Member IMC Group

Tungaloy

ACCELERATED MACHINING



General Catalog

2020 / 2021


tungaloy



Member IMC Group Tungaloy

In an accelerated world, a quick response to market needs is necessary. As a pioneer in innovation, **Tungaloy** leads the market in developing unique and powerful grades and geometries for this new era. TUNGFORCE, our newest line of products is designed for accelerated machining, bringing you the newest and greatest solutions for your machining needs.

Member IMC Group

Tungaloy

2020 / 2021

Full Product Line



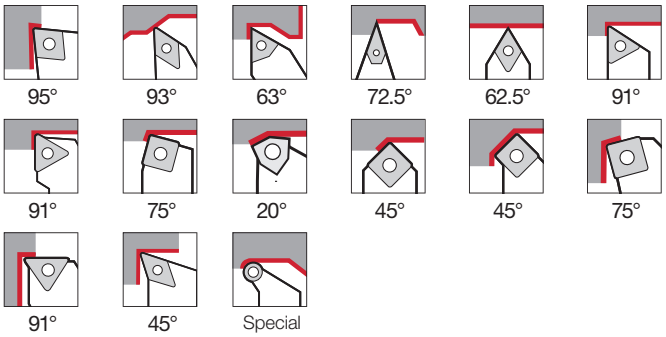
www.tungaloy.com

Grade A
Insert B
External Toolholder C
Internal Toolholder D
Threading Tool E
Parting, Grooving F
Miniature Machining G
Mill H
Endmill I
Drill J
Tooling System K
User's Guide L
Index M

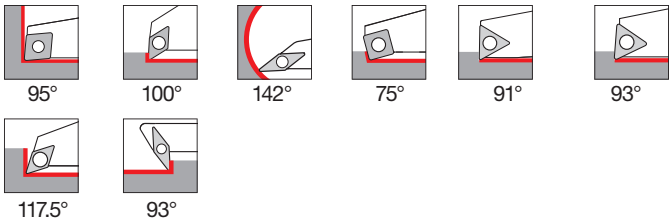
About Tungaloy Cutting Tool Catalog

Icons at the right/left side of each page

External toolholder (cutting edge shape / angle)



Internal toolholder (cutting edge shape / angle)



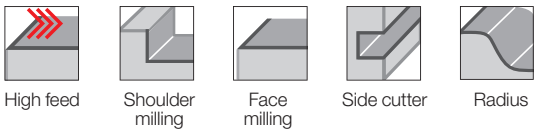
Parting, Grooving



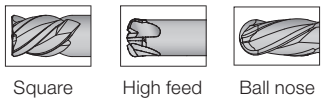
Miniature machining



Mill



Endmill

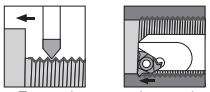


Drill

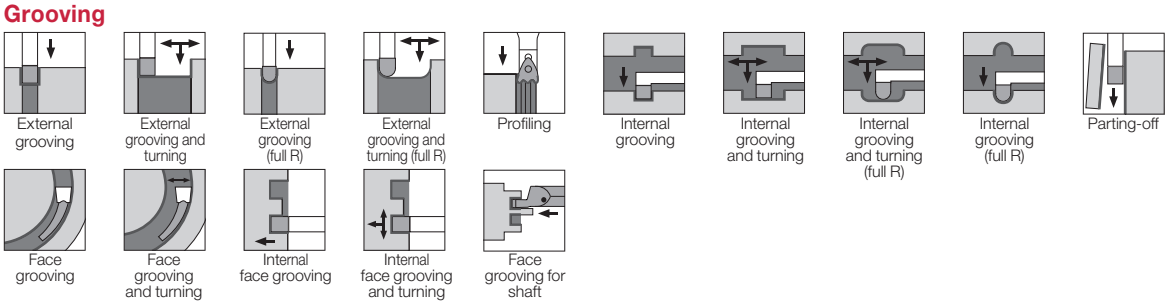


Icons for applications of each product

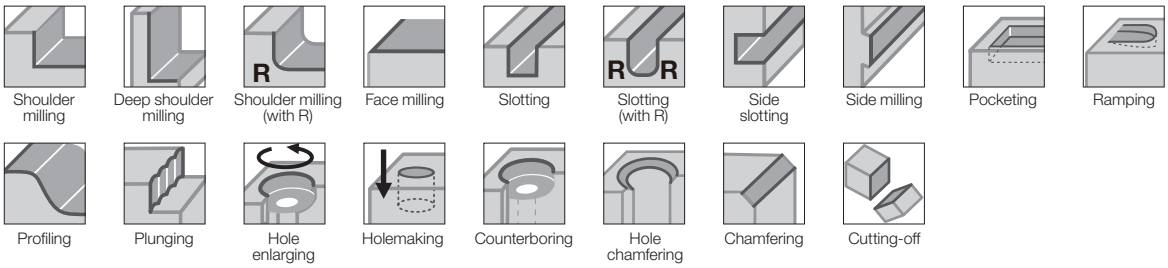
Threading



Grooving



Milling



Drilling



About Tungaloy Cutting Tool Catalog

Note in using this catalog:

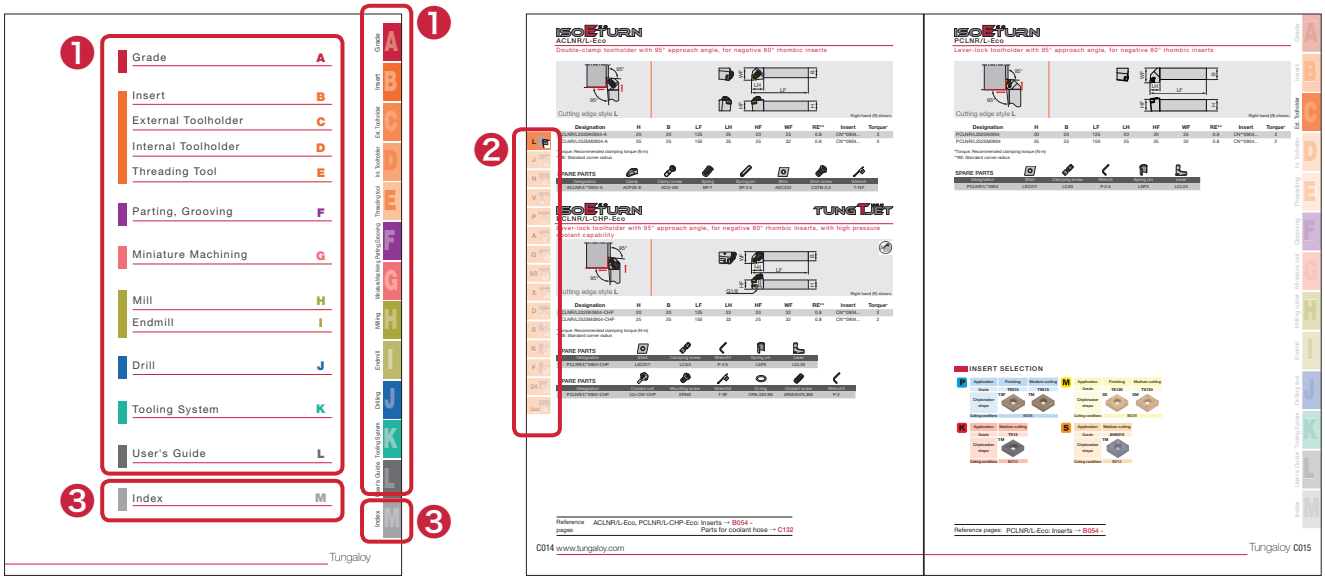
★ This catalog provides the information of Tungaloy's cutting tools as of September 2019.

★ The specifications are subject to change without prior notice for product improvements. Also, the products may be discontinued in the future due to the development of new products.

★ The dimensions of all products are shown in millimeters (mm).

★ For indexable tools, such as toolholders, cutters, drill bodies, applicable inserts or heads need to be ordered separately.

How to use this catalog:



❶ Select the tool category at the product group index on the right pages.

❷ Select the tool type at the application index on the left pages.

❸Check the tool designation on the page of the tool details.

*The index is in the alphanumerical order. Use it for your product search.

How to read the list for the standard items:

★ Designations for indexable tools – toolholders, cutters, drill bodies, etc.

· Orders are to be received for the tools with the designations in the catalog.

· For the tool with right- and left-hand options, the designation includes **R/L** as shown below.

Ex. 1: Designation: A16Q-STFP**R/L**13-D180

You can order both right- and left-hand tools. A16Q-STFP**R**13-D180 (a right-hand tool) and A16Q-STFP**L**13-D180 (a left-hand tool) will be available.

Ex. 2: Designation: A20R-STFP**R**13-D220

You can order only right-hand tools. Please contact us when you need left-hand tools.

★ Line up for inserts and solid tools

Blank : Please contact us regarding the product.

About the dimension symbols conforming to ISO13399

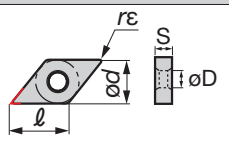
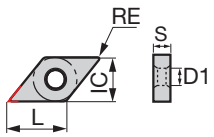
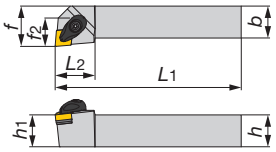
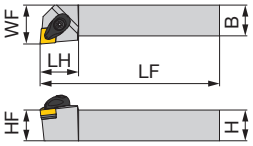
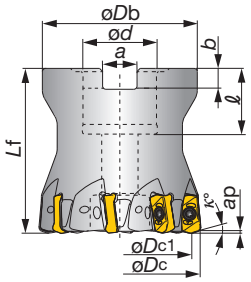
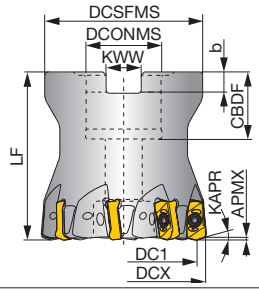
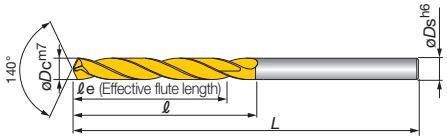
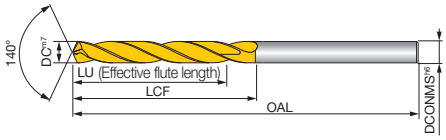
What is ISO13399?

ISO13399 is an international standard for the purpose of standardizing the electronic data of tools in the world.

Switching to the dimension symbols conforming to ISO13399

In this catalog, we use the dimension symbols (properties) conforming to ISO13399 international standard.
Below are the examples of the change.

Examples of the change:

	Before	After
Insert		
Turning		
Milling		
Drilling		

ISO13399 standardizes not only the format of 2D and 3D CAD data but also the tool dimension symbols (properties) and reference position information. This allows the tool information to be read and combined into NC programs and CAM software, regardless of any tool maker's data. In addition to General Catalog (paper catalog), we are also updating the symbols in e-catalog (electronic catalog on our website) to the properties conforming to ISO13399. The e-catalog also provides 2D and 3D CAD data in accordance with ISO13399 standard.

Insert

New symbol	Old symbol	Description
AN	-	Main cutting edge relief angle
APMX	Max. ap	Maximum depth of cut
AS	A	Side cutting edge relief angle
BW	B	Body width
BS	bs	Side cutting edge (wiper) length
CDX	T max	Maximum groove depth
CW	*W*	Grooving edge width
D1	ø*d*1	Mounting hole diameter
DCONMS	ø*D*s	Mounting part diameter on the machine
DMIN	ø*D*m	Mounting part diameter on workpiece
EPSR	-	Minimum machining diameter
GAN	-	Nose angle
IC	ø*d*	Rake angle (insert)
INSD	A	Inscribed circle diameter
INSL	B	Insert diameter (round type)
KAPR	κ	Insert length
LBB	-	Approach angle
LE	A	Chipbreaker width
LF	*L*1	Effective cutting edge length
M	m	Standard length
PDX	t	Distance from inscribed circle to cutting edge (m dimension)
PDY	ℓ3	Thread position (X direction)
PNA	θ	Thread position (Y direction)
PSIRL	θ	Cutting edge angle
PSIRR	θ	Left-hand front cutting edge angle
RE	*r*	Right-hand front cutting edge angle
S	T	Corner radius
W1	-	Insert width

Turning, Grooving

New symbol	Old symbol	Description
B	*b*	Shank width
BD	ø*D*1, ø*D*2, ø*D*3	Body external diameter
CDX	*ar*	Maximum groove depth
CND	-	Oil hole diameter
CNT	-	Oil hole plug size
CUTDIA	ø*D*max	Maximum parting diameter
CW	W	Grooving edge width
CWN	-	Minimum grooving edge width
CWX	-	Maximum grooving edge width
DAXN	ø*D*m	Minimum diameter in face grooving
DAXX	ø*D*max	Maximum diameter in face grooving
DCONMS	ø*D*s	Mounting part diameter on the machine
DCONWS	ø*D*, ø*d*2	Mounting part diameter on the workpiece
DMIN	ø*D*m	Minimum machining diameter
GAMF	α	Radial rake angle
GAMP	θ	Axial rake angle
H	*h*	Shank length
HBH	*h*2	Height of offset on the bottom of head
HBKL	*f*2	Length of uneven level on the back of head
HBKW	*L*2	Width of uneven level on the back of head
HBL	*L*2	Length of offset on the bottom of head
HF	h1	Standard height
KAPR	κ	Approach angle
LB	*L*	Body length
LF	*L*1	Standard length
LH	*L*2	Head length
OAH	*h*4	Overall height
OAL	*L*1	Overall length
OAW	*L*3	Overall width
PSIR	β	Lead angle
WB	-	Body width
WF	*f*	Standard width
WFS	*f*2	Standard width (the second corner)

About the dimension symbols conforming to ISO13399

Tooling system

New symbol	Old symbol	Description
APMX	Max. *ap*	Maximum depth of cut
BD	*øD1*, *øD2*, *øD3*	Body external diameter
BHTA	α	Neck taper angle (half of nose angle)
BTED	*ød1*	Taper tip diameter
CRKS	S	Mounting screw size
DBC	*ød3*	Bolt hole pitch diameter
DCONMS	*øDs*	Mounting part diameter on the machine
DCONWS	*øD*, *ød2*	Mounting part diameter on the workpiece
DMIN	*øDm*	Minimum machining diameter
GAMF	α, R.R.	Radial rake angle
GAMP	*θ*, A.R.	Axial rake angle
KAPR	κ	Cutting edge angle
LB	*L2*, *L3*	Body length
LF	*L*	Standard length
LPR	*L1*	Parting length
LS	*ℓs*	Shank length
LSC	*Lmin*	Clamp length
LSCX	*Lmax*	Maximum clamp length
OAH	H4	Overall height
OAL	*L*	Overall length
OAW	*W*	Overall width
THID	-	Mounting screw size
WB	*W*	Body width
WF	*f*	Standard width

Drilling

New symbol	Old symbol	Description
BD	*øD1*, *øD2*, *øD3*	Body external diameter
CND	-	Oil hole diameter
CNT	-	Oil hole plug size
CRKS	*S*	Mounting screw size
DC	*øDc*	Machining diameter
DCONMS	*øDs*	Mounting part diameter on the machine
DCONWS	*øD*, *ød2*	Mounting part diameter on the workpiece
DCSFMS	*øD*	Connecting part diameter
KAPR	κ	Cutting edge angle
LCF	*ℓ*	Flute length
LF	*Lf*	Standard length (from the drill shoulder)
LPR	-	Parting length (from flange to tip)
LS	*ℓs*	Shank length
LU	*ℓ*	Machinable depth
NOF	z	Number of flutes
OAL	*L*	Overall length (from tip)
PL	PL	Distance from drill tip to shoulder
ZEFP	Z eff	Number of effective cutting edges on periphery

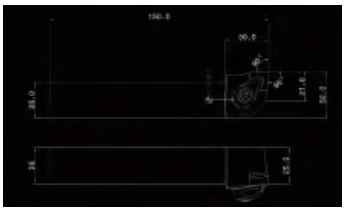
Milling

New symbol	Old symbol	Description
APMX	Max. *ap*	Maximum depth of cut
BD	*øD1*, *øD2*, *øD3*	Body external diameter
BHTA	α	Neck taper angle (half of nose angle)
CBDP	*ℓ*	Mounting hole depth
CDX	Max. *ae*	Maximum slot width
CHW	k	Chamfer width on the corner
CICT	z	Number of inserts
CRKS	S	Mounting screw size
CW	W	Slotting edge width
CWN	-	Minimum slotting edge width
CWX	-	Maximum slotting edge width
DBC	*ød3*	Bolt hole pitch diameter
DC	*øDc*	Machining diameter
DCONMS	*ød*	Mounting part diameter on the machine
DCONWS	*øD*, *ød2*	Mounting part diameter on the workpiece
DCSFMS	*øDb*	Mounting surface diameter on the machine
DCX	*øDc1*	Maximum machining diameter
GAMF	R.R.	Radial rake angle
GAMP	A.R.	Axial rake angle
H	T	Width across flat
KAPR	κ	Cutting edge angle
KWW	*a*	Drive key width
LF	*Lf*	Standard length
LH	*Lf*	Neck length
LS	*ℓs*	Shank length
NOF	z	Number of flutes
OAL	*L*, *L6*	Overall length
PDX	*t*	Thread position (X direction)
PNA	*θ*	Cutting edge angle
PSIR	*β*	Lead angle
RMPX	*θ*	Maximum ramping angle
THUB	T	Hub height (slot mill)
WT	Kg	Weight
ZEFP	Z eff	Number of effective cutting edges on the periphery

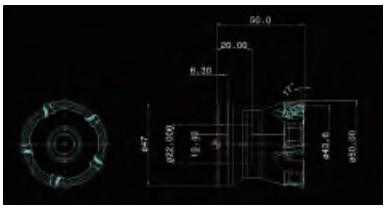
Note:
- Symbols unspecified in ISO13399 standard and Tungaloy's original symbols are not included.
- The symbols still under discussion are included. Please note any change or addition may occur.

CAD data provided in e-catalog

● 2D data (DXF format file)



Turning:
Shows the insert with standard corner radius.



Milling:
Includes actual cutting edge curve (CUT layer) and body cross section (NOCUT layer).

● 3D data Light type (STP format file): Can be used to check tool path and interference.

Turning: Equipped with an insert with a standard corner radius.



Milling: A rotating body model of an actual cutting edge curve and a body cross section.



● 3D data Detail type (STP format file): Can be used to create a new tool layout chart. (Can be combined with any insert model on a CAD software.)

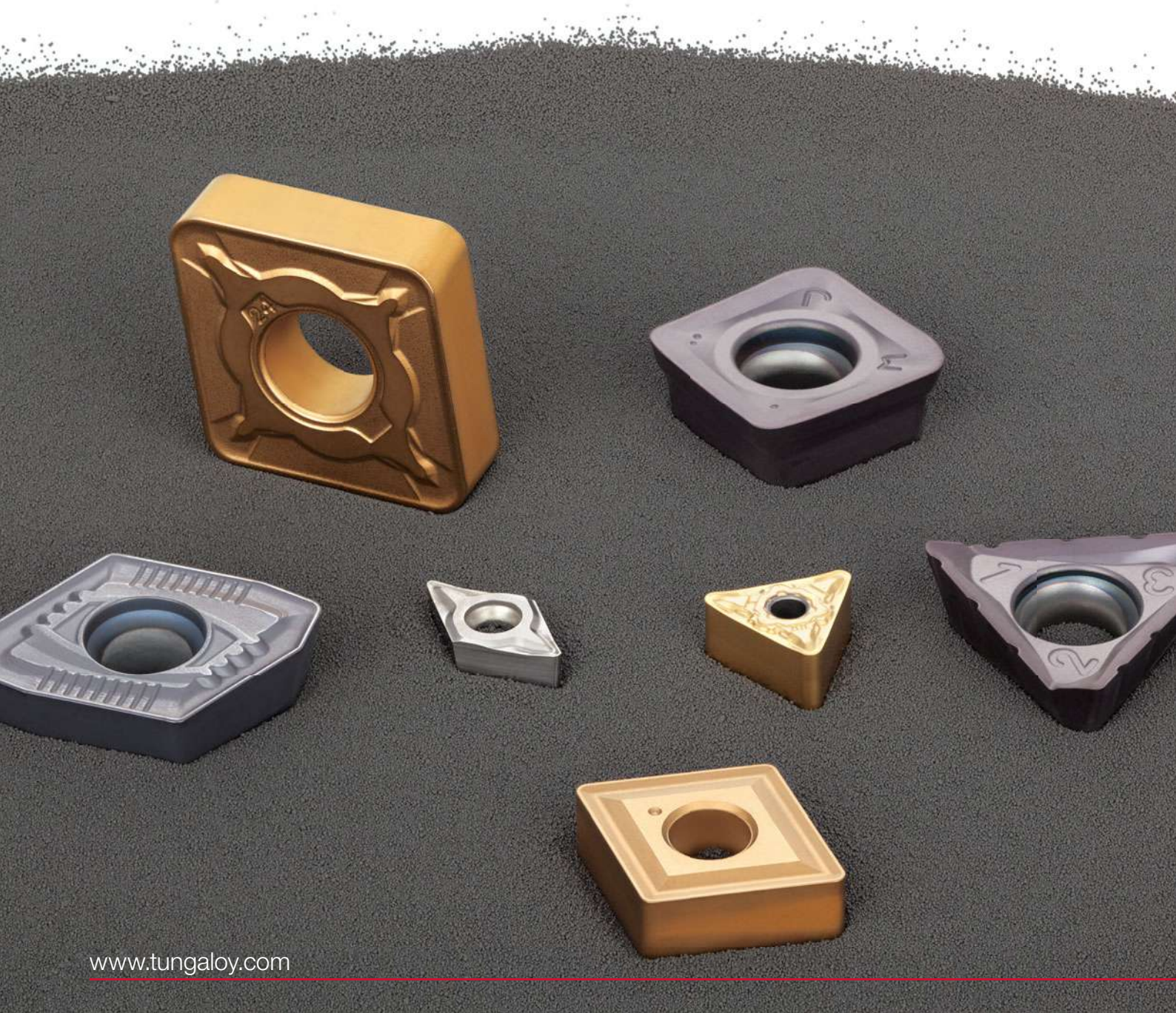
Turning



Milling



Grade



Grade

Coated Grade CVD A002

Coated Grade PVD A003

Ceramic A005

Cermet A005

CBN (T-CBN) A006

PCD (T-DIA) A007

Uncoated Cemented Carbide A007

Product comparison by workpiece material A008

Product comparison by chipbreaker A020

CVD - Coated Grade

Grade	Coating: Main composition	Coating: Thick-ness / µm	Applica-tion	Feature	Turning	Grooving	Milling	Drilling
New **T9205** P01 - P10 K10 - K20	Ti compound +Al2O3	18	P K	- High wear resistance - Excellent performance in high-speed cutting	■			
New **T9215** P10 - P20	Ti compound +Al2O3	18	P M K	- Well-balanced between wear and chipping resistance - First choice for steel - High versatility for a wide range of applications	■			
New **T9225** P15 - P25	Ti compound +Al2O3	16	P	- First choice for roughing to medium cutting - High fracture resistance	■	■		
New **T9235** P30 - P40	Ti compound +Al2O3	16	P	- Cast iron - High fracture resistance in heavy interrupted cutting	■			
T9105 P01 - P10 K10 - K20	TiCN-Al2O3	16	P K	- High wear resistance - Excellent performance in high-speed cutting	■			
T9115 P10 - P20 K15 - K30	TiCN-Al2O3	16	P K	- Good balance between wear and chipping resistance - Suitable for a wide range of applications	■			
T9125 P20 - P30	TiCN-Al2O3	16	P	- High chipping resistance in light to medium interrupted cutting	■	■		
T9135 P30 - P40	TiCN-Al2O3	16	P	- High fracture resistance in heavy interrupted cutting	■			
T6120 P10 - P20 M10 - M20	TiCN	6	P M	- Excellent wear resistance in high-speed continuous cutting	■			
T6130 P15 - P30 M15 - M30	TiCN	6	P M	- High wear resistance in cutting at medium to high speed - First choice for stainless steel	■			
T515 K10 - K20	TiCN-Al2O3	16	K	- High wear resistance even in high-speed machining - First choice for roughing cast iron	■	■		
T5105 K05 - K15	TiCN-Al2O3	16	K	- High resistance to wear and plastic deformation in high-speed continuous cutting	■			
T5115 K10 - K20	TiCN-Al2O3	16	K	- Stable machining in a wide range of applications from continuous to interrupted cutting	■			
T5125 K15 - K30	TiCN-Al2O3	16	K	- Toughness to prevent sudden fracture - Ideal for heavy interrupted cutting	■			
T313V -	TiCN-Al2O3	3	Threading	- High resistance to plastic deformation	■			
New **T3225** P20 - P35 M20 - M35	TiCN-Al2O3	10	P M	- High chipping and fracture resistance - Suitable for milling steel and stainless steel			■	
T3130 P20 - P40 M20 - M40	TiCN-Al2O3	6	P M	- Good balance between wear and chipping resistance - Suitable for milling steel and stainless steel			■	
T1215 K10 - K25	TiCN-Al2O3	10	K	- Good balance between wear and chipping resistance - Suitable for milling cast iron			■	
T1115 K10 - K25	TiCN-Al2O3	11	K	- High wear resistance - Suitable for milling cast iron			■	

PVD - Coated Grade

Grade	Coating: Main composition	Coating: Thick-ness / μm	Applica-tion	Feature	Turning	Grooving	Milling	Drilling
AH110 P05 - P15 M05 - M15 K10 - K25 S05 - S15	(Ti, Al)N	3	P M K S	- High wear resistance - Suitable for finishing steel, cast iron, and difficult-to-cut material	■		■	
AH120 P15 - P25 M15 - M25 K15 - K30 S10 - S25	(Ti, Al)N	3	P M K S	- Good balance between wear and fracture resistance - Suitable for machining steel, stainless steel, and cast iron under general cutting conditions	■		■	■
AH130 P25 - P40 M25 - M40	(Ti, Al)N	3	P M	- High chipping and fracture resistance - Designed for machining austenitic stainless steel under general cutting conditions			■	
AH140 M30 - M45	(Ti, Al)N	3	M	- High fracture resistance - Suitable for milling stainless steel			■	
AH170 P20 - P35 M20 - M35 K15 - K30	(Ti, Al)N	3	P M K	- High wear resistance - Designed for drilling carbon steel and cast iron				■
AH180 P20 - P35 M20 - M35 K15 - K30	(Ti, Al)N	3	P M K	- High wear resistance - Designed for drilling carbon steel, cast iron, and stainless steel				■
AH330 P15 - P30	(Ti, Al)N	3	P	- Excellent wear resistance	■		■	
AH630 P15 - P30 M15 - M30	(Ti, Al)N	5	P M	- Good resistance to wear and fracture in machining stainless steel at low to medium cutting speed	■			
AH645 P30 - P40 M30 - M40	(Ti, Al)N	5	P M	- High fracture resistance in machining stainless steel	■			
AH710 P05 - P15 K05 - K15 H05 - H15	(Ti, Al)N	3	P K H	- High wear resistance - Suitable for finishing cast iron and high-hardened steel	■	■	■	
AH725 P15 - P30 M15 - M30 K25 - K30 S15 - S25	(Ti, Al)N	2	P M K S	- Good balance between wear and chipping resistance - Suitable for machining steel and stainless steel under general cutting conditions	■	■	■	■
New **AH7025** P20 - P30 M20 - M30 S15 - S25	(Ti, Al)N	3.5	P M S	- Excellent wear resistance and high rigidity - First choice for grooving of various materials		■		
AH730 P15 - P30	(Ti, Al)N	3	P	- Good balance between wear and fracture resistance	■		■	
AH740 P25 - P40	(Ti, Al)N	3	P	- Excellent chipping resistance in machining steel				■
AH750 H15 - H30	(Ti, Al)N	3	H	- High wear resistance - Designed for milling high-hardened material			■	
AH8005 M01 - M10 S01 - S10	(Al,Ti)N	3.5	M S H	- Good resistance to wear and adhesion - Excellent performance in machining heat-resistant alloy at high speed	■		■	
AH8015 M10 - M20 S10 - S20	(Al,Ti)N	3.5	P M K S H	- Good balance between wear and fracture resistance - First choice for machining heat-resistant alloy under general cutting conditions	■		■	
AH905 S01 - S10	(Al, Ti)N	1.5	S	- High resistance to wear and built-up edge	■	■		

PVD - Coated Grade

Grade	Coating: Main composition	Coating: Thick-ness / μm	Applica-tion	Feature	Turning	Grooving	Milling	Drilling
AH3225 New P20 - P35 M20 - M35	(Ti, Al)N	5	P M	- Good balance between wear and fracture resistance - Suitable for steel and stainless steel			■	
AH3035 P20 - P45 H20 - H30	(Ti, Al)N	5	P H	- Good balance between wear and chipping resistance - Suitable for machining high-hardened steel at high feed			■	
AH3135 P30 - P40 M30 - M40	(Ti, Al)N	4	P M	- High fracture resistance - Suitable for machining steel and stainless steel under general cutting conditions			■	■
AH4035 M30 - M45	(Ti, Al)N	5	M	- Good balance between wear and fracture resistance - Suitable for difficult-to-cut stainless steel			■	
AH6030 M25 - M35 S15 - S30	(Ti, Al)N	5	M S	- High fracture resistance - Suitable for drilling stainless steel and heat-resistant alloy under general cutting conditions				■
AH9030 P15 - P35 K10 - K25	(Ti, Al)N	5	P K	- High wear resistance - Suitable for drilling steel and cast iron at high speed				■
AH9130 New P15 - P35 M25 - M35 K10 - K25 S15 - S30	(Ti, Al)SiCrN	4.5	P M K S	- High wear resistance - Designed for drilling various materials				■
SH725 P20 - P30 M20 - M30	(Ti, Al)N	2	P M	- High wear resistance - Designed for machining steel and stainless steel	■	■		
SH730 P20 - P35 M20 - M35 S05 - S15	(Ti, Al)N	1	P M S	- High wear resistance - Designed for machining steel, stainless steel, and difficult-to-cut material	■	■		
GH110 K10 - K25 N05 - N15	Ti(C, N, O)	3	P M K N S	- High wear resistance	■		■	
GH130 P25 - P40 M25 - M40 K25 - K40	Ti(C, N, O)	3	P M K	- High chipping and fracture resistance - Suitable for steel, stainless steel, and cast iron		■	■	■
GH330 P15 - P30 M15 - M30 K05 - K30	Ti(C, N, O)	3	P M K	- High resistance to wear and fracture - Suitable for continuous to medium interrupted cutting	■	■	■	
GH730 P20 - P35 M20 - M35 K20 - K30	Ti(C, N, O)	3	P M K	- High wear resistance - Suitable for turning and grooving at low speed	■	■		
J740 -	TiN	1	For small lathes	- Ultra-fine-grain cemented carbide coated with TiN-based compound	■	■		
YH170 P20 - P35 M20 - M35	Ti(C, N)	1.5	P M	- High resistance to wear and fracture - Designed for drilling carbon steel and stainless steel				■
YH180 P20 - P35 M20 - M35	Ti(C, N)	1.5	P M	- High wear resistance - Designed for drilling carbon steel and stainless steel				■
JM10 P20 - P35 M20 - M35	TiN	1	P M	- High wear resistance - Designed for drilling carbon steel and stainless steel				■
DS1100 N05 - N20	DLC coating	Thin layer	N	- High wear resistance - Suitable for finishing aluminium			■	
DS1200 N10 - N25	DLC coating	Thin layer	N	- Good balance between wear and chipping resistance - Suitable for semi-finishing to finishing of aluminium			■	

Ceramic

Grade	Hardness (HRA)	Application	Feature	Turning	Grooving	Milling	Drilling
LX11	94.0	H	- Alumina base - Suitable for continuous cutting of high-hardened material	■			
LX21	94.0	K	- Alumina base - Excellent chipping resistance in continuous cutting of cast iron	■			
FX105	93.0	K	- Silicon nitride base - Suitable for high-speed machining of cast iron	■		■	
CX710	92.9	K	- Silicon nitride base - Suitable for high-speed machining of cast iron	■			
WG300	94.4	S H	- Whisker-reinforced alumina ceramic for heat-resistant alloy and high-hardened material	■			
New FX510	94.0	S K N	- Sialon base - Suitable for heat-resistant alloy, such as nickel-based alloy			■	

Cermet

Grade	Coating: Main composition	Coating: Thickness / µm	Application	Feature	Turning	Grooving	Milling	Drilling
New AT9530	(Ti,Al)N laminated coating	3	P	- High wear resistance - First choice for machining alloy steel	■			
GT9530	Ti(C, N, O)	3	P K	- High wear resistance - Excellent surface quality in finishing	■			
J9530	TiN	1	For Swiss lathes	- Suitable for small-part machining	■	■		
NS9530	Uncoated	-	P K	- High fracture resistance - Suitable for finishing to medium cutting of steel	■	■		
NS740	Uncoated	-	P	- High resistance to fracture and thermal crack - High-rigidity grade for milling			■	
NS520	Uncoated	-	P K	- High wear resistance	■			
GT720	Ti(C, N, O)	3	P K	- High wear resistance in face milling at high speed	■			
X407	Uncoated	-	P	- High wear resistance in finishing with dry cutting	■		■	
N308	Uncoated	-	P	- High wear resistance			■	

CBN

Grade	Hardness (Hv)	T.R.S. (GPa)	Application	Feature	Turning	Grooving	Milling	Drilling
New BXA20	3300 ~ 3500	1.30 ~ 1.50	H	- Coated T-CBN for excellent performance in machining hardened steel	■			
BXM10	2700 ~ 2900	0.80 ~ 0.90	H	- Coated T-CBN for excellent performance in high-speed continuous cutting of hardened steel	■			
BXM20	3500 ~ 3700	1.35 ~ 1.50	H	- Coated T-CBN for machining hardened steel in a wide range of application area	■			
BXC50	3500 ~ 3700	1.15 ~ 1.30	H	- Coated T-CBN with high fracture resistance in continuous to interrupted cutting	■			
BX310	2700 ~ 2900	0.80 ~ 0.90	H	- High wear resistance - Designed for high-speed continuous cutting of hardened steel	■			
BX330	2800 ~ 3000	0.85 ~ 0.95	H	- Excellent sharpness - Designed for finishing hardened steel	■			
BX360	3200 ~ 3400	1.00 ~ 1.10	H	- Suitable for general machining of hardened steel	■	■		
BX380	3500 ~ 3700	1.15 ~ 1.30	H	- High fracture resistance - Designed for heavy interrupted cutting of hardened steel	■			
BX530	2800 ~ 3000	0.85 ~ 0.95	H	- Designed for finishing hardened steel with good surface quality	■			
BXC90 (BX90S)	3900 ~ 4100	1.80 ~ 1.90	K	- Coated T-CBN for high-speed machining of cast iron	■		■	
BX910	2600 ~ 2800	0.80 ~ 0.90	K	- Excellent wear resistance in high-speed machining - Designed for centrifugally cast iron	■		■	
BX930	3000 ~ 3200	0.95 ~ 1.20	K	Designed for ductile cast iron	■			
BX850	3300 ~ 3500	0.75 ~ 0.85	H	- High fracture resistance - Good performance in high-speed face milling			■	
BX870	3000 ~ 3200	0.95 ~ 1.20	K	- High wear resistance - Designed for centrifugally cast iron	■		■	
BX470	4100 ~ 4300	1.90 ~ 2.10	Sintered metal	- Excellent sharpness - Suitable for ferrous sintered metal	■			
BX480	4100 ~ 4300	1.90 ~ 2.10	Sintered metal K	- Hardest T-CBN - Ideal for ferrous sintered metal - Suitable for high-speed face milling of cast iron	■		■	
M714B	3000 ~ 3200	1.00 ~ 1.10	S	- High wear resistance and thermo stability - Suitable for high-speed machining of Inconel	■			

PCD (T-DIA)

Grades	Grain size (μm)			Appli-cation	Feature	Turning	Grooving	Milling	Drilling
New DX110	< 1	8500	1.8	N	- Excellent sharpness for high surface quality - Suitable for finishing non-ferrous metal and nonmetal	■		■	
DX120	4.5	9000	1.8	N	- Suitable for finishing non-ferrous metal and nonmetal	■		■	
DX140	12.5	10000	1.7	N	- High wear resistance - Designed for non-ferrous metal and nonmetal	■		■	
DX160	28	11000	1.6	N	- Designed for ceramic, cemented carbide, and nonmetal	■		■	
DX180	45	12000	1.5	N	- High wear resistance - Designed for ceramic, cemented carbide, and nonmetal	■			

Uncoated Cemented Carbide

Grades	Hardness (HRA)	T.R.S. (GPa)	Application	Turning	Grooving	Milling	Drilling
UX30 P30 M30	91.1	2.3	P M	■	■	■	
TH10 P10 M10 K10 N10	92.0	2.4	P M K N	■	■	■	
KS05F K05 S05 N05	93.0	2.9	K S N	■	■	■	
KS15F N15	91.5	3.0	N	■		■	
KS20 K20 N20 S20	90.8	2.8	K S N	■			
TH03 P05 M05 K05 N05	93.8	1.9	P M K N	■			
F	93.4	2.5	P K				■
EM10 P10 - P25 K10 - K25	91.5	3.4	P K				■

Grades	Hardness (HRA)	T.R.S. (GPa)	Application	Turning	Grooving	Milling	Drilling
UM K10 - K25 N10 - N25	90.9	3.5	K N				■
G2 K10 - K25 N10 - N25	90.8	2.7	K N				■
G1F P10 - P25 K10 - K25	92	2.6	P K				■
MD10 P10 - P25 M10 - M25	92.8	3.4	P M				■
MD20 P20 - P35 M20 - M35	91.5	3.9	P M				■

Grade Comparison Chart

●CVD Coated Grades for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	TaeguTec	Widia	Walter	Ceratizit
Classification	Symbol															
P	P01	**T9205 T9105**	UE6105	AC810P	GC4305	CA510	HG8010	JC110V		TP0500 TP0501	KCP05	IC8150 IC9150 IC9015	TT8115	TN10P TN20K	WPP01 WPP05 WPP05S	
	P10	**T9205 T9105 T9215 T9115**	UE6105 MC6015	AC810P AC8015P	GC4305 GC4315	CA515	HG8010 GM8020	JC110V JC215V	CP7 CP5	TP0500 TP1500 TP0501 TP1501	KCP10	IC8150 IC9150 IC8080 IC9080 IC9015	TT8115	TN10P TN20K WP15CT	WPP05 WPP10 WAK20 WPP05S WPP10S	CTC3110 CTCK120
	P20	**T9215 T9115 T9225 T9125**	MC6015 MC6025	AC8015P AC8025P	GC4315 GC4325	CA515 CA525 CA025P	HG8025 GM8020 GM25	JC110V JC215V	CP7 CP5	TP1500 TP2500 TP1501 TP2501	KCP25	IC8150 IC9150 IC9015 IC8250 IC9250	TT8125 TT5100	TN10P TN15M WP25CT	WPP20 WPP20S	CTCP115 CTCP125 CTC1425
	P30	**T9225 T9125 T9235 T9135 T6130**	MC6025 MC6035	AC8025P AC8035P	GC4325 GC4335	CA530 CA025P	HG8025 GM8035 GM25	JC215V JC325V		TP2500 TP3500 TP2501 TP3501	KCP30	IC8080 IC656 IC9350	TT8125 TT5100 TT8135	TN30P TN30M WP35CT	WPP30 WAK30 WPP30S	CTCP125 CTC1425 CTC1135 CTC1435 CTC2135
	P40	**T9235 T9135 T6130**	MC6035	AC8035P AC630M	GC4335	CA530	GM8035 GX30	JC325V		TP3500 TP3501	KC9140 KC9240 KCP40	IC9350 IC635	TT8135 TT7100	TN30P TN30M	WPP30 WAK30 WPP30S	CTC1135 CTC1435 CTC2135
M	M10	**T9215 T9115**	MC7015	AC6020M	GC2015	CA6515		JC110V			KCM15	IC9250 IC520M	TT9215	TN15M WM15CT		CTCP115
	M20	**T6120 T9215 T9115**	MC7015 MC7025	AC6020M	GC2015 GC2025	CA6525	HG8025 GM25	JC110V		TM2000	KCM15 KCM25	IC9025 IC9350 IC4050	TT9215 TT9225	TN15M WM25CT		CTC1425 CTCP125 CTC1135
	M30	**T6130**	MC7025	AC6030M	GC2025	CA6525	GM8035 GM25 GX30	JC215V		TM2000 TM4000	KCM25 KCM35	IC9350 IC4050 IC635	TT9225 TT9235	TN30M WM35CT		CTC1435 CTC2135
	M40						GX30			TM4000	KCM35	IC635	TT9235			
K	K01	**T5105**	MC5005		GC3205	CA310	HX3505	JC050W JC105V	CP1	TK0501	KCK05	IC8080		WK05CT		
	K10	**T5105 T515 T5115**	MC5015	AC4010K	GC3210	CA315	HX3515 GM10 HG8010	JC105V JC110V	CP1	TK1501	KCK05 KCK15	IC9150 IC5100 IC4100	TT7005	WK05CT	WKK10S	CTC3110 CTC1425
	K20	**T515 T5115 T5125**	MC5015	AC4015K AC420K	GC3225	CA320	HX3515 GM8020	JC110V JC215V	CP1	TK2001	KCK15 KCK20	IC9150 IC5100 IC4100 IC9080	TT7310	WK20CT	WKK20S	CTC1435 CTCK120 CTCP115
	K30	**T5125**					HG8025	JC215V				IC520M IC4050			WKP30S	CTCP125

Note: The above table is selected from a publication. We have not obtained approval from each company.

Grade Comparison Chart

●PVD Coated Grade for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	TaeguTec	Widia	Walter	Ceratizit
Classification	Symbol															
P	P01					PR1005						IC507 IC807 IC907			WXN10	
	P10	**AH710**	VP10RT		GC1525	PR930 PR1005 PR1115 PR1215 PR1425	IP2000	JC5003 JC5030	VM1 DT4 DM4	TS2000 CP200	KC5010 KC5510 KCU10			WS10PT	WSM10 WSM21	
	P20	**AH120 AH725 AH730 SH725 SH730 J740**	VP10RT VP15TF VP20MF VP20RT UP20M	AC520U	GC1525 GC1125	PR930 PR1025 PR1115 PR1215 PR1425 PR1225	IP2000 IP3000	JC5030 JC5040	VM1 DT4 DM4	TS2500 CP200	KC5025 KC5525 KCU25	IC507 IC807 IC907	TT9030	WS10PT WS25PT	WSM20 WSM21	
	P30	**AH120 AH725 AH7025 SH725 AH730 SH730 GH730 GH330 J740**	VP15TF VP20MF VP20RT UP20M	AC530U	GC1125	PR1025 PR1225	IP3000	JC5040	DT4 DM4 QM3	CP500	KC5025 KC5525 KCU25	IC328 IC928 IC3028	TT9030 TT8020	WS25PT	WSM30	CTP1235 CTP1625 CTP2235
	P40	**AH120 AH725 AH645**		AC530U						CP500		IC328 IC3028	TT8020			CTP1235 CTP2235
M	M01											IC520			WXM10	
	M10	**AH8005 AH630**	VP10RT		GC1105 GC1115 GC1525	PR1025 PR1215	IP100S IP050S	JC5003 JC8015	TM4 ZM3	TS2000 TS2500 CP200	KC5010 KC5510 KCU10	IC520 IC507 IC807 IC907		WS10PT	WSM10 WSM10S	
	M20	**AH8015 AH630 AH120 AH7025 AH725 SH725 SH730**	VP10RT VP15TF VP20MF VP20RT UP20M	AC520U	GC1115 GC1125 GC1525	PR930 PR1025 PR1125 PR1215 PR1425 PR1225	IP100S IP050S	JC5015 JC5030 JC8015	TM4 ZM3 DT4 DM4	TS2500 CP200 CP500	KC5025 KC5525 KCU25	IC520 IC507 IC807 IC907 IC308 IC3028	TT9030 TT8010	WS10PT WS25PT	WSM20 WSM21 WSM20S	CTP1235 CTP2120
	M30	**AH645 AH120 AH725 SH725 SH730 J740**	VP15TF VP20MF VP20RT UP20M MP7035	AC530U AC6040M AC1030U	GC1125 GC2035	PR1125	IP100S	JC5015 JC5030 JC5040	TM4 ZM3 DT4 DM4	CP500	KC5025 KC5525 KCU25	IC3028 IC308 IC908 IC928	TT8020	WS25PT	WSM30 WSM30S	CTP1235 CTP2120 CTP2235 CTP1625
	M40	**AH645**	MP7035	AC530U AC6040M	GC2035							IC228 IC328				
K	K01	**AH110**										IC910				
	K10	**GH110 AH110**	VP10RT	AC510U		PR905 PR1215		JC5003 JC5015		TS2000 CP200	KC5010 KC5510 KCU10	IC910 IC308 IC508	TT9030	WS10PT		CTP6215
	K20	**AH120 AH7025**	VP10RT VP20RT VP15TF			PR905 PR1215		JC5015		TS2500 CP200 CP250	KC5025 KC5525 KCU25	IC910 IC308 IC508 IC928 IC1008	TT9030	WS10PT WS25PT		CTP6215
	K30	**AH120 GH130**	VP20RT VP15TF							CP500		IC928 IC1008	TT9030	WS25PT		CTP1625
S	S01	**AH8005**	VP05RT MP9005					JC8003							WSM10	
	S10	**AH8005 AH8015**	VP10RT MP9015	AC510U AC520U AC5015S	GC1105	PR1305 PR1310		JC8015 JC5015	DT4 DM4	TS2000 TS2500 CP200 CP500	KC5010 KC5510 KCU10	IC507 IC807 IC808 IC907 IC908	TT8010	WS10PT	WSM10 WSM10S	CTP2235
	S20	**AH8015 AH7025**	VP15TF MP9015 VP20RT	AC520U AC1030U AC5025S	GC1115 GC1125	PR1310		JC8015 JC5015	DT4 DM4	TS2000 TS2500 CP200 CP500	KC5025 KC5525 KCU25	IC507 IC807 IC808 IC907 IC908	TT8020	WS10PT WS25PT	WSM20 WSM21 WSM20S	CTP2235
	S30	**AH630 AH7025**	VP15TF VP20RT	AC520U AC5025S	GC1125	PR1325						IC830 IC928		WS25PT	WSM30 WSM30S	

Note: The above table is selected from a publication. We have not obtained approval from each company.

Grade Comparison Chart

●Cermet for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	TaeguTec	Widia	Walter	Ceratizit
Classifi-cation	Symbol															
P	P01	NS520	AP25N VP25N	T110A T1000A		TN30 PV30 TN6010 PV7010		LN10	Q15 C7Z		KT1120		PV3010 CT3000			
	P10	GT9530 J9530	AP25N VP25N NX2525	T1500Z T2000Z T1200A T1500A	CT5015	TN60 TN6010 PV7010 TN610 PV710	CZ25	CX50 PX75	C7Z Z15	TP1020 C15M	KT315	IC30N IC530N	PV3010 CT3000	TTI15	WCE10	TCC410 TCM10 TCM407
	P20	GT9530 NS9530 J9530	AP25N VP25N VP45N NX2525 NX3025	T1200A T1500A T1500Z T2000Z	CT5015 GC1525	TN90 TN6020 PV7020 PV7025 TN620 PV720	CZ25 CH550	CX75 PX75 PX90	C7Z T15	TP1020 TP1030 C15M	KT5020	IC30N IC530N	PV3010 CT3000	TTI15	WCE10	TCC410 TCM10
	P30	NS9530	VP45N NX4545	T3000Z	GC1525			PX90	N40 C7X							
M	M10	NS520	AP25N VP25N NX2525	T1000A T2000Z	CT5015	TN60 TN6020 PV7020 PV7025		LN10 CX50	C7Z C7X	TP1020 TP1030	KT315 KT5020		PV3010 CT3000	TTI15		TCC410 TCM10 TCM407
	M20	GT9530 NS9530 J9530	NX2525 AP25N VP25N	T1500A T2000Z	GC1525	TN90 TN6020 PV7020 PV7025	CZ25 CH550	CX75	C7Z C7X	C15M	KT5020	IC30N IC530N	PV3010 CT3000			
	M30	NS9530	NX4545	T3000Z												
K	K01	NS520	AP25N VP25N	T1000A		TN30 PV30 PV7005		LN10					PV3010 CT3000			TCC410
	K10	GT9530 NS9530 J9530	AP25N VP25N NX2525	T1500A T2000Z	CT5015	TN60 TN6010 PV7005 PV7010	CZ25 CH550	LN10 CX75			KT315 KT5020	IC30N IC530N	CT3000	TTI15		TCC410 TCM10 TCM407
	K20	NS9530	AP25N VP25N NX2525	T3000Z				CX75			KT5020					TCM407

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Grade Comparison Chart

●Cemented Carbide for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classification	Symbol																
P	P01																
	P10	**TH10**		ST10P			WS10	SRT			P10	IC70		P10	TN15U		
	P20	**KS20**	UTi20T	ST20E	SMA H10F		EX35	SRT SR20	KM1	S10M	K125M TTM	IC70	P40	P20	TN15U		
	P30	**KS15F** **UX30**	UTi20T	A30 A30N	SM30 H10F	PW30	EX40	DX30 SR30	KM3	S25M	GK K600 TTR	IC28 IC54	P40	P30			S40T
	P40	**TX40**		ST40E			EX45	SR30		S60M	G13	IC28 IC54		P40			S40T
M	M01																
	M10	**TH10**		U10E EH510	H10A		WA10B	UMN	KM1	890	K313	IC20		M10	TN15U WU10HT		
	M20	**KS20**	UTi20T	U2 EH520	H13A		EX35	DX25 UMS		HX 883	K68 KMF K125M TTM	IC20	IN30M	M20	TN15U WU10HT		CTW7120 H210T
	M30	**UX30**	UTi20T	A30 A30N	H10F SM30		EX45	UMS			GK K600 TTR	IC28	IN30M				
	M40	**TU40**						UM40			G13	IC28	IN30M	M40			S40T
K	K01	**KS05F**	HTi05T	H2 H1			WH01 WH05	KG03			K605			UF1	TN15U WU10HT		
	K10	**TH10**	HTi10	H1 EH10 EH510	H10	KW10	WH10	KG10 KT9 CR1	KM1	890	K313 K110M THM THM-U	IC20 IC09T	IN05S	K10	TN15U WU10HT		H210T H216T H10T
	K20	**KS15F** **KS20**	UTi20T	G10E EH20 EH520	H13A H10F	KW10 GW15	WH20	KT9 CR1 KG20 FB15		890 HX 883	K715 KMF K600	IC20 IC09T	IN05S IN10K IN15K IN30M	K20	TN15U WU10HT		CTW7120 H210T H216T H10T
	K30		UTi20T	G10E	H13A H10F	GW25		KG30		883	THR	IC28	IN10K IN15K IN30M	K30			
	K40										G13		IN30M				
N	N01	**KS05F**		H1	H10	KW10					K605	IC20					
	N10	**TH10**	HTi10	H1	H10 H10F	GW15	WH10	KT9 CR1	KM1	890 HX KX H15	K313 K110M THM THM-U	IC20 IC28	IN05S IN10K	K10	TN15U WU10HT	WK1 WK10	H210T H216T H10T
	N20	**KS15F**			H10F H13A		WH20	KT9 CR1	KM1	890 HX KX 883	K715 KMF K600	IC20 IC28	IN10K IN15K	K20	TN15U WU10HT	WK1 WK10	CTW7120 H210T H216T H10T
	N30									883 H25	G13 THR		IN15K IN30M			WK40 WMG40	
S	S01		RT9005									IC20					
	S10	**KS05F** **TH10**	RT9005 RT9010	EH510	H10 H10A	KW10	WH10	KG10	KM1	890 883	K10 K313 THM	IC20	IN05S IN10K	K10	TN15U WU10HT	WK1	H210T H216T H10T
	S20	**KS15F** **KS20**	RT9010 TF15	EH520	H10F H13A	GW25	WH20	KG20	KM1	890 883 H25	K715 KMF	IC20 IC28	IN10K IN15K	K20	TN15U WU10HT	WK1 WMG40	CTW7120 H210T H216T H10T
	S30		TF15							883	G13 K600 THR		IN15K IN30M			WMG40	
H	H01							KG03				IC20					
	H10	**TH10**			H13A			FZ05				IC20	IN10K	K10			
	H20							FZ15		890 HX 883			IN15K				

Note: The above table is selected from a publication. We have not obtained approval from each company.

Grade Comparison Chart

●PCBN and PCD for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classifi-cation	Symbol															
K	K01	**BX930 BX910 BX870**	MB710 MB5015	BN500 BNC500	CB7525 CB7050 CB50	KBN60M		B52		KB9610 KD120 KB1630	IB10K		KB90	WBH10C	WCB80	TA100 CTL3215
	K10	**BX470 BX480**	MB730 MB4020	BN7000 BN7500	CB7050 CB7925 CB50	KBN60M	JBN795	B23 B30 B52	CBN200 CBN300 CBN400C CBN010	KB9640 KD120 KB1630	IB05S IB10S		KB90A	WBK40U	WCB80 WCB50	TA120 TA201 CTL3215
	K20	**BX480**	MB730 MB4020	BN700 BN7000	CB7050	KBN60M		B23 B30 B52	CBN300 CBN500 CBN600 CBN010	KB1340 KB1345	IB90 IB25KD			WBK45U	WCB80	CTL3215
	K30	**BXC90 BX90S**	BC8130	BNS800		KBN900		B16	CBN500 CBN600	KB1340 KB1345						
S	S01	**M714B**	MB730	BN350			JBN795	JP2	CBN170				KB90			
	S10	**BX470 BX480**		BN7500	CB7050	KBN65B KBN65M		B23 B30	CBN200	KB1630	IB05S IB10S		KB90A	WBK45U	WCB80	TA201
H	H01	**BXM10 BX310**	BC8110 MBC010 MB810 BC8105	BNC100 BNC160 BNC2010 BNX10 BN1000	CB20 CB7105	KBN510 KBN05M KBN10M		B52 B5K	CBN10 CBN100 CBN160C CBN050C	KB1610 KB5610	IB05H IB10HC		KB50	WBH10C	WCB30	
	H10	**BXM10 BX330 BX530**	BC8110 MBC020 MB8025 BC8020 BC8120	BNC160 BNC200 BNC2020 BN250 BN1000	CB7015 CB20 CB50 CB7115	KBN525 KBN05M KBN25M	JBN245	B36 B52 B6K	CBN150 CBN200 CBN300 CBN060K CBN050C CBN160C CBN300P CBN400C	KB9610 KB1610 KB5610	IB50 IB55 IB10H IB10HC IB20H IB25HA		KB50 TB650	WBH10C WBH10P WBH10U	WCB30 WCB50	CTL3215 TA100
	H20	**BXM20 BXA20 BX360**	MBC020 BC8120 MB8025 MB825 BC8020	BNC200 BNC2020 BN250 BNX20 BNX25 BN2000	CB7025 CB20 CB7035 CB7125	KBN525 KBN05M KBN10M KBN25M	JBN300 JBN330	B22 B36 B40 B6K	CBN150 CBN200 CBN300 CBN060K CBN160C CBN300P CBN400C	KB5625 KB1625	IB20H IB20HC IB25HA IB25HC		TB650	WBH25P	WCB50 WCB80	CTL3215 TA120
	H30	**BXC50 BX380**	BC8130 MB835	BNC300 BN350 BNX25	CB7525 CB7135	KBN35M KBN900	JBN300 JBN330	B22 B40	CBN500	KB1630 KB9640	IB25HC			WBH40C		TA201
N	N01	**DX160 DX180**	MD205	DA90	CD10		JDA30 JDA735			KD1400 KD1405 KD100	ID5				WCD10	CTD4125
	N10	**DX140**	MD220	DA150	CD10	KPD230	JDA715	PD1	PCD05 PCD10	KD100 KD1400 KD1425	ID5	IN90D	KP500	WDN25U	WCD10	CTD4125 CTD4110
	N20	**DX120**	MD220	DA2200	CD10	KPD010	JDA715	PD1	PCD05 PCD20	KD1425		IN90D	KP300	WDN25U	WCD10	CTD4205
	N30	**DX110**	MD230	DA1000		KPD001	JDA10		OVD20 PCD30 PCD30M				KP100			

Note: The above table is selected from a publication. We have not obtained approval from each company.

Grade Comparison Chart

●Ceramics for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classification	Symbol																
K	K01	**LX11** **LX21**		NB90S NB90M	CC6190 CC650	KA30 A65 KT66 PT600M			HC1 HW2 SE1 HC2		KY1310 KY1615			AW20 AB30 AS10	CW2015		CTN3105 CTS3105
	K10	**CX710** **FX105**			CC6190 CC650	A65 KT66 A66N PT600M			HC1 HW2 SE1 WA1 WA5		KY1310 KY1320 KY1615 KY3400		IN70N	AB30 AS10	CW2015 CW5025	WSN10	CTN3105 CTM3110 CTI3105 CTN3110 CTS3105
	K20	**FX105** **CX710**			CC6190	KS6000			SP9 SX1 SX8 SX9		KY1320 KY3400 KY3500 KY4300		IN70N	AS10	CW5025	WSN10	CTM3110 CTN3110
S	S01								JX1		KY1525 KY2100						
	S10	**WG300**		WX120	CC670 CC6060 CC6065	CF1			WA1 WA5 SX9		KY1525 KY1540 KY2100 KY4300			AS20 TC430	CW3020		
H	H01	**LX11**		NB100C	CC6050 CC650	A65 KT66 A66N PT600M			ZC4 ZC7		KY4300			AW20	CW2015		CTS3105
	H10	**WG300**		NB100C	CC6050 CC670 CC6190	A65 KT66 A66N PT600M			HC4 HC7 WA1		KY1615 KY4400			AB2010 AB20 AB30	CW2015		CTS3105

Note: The above table is selected from a publication. We have not obtained approval from each company.

Grade Comparison Chart

●CVD Coated Grade for Milling

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classification	Symbol																
P	P01											IC9015 IC5400 IC8080 IC9080			TN2510		
	P10		FH7020	ACP100	GC4220 GC4230			JC730U		MP1500	KCPM20	IC9015 IC5400 IC8080 IC9080 IC4100 IC5100			TN2510 TN7525	WKP25	GM226+
	P20	**T3225**	FH7020 F7030	ACP100	GC4220 GC4230		GX2140 GX2160	JC730U		MP1500 MP2500 T25M	KCPM20 KCPK30 KCPM30 KC927M	IC8080 IC9080 IC4100 IC5100 IC9250 IC520M	IN6530	TT7800	TN7525 TN7535	WKP25 WKP35 WKP35S	GM226+
	P30	**T3130** **T3225**	F7030	ACP100	GC4230 GC4240 GC2040		GX2140 GX2160			MP1500 MP2500 T350M T25M	KCPK30 KCPM30 KC927M	IC9250 IC520M IC4050 IC635	IN6530	TT7800	TN7525 TN7535	WKP25 WKP35 WKP35S	GM226+ GM246 GM43+
	P40				GC4230 GC4240 GC2040		GX2160			MM4500 T350M	KCPK30 KCPM30	IC4050 IC635	IN6530	TT7800	TN7535	WKP35 WKP35S	GM246 GM43+
M	M10			ACM200	GC2015			JC730U			KCPM20	IC9250 IC520M IC9350			TN7525		
	M20	**T3225**	F7030	ACM200	GC4230	CA6535		JC730U		MP2500 T350M T25M	KCPM20 KCPM30 KC927M	IC9250 IC520M IC9350 IC4050 IC635	IN6530	TT7800	TN7525 TN7535		CTC5235 GM226+
	M30	**T3225** **T3130**	F7030	ACM200	GC2040 GC4230 GC4240 S40T	CA6535	GX2160	JC730U		MP2500 T350M T25M	KCPM30 KC927M	IC9350 IC4050 IC635	IN6530	TT7800	TN7525 TN7535		CTC5235 CTC5240 GM226+ GM246 GM43+
	M40				GC2040 GC4240 S40T	CA6535	GX2160			MM4500 T350M		IC635	IN6530		TN7535		CTC5235 CTC5240 GM246 GM43+
K	K01		MC5020	ACK200		CA420M		JC605W			KC907M	IC8080 IC4100 IC5100 IC9150			TN2510 TN5505	WKP15	CTC3215
	K10	**T1215** **T1115**	MC5020	ACK200	GC3220	CA420M	GX2120	JC605W JC608X JC610		MK1500	KC907M KC914M KC917M KC924M KCK15	IC8080 IC4100 IC5100 IC9150 IC9080 IC520M		TT6800	TN2510 TN5505 TN5515 TN5520	WKP15 WKP25	CTC3215 SR216 SR226+
	K20	**T1215**	MC5020	ACK200	GC3220 GC3330 GC3040 GC4220 GC4230	CA420M	GX2120 GX2140	JC605W JC608X JC610		MK1500 MP1500	KC917M KC924M KCK15 KCPM20 KCPK30 KC927M	IC5100 IC9150 IC9080 IC520M IC4050	IN6515 IN6530	TT6800	TN5515 TN5520	WKP15 WKP25 WKP35 WKP35S	SR216 SR226+
	K30		MC5020		GC3330 GC3040 GC4220 GC4230 GC4240		GX2140	JC610		MK1500 MP1500	KCPM20 KCPK30 KC927M	IC520M IC4050	IN6515 IN6530			WKP25 WKP35 WKP35S	

Note: The above table is selected from a publication. We have not obtained approval from each company.

Grade Comparison Chart

●PVD Coated Grade for Milling

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classification	Symbol																
P	P01	**AH710 AH110**			GC1010		ATH80D JP4105	JC8003			KC505M KC510M KC515M	IC903		TT2510 TT5505	TN2505 TN6505		
	P10	**AH120 AH725**	MP6120 VP15TF	ACP200	GC1010 GC1025	PR830 PR1225 PR1230 PR1525	ATH80D PN08M ATH10E PN15M JP4105 JP4115 JP4120	JC8003 JC8015 JC5015 JC5118	DM4		KC505M KC510M KC515M KC610M KC715M	IC903 IC907 IC950 IC908 IC910 IC380 IC900	IN2505	TT2510 TT5505 TT5515 TT7080	TN2505 TN2525 TN6425 TN6505	WHH15 WXM15	
	P20	**AH120 AH725 AH3135 AH9030 AH3225 AH9130**	MP6120 VP15TF MP6130 UP20M VP20RT	ACP200 ACP300	GC1025 GC1030 GC2030	PR830 PR1225 PR1230 PR1525	JP4120 JS4045 CY250	JC8015 JC5015 JC5118 JC5040		MP3000 F25M	KC522M KC525M KC527M KC530M KC610M KC620M KC635M KC715M KC720M KC730M	IC907 IC950 IC908 IC910 IC380 IC900 IC830 IC928 IC1008	IN2040 IN2505 IN4005 IN4030	TT2510 TT5505 TT5525 TT7080 TT9030 TT9080	TN2525 TN6425 TN6430 TN6525	WHH15 WXM15	CTP1235 CTP1625
	P30	**AH120 AH725 AH3135 AH130 AH6030 AH3225 AH9130**	MP6120 VP15TF MP6130 UP20M VP20RT VP30RT	ACP200 ACP300	GC1025 GC1030 GC2030	PR830 PR1225 PR1230 PR1525	JS4045 CY250 JM4160	JC5118 JC5040 JC8050 JC7560		MP3000 F25M F30M F40M	KC525M KC527M KC530M KC537M KC610M KC620M KC720M KC725M KC730M KC735M	IC907 IC950 IC908 IC910 IC380 IC900 IC830 IC928 IC1008	IN2040 IN2505 IN2530 IN4005 IN4030	TT5525 TT7080 TT8020 TT8080 TT9030 TT9080	TN6430 TN6525 TN6540	WSP45 WSP46	CTP1235 CTP1625 CTP2235
	P40	**AH140**	VP30RT	ACP300	GC1030 GC2030		JM4160	JC5118 JC5040 JC8050 JC7560		MP3000 F40M T60M	KC537M KC720M KC725M KC735M	IC830 IC928 IC1008	IN2040 IN2530 IN4005 IN4030	TT8020	TN6540	WSP45 WSP46	CTP1235 CTP2235
M	M01			ACM100 ACK300	GC1010		PCS08M		DM4			IC907 IC903					
	M10	**AH725**	VP15TF	ACM100 ACK300 ACP300	GC1010 GC1025 GC1030 GC2030	PR830 PR1225 PR1525 PR1535	PCS08M CY150		DM4		KC515M KC610M KC635M KC720M	IC907 IC903	IN2505	TT5525 TT9030 TT9080	TN6425 TN6525	WXM15	
	M20	**AH725 AH3135 AH130 AH6030 AH3225 AH9130**	VP15TF MP7130 MP7030 UP20M VP20RT	ACM300 ACP300	GC1025 GC1030 GC1040 GC2030	PR830 PR1225 PR1525 PR1535	CY150 CY250	JC8015 JC5015 JC5118	DM4	MP3000 MS2050 F25M F30M	KC522M KC525M KC530M KC610M KC635M KC720M KC730M	IC380 IC900 IC908 IC928 IC1008	IN2005 IN2505 IN2530 IN4005	TT8020 TT8080	TN6425 TN6525	WXM15 WSM35 WSM36	CTP1235 CTP1625
	M30	**AH3135 AH130 AH9130**	VP15TF MP7130 MP7030 UP20M VP20RT MP7140 VP30RT	ACM300	GC1040 GC2030	PR830 PR1225 PR1525 PR1535	CY250 JM4160	JC8015 JC5015 JC5118 JC8050 JC7560		MP3000 MS2050 F30M F40M	KC522M KC525M KC530M KC537M KC725M KC730M KC735M	IC380 IC900 IC908 IC928 IC1008 IC328 IC330	IN2005 IN2505 IN2530 IN4005 IN4030	TT8020 TT8080	TN6540	WSM35 WSM36 WSP45 WSP46	CTP1235 CTP2235
	M40	**AH140**	MP7140 VP30RT	ACM300	GC1040	PR1225 PR1525 PR1535	JM4160	JC5015 JC5118 JC8050 JC7560		MS2050 F40M	KC725M	IC1008 IC328 IC330	IN2005 IN2530 IN4005 IN4030	TT8020	TN6540	WSM35 WSM36 WSP45 WSP46	CTP2235
K	K01	**AH110**	MP8010		GC1010	PR1510	ATH80D JP4105	JC8003				IC380 IC900		TT6080	TN2505 TN6405 TN6505		AMZ
	K10	**AH110 AH120**	MP8010 VP15TF		GC1010 GC1020	PR1210 PR1510	ATH80D JP4105 JP4120 CY150	JC8015		MK2050	KC514M KC515M KC520M KC620M	IC380 IC900 IC810 IC910	IN2015 IN2505 IN4015	TT6080	TN2505 TN6405 TN6505 TN6510	WHH15 WXM15 WKK25	AMZ CTP3220 CTP6215
	K20	**AH120 AH9030 AH9130**	MP8010 VP15TF VP20RT	ACK300	GC1020	PR1210 PR1510	JP4120 CY150 CY250	JC8015 JC5015		MK2050	KC514M KC520M KC522M KC524M KC527M KC610M KC620M KC635M	IC810 IC910 IC950 IC350 IC830 IC928	IN2015 IN2505 IN4015 IN4030		TN2525 TN6510 TN6520 TN6525	WHH15 WXM15 WKK25	CTP3220 CTP1625
	K30	**AH120**	VP15TF VP20RT	ACK300		PR1510	CY250	JC8015 JC5015		MK2050	KC522M KC524M KC527M KC537M KC610M KC620M KC635M	IC830 IC928 IC1008 IC808 IC908	IN2015 IN2505 IN4015 IN4030		TN6430 TN6525 TN6540	WKK25	

Note: The above table is selected from a publication. We have not obtained approval from each company.

Grade Comparison Chart

●PVD Coated Grade for Milling

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classification	Symbol																
N	N01										KC410M KC510M KC5410			TT6080	TN6501		AMZ
	N10	**DS1100**		DL1000	GC1025 GC1030		SD5010 HD7010				KC410M KC510M KC5410 KC620M			TT6080 TT8020	TN6501 TN6502	WXN15	AMZ
	N20	**DS1200**	LC15TF	DL1000	GC1025 GC1030		SD5010 HD7010			F15M	KC422M KC620M			TT8020		WXN15	
S	S01	**AH110** **AH710**		ACM100 ACK300	GC1010	PR905 PR1210 PR1535		JC8003 JC8015			KC510M	IC808 IC907 IC908			TN6405		AMZ
	S10	**AH120** **AH725**	MP9120 VP15TF MP9130 MP9030	ACM100 ACK300	S30T GC1010 GC1030 GC2030	PR905 PR1210 PR1535	PTH13S JS1025	JC8003 JC8015 JC5015 JC5118		MS2050	KC510M KC610M	IC808 IC907 IC908 IC903	IN2505 IN2530	TT9030 TT9080 TT8080	TN6405 TN6425		AMZ CTP1625
	S20	**AH725** **AH130** **AH6030**	MP9120 VP15TF MP9130 MP9030	ACM300	S30T GC1030 GC1040 GC2030 GC2040	PR905 PR1210 PR1535	PTH13S JS1025	JC8015 JC5015 JC5118 JC8050 JC7560		MS2050 F40M	KC522M KC525M KC610M	IC300 IC900 IC830 IC928	IN2505 IN2530	TT8080 TT8020	TN6425	WSM35 WSM36	CTP1235 CTP1625
	S30	**AH130**	MP9130 MP9030	ACM300	S30T GC1040 GC2040	PR1535		JC5118 JC8050 JC7560		MS2050 F40M	KC522M KC525M KC725M	IC830 IC928	IN2530	TT8020	TN6540	WSM35 WSM36 WSP45 WSP46	CTP1235 CTP2235
H	H01	**AH110** **AH710**	MP8010		GC1010			DH102 JC6102 JC8003 JC8008			KC510M	IC903		TT2510 TT5505	TN2505		
	H10	**AH110** **AH120** **AH710**	MP8010 VP15TF		GC1010 GC1025 GC1030		PTH08M JP4105	JC6102 JC8003 JC8008 JC8015 JC5118		MH1000 F15M	KC505M KC510M KC635M	IC903 IC808 IC907 IC908		TT5515 TT6080	TN2505 TN2525	WHH15	CTP6215
	H20	**AH120** **AH725** **AH9030**	VP15TF		GC1025 GC1030		JP4105	JC8015 JC5118		F15M	KC635M	IC808 IC907 IC908 IC380 IC900		TT5515 TT6080	TN2525	WHH15	CTP6215
	H30									MP3000 F30M		IC380 IC900 IC1008					

Note: The above table is selected from a publication. We have not obtained approval from each company.

Grade Comparison Chart

●Cermet for Milling

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classifi-cation	Symbol																
P	P01			T250A	CT530	TN60 TN100M	MZ1000						IN0560	CT3000			TCC410
	P10	**NS740**	NX2525	T250A	CT530	TN60 TN100M TC60M	MZ1000 MZ2000 CH550	NIT CX75 CX90		MP1020	KTPK20	IC30N	IN0560 IN60C	CT3000 CT7000	TTI25		TCC410 TCM10
	P20	**NS740**	NX2525 NX4545	T250A T4500A		TN60 TN100M TC60M	MZ2000 MZ3000 CH500 CH7030	NIT CX75 CX90 SC30		MP1020	KTPK20	IC30N	IN60C	CT3000 CT7000	TTI25		TCM10
	P30		NX4545	T4500A			MZ3000 CH7035		C7X			IC30N	IN0545	CT7000			
M	M10	**NS740**	NX2525	T250A	CT530	TN60 TN100M TC60M	MZ1000 CH550	NIT CX75			KTPK20	IC30N	IN0560	CT3000 CT7000	TTI25		TCC410
	M20	**NS740**	NX2525 NX4545	T250A T4500A		TN60 TN100M TC60M	MZ2000 MZ3000 CH500 CH7030	NIT CX75 SC30	C7X	MP1020	KTPK20	IC30N		CT7000	TTI25		TCC410 TCM10
	M30		NX4545	T4500A			MZ3000 CH7035	SC30									
K	K01						MZ1000 CH550	NIT									TCC410
	K10	**NS740**	NX2525				MZ2000 MZ3000 CH500 CH7030	NIT CX75			KTPK20			CT7000			TCC410 TCM10
	K20						MZ2000 MZ3000 CH500 CH7030 CH7035	CX75			KTPK20						

Note: The above table is selected from a publication. We have not obtained approval from each company.

Grade Comparison Chart

●Cemented Carbide for Milling

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classification	Symbol																
P	P01																
	P10																S26T
	P20		UTi20T	A30N			EX35				K125M	IC50M		P30	TTM		S26T
	P30	**UX30**	UTi20T	A30N	SM30		EX40				K125M	IC50M IC28		P30	TTM TTR		S26T
	P40				SM30							IC28			TTR		
M	M01																
	M10											IC20 IC07 IC08					S26T
	M20		UTi20T		SM30							IC07 IC08			TTM		S26T
	M30		UTi20T	A30N	SM30							IC28			TTM TTR		S26T
	M40			A30N								IC28			TTR		
K	K01					KW10					K115M K313			K10	THM-F		
	K10	**TH10**	HTi10	G10E	H13A	KW10 GW25	WH10				K115M K313 K110M	IC20		K10	THM-F THM		CTW4615 H216T
	K20		HTi10 UTi20T	G10E	H13A	KW10 GW25				HX	KMF	IC20	IN10K		THM THR		CTW4615 H216T
	K30		UTi20T								KMF		IN10K		THR		
	K40												IN10K				
N	N01	**KS05F**	HTi10		H10	KW10					K115M				THM-U	WK10	
	N10	**TH10**	HTi10		H10 H13A H10F	KW10 GW25	WH10			H15	K115M K313 K110M	IC20 IC08		K10 UF10	THM-U THM-F THR-S	WK10	CTW4615 H216T
	N20	**KS15F**	HTi10 TF15	H1	H13A H10F	KW10 GW25				HX H15 H25	KMF K313 K110M	IC20 IC08 IC28		K10 UF10	THM-F THR-S THM	WMG40	CTW4615 H216T
	N30		TF15	H1						H25	KMF	IC28				WMG40	
S	S01					KW10					K313	IC20					
	S10			EH520	H13A	KW10 GW25		FZ15			K313 K110M	IC20 IC07 IC08			THM-F		
	S20	**KS20**		EH520	H10F H13A	KW10 GW25		FZ15		HX H25	KMF	IC20 IC07 IC08 IC28			THM		
	S30				H10F							IC07 IC08					
H	H01				H1P			FZ05									
	H10				H1P			FZ05 FZ15				IC20			THM-F		
	H20							FZ15									

Note: The above table is selected from a publication. We have not obtained approval from each company.

Grade Comparison Chart

●PCBN and PCD for Milling

ISO Classification	ISO Symbol	Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
K	K10	**BX480**	MB710 MB730	BN700 BN7000 BN500	CB50	KBN475	JBN795 JBN500	B30 B52	CBN200		IB85	IN80B	KB90	WBK40U	WCB80	TA201
	K20	**BXC90** **BX90S**	MBS140	BNS800					CBN300 CBN400C	KB1340						
H	H20	**BX850**					JBN245		CBN100							
	H30	**BX940**		BNX25	CB50					KB1340		IN80B			WCB80	TA201
N	N10	**DX140**	MD220		CD10	KPD230	JDA30 JDA735	PD1	PCD20 PCD30M	KD1415	ID5	IN90D		WDN25U	WCD10	CTD4205
	N20			DA2200		KPD010	JDA10			KD1425	ID8					
	N30	**DX110**		DA1000		KPD001			PCD05	KD1420						

Note: The above table is selected from a publication. We have not obtained approval from each company.

●Ceramics for Milling

ISO Classification	ISO Symbol	Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
K	K01	**LX11** **LX21**		NB90S NB90M	CC6190 CC650	KA30 A65 KT66 PT600M			HC1 HW2 SE1 HC2		KY1310 KY1615			AW20 AB30 AS10	CW2015		CTN3105 CTS3105
	K10	**CX710** **FX105**			CC6190 CC650	A65 KT66 A66N PT600M			HC1 HW2 SE1 WA1 WA5		KY1310 KY1320 KY1615 KY3400		IN70N	AB30 AS10	CW2015 CW5025	WSN10	CTN3105 CTM3110 CTI3105 CTN3110 CTS3105
	K20	**FX105** **CX710**			CC6190	KS6000			SP9 SX1 SX8 SX9		KY1320 KY3400 KY3500 KY4300		IN70N	AS10	CW5025	WSN10	CTM3110 CTN3110
S	S01								JX1		KY1525 KY2100						
	S10	**WG300**		WX120	CC670 CC6060 CC6065	CF1			WA1 WA5 SX9		KY1525 KY1540 KY2100 KY4300			AS20 TC430	CW3020		
H	H01	**LX11**		NB100C	CC6050 CC650	A65 KT66 A66N PT600M			ZC4 ZC7		KY4300			AW20	CW2015		CTS3105
	H10	**WG300**		NB100C	CC6050 CC670 CC6190	A65 KT66 A66N PT600M			HC4 HC7 WA1		KY1615 KY4400			AB2010 AB20 AB30	CW2015		CTS3105

Note: The above table is selected from a publication. We have not obtained approval from each company.

Chipbreaker Comparison Chart

●Negative insert type

ISO Classification	Cutting Mode	Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Kyocera	Sandvik	Mitsubishi Hitachi Tool	Kennametal	Dijet	Iscar	TaeguTec	Widia	Walter	Ceratizit
P	Precision finishing	**01** **TF**	PK FH	FA	DP	QF	FE	FS , LF	PF	SF , PP , TF	FA			
	Finishing and light cutting	**TS , TSF** **ZF** **11 , NS** **AS** **TQ** **NM** **CB** **C**	SA FY C SH MP	SU FL SE , SX	PQ , VF CJ PQ GP , PP HQ GS CQ	PF , QF LC MF R/L-K	BE , BH AB , CT CE	FF , FN	UA , FT UR , UT	F3P NF , SF	FG VF , EA FC MC ML , MP	4 AP	NF3 NS6	CF , TF
	Finishing and light cutting (With Wiper)	**AFW , FW** **ASW , SW**	SW	LUW SEW GUW	WP WQ	WL , WF WMX WM , WR		FW MW RW		WF WG	WS WT	FW MW	NF NM	TFQ TMQ
	Medium cutting	**TM , AM** **DM , ZM** **All-round , TA**	MA MH , MP	GU GE , UX	HS , PT , GT CS , PS	PM , QM XM , XRM	AH AE , AY , B	P MN	PG , UB GN GNP	M3P , M3M PP , TF , GN	PC , MT MC , MG-	48	NMT , NM4	TMF , TMM M50
	Medium to heavy cutting	**TH** **THS**	RP , GH HZ , HL	MU , ME HG	PH All-round	HM , PR MR	RE	RN , RP MR	GG , UD	NR MR	RT	49	NM5 , NM6 NM9	TM TRM
	Heavy cutting	**TU** **TRS** **TUS**	HM , HX HV	HG , HP HU , HW HF	PX	PR , MR HR , QR	TE , UE HX , HE H	RM RH	UC	R3P NM	HT , HD RX , RH HY , HZ		NR6 NRF NRR	TRR , TR R28 , R58 R88
M	Finishing and light cutting	**SF , SA** **SS**	GM , MS SH , LM	EX , EG SU , EF	GU MQ	MF , XF LC , R/L-K	MP BH , AB	FP	SF	TF , VL	EA , SF , SU FG		NF4 NMS	CF , F30 , M34 F32 , TF
	Medium cutting	**SM** **S , TA**	MM , MA ES	GU HM	TK MU	MM , QM XM , XRM	PV , SE DE	MP , P	SZ	M3M , PP	EM , ET		NM4	TMF , M42 M30 , M52
	Heavy cutting	**TH , SH** **TU**	GH , RM , HZ	EM , MU	MS	MR HM , PR	AH , AE	UP , RP	SG	MR , MH		SR	NR4 NRT , NRS	TM , M60 TRM , TMR , TRR R80
K	Finishing	**CF , TA**	LK, MA	UZ	C	KF , XF	Y , AH	FN		GN	FG			CF
	Medium cutting	**CM** **All-round**	MK GK	GZ	ZS All-round	KM , QM XM , XRM	V, AE VA	RP , UN	PG		MT MG		NM5	M50
	Heavy cutting	**CH** **Flat-top**	RK **Flat-top**	**Flat-top**	GC **Flat-top**	KR **Flat-top**	RE **Flat-top**	**Flat-top**	GG , UD **Flat-top**		RT		**Flat-top**	TMR , TR R28 R58 , R88
N	Cutting of non-ferrous metals	**P**		AX	AH , A3	MF QM	**Flat-top**	MS , MP MG		PP	ML			F32
S	Finishing	**HRF**	FJ , LS	EF EX	MQ	SF 01		FS , LS MS			SF		NFT NF4	
	Medium cutting	**HRM** **HMM** **SA**	MS RS , GJ	EG MU	TK , MS , MU	MM , QM SMR		UP , P , NGP RP		PP	SU	SM	NMS NM4 , NRS , NR4	M34 , M52

Note: Above charts are based on published data and not authorized by each manufacturer.

Chipbreaker Comparison Chart

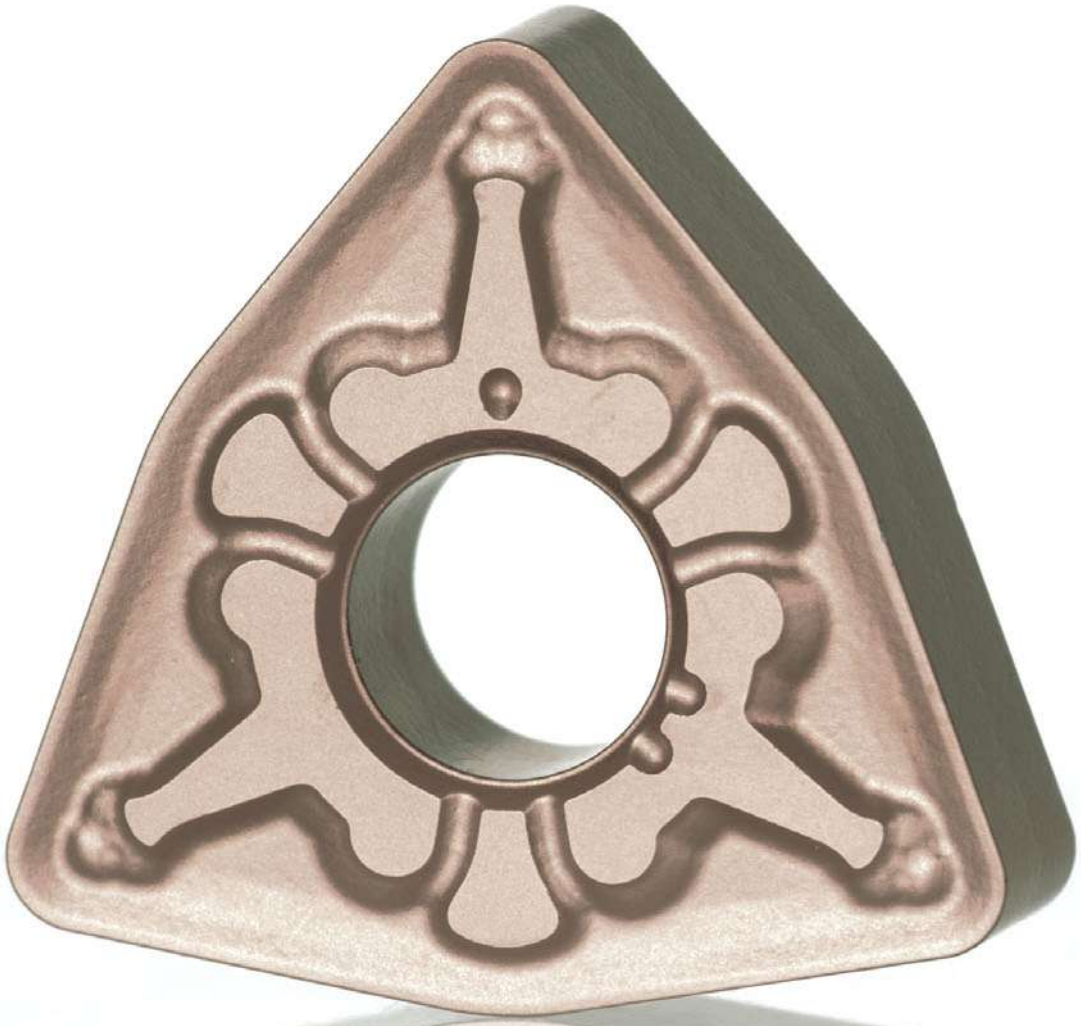
●Positive insert type

ISO Classification	Cutting Mode	Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Kyocera	Sandvik	Mitsubishi Hitachi Tool	Kennametal	Dijet	Iscar	TaeguTec	Widia	Walter	Ceratizit
P	Precision finishing	**01**	FV , SMG	FC , FW	CF CK		No sign MP	UF		SF		2	PF2	F32
P	Finishing and light cutting	**PSF , PF , SS** **PS , PSS , TS** **TSF** **TSW** **W08~20**	FP , FV , SV LP SW , MW R/L , R/L-FD R/L-FS R/L-MV R/L-F , R/L-L	FP , FZ , LU FK , SS , SC SU , SK , SF US LUW , SDW W , SD FX , FY	GQ , GK GP , HQ XP , XQ	R/L-K PF , XF UF , PM WF , WK , WM	JQ	11 , GM LF	FT	PF SM , 14 , 17 19 , XL R/L RF , LF No sign	FA FG GF	41	PF5 PF4 PS5 PF , PM	SF SMF SMQ , 25Q
P	Medium cutting	**PM** **TM** **23** **24** **All-round** **RS**	MP MV No sign	SU , MU UJ SC (except for G-class inserts) RP	All-round VF , MF	PM , XM UM , PR , XR UR	JE	GM , MP , MR	GG	DT , HQ	MT MT	43	PM5	SM
P	High-feed, small depth of cut cutting	**61**	No sign			No mark	WE			No sign 14	No sign	No sign		
M	Finishing	**PSF , SS**	FM , FV , SV	FC		R/L-K UF , MF	MP	GM , LF			FG	41		
M	Finishing to Medium cutting	**PSS** **PS**	LM SV		MQ	MM , XM UM	JQ	MF					PF4	SF , SMF
M	Medium cutting	**PM**	MM , MV	MU		MR , XR UR	JE						PM5	F23 , F43 SM
K	Cutting of cast irons	**CM** **Flat-top**	MK **Flat-top**	**Flat-top**	**Flat-top**	KF , XF KM , XM UM , KR , XR	JQ , JE	**Flat-top**	**Flat-top**	19	MT **Flat-top**		PS5 , PM5 **Flat-top**	SF 25P 27 , 29
N	Cutting of non-ferrous metals	**AL** **PP** **Ground**	AZ R/L-F R/L	AG AX , AY	AH , A3	AL		GT-HP		AS	FL	AL1, AL2 , AL3	PF2 PM2	23P 25P 27 , 29
S	Finishing	**PSF**	FJ	FC	MQ	MF , UF , R/L-K								SF
S	Finishing to Medium cutting	**PSS** **PS**		FX , FY		MM , XM								F23
S	Medium cutting	**All-round**		SI		UM , MR , UR , XR					FG		PF2 , PF4	SM , 25P , 29
P M N S	Turning on small lathes	**01** **W08 , W15 , W20** **J10** **JRP , JSP , JPP** **TS , JTS** **TSW** **SS , JSS** **JS**	R/L-SR R/L-SN R/L-SS FS , F SW , MW SMG	W , SD FX , FY LUW , SDW LU , FP , FK , SU FB , LB FC , SI , SC	R/L-F , R/L-FSF ER/L-U FR/L-U R/L-U FR/L-U , R/L-USF MF , R/L-FSF GK E-GK	F , M	No sign		MF , MM ALU , MM1 ASF FT , ACB		GF , GW		PM5	

Note: Above charts are based on published data and not authorized by each manufacturer.

MEMO

Insert



Insert - Content structure

- Inserts are grouped in Positive type, Negative type, and CBN/PCD.
- The list is in alphabetical order.
- The order of the list: C (80°) → D (55°) → R (360°) → S (90°) → T (60°) → V (35°) → W (80°) → Y (25°) → Other shapes
- The order of inserts:
  - Negative type (each shape with hole → without hole)
  - Positive type (each shape with hole → without hole)
- The order of chipbreakers:
  From precision finishing to heavy cutting, in the order of the values of cutting depth and feed rate.
- Insert without chipbreaker is on the last page of each shape.
- Introduces the proposed inserts according to the workpiece materials and the shape of workpiece materials.
- The standard cutting conditions for typical chipbreakers are at the bottom of the pages.
- ● in the catalog describes our standard stock items, and ▲ means the item to be discontinued in the future.

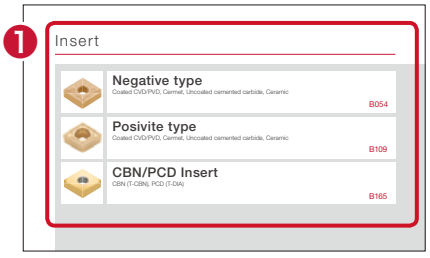
How to use the page

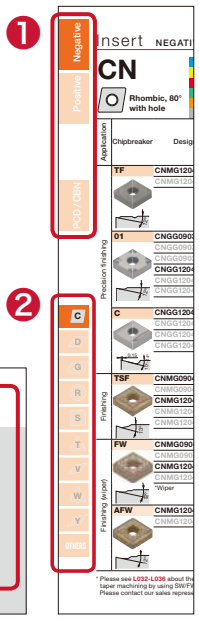
Method ①

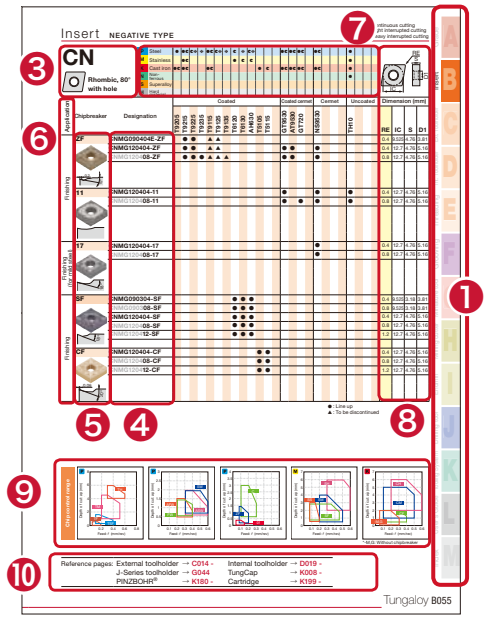
Select an insert at the right end, and choose the information page by the insert type (❶) and the outer shape of the insert (❷) at the left end.

Method ②

Check the page of each insert type from the index on B003 (❶), and choose the page of the setting information according to the outer shape of the insert (❷).

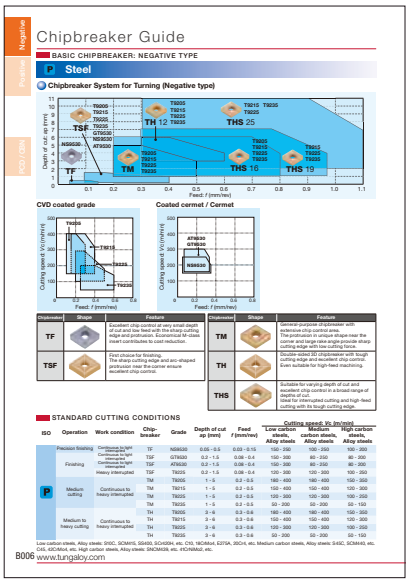


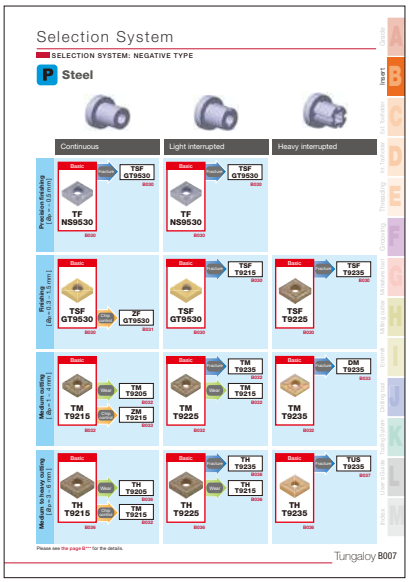




Method ③

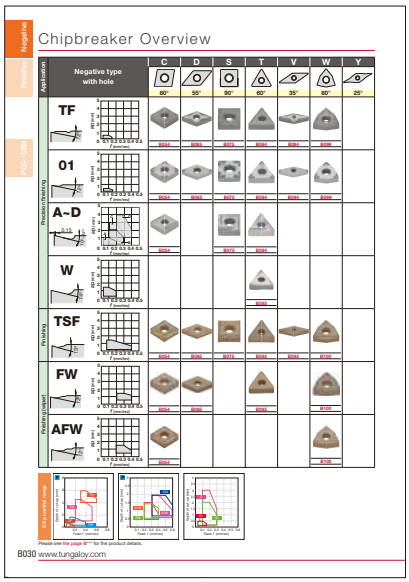
Select an insert at the chipbreaker introduction and the selection guide on B006 - B029 and check the details on the product page.





Method ④

Select an insert from the list of chipbreaker shapes on B030-B053 and check the details on each page.



When ordering

- Please specify the designation, grade, and quantity.
  e.g. **CNMG120408-TM T9115 ... 10 pieces** (10 inserts per package)
  *You will find a note if the number per package is not 10.

Insert



Negative type

Coated CVD/PVD, Cermet, Uncoated cemented carbide, Ceramic

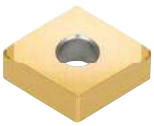
B054



Posivite type

Coated CVD/PVD, Cermet, Uncoated cemented carbide, Ceramic

B109



CBN/PCD Insert

CBN (T-CBN), PCD (T-DIA)

B165

Designation system for Insert

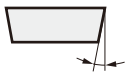
● How to decide the insert designation (conforms to JIS B4120-1998, ISO 1832 / AM1:1998)

Symbol	Shape	Nose angle (degree)	Figure
H	Hexagonal	120°	
O	Octagonal	135°	
P	Pentagonal	108°	
S	Square	90°	
T	Triangular	60°	
C	Rhombic	80°	
D		55°	
E		75°	
F		50°	
G	G-shape (Tungaloy's symbol)	70°	
M	Rhombic	86°	
V		35°	
Y	Y-shape (Tungaloy's symbol)	25°	
W	Trigon	80°	
L	Rectangular	90°	
A	Parallelogram	85°	
B		82°	
K		55°	
R	Round	-	

❶ Shape

Note: For rhombic and parallelogram inserts, use the smaller nose angle.

Symbol	Relief angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Others
X	Special



❷ Relief angle

Symbol (class)	Tolerance (mm)		
	Corner height (M)	Thickness (S)	I.C. dia. (IC)
A	±0.005	±0.025	±0.025
F	±0.005	±0.025	±0.013
C	±0.013	±0.025	±0.025
H	±0.013	±0.025	±0.013
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
J	±0.005	±0.025	±0.005 ~ ±0.13
K	±0.013	±0.025	±0.05 ~ ±0.13
L	±0.025	±0.025	±0.05 ~ ±0.13
M	±0.08 ~ ±0.18	±0.13	±0.05 ~ ±0.13
N	±0.08 ~ ±0.18	±0.025	±0.05 ~ ±0.13
U	±0.13 ~ ±0.38	±0.13	±0.08 ~ ±0.25

❸ Accuracy

	❶	❷	❸	❹	❺
[Example]	T	N	M	G	16
[Example]	C	C	G	T	09

❹ Groove and hole

Symbol	Hole	Shape of hole	Chip-breaker	Shape
N	Without	-	Without	
R			Single-sided	
F			Double-sided	
A	With	Cylindrical hole	Without	
M			Single-sided	
G			Double-sided	
W		Partly cylindrical hole, single-side 40° ~ 60° Counter sink	Without	
T			Single-sided	
Q		Partly cylindrical hole, double-side 40° ~ 60° Counter sink	Without	
U			Double-sided	
B		Partly cylindrical hole, single-side 70° ~ 90° Counter sink	Without	
H			Single-sided	
C		Partly cylindrical hole, double-side 70° ~ 90° Counter sink	Without	
J			Double-sided	
X	Special			

❺ Cutting edge length and I.C. symbol

* R		S		C		W		T		D		V		K		I.C. dia.
Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	
		03	3.97	03	4.0			06	6.9	04	4.8					3.97
		04	4.76	04	4.8			08	8.2	05	5.8	08	8.3			4.76
05	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
		05	5.56	05	5.6	03	3.8	09	9.6	06	6.8					5.56
06	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
		06	6.35	06	6.5	04	4.3	11	11	07	7.8	11	11.2			6.35
		07	7.94	08	8.1	05	5.4	13	13.8	09	9.7					7.94
08	8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	8
09	9.525	09	9.525	09	9.7	06	6.5	16	16.5	11	11.6	16	16.6	16	19.7	9.525
10	10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	10
12	12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	12
12	12.7	12	12.7	12	12.9	08	8.7	22	22	15	15.5	22	22.1			12.7
15	15.875	15	15.875	16	16.1	10	10.9	27	27.5	19	19.4					15.875
16	16	–	–	–	–	–	–	–	–	–	–	–	–	–	–	16
19	19.05	19	19.05	19	19.3	13	13	33	33	23	23.3					19.05
20	20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	20
		22	22.225	22	22.6			38	38.5	27	27.1					22.225
25	25	–	–	–	–	–	–	–	–	–	–	–	–	–	–	25
25	25.4	25	25.4	25	25.8			44	44	31	31					25.4
31	31.75	31	31.75	32	32.2			55	55	38	38.8					31.75
32	32	–	–	–	–	–	–	–	–	–	–	–	–	–	–	32

*When M0 is included in Designation, the inscribed-circle diameter is metric size. (mm)

● Detailed accuracy for J,K,L,M,N and U classes

For inserts with nose corner angles larger than 55°

(mm)

Inscribed circle	Tolerance on inscribed circle dia. (IC)		Tolerance on corner height (M)		Applicable insert shape
	J,K,L,M,N (class)	U (class)	J,K,L,M,N (class)	U (class)	
6.35	±0.05	±0.08	±0.08	±0.13	H W O R P S T C,E,M
9.525					
12.7	±0.08	±0.13	±0.13	±0.2	
15.875	±0.1	±0.18	±0.15	±0.27	
19.05					
25.4	±0.13	±0.25	±0.18	±0.38	
31.75	±0.15	±0.25	±0.2	±0.38	
32					

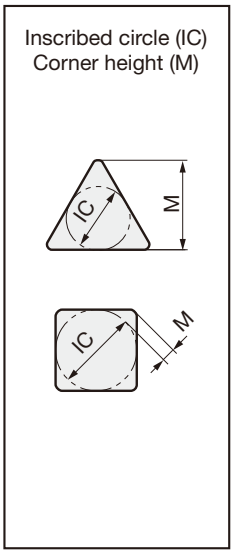
For M-type inserts with nose corner angles of 55° (Shape: D), 35° (Shape: V), 25° (Shape: Y)

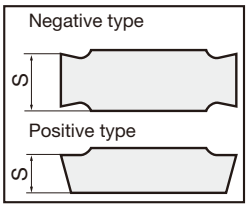
(mm)

Inscribed circle	Tolerance on inscribed circle dia. (IC)	Tolerance on corner height (M)	Applicable insert shape
6.35	±0.05	±0.11	D
9.525			
12.7	±0.08	±0.15	
15.875	±0.1	±0.18	
19.05			
6.35	±0.05	±0.16	V
9.525			Y

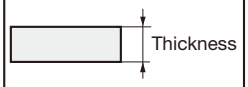
● Insert thickness

For many of the inserts with chipbreaker, the insert height of the cutting edge is lower. In that case, the insert thickness outlined in the drawing of external dimensions is equivalent of "S" in the figure on the right.





Symbol	Thickness (mm)
X1	1.39
01	1.59
T1	1.98(1.79)
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52



⑥ Thickness

[Example]

⑥	⑦		⑩
04	08	-	TM

⑥	⑦	⑧	⑨		⑩
T3	04	F	N	-	JS

(Optional symbol) (Optional symbol) (Supplementary symbol)

⑦ Corner radius



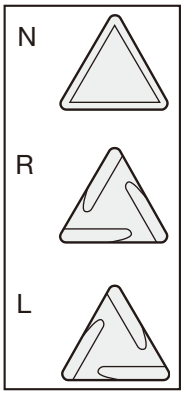
Symbol	Corner radius RE (mm)
00	0.03
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0
24	2.4
28	2.8
32	3.2

⑧ Major cutting edge

Symbol	Cutting edge	Shape
F	Sharp	
E	Rounded	
W.T	Chamfered	
S	Combination	

⑨ Hand of insert

Symbol	Hand
R	Right
L	Left
N	Neutral



⑩ Chipbreaker

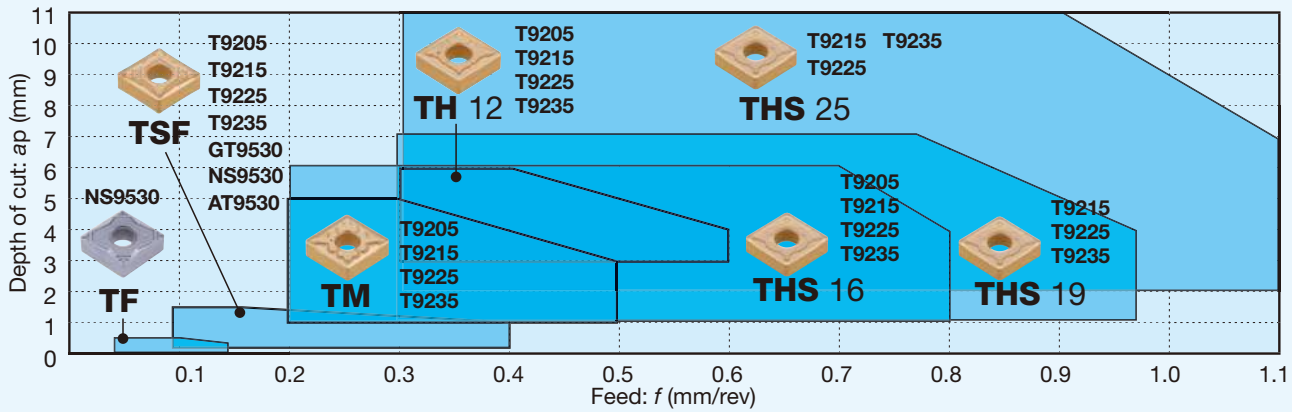
Symbol	Applications	Symbol	Applications
01(TF)	Precision finishing (Basic selection)	AFW	Small depth of cut and high feed (Wiper type Inserts)
TS	Finishing (Basic selection)	ASW	Small depth of cut and high feed (Wiper type Inserts)
TSF	Finishing (Basic selection)	CB	Medium cutting
TM	Medium cutting (Basic selection)	CM	Medium cutting of cast irons
THS	Medium to heavy cutting (Basic selection)	All-round	Medium cutting
TRS	Medium to heavy cutting	A	Finishing (Right and left hand)
TUS	Heavy cutting	B	Finishing (Right and left hand)
DM	Medium cutting	C	Finishing (Right and left hand)
HRF	Finishing	D	Finishing (Right and left hand)
HRM	Finishing to medium cutting	P	Finishing of Aluminium alloys
HMM	Finishing to medium cutting	W	Finishing (Angular type)
SF	Finishing of stainless steels	PSF	Finishing (Positive type)
SS	Finishing of stainless and mild steels	PSS	Finishing to light cutting (Positive insert)
SM	Medium cutting of stainless steels	PS	Finishing to medium cutting (Positive type Basic selection)
S	Medium cutting of stainless steels	PM	Medium cutting (Positive type)
SH	Medium to heavy cutting of stainless steels	AL	Finishing to medium cutting of aluminium alloys
SA	For heat-resisting alloys and stainless steels	RS	Medium cutting (For round inserts)
ZF	Finishing and profiling	W□□	Finishing (Angular type)
ZM	Finishing to medium cutting and profiling	H□□	Finishing to medium cutting (Parallel)
NS	Finishing and profiling	11	Finishing
NM	Finishing to medium cutting and profiling	61	Small depth of cut and high feed (For round inserts)
AS	Small depth of cut and high feed	S1	Finishing (For KNMX type)
TA	Medium cutting	J08,J10	For small lathes
TQ	Medium cutting	JS	For small lathes
AM	Small depth of cut and high feed	JRP	For small lathes
FW	Finishing (Wiper type)	JPP	For small lathes
SW	Finishing to medium cutting (Wiper type)	JSP	For small lathes

Chipbreaker Guide

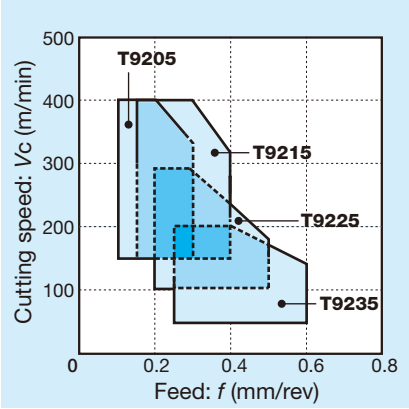
BASIC CHIPBREAKER: NEGATIVE TYPE

P Steel

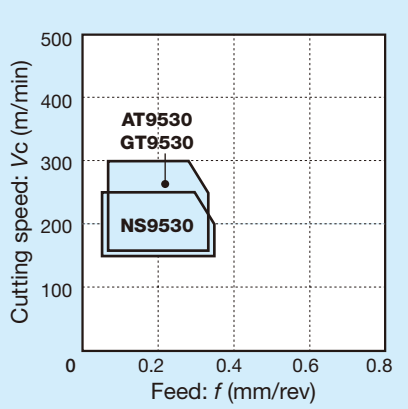
Chipbreaker System for Turning (Negative type)

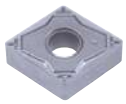


CVD coated grade



Coated cermet / Cermet



Chipbreaker	Shape	Feature
TF		Excellent chip control at very small depth of cut and low feed with the sharp cutting edge and protrusion. Economical M-class insert contributes to cost reduction.
TSF		First choice for finishing. The sharp cutting edge and arc-shaped protrusion near the corner ensure excellent chip control.

Chipbreaker	Shape	Feature
TM		General-purpose chipbreaker with extensive chip control area. The protrusion in unique shape near the corner and large rake angle provide sharp cutting edge with low cutting force.
TH		Double-sided 3D chipbreaker with tough cutting edge and excellent chip control. Even suitable for high-feed machining.
THS		Suitable for varying depth of cut and excellent chip control in a broad range of depths of cut. Ideal for interrupted cutting and high-feed cutting with its tough cutting edge.

STANDARD CUTTING CONDITIONS

ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting speed: *Vc* (m/min) Low carbon steels, Alloy steels	Medium carbon steels, Alloy steels	High carbon steels, Alloy steels
P	Precision finishing	Continuous to light interrupted	TF	NS9530	0.05 - 0.5	0.03 - 0.15	150 - 250	100 - 250	100 - 200
	Finishing	Continuous to light interrupted	TSF	GT9530	0.2 - 1.5	0.08 - 0.4	150 - 300	80 - 250	80 - 200
		Continuous to light interrupted	TSF	AT9530	0.2 - 1.5	0.08 - 0.4	150 - 300	80 - 250	80 - 200
		Heavy interrupted	TSF	T9225	0.2 - 1.5	0.08 - 0.4	120 - 300	120 - 300	100 - 250
	Medium cutting	Continuous to heavy interrupted	TM	T9205	1 - 5	0.2 - 0.5	180 - 400	180 - 400	150 - 350
			TM	T9215	1 - 5	0.2 - 0.5	150 - 400	150 - 400	120 - 300
			TM	T9225	1 - 5	0.2 - 0.5	120 - 300	120 - 300	100 - 250
			TM	T9235	1 - 5	0.2 - 0.5	50 - 200	50 - 200	50 - 150
	Medium to heavy cutting	Continuous to heavy interrupted	TH	T9205	3 - 6	0.3 - 0.6	180 - 400	180 - 400	150 - 350
			TH	T9215	3 - 6	0.3 - 0.6	150 - 400	150 - 400	120 - 300
			TH	T9225	3 - 6	0.3 - 0.6	120 - 300	120 - 300	100 - 250
			TH	T9235	3 - 6	0.3 - 0.6	50 - 200	50 - 200	50 - 150

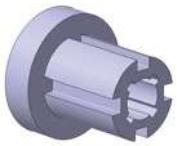
Low carbon steels, Alloy steels: S10C、SCM415, SS400, SCr420H, etc. C10, 18CrMo4, E275A, 20Cr4, etc. Medium carbon steels, Alloy steels: S45C, SCM440, etc. C45, 42CrMo4, etc. High carbon steels, Alloy steels: SNCM439, etc. 41CrNiMo2, etc.

Selection System

SELECTION SYSTEM: NEGATIVE TYPE

P Steel





	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.5 mm]	Basic **TF NS9530** B030 → Fracture → **TSF GT9530** B030	Basic **TF NS9530** B030 → Fracture → **TSF GT9530** B030	
Finishing [a_p = 0.3 ~ 1.5 mm]	Basic **TSF GT9530** B030 → Chip control → **ZF GT9530** B031	Basic **TSF GT9530** B030 → Fracture → **TSF T9215** B030	Basic **TSF T9225** B030 → Fracture → **TSF T9235** B030
Medium cutting [a_p = 1 ~ 4 mm]	Basic **TM T9215** B032 → Wear → **TM T9205** B032; Chip control → **ZM T9215** B033	Basic **TM T9225** B032 → Fracture → **TM T9235** B032; Wear → **TM T9215** B032	Basic **TM T9235** B032 → Fracture → **DM T9235** B033
Medium to heavy cutting [a_p = 3 ~ 6 mm]	Basic **TH T9215** B036 → Wear → **TH T9205** B036; Chip control → **TM T9215** B032	Basic **TH T9225** B036 → Fracture → **TH T9235** B036; Wear → **TH T9215** B036	Basic **TH T9235** B036 → Fracture → **TUS T9235** B037

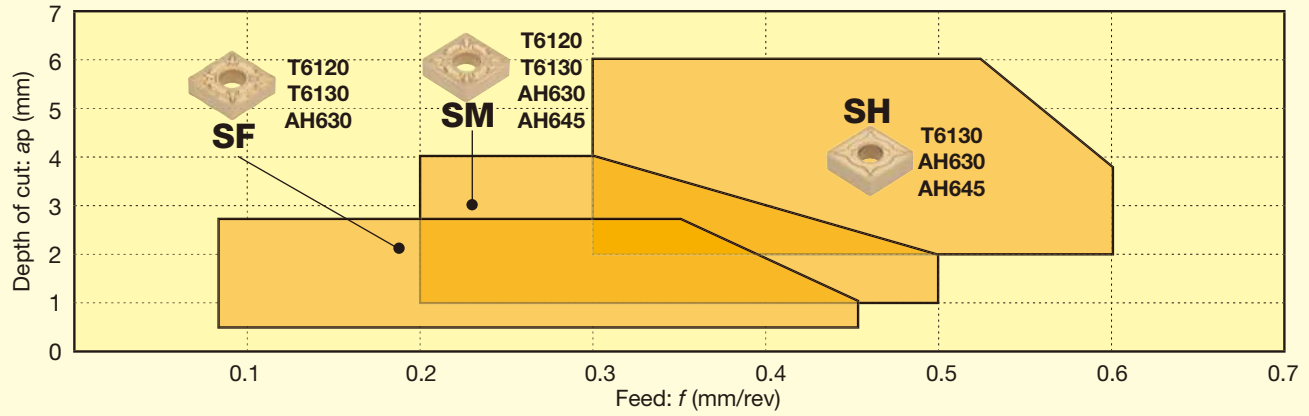
Please see the page B*** for the details.

Chipbreaker Guide

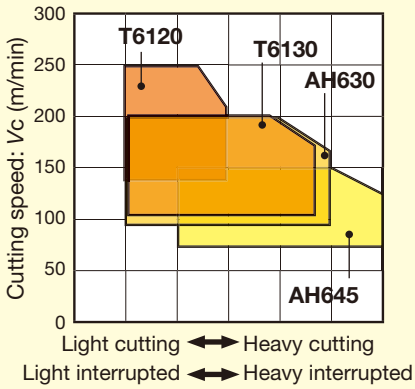
BASIC CHIPBREAKER: NEGATIVE TYPE

M Stainless Steel

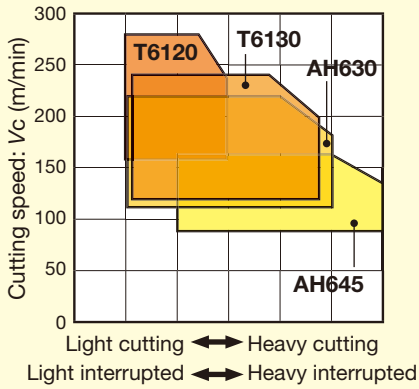
Chipbreaker System for Turning (Negative type)



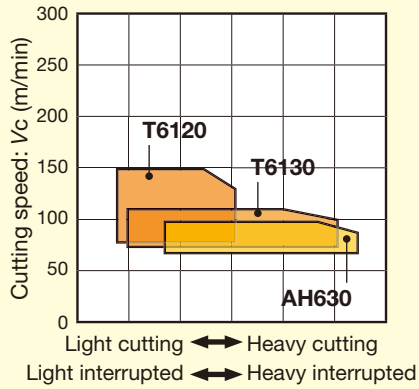
Austenitic stainless steel



Ferritic / martensite stainless steel



Precipitation hardened stainless steel



Chipbreaker	Shape	Feature
SF		Excellent chip control with small depth of cut at high feed. Suitable for finishing stainless steel.
SH		Suitable for medium to heavy cutting. High fracture resistance with specially reinforced cutting edge. Ideal for machining that requires cutting edge strength. such as roughing and interrupted cutting.

Chipbreaker	Shape	Feature
SM		General-purpose chipbreaker with sharpness and good chip control. First choice for stainless steel.

STANDARD CUTTING CONDITIONS

ISO	Operation	Work condition	Chipbreaker	Grade	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting speed *Vc* (m/min)
M	Finishing	Continuous	SF	T6120	0.5 - 2.5	0.08 - 0.45	140 - 240
		Continuous to light interrupted	SF	T6130	0.5 - 2.5	0.08 - 0.45	100 - 200
		Heavy interrupted	SF	AH630	0.5 - 2.5	0.08 - 0.45	90 - 190
	Medium cutting	Continuous	SM	T6120	1 - 4	0.2 - 0.5	140 - 240
		Continuous to light interrupted	SM	T6130	1 - 4	0.2 - 0.5	100 - 200
		Light interrupted	SM	AH630	1 - 4	0.2 - 0.5	90 - 190
		Heavy interrupted	SM	AH645	1 - 4	0.2 - 0.5	70 - 150
	Medium to heavy cutting	Continuous to light interrupted	SH	T6130	2 - 6	0.3 - 0.6	100 - 200
		Light interrupted	SH	AH630	2 - 6	0.3 - 0.6	90 - 190
		Heavy interrupted	SH	AH645	2 - 6	0.3 - 0.6	70 - 150

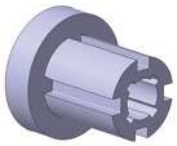
Stainless steels: SUS304、SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-3, etc.

Selection System

SELECTION SYSTEM: NEGATIVE TYPE

M Stainless Steel





	Continuous	Light interrupted	Heavy interrupted
Finishing [a_p = 0.5 ~ 1.5 mm]	Basic **SF T6120** B031 → Fracture → **SF T6130** B031	Basic **SF T6130** B031 → Fracture → **SF AH630** B031; Wear → **SF T6120** B031	Basic **SF AH630** B031 → Fracture → **SF AH645** B031; Wear → **SF T6130** B031
Medium cutting [a_p = 1 ~ 4 mm]	Basic **SM T6130** B035 → Wear → **SM T6120** B035; Chip control → **SF T6130** B031	Basic **SM AH630** B035 → Fracture → **SM AH645** B035; Wear → **SM T6130** B035	Basic **SM AH645** B035 → Fracture → **SH AH645** B037
Medium to heavy cutting [a_p = 2 ~ 6 mm]	Basic **SH T6130** B037 → Fracture → **SH AH630** B037; Wear → **SH T6120** B037; Chip control → **SM T6130** B035	Basic **SH AH630** B037 → Fracture → **SH AH645** B037; Wear → **SH T6130** B037	Basic **SH AH645** B037 → Wear → **SH AH630** B037

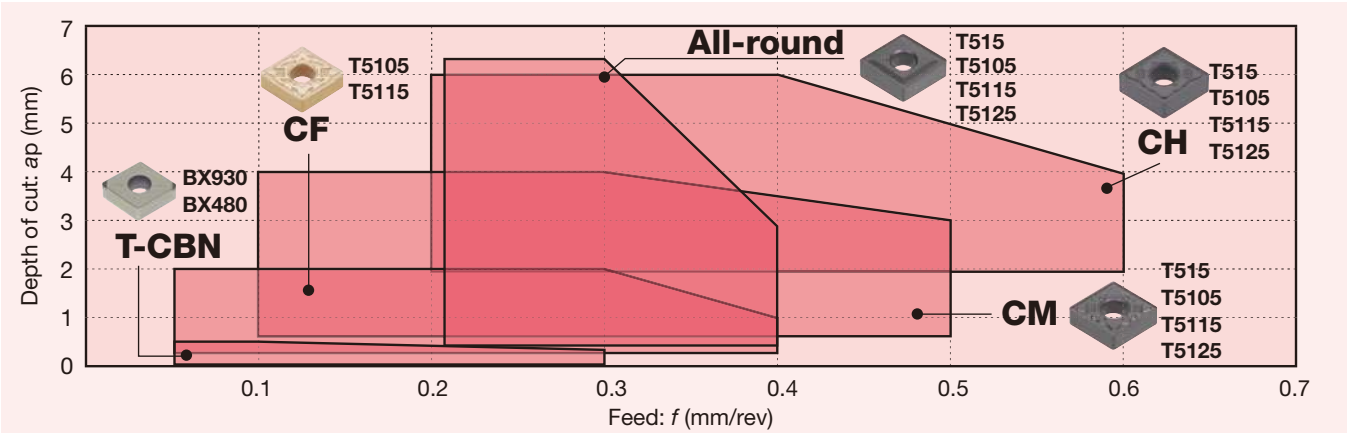
Please see the page B*** for the details.

Chipbreaker Guide

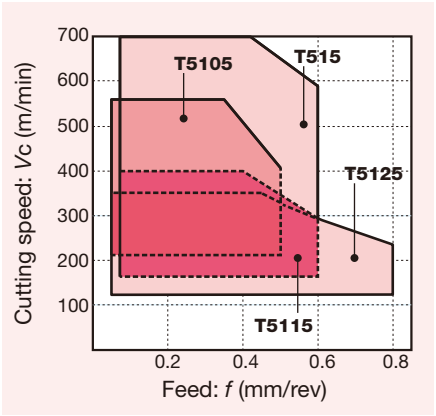
BASIC CHIPBREAKER: NEGATIVE TYPE

K Cast Iron

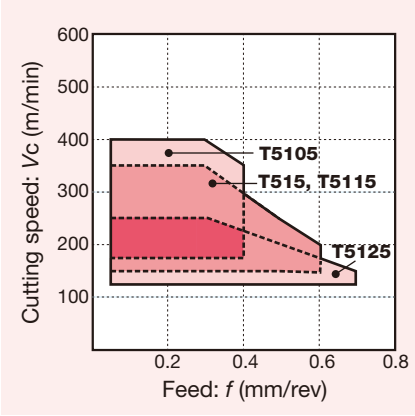
Chipbreaker System for Turning (Negative type)



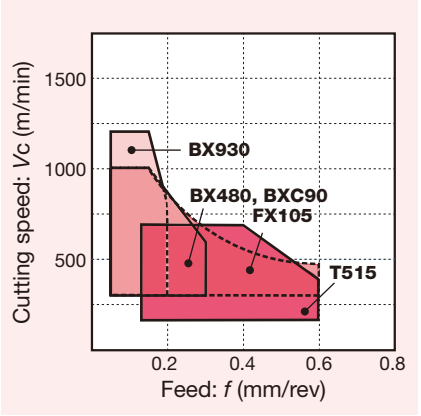
Grey cast iron

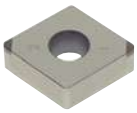


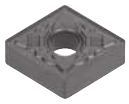
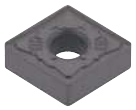
Ductile cast iron



Grey cast iron (high speed cutting)



Chipbreaker	Shape	Feature
No chip-breaker (T-CBN)		Excellent performance in high-speed finishing of cast iron with CBN sintered body on the cutting edge.
CF		Low cutting force chipbreaker for cast iron. Combined with an arc-shaped high rake angle (substantially 20°) drastically reduces cutting force and prevents the deformation and burr of thin-walled components.
All-round		Excellent performance in interrupted cutting. Highly reliable chipbreaker with great stability.

Chip-breaker	Shape	Feature
CM		First choice for cast iron. Versatile chipbreaker for a wide range of applications from continuous to interrupted cutting thanks to the positive land and wide chip pocket.
CH		Chipbreaker with reinforced cutting edge. The negative land and the land support provide stable insert seating and increase cutting edge strength, resulting in no fracture even in heavy cutting.

STANDARD CUTTING CONDITIONS

ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting speed: *Vc* (m/min)	
							Grey cast iron	Ductile cast iron
K	High speed cutting	Continuous	Without	BX930	0.05 - 0.5	0.05 - 0.2	300 - 1200	100 - 500
		Light interrupted	Without	BX480	0.05 - 0.5	0.05 - 0.3	300 - 1000	100 - 300
		Continuous	Without	BXC90	0.08 - 3	0.05 - 0.4	300 - 1000	100 - 300
	Finishing	Continuous	All-round	T515	1 - 5	0.1 - 0.5	150 - 700	140 - 370
		Light interrupted	All-round	T515	1 - 5	0.1 - 0.5	150 - 700	140 - 370
		Heavy interrupted	All-round	T515	1 - 5	0.1 - 0.5	150 - 700	140 - 370
	Medium cutting	Continuous	All-round	T515	1 - 5	0.1 - 0.5	150 - 700	140 - 370
		Light interrupted	All-round	T515	1 - 5	0.1 - 0.5	150 - 700	140 - 370
		Heavy interrupted	CH	T515	3 - 6	0.2 - 0.6	150 - 700	140 - 370
	Medium to heavy cutting	Continuous	All-round	T515	1 - 5	0.1 - 0.5	150 - 700	140 - 370
		Light interrupted	All-round	T515	1 - 5	0.1 - 0.5	150 - 700	140 - 370
		Heavy interrupted	CH	T515	3 - 6	0.2 - 0.6	150 - 700	140 - 370

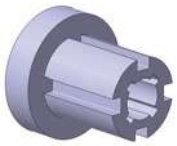
Grey cast iron: FC250, etc. 250, etc. Ductile cast iron: FCD450, etc. 450-10S, etc.

Selection System

SELECTION SYSTEM: NEGATIVE TYPE

K Cast Iron





	Continuous	Light interrupted	Heavy interrupted
Finishing [a_p = 0.5 ~ 2 mm]	Basic: All-round T515 (B033) → Wear: All-round T5105 (B033); Burr occurrence: CF T5105 (B031)	Basic: All-round T515 (B033) → Wear: All-round T5105 (B033); Fracture: CH T515 (B037); Burr occurrence: CF T5115 (B031)	Basic: CH T515 (B037) → Wear: CH T5105 (B037); Fracture: CH T5125 (B037); Burr occurrence: All-round T515 (B033)
Medium cutting [a_p = 1 ~ 5 mm]	Basic: All-round T515 (B033) → Wear: All-round T5105 (B033); Burr occurrence: CF T5105 (B031)	Basic: All-round T515 (B033) → Wear: All-round T5105 (B033); Fracture: CH T515 (B037); Burr occurrence: CF T5115 (B031)	Basic: CH T515 (B037) → Wear: CH T5105 (B037); Fracture: CH T5125 (B037); Burr occurrence: All-round T515 (B033)
Medium to heavy cutting [a_p = 3 ~ 6 mm]	Basic: All-round T515 (B033) → Wear: All-round T5105 (B033); Burr occurrence: CF T5105 (B031)	Basic: All-round T515 (B033) → Wear: All-round T5105 (B033); Fracture: CH T515 (B037); Burr occurrence: CF T5115 (B031)	Basic: CH T515 (B037) → Wear: CH T5105 (B037); Fracture: CH T5125 (B037); Burr occurrence: All-round T515 (B033)

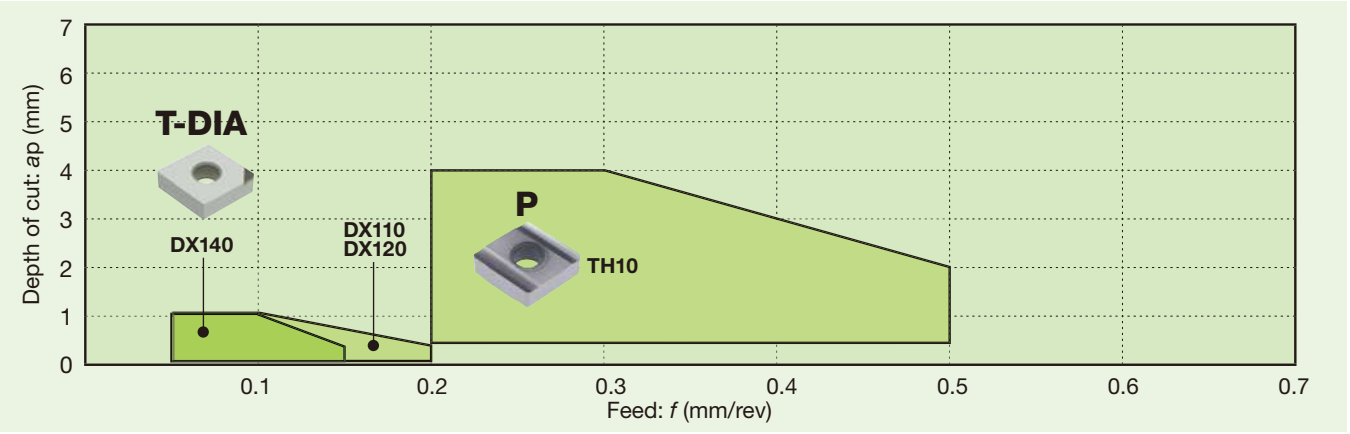
Please see the page B*** for the details.

Chipbreaker Guide

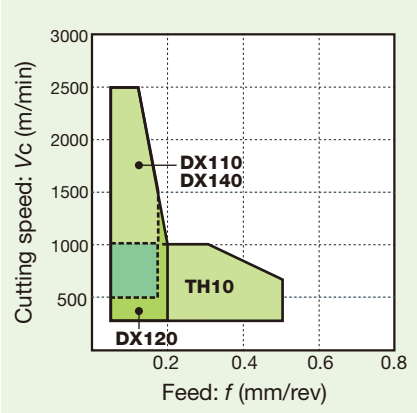
BASIC CHIPBREAKER: NEGATIVE TYPE

N Non-ferrous Metal

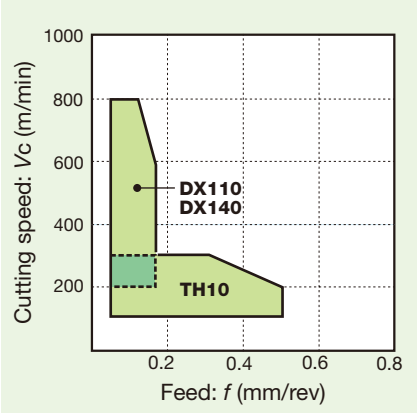
Chipbreaker System for Turning (Negative type)



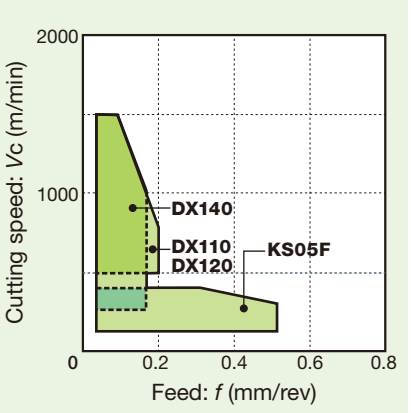
Aluminium alloy (Si < 12%)

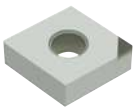
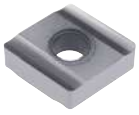


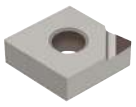
Aluminium alloy (Si ≥ 12%)



Copper alloy



Chipbreaker	Shape	Feature
No chip-breaker (T-DIA)		Excellent performance in high-speed finishing of non-ferrous metal, such as aluminium and copper alloy, with diamond sintered body on the cutting edge.
P		Excellent sharpness for non-ferrous metal, such as aluminium and copper alloy.

Chipbreaker	Shape	Feature
With chip-breaker (T-DIA)		Wide chipbreaker for excellent chip control.

STANDARD CUTTING CONDITIONS

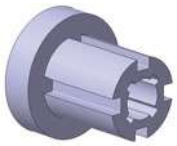
ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting speed: *Vc* (m/min) Aluminium alloy (Si < 12%)	Aluminium alloy (Si ≥ 12%)	Copper alloy
N	Precision finishing	Continuous	With	DX110	0.05 - 0.5	0.05 - 0.15	500 - 2500	400 - 800	500 - 1500
		Light interrupted	Without	DX140	0.05 - 0.5	0.05 - 0.20	300 - 2500	-	500 - 1500
	Finishing	Continuous	Without	DX140	0.05 - 2	0.05 - 0.15	500 - 2500	400 - 800	500 - 1500
		Light interrupted	Without	DX140	0.05 - 2	0.05 - 0.15	300 - 1800	400 - 600	400 - 1200
		Heavy interrupted	P	TH10	0.5 - 4	0.2 - 0.5	100 - 500	100 - 200	100 - 200
	Medium cutting	Continuous	P	TH10	0.5 - 4	0.2 - 0.5	100 - 1000	100 - 300	100 - 300
		Light interrupted	P	TH10	0.5 - 4	0.2 - 0.5	100 - 800	100 - 200	100 - 200
		Heavy interrupted	P	TH10	0.5 - 4	0.2 - 0.5	100 - 500	100 - 200	100 - 200

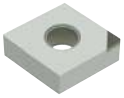
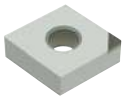
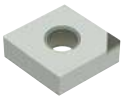
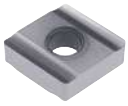
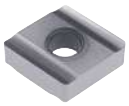
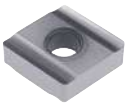
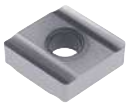
Selection System

SELECTION SYSTEM: NEGATIVE TYPE

N Non-ferrous Metal





	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.5 mm]	Basic  With chipbreaker **DX110** B188 Wear → **T-DIA DX140** B189	Basic  **T-DIA DX140** B189 Surface quality → With chipbreaker T-DIA **DX110** B188 Wear → **T-DIA DX160** B189	
Finishing [a_p = 0.5 ~2 mm]	Basic  **T-DIA DX140** B189 Surface quality → With chipbreaker T-DIA **DX110** B188 Wear → **T-DIA DX160** B189	Basic  **T-DIA DX140** B189 Fracture → **P TH10** B035 Wear → **T-DIA DX160** B189	Basic  **P TH10** B035
Medium cutting [a_p = 1 ~ 4 mm]	Basic  **P TH10** B035 Wear → **T-DIA DX140** B189	Basic  **P TH10** B035 Wear → **T-DIA DX140** B189	Basic  **P TH10** B035

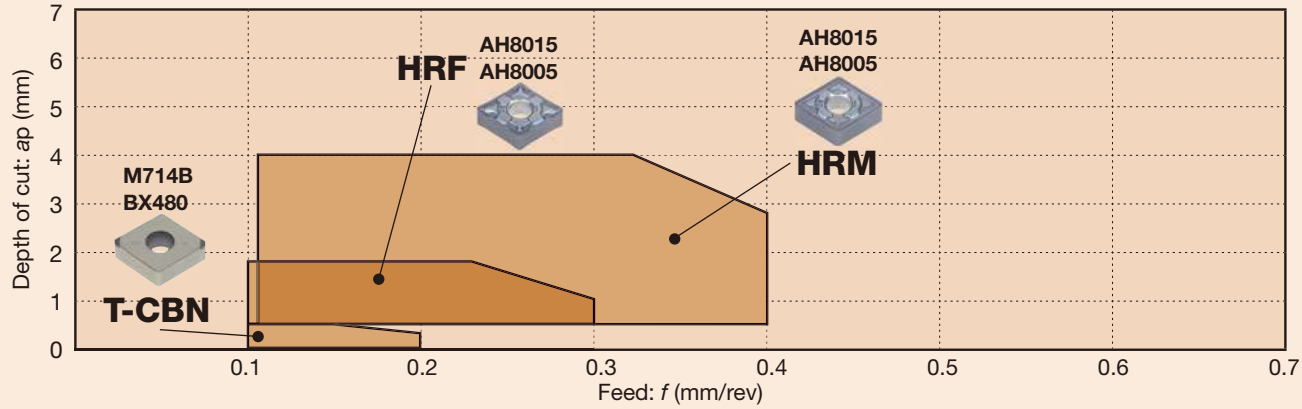
Please see the page B*** for the details.

Chipbreaker Guide

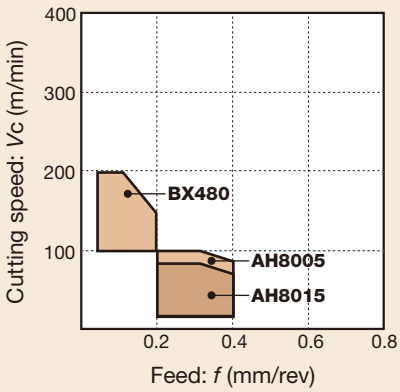
BASIC CHIPBREAKER: NEGATIVE TYPE

S Superalloys and titanium

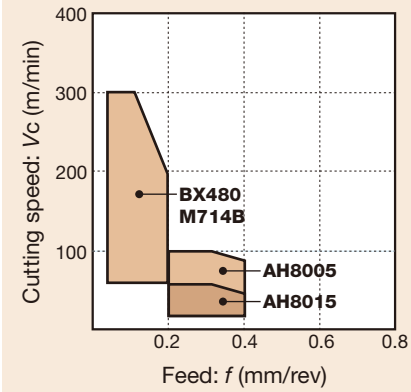
Chipbreaker System for Turning (Negative type)



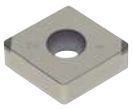
Titanium alloy



Ni-base alloy



Chipbreaker	Shape	Feature
HRF		Suitable for finishing superalloy. Unique protrusion improves chip control in cutting low depth.
HRM		First choice for heat-resistant alloy. The geometry optimized for a wide range of depths of cut.

Chipbreaker	Shape	Feature
No chip-breaker (T-CBN)		Excellent performance in finishing of heat-resistant alloy and titanium alloy with CBN sintered body on the cutting edge.

STANDARD CUTTING CONDITIONS

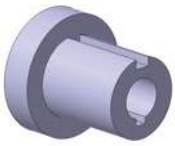
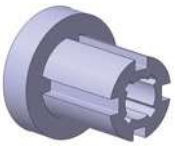
ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting speed: *Vc* (m/min)	
							Titanium alloy	Ni-base alloy
S	Precision finishing	Continuous	Without	BX480	0.1 - 0.5	0.05 - 0.2	100 - 200	70 - 300
			Without	M714B	0.1 - 0.5	0.05 - 0.2	-	70 - 400
		Light interrupted	Without	BX480	0.1 - 0.5	0.05 - 0.2	100 - 200	-
	Finishing to medium cutting	Continuous	HRF	AH8005	0.5 - 1.5	0.05 - 0.25	20 - 100	20 - 100
		Light interrupted	HRF	AH8015	0.5 - 1.5	0.05 - 0.25	20 - 80	20 - 50
		Heavy interrupted	HRF	AH8015	0.5 - 1.5	0.05 - 0.25	10 - 60	10 - 40
	Medium cutting	Continuous	HRM	AH8005	0.5 - 4	0.1 - 0.4	20 - 100	20 - 100
		Light interrupted	HRM	AH8015	0.5 - 4	0.1 - 0.4	20 - 80	20 - 50
		Heavy interrupted	HRM	AH8015	0.5 - 4	0.1 - 0.4	10 - 60	10 - 40

Ni-base alloy: INCONEL718, etc. Titanium alloy: Ti-6Al-4V, etc.

Selection System

SELECTION SYSTEM: NEGATIVE TYPE

S Superalloys and titanium

	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.5 mm]	Basic → **T-CBN BX480 M714B** B170 -	Basic → **T-CBN BX480** B170 - Fracture → No chipbreaker **TH10** B038	
Finishing [a_p = 0.5 ~ 1.5 mm]	Basic → **HRF AH8005** B031 Fracture → **HRF AH8015** B031 Chip control → **28 AH8005** B034	Basic → **HRF AH8015** B031 Fracture → **HRM AH8015** B035 Wear → **HRF AH8005** B031 Chip control → **28 AH8015** B034	Basic → **HRF AH8015** B031 Fracture → **HRM AH8015** B035 Wear → **HRF AH8005** B031
Medium cutting [a_p = 0.5 ~ 4 mm]	Basic → **HRM AH8005** B035 Fracture → **HRM AH8015** B035 Burr occurrence → **HRF AH8015** B031 Chip control → **28 AH8005** B034	Basic → **HRM AH8015** B035 Fracture → **SM AH630** B035 Wear → **HRM AH8005** B035 Chip control → **28 AH8015** B034	Basic → **HRM AH8015** B035 Fracture → **SM AH630** B035 Wear → **HRF AH8005** B031

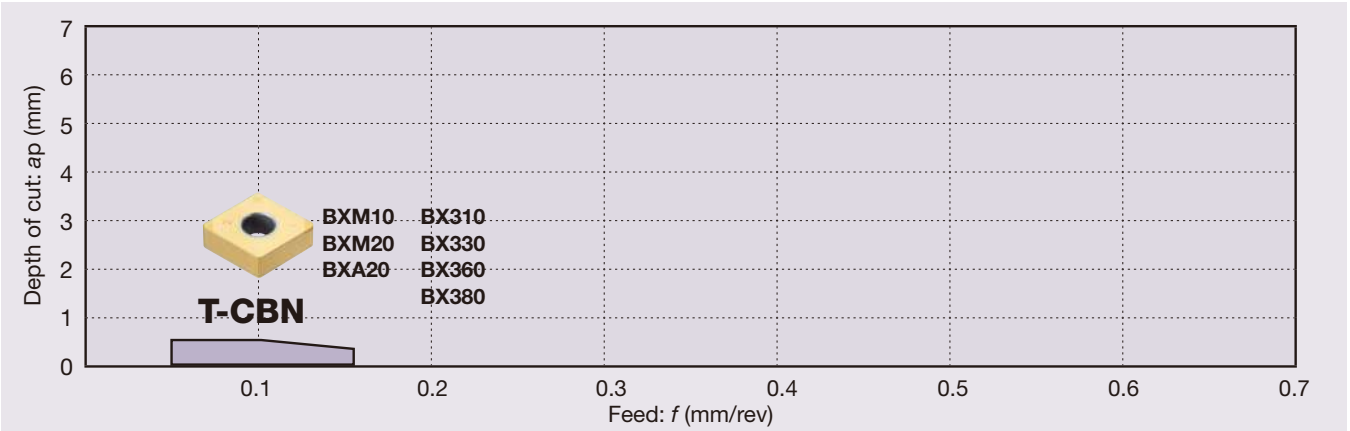
Please see the page B*** for the details.

Chipbreaker Guide

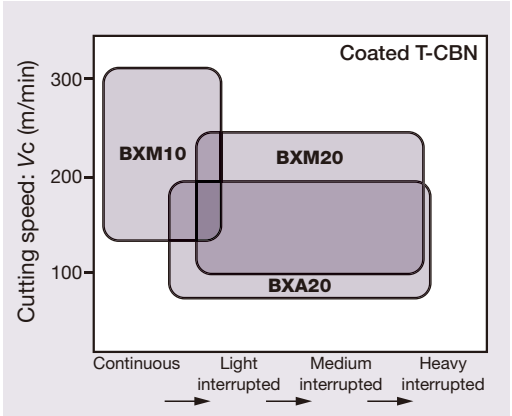
BASIC CHIPBREAKER: NEGATIVE TYPE

H Hard Materials

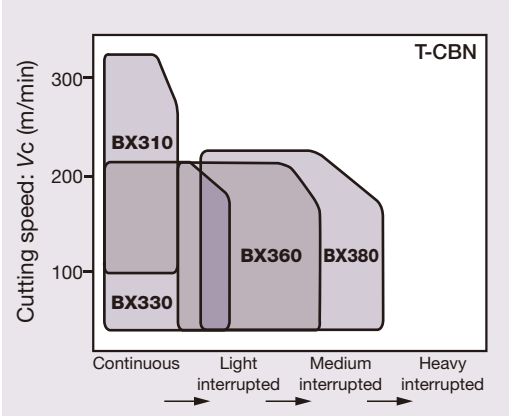
Chipbreaker System for Turning (Negative type)

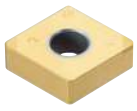


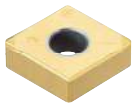
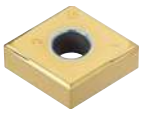
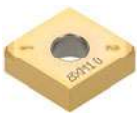
Coated T-CBN



T-CBN



Chipbreaker	Shape	Feature
No chip-breaker (T-CBN)		Excellent performance in finishing of hard material with CBN sintered body on the cutting edge.

Chipbreaker	Shape	Feature
HF		Excellent chip control in removing carburized layer at small depth of cut.
HM		Excellent chip control in removing carburized layer at large depth of cut.
HP		Excellent chip control in precision finishing.

STANDARD CUTTING CONDITIONS

ISO	Operation	Work condition	Chipbreaker	Grade	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting speed *Vc* (m/min)
H	Precision finishing	Continuous to light interrupted	HP	BXM10 BXA20	0.05 - 0.2	0.03 - 0.18	150 - 350
	Finishing	Continuous to heavy interrupted	Without	BXM10 BXM20 BXA20	0.05 - 0.5	0.05 - 0.25	70 - 220
	Removing of carburized layer	Continuous	HF	BXM20	0.2 - 0.75	0.05 - 0.2	70 - 200
		Continuous	HM	BXM20 BXA20	0.5 - 1	0.05 - 0.2	70 - 200

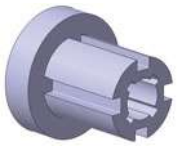
Hardened steels, Pre-hardened steels: SKD11, SKD61, etc. X153CrMoV12, X40CrMoV5-1, etc.

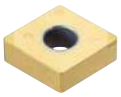
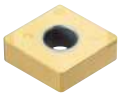
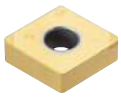
Selection System

SELECTION SYSTEM: NEGATIVE TYPE

H Hard Materials





	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.2 mm]	Basic  **T-CBN HP BXM10** B171 -	Basic  **T-CBN BXA20** B170 - Fracture → **-H BXM20** B170 - High-speed wear → **T-CBN BXM10** B170 -	
Finishing [a_p = ~ 0.5 mm]	Basic  **T-CBN BXM10** B170 -	Basic  **T-CBN BXA20** B170 - Fracture → **-H BXM20** B170 - High-speed wear → **T-CBN BXM10** B170 -	Basic  **T-CBN BXM20** B170 - Fracture → **-H BXM20** B170 -

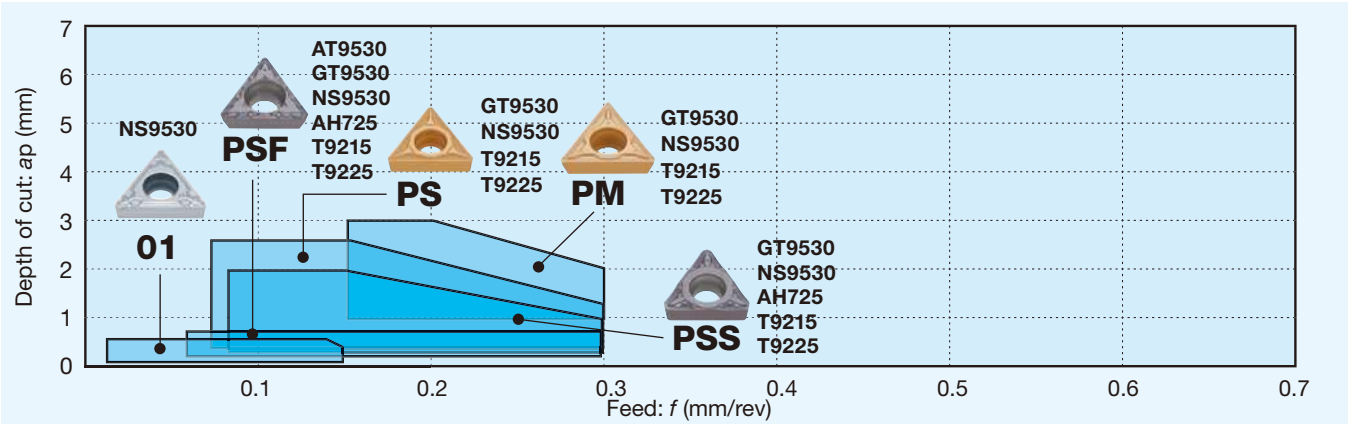
Please see the page B*** for the details.

Chipbreaker Guide

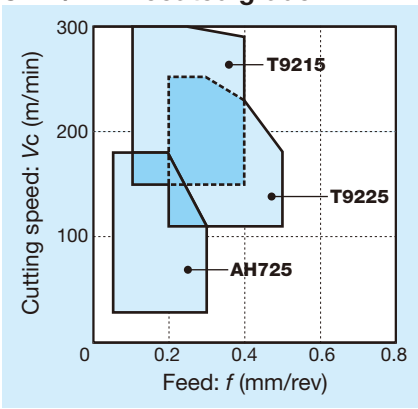
BASIC CHIPBREAKER: POSITIVE TYPE

P Steel

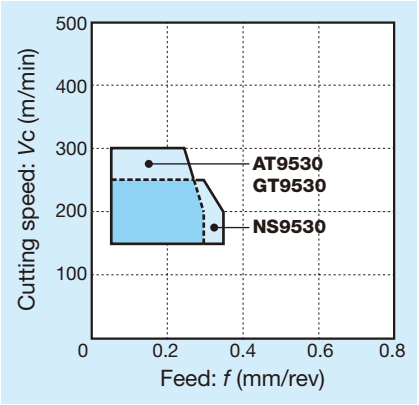
Chipbreaker System for Turning (Positive Type)

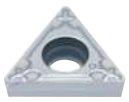
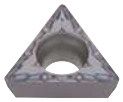
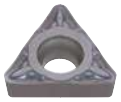


CVD / PVD coated grade



Coated cermet / Cermet



Chipbreaker	Shape	Feature
01		Excellent chip control in machining very small depth of cut thanks to the sharp cutting edge and protrusion.
PSF		Low cutting force and high wear resistance. First choice for finishing. Excellent chip control in finishing prevents chip entanglement in internal machining.
PSS		3D chipbreaker for finishing to medium cutting with excellent chip control and low cutting force.

Chipbreaker	Shape	Feature
PS		3D chipbreaker for finishing to medium cutting with excellent chip control and sharpness. M-class insert delivers cost reduction and highly efficient boring in a wide range of applications.
PM		First choice for medium cutting with excellent sharpness and good chip control. Delivers stable machining of stainless steel.

STANDARD CUTTING CONDITIONS

ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting speed: *Vc* (m/min) Low carbon steels, Alloy steels	Medium carbon steels, Alloy steels	High carbon steels, Alloy steels
P	Precision finishing	Continuous	01	NS9530	0.05 - 0.5	0.03 - 0.15	150 - 250	80 - 220	80 - 180
		Light interrupted	01	NS9530	0.05 - 0.5	0.03 - 0.15	150 - 250	80 - 220	80 - 180
	Finishing	Continuous	PSS	NS9530	0.1 - 0.5	0.05 - 0.3	150 - 250	80 - 220	80 - 180
		Light interrupted	PSS	NS9530	0.1 - 0.5	0.05 - 0.3	150 - 250	80 - 220	80 - 180
		Heavy interrupted	PSS	NS9530	0.1 - 0.5	0.05 - 0.3	150 - 250	80 - 220	80 - 180
	Finishing to light cutting	Continuous	PS	NS9530	0.3 - 2	0.08 - 0.3	150 - 250	80 - 220	80 - 180
		Light interrupted	PS	NS9530	0.3 - 2	0.08 - 0.3	150 - 250	80 - 220	80 - 180
		Heavy interrupted	PS	NS9530	0.3 - 2	0.08 - 0.3	150 - 250	80 - 220	80 - 180
	Finishing to Medium cutting	Continuous to Heavy interrupted	PS	T9215	0.5 - 2.5	0.08 - 0.3	120 - 350	100 - 350	80 - 250
			PS	T9225	0.5 - 2.5	0.08 - 0.3	100 - 300	80 - 300	80 - 250
	Medium cutting	Continuous to Heavy interrupted	PM	-	1 - 3	0.15 - 0.3	150	100 - 200	80 - 180
			PM	-	1 - 3	0.15 - 0.3	120	80 - 180	80 - 120

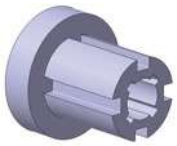
Low carbon steels, Alloy steels: S10C, SCM415, SS400, SCr420H, etc. C10, 18CrMo4, E275A, 20Cr4, etc. Medium carbon steels, Alloy steels: S45C, SCM440, etc. C45, 42CrMo4, etc. Hi carbon steels, Alloy steels: SNCM439, etc. 41CrNiMo2, etc.

Selection System

SELECTION SYSTEM: POSITIVE TYPE

P Steel





	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.5 mm]	Basic: 01 NS9530 — B040, B045	Basic: 01 NS9530 — B040, B045 Fracture: PSF NS9530 — B040, B045, B049	
Finishing [a_p = 0.1 ~ 0.5 mm]	Basic: PSS NS9530 — B040, B045, B049 Wear: PSS GT9530 — B040, B045, B049 Fracture: PS NS9530 — B040, B045, B049 Chip control: PSF NS9530 — B040, B045, B049	Basic: PSS NS9530 — B040, B045, B049 Wear: PSS GT9530 — B040, B043, B049 Fracture: PS NS9530 — B040, B043, B049 Chip control: PSF NS9530 — B040, B043, B049	Basic: PSS NS9530 — B040, B045, B049 Wear: PSS GT9530 — B040, B047, B049 Fracture: PS NS9530 — B040, B045, B049 Chip control: PSF NS9530 — B040, B045, B049
Finishing to medium cutting [a_p = 0.5 ~ 2.5 mm]	Basic: PS T9215 — B040, B045, B049 Fracture: PS T9215 — B040, B045, B049 Wear: PS NS9530 — B040, B045, B049	Basic: PS T9215 — B040, B045, B049 Fracture: PS T9215 — B040, B045, B049 Wear: PS NS9530 — B040, B045, B049	Basic: PS T9215 — B040, B045, B049 Fracture: PM T9215 — B042, B046 Chip control: TSF T9215 — B040, B045
Medium cutting [a_p = 1 ~ 3 mm]	Basic: PM T9215 — B042, B046 Wear: PM NS9530 — B042, B046	Basic: PM T9215 — B042, B046 Fracture: PM T9215 — B042, B046	Basic: PM T9215 — B042, B046 Chip control: TM T9215 — B041, B045

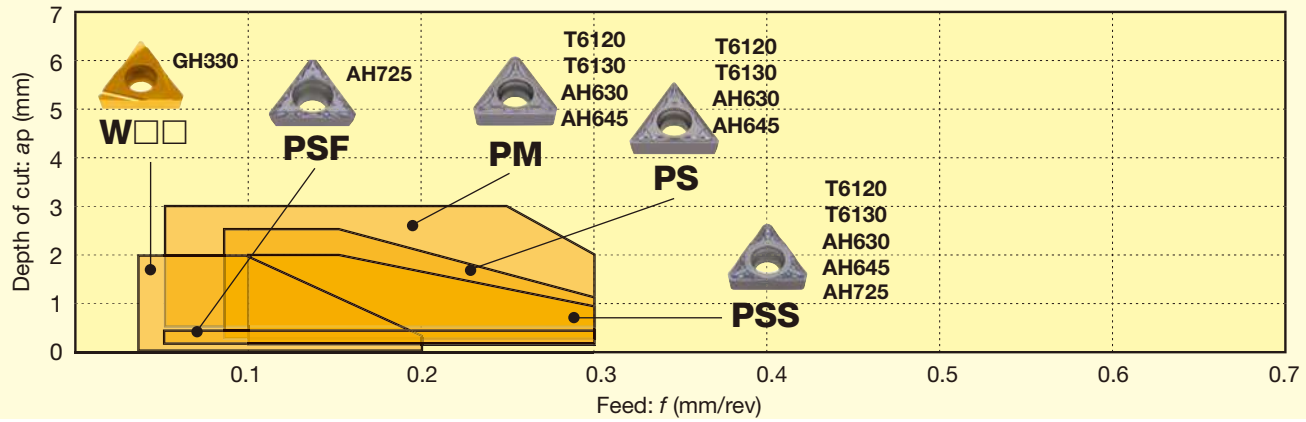
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

Chipbreaker Guide

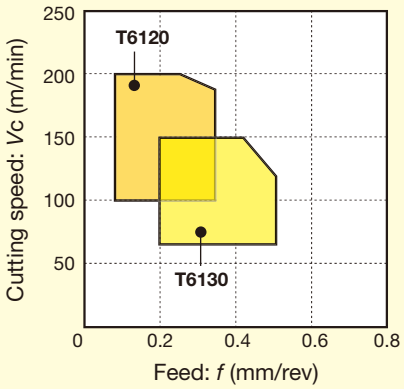
BASIC CHIPBREAKER: POSITIVE TYPE

M Stainless Steel

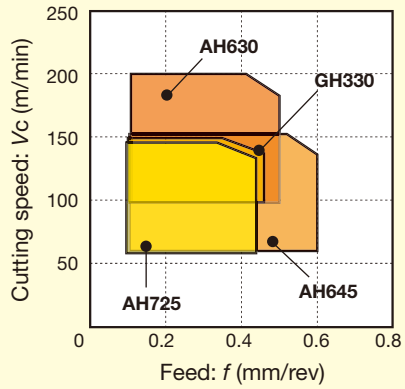
Chipbreaker System for Turning (Positive Type)

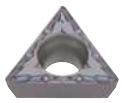


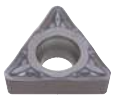
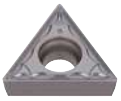
CVD coated grade



PVD coated grade



Chipbreaker	Shape	Feature
W□□		Designed to control the direction of chip flow in precision finishing. Smooth chip evacuation in boring.
PSF		Low cutting force and high wear resistance. First choice for finishing. Excellent chip control in finishing prevents chip entanglement in internal machining.

Chipbreaker	Shape	Feature
PSS		3D chipbreaker for finishing to medium cutting with excellent chip control and low cutting force.
PS		3D chipbreaker for finishing to medium cutting with excellent chip control and sharpness. M-class insert delivers cost reduction and highly efficient boring in a wide range of applications.
PM		First choice for medium cutting with excellent sharpness and good chip control. Delivers stable machining of stainless steel.

STANDARD CUTTING CONDITIONS

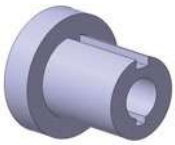
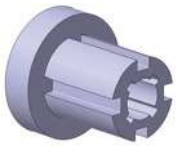
ISO	Operation	Work condition	Chipbreaker	Grade	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting speed *Vc* (m/min)
M	Precision finishing	Continuous	W□□	GH330	0.05 - 2.0	0.03 - 0.2	100 - 150
	Finishing	Continuous	PSF	AH725	0.1 - 0.5	0.05 - 0.3	50 - 150
		Light interrupted	PSF	AH725	0.1 - 0.5	0.05 - 0.3	50 - 150
		Heavy interrupted	PSF	AH725	0.1 - 0.5	0.05 - 0.3	50 - 120
	Finishing to light cutting	Continuous	PSS	AH630	0.3 - 2	0.08 - 0.3	90 - 190
		Light interrupted	PSS	AH630	0.3 - 2	0.08 - 0.3	90 - 190
		Heavy interrupted	PSS	AH630	0.3 - 2	0.08 - 0.3	90 - 190
	Finishing to medium cutting	Continuous	PS	T6130	0.5 - 2.5	0.08 - 0.3	100 - 200
		Light interrupted	PS	AH630	0.5 - 2.5	0.08 - 0.3	90 - 190
		Heavy interrupted	PS	AH630	0.5 - 2.5	0.08 - 0.3	90 - 190
	Medium cutting	Continuous	PM	T6130	1 - 3*	0.15 - 0.3	100 - 200
		Light interrupted	PM	AH630	1 - 3*	0.15 - 0.3	90 - 190
		Heavy interrupted	PM	AH630	1 - 3*	0.15 - 0.3	90 - 190

* For CCMT0602 and DCMT0702 type inserts, *ap* = 0.5 - 2.5
Stainless steels: SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-3, etc.

Selection System

SELECTION SYSTEM: POSITIVE TYPE

M Stainless Steel

	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.5 mm]	Basic **W□□ GH330** B041, B046, B049	Basic **W□□ GH330** B041, B046, B049	
Finishing [a_p = 0.3 ~ 1.5 mm]	Basic **PSF AH725** B040, B045, B049 Wear → **PSS T6130** B040, B045, B049	Basic **PSF AH725** B040, B045, B049 Fracture → **PSS AH630** B040, B045, B049 Wear → **PSS T6130** B040, B045, B049	Basic **PSF AH725** B040, B045, B049 Fracture → **PSS AH630** B040, B045, B049
Finishing to medium cutting [a_p = 0.5 ~ 2.5 mm]	Basic **PSS AH630** B040, B045, B049 Wear → **PS T6130** B040, B045, B049	Basic **PS AH630** B040, B045, B049 Fracture → **PM AH645** B042, B046 Wear → **PS T6130** B040, B045, B049	Basic **PS AH630** B040, B045, B049 Fracture → **PM AH645** B042, B046 Wear → **PS T6130** B040, B045, B049
Medium cutting [a_p = 1 ~ 3 mm]	Basic **PM T6130** B042, B046	Basic **PM AH630** B042, B046 Fracture → **PM AH645** B042, B046 Wear → **PM T6130** B042, B046	Basic **PM AH630** B042, B046 Fracture → **PM AH645** B042, B046

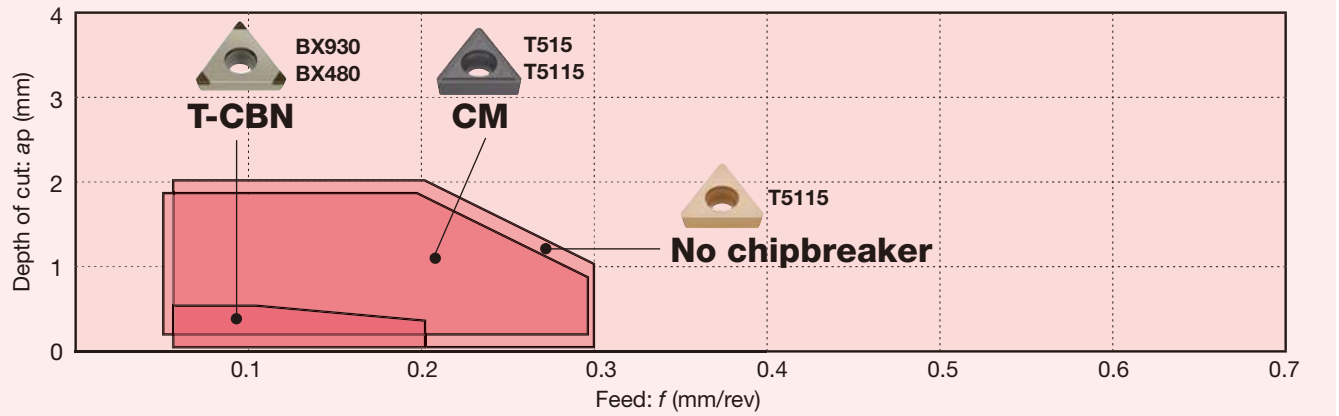
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

Chipbreaker Guide

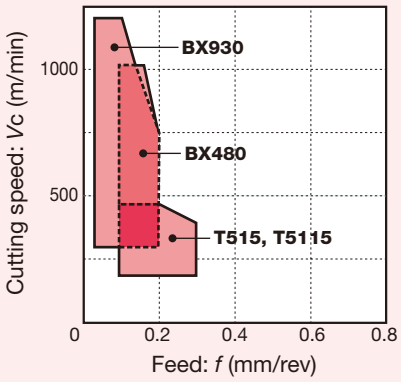
BASIC CHIPBREAKER: POSITIVE TYPE

K Cast Iron

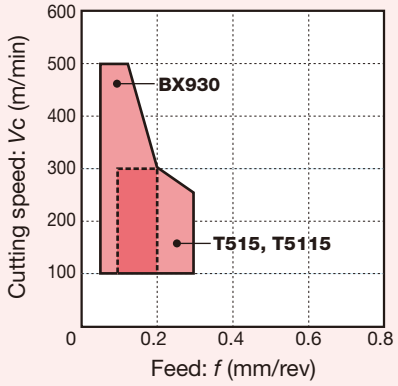
Chipbreaker System for Turning (Positive Type)

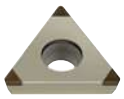


Grey cast iron



Ductile cast iron



Chipbreaker	Shape	Feature
No chip-breaker (T-CBN)		Excellent performance in high-speed finishing of cast iron with CBN sintered body on the cutting edge.
No chip-breaker		Suitable for a wide range of applications from finishing to roughing cast iron. Excellent performance with high cutting edge strength.

Chipbreaker	Shape	Feature
CM		Highly versatile all-round chipbreaker with low cutting force. Suitable for finishing to medium cutting.

STANDARD CUTTING CONDITIONS

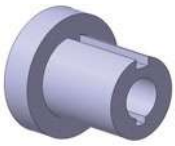
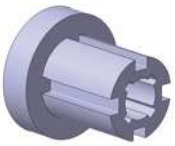
ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting speed: *Vc* (m/min)	
							Grey cast iron	Ductile cast iron
K	Precision finishing	Continuous	Without	BX930	0.05 - 0.5	0.05 - 0.2	300 - 1200	100 - 500
		Light interrupted	Without	BX480	0.05 - 0.5	0.05 - 0.2	300 - 800	100 - 300
		Light interrupted	Without	BX470	0.05 - 0.5	0.05 - 0.2	300 - 800	100 - 300
	Finishing	Continuous	CM	T515	0.05 - 2	0.05 - 0.3	150 - 700	150 - 300
		Heavy interrupted	CM	T515	0.05 - 2	0.05 - 0.3	100 - 200	100 - 200
	Medium cutting	Light interrupted	CM	T515	0.05 - 2	0.05 - 0.3	100 - 300	100 - 250

Grey cast iron: FC250, etc. 250, etc.
Ductile cast iron: FCD450, etc. 450-10S, etc.

Selection System

SELECTION SYSTEM: POSITIVE TYPE

K Cast Iron

	Continuous	Light interrupted	Heavy interrupted
Finishing to Medium cutting [ap = 0.5 ~ 3 mm]	Basic  CM T515 B042, B046, B049 Wear → T-CBN BX930 B184 -	Basic  CM T515 B042, B046, B049	Basic  CM T515 B042, B046, B049

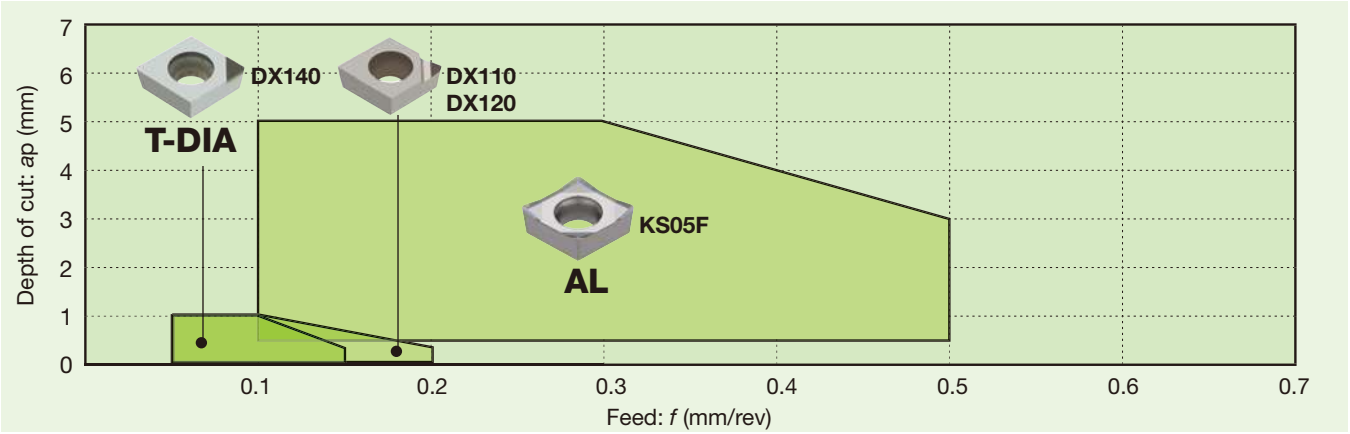
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

Chipbreaker Guide

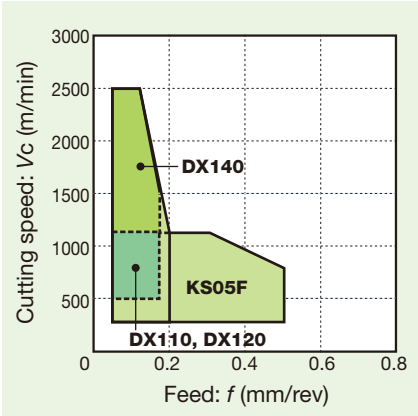
BASIC CHIPBREAKER: POSITIVE TYPE

N Non-ferrous Metal

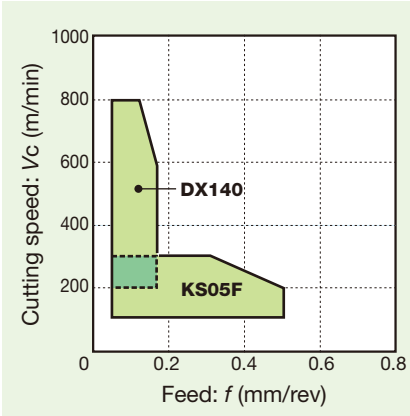
Chipbreaker System for Turning (Positive Type)



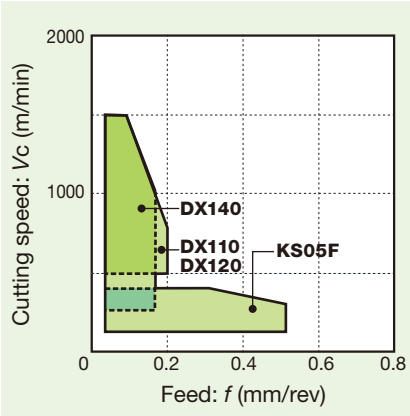
Aluminium alloy (Si < 12%)

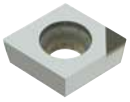
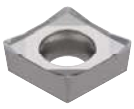


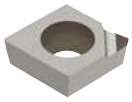
Aluminium alloy (Si ≥ 12%)



Copper alloy



Chipbreaker	Shape	Feature
No chip-breaker (T-DIA)		Excellent performance in high-speed finishing of non-ferrous metal with diamond sintered body on the cutting edge.
AL		Large rake angle and sharp cutting edge reduce cutting force. Lapped rake face prevents adhesion. Large inclination on the cutting edge (wavy cutting edge) for more stable chip control.

Chipbreaker	Shape	Feature
With chip-breaker (T-DIA)		Wide chipbreaker for smooth chip evacuation. Large rake face reduces cutting force. DIA on the cutting edge delivers high-speed machining and long tool life.

STANDARD CUTTING CONDITIONS

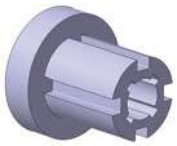
ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting speed: *Vc* (m/min) Aluminium alloy (Si < 12%)	Aluminium alloy (Si ≥ 12%)	Copper alloy
N	Precision finishing	Continuous	With	DX110	0.05 - 1	0.05 - 0.15	500 - 2500	400 - 800	500 - 1500
		Light interrupted	Without	DX140	0.05 - 1	0.05 - 0.2	300 - 2500	-	500 - 1500
	Finishing	Continuous	Without	DX140	0.05 - 1	0.05 - 0.15	500 - 2500	400 - 800	500 - 1500
		Light interrupted	Without	DX140	0.05 - 1	0.05 - 0.15	300 - 1800	400 - 600	400 - 1200
		Heavy interrupted	AL	KS05F	0.5 - 5	0.1 - 0.5	100 - 600	100 - 200	-
	Medium cutting	Continuous	AL	KS05F	0.5 - 5	0.1 - 0.5	100 - 1200	100 - 300	100 - 300
		Light interrupted	AL	KS05F	0.5 - 5	0.1 - 0.5	100 - 900	100 - 200	100 - 200
		Heavy interrupted	AL	KS05F	0.5 - 5	0.1 - 0.5	100 - 600	100 - 200	-

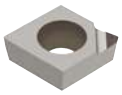
Selection System

SELECTION SYSTEM: POSITIVE TYPE

N Non-ferrous Metal





	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.5 mm]	Basic  With chipbreaker **DX110** B190 Wear → **T-DIA DX140** B191 -	Basic  With chipbreaker **DX110** B190 Wear → **T-DIA DX140** B191 -	
Finishing [a_p = 0.5 ~ 2 mm]	Basic  **T-DIA DX140** B191 - Wear → **T-DIA DX160** B191 Chip control → With chipbreaker T-DIA **DX110** B190	Basic  **T-DIA DX140** B191 - Fracture → **AL KS05F** B042 Wear → **T-DIA DX160** B191	Basic  **AL KS05F** B042
Medium cutting [a_p = 1 ~ 5 mm]	Basic  **AL KS05F** B042 Wear → With chipbreaker T-DIA **DX120** B190	Basic  **AL KS05F** B042 Wear → **T-DIA DX140** B191 -	Basic  **AL KS05F** B042

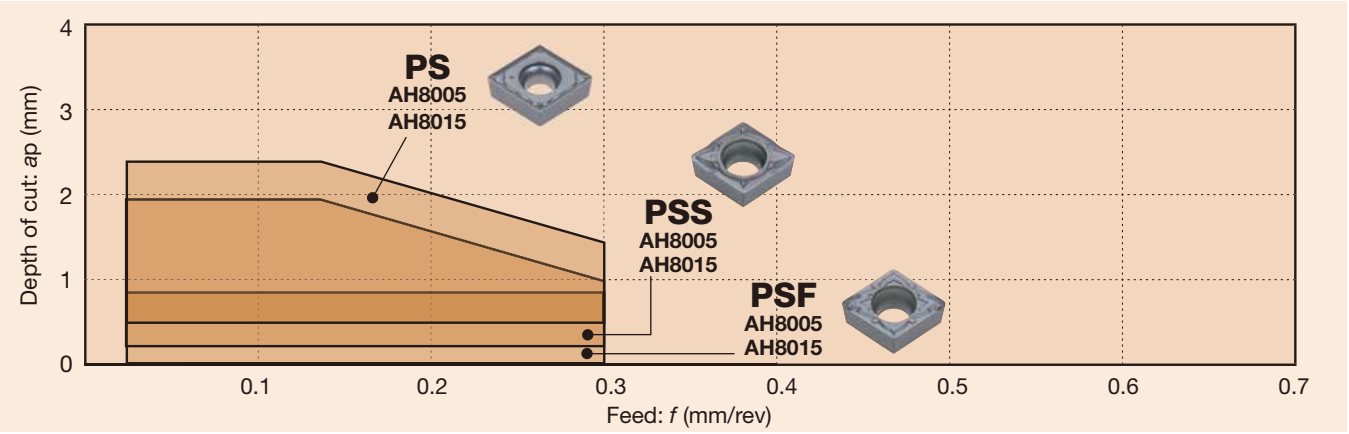
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

Chipbreaker Guide

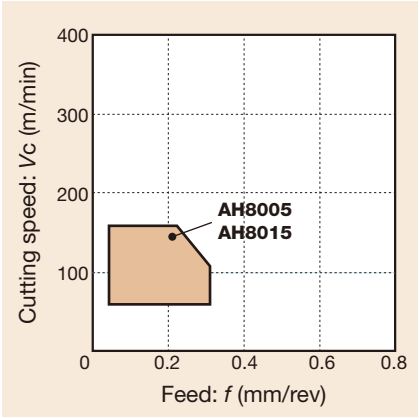
BASIC CHIPBREAKER: POSITIVE TYPE

S Superalloys and titanium

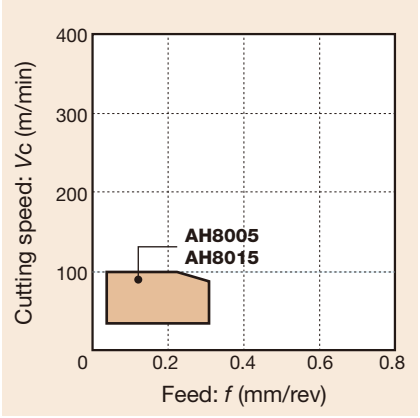
Chipbreaker System for Turning (Positive Type)

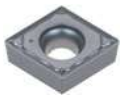


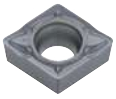
Titanium alloy



Ni-base alloy



Chipbreaker	Shape	Feature
PS		3D chipbreaker for finishing to medium cutting with excellent chip control and sharpness. M-class insert delivers cost reduction and highly efficient boring in a wide range of applications.

Chipbreaker	Shape	Feature
PSF		Low cutting force and high wear resistance. First choice for finishing. Excellent chip control in finishing prevents chip entanglement in internal machining.
PSS		3D chipbreaker for finishing to medium cutting with excellent chip control and low cutting force.

STANDARD CUTTING CONDITIONS

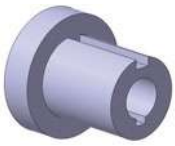
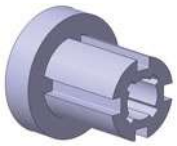
ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting speed: *Vc* (m/min)	
							Titanium alloy	Ni-base alloy
S	Finishing	Continuous	PSS	AH8015	0.3 - 2	0.02 - 0.3	20 - 150	20 - 100
		Light interrupted	PSS	AH8015	0.3 - 2	0.02 - 0.3	20 - 150	20 - 100
	Finishing to medium cutting	Continuous	PS	AH8015	0.5 - 2.5	0.02 - 0.3	20 - 150	20 - 100
		Light interrupted	PS	AH8015	0.5 - 2.5	0.02 - 0.3	20 - 150	20 - 100

Ni-base alloy: INCONEL718, etc.
Titanium alloy: Ti-6Al-4V, etc.

Selection System

SELECTION SYSTEM: POSITIVE TYPE

S Superalloys and titanium

	Continuous	Light interrupted	Heavy interrupted
Finishing [a_p = 0.3 ~ 2 mm]	Basic **PSS AH8015** B040, B045, B049 → Wear → **PSS AH8005** B042, B045, B049	Basic **PSS AH8015** B042, B046, B049 → Wear → **PSS AH8005** B040, B045, B049; → Fracture → **PS AH8015** B040, B045, B049	
Finishing to medium cutting [a_p = 0.5 ~ 2.5 mm]	Basic **PS AH8015** B040, B045, B049 → Wear → **PSS AH8005** B040, B045, B049	Basic **PS AH8015** B040, B045, B049 → Fracture → **All-round AH8015** B042, B047	Basic **PS AH8015** B040, B045, B049 → Fracture → **All-round AH8015** B042, B047

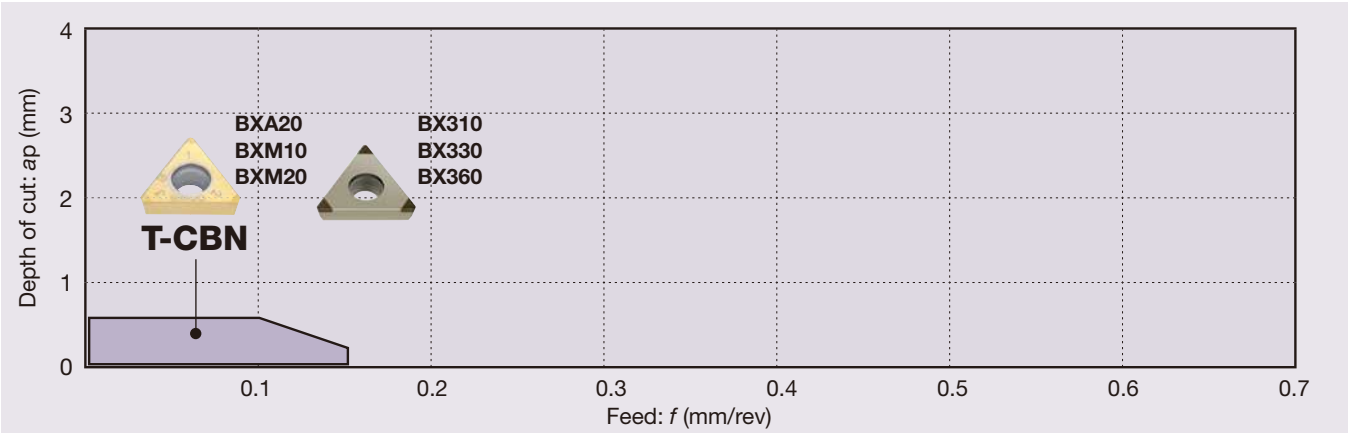
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

Chipbreaker Guide

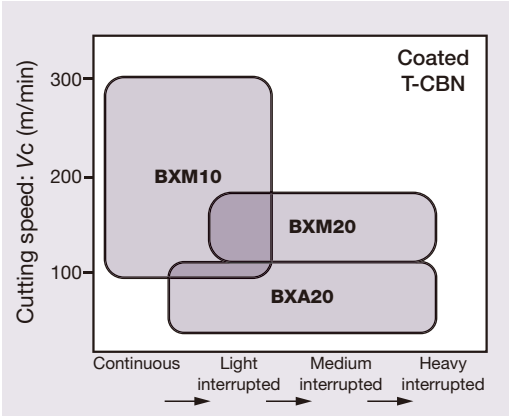
BASIC CHIPBREAKER: POSITIVE TYPE

H Hard Materials

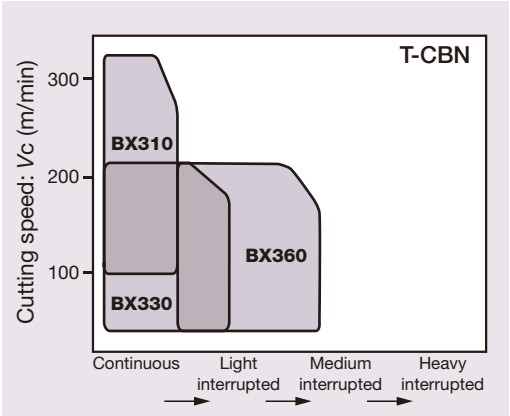
Chipbreaker System for Turning (Positive Type)



Coated T-CBN



T-CBN



Chipbreaker	Shape	Feature
No chip-breaker (T-CBN)		Excellent performance in high-speed finishing of hard material with CBN sintered body on the cutting edge.

Chipbreaker	Shape	Feature
HP (T-CBN)		Excellent chip control in precision finishing.

STANDARD CUTTING CONDITIONS

ISO	Operation	Work condition	Chipbreaker	Grade	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting speed *Vc* (m/min)
H	Precision finishing	Continuous	HP	BXM10	0.05 - 0.2	0.03 - 0.15	150 - 350
		Light interrupted	Without	BXM20 BXA20	0.05 - 0.2	0.03 - 0.15	70 - 220
	Finishing	Continuous to heavy interrupted	Without	BXM20 BXA20	0.07 - 0.5	0.05 - 0.3	70 - 220

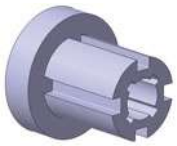
Hardened steels, Pre-hardened steels: SKD11, SKD61, etc. X153CrMoV12, X40CrMoV5-1, etc.

Selection System

SELECTION SYSTEM: POSITIVE TYPE

H Hard Materials

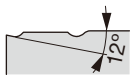
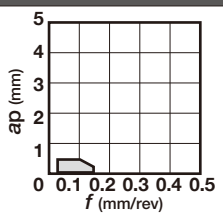
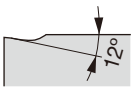
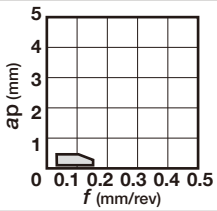
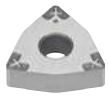
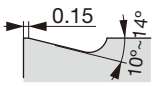
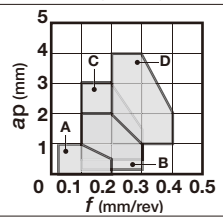
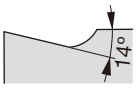
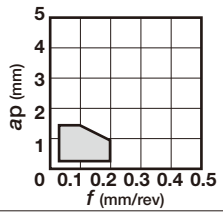
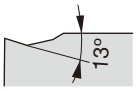
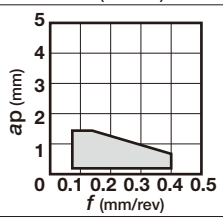
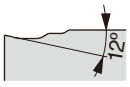
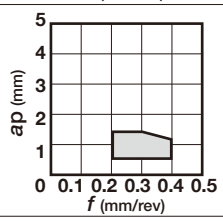
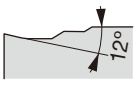
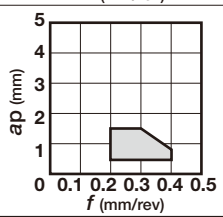




	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.3 mm]	Basic T-CBN HP BXM10 B180 -	Basic T-CBN BXM10 B180 - Fracture T-CBN BXA20 B180 -	
Finishing [a_p = ~ 0.5 mm]	Basic T-CBN BXM10 B180 -	Basic T-CBN BXM10 B180 - Fracture T-CBN BXA20 B180 -	Basic T-CBN BXM20 B180 - Fracture T-CBN BXA20 B180 -

Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

Chipbreaker Overview

Application	Negative type with hole	C 80°	D 55°	S 90°	T 60°	V 35°	W 80°	Y 25°
Precision finishing	TF  	 B054	 B065	 B075	 B084	 B094	 B099	
	01  	 B054	 B065	 B075	 B084	 B094	 B099	
	A~D  	 B054		 B075	 B084			
	W  				 B085			
Finishing	TSF  	 B054	 B065	 B075	 B085	 B095	 B100	
Finishing (wiper)	FW  	 B054	 B065		 B085		 B100	
	AFW  	B054					B100	

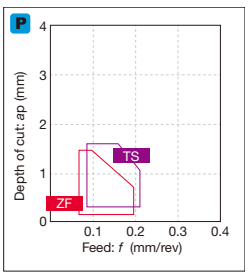
Chip control range

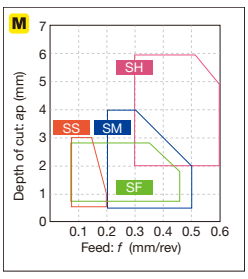
Please see the page B*** for the product details.

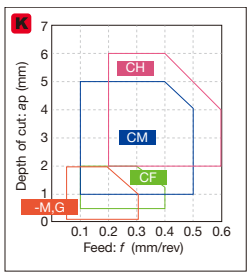
Chipbreaker Overview

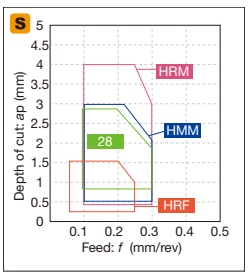
Application	Negative type with hole	C 80°	D 55°	S 90°	T 60°	V 35°	W 80°	Y 25°
Finishing	ZF	B055	B066		B085	B095	B100	B107
Finishing	11	B055	B066	B076	B086	B095	B100	
Finishing (for mild steel)	17	B055	B066	B076	B086		B100	
Finishing	SF	B055	B066	B076	B086	B095	B101	
Finishing	CF	B055	B066	B076	B086	B096	B101	
Finishing	HRF	B056	B066	B076	B086	B096	B101	
Finishing	TS	B056	B067	B076	B087	B096	B101	

Chip control range





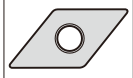
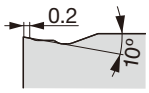
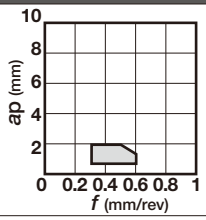
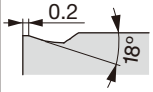
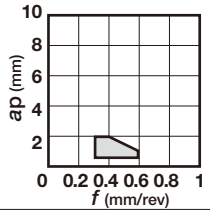
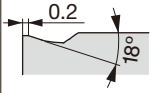
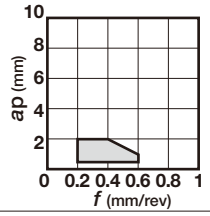
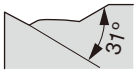
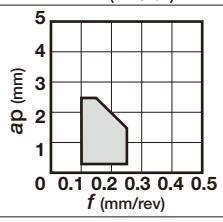
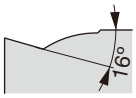
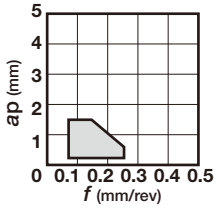
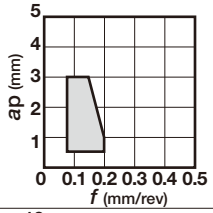




Please see the page B*** for the product details.

*-M,G: Without chipbreaker

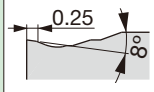
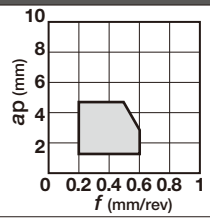
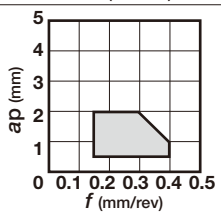
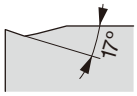
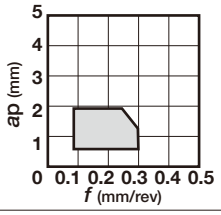
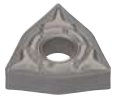
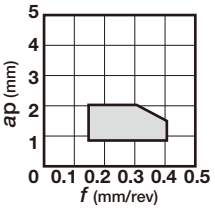
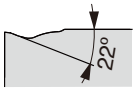
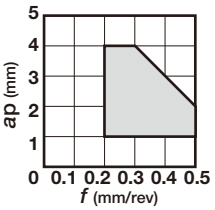
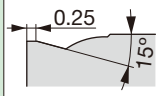
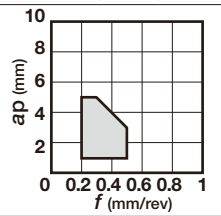
Chipbreaker Overview

Application	Negative type with hole	C	D	S	T	V	W	Y
								
		80°	55°	90°	60°	35°	80°	25°
Finishing to medium cutting (wiper)	**SW**  	 B056	 B067		 B087		 B102	
	ASW  	 B056					 B102	
High feed, small depth of cut	**AS**  	 B056	 B067	 B076	 B087		 B102	
Boring (double side)	**CB**  	 B056	 B067		 B087		 B102	
Finishing	**NS**  	 B056	 B067	 B077	 B087		 B102	
	SS  	 B057	B068	B077	B088	B096	B102	
Medium cutting	**TM**	B057	B068	B077	B088	B096	B103	

Chip control range

Please see the page B*** for the product details.

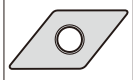
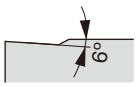
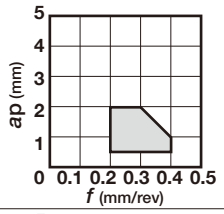
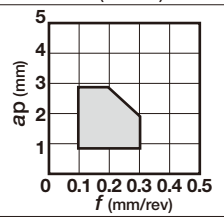
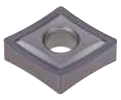
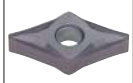
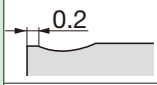
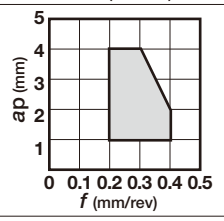
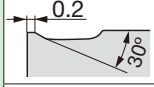
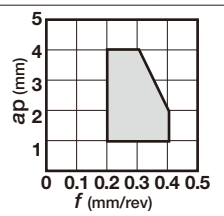
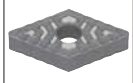
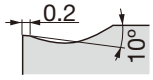
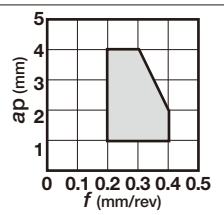
Chipbreaker Overview

Application	Negative type with hole	C 80°	D 55°	S 90°	T 60°	V 35°	W 80°	Y 25°
Finishing to medium cutting	**AM**  	 B057	 B068		 B088		 B103	
	NM  	 B057	 B068		 B088		 B103	
	TQ  	 B058	 B069		 B088	 B096	 B103	
	ZM  	 B058	 B069	 B077	 B088	 B097	 B104	 B107
Medium cutting	**TA**  	 B058		 B077	 B088		 B103	
	DM  	 B058	 B069	 B078	 B089	B097	B104	
	All-round	B058	B069	B078	B089	B097	B104	

Chip control range

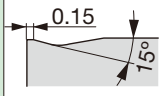
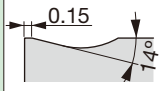
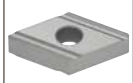
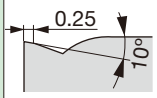
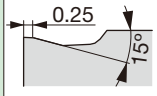
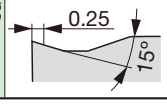
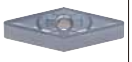
Please see the page B*** for the product details.

Chipbreaker Overview

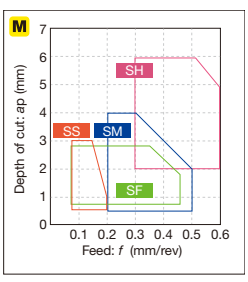
Application	Negative type with hole	C	D	S	T	V	W	Y
								
		80°	55°	90°	60°	35°	80°	25°
Finishing to medium cutting	**27**  	 B059	 B069	 B078	 B089		 B104	
Medium cutting	**28**  	 B059	 B070		 B090	 B097		
	33 0.2  	 B059	 B070	 B078	 B090	 B097	 B104	
	37 0.2 30°  	 B059	 B070	 B078	 B090		 B104	
	38 0.2 10°  	 B059	 B070		 B090			
	57 0.2 6°	B061	B072	B081	B092			
	65 0.3 10°	B062		B081				

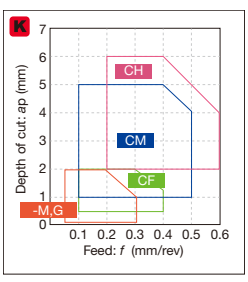
Please see the page B*** for the product details.

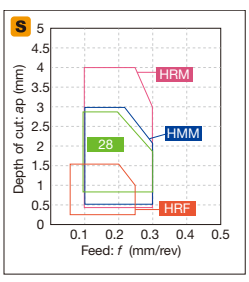
Chipbreaker Overview

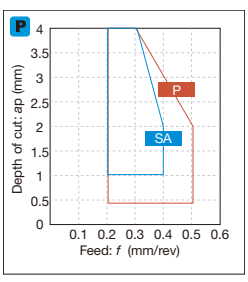
Application	Negative type with hole	C 80°	D 55°	R	S 90°	T 60°	V 35°	W 80°
Heavy cutting	**61** 			 B074				
Medium cutting	**Parallel** 		 B070					
	SM 	 B060	 B070		 B078	 B090	 B098	 B105
	CM 	 B060	 B070		 B079	 B090	 B098	 B105
	P 	 B060	 B071		 B079	 B091		
Finishing to medium cutting	**HRM** 	 B060	 B071		 B079	 B091	 B098	 B105

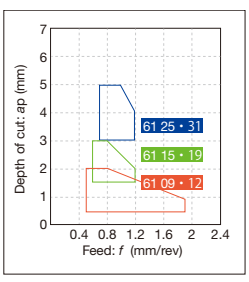
Chip control range





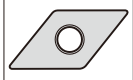
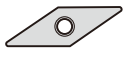
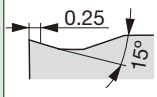
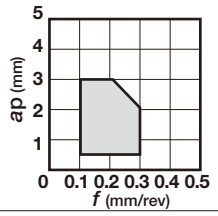
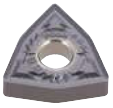
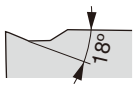
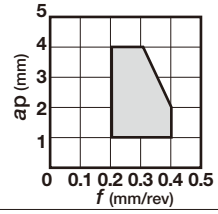
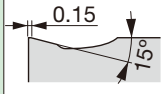
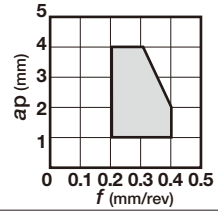
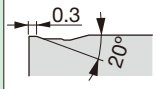
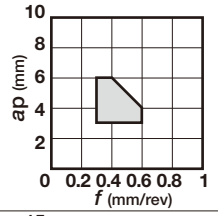
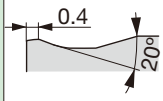
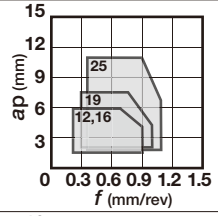
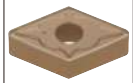






Please see the page B*** for the product details. *-M,G: Without chipbreaker

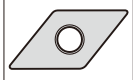
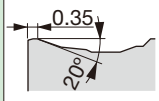
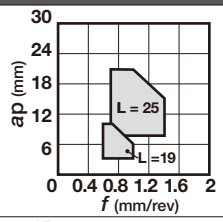
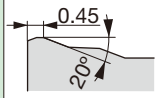
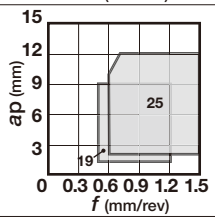
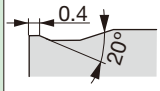
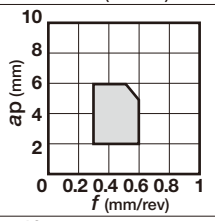
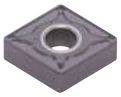
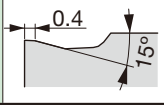
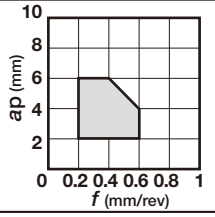
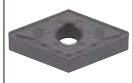
Chipbreaker Overview

Application	Negative type with hole	C	D	R	S	T	V	W
								
		80°	55°		90°	60°	35°	80°
Medium cutting	**HMM**  	 B060	 B071		 B079	 B091	 B098	 B105
Medium cutting	**SA**  	 B060	 B071		 B079	 B091		 B105
Medium cutting	**S**  	 B060	 B071		 B080	 B092		
Medium to heavy cutting	**TH**  	 B061	 B072		 B080	 B092		 B106
Medium to heavy cutting	**THS**  	 B061	 B072		 B080	B092		B106
Medium to heavy cutting (single side)	**TRS**	B062			B080			

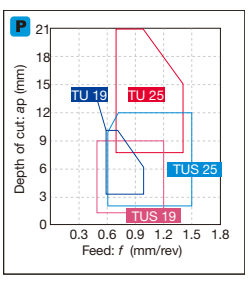
Chip control range

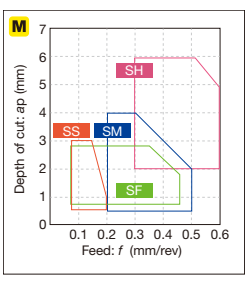
Please see the page B*** for the product details.

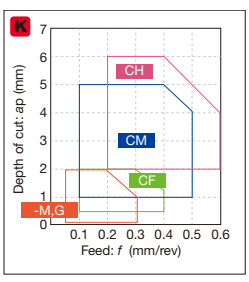
Chipbreaker Overview

Application	Negative type with hole	C	D	R	S	T	V	W
								
		80°	55°		90°	60°	35°	80°
Heavy cutting (single side)	**TU**  	 B062			 B080			
	TUS  	 B062			 B081			
Medium to heavy cutting	**SH**  	 B062	 B072		 B081			 B106
	CH  	 B062	 B072		 B081	 B092		 B106

Chip control range



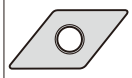
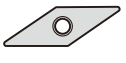
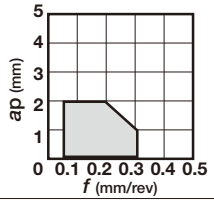
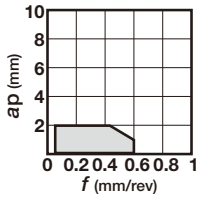


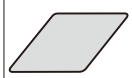
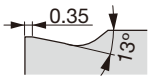
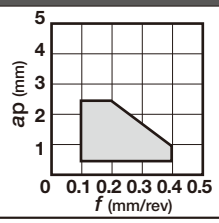


Please see the page B*** for the product details.

*-M,G: Without chipbreaker

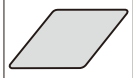
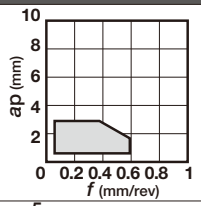
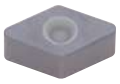
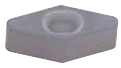
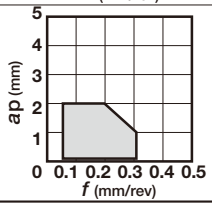
Chipbreaker Overview

Application	Negative type with hole	C	D	R	S	T	V	W
								
		80°	55°		90°	60°	35°	80°
Finishing to medium cutting	— M,G-class  	 B063	 B072	 B074	 B082	 B093	 B098	 B106
	Wiper M-class  	 B063						

Application	Negative type with hole	C	D	KNMX	LNGN	R	S	T
								
		80°	55°	55°	90°		90°	60°
Finishing	S1  			 B108				

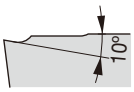
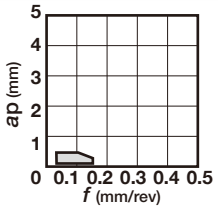
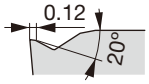
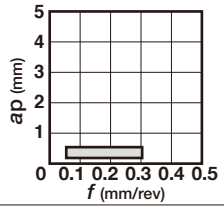
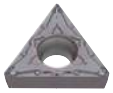
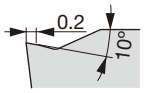
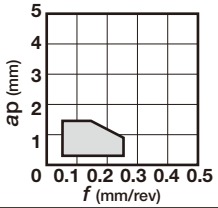
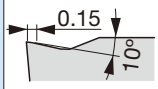
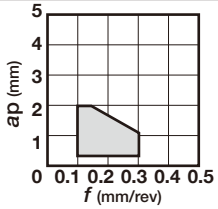
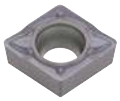
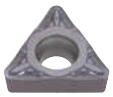
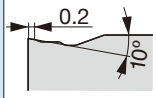
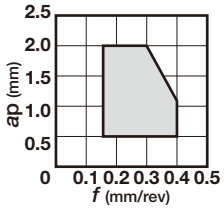
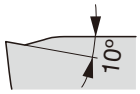
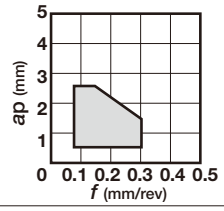
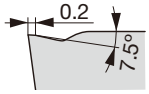
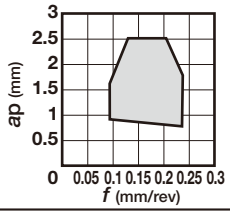
Please see the page B*** for the product details.

Chipbreaker Overview

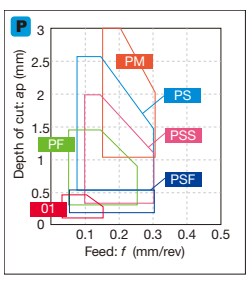
Application	Negative type without hole	C	D	H	R	S	T	V
								
		80°	55°	120°		90°	60°	35°
Finishing to medium cutting	— G-class  	 B064	 B073	 B108		 B082		 B099
	— M,G-class  	 B064	 B073		 B074	 B082	 B094	

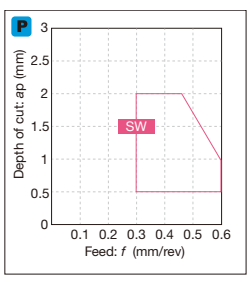
Please see the page B*** for the product details.

Chipbreaker Overview

Application	Positive 7° with hole	C	D	R	S	T	V	Y
		80°	55°		90°	60°	35°	25°
Precision finishing	01  	 B109	 B119			 B137		
Finishing	PSF  	 B109	 B119			 B137	 B153	
	PF  	 B109	 B119				 B153	
Finishing to light cutting	PSS  	 B110	 B120			 B137	 B153	
Med ium cutting (wiper)	SW  	 B110						
Finishing to medium cutting	PS  	 B110	 B120		 B133	 B138	 B153	
	TSF  	 B110	 B120			 B138	 B153	

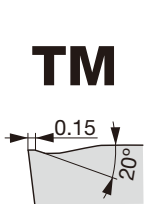
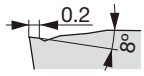
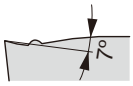
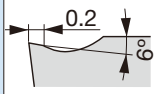
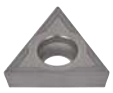
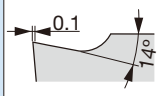
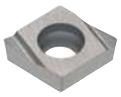
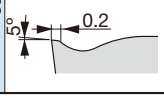
Chip control range



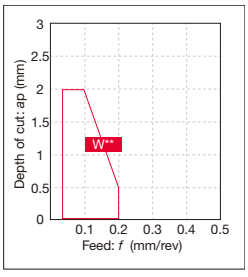


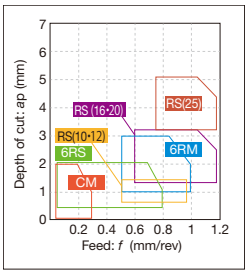
Please see the page B*** for the product details.

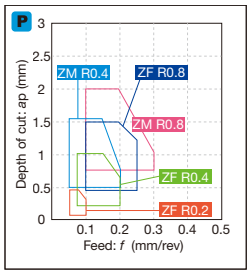
Chipbreaker Overview

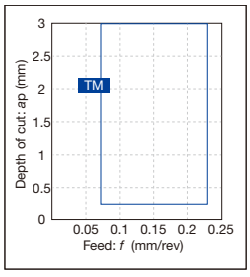
Application	Positive 7° with hole	C	D	R	S	T	V	Y
		80°	55°		90°	60°	35°	25°
Finishing to medium cutting	**TM** 	 B110	 B120			 B138	 B153	
	ZF 							 B160
	ZM 							 B160
	23 	 B111	 B120		 B133	 B138		
Medium cutting	**24** 	 B111	 B120		 B133	 B138	 B154	
Finishing	**W**** 	 B111, B112	 B121			 B138		
Finishing to medium cutting	**RS** 			 B129				

Chip control range



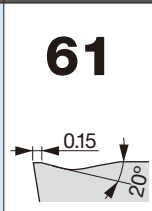
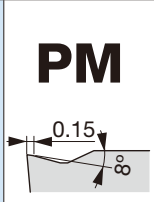
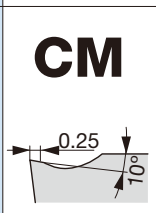
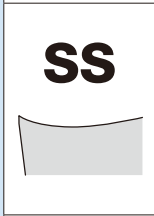
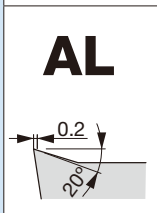
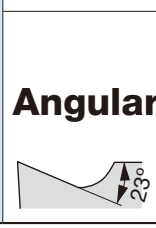




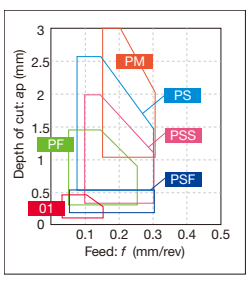


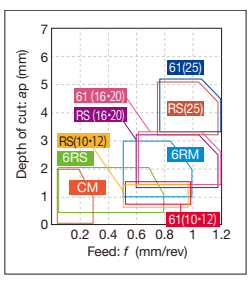
Please see the page B*** for the product details.

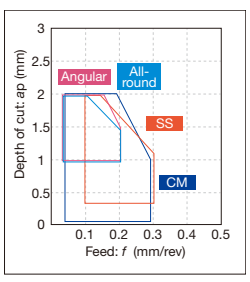
Chipbreaker Overview

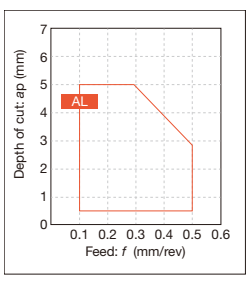
Application	Positive 7° with hole	C	D	R	S	T	V	Y
		80°	55°		90°	60°	35°	25°
Heavy cutting	**61** 			B130				
Medium cutting	**PM** 	B112	B121		B133	B139		
Finishing to medium cutting	**CM** 	B112	B121	B129	B133	B139	B154	
	SS 					B139		
	AL 	B113	B122	B129		B139	B154	
	All-round 	B113	B122				B154	
	Angular 	B113	B122					

Chip control range



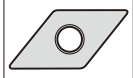
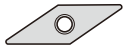
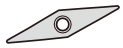
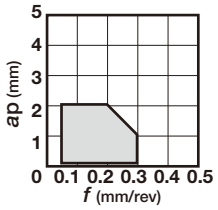
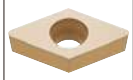
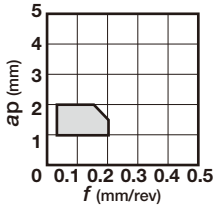
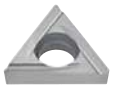
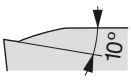
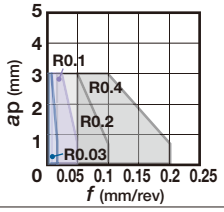
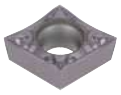
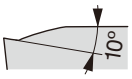
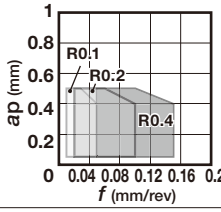
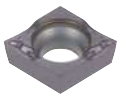
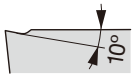
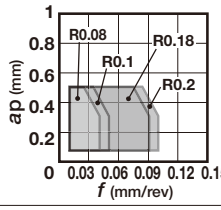
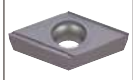
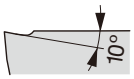
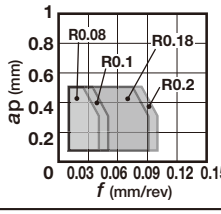
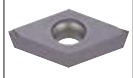




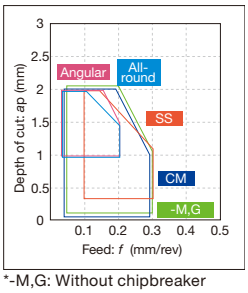


Please see the page B*** for the product details.

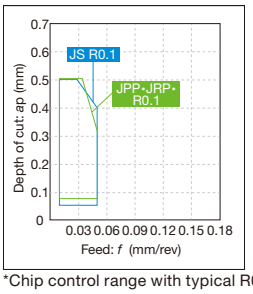
Chipbreaker Overview

Application	Positive 7° with hole	C	D	R	S	T	V	Y
								
		80°	55°		90°	60°	35°	25°
Finishing to medium cutting	— M,G-class  	 B113	 B122					
Finishing	— (with hand)  					 B140		
For external turning on Swiss lathes (including sharp edge type)	JS  	 B114	 B123			 B140		
	JS  	 B114						
For external turning on Swiss lathes (sharp edge)	JPP  		 B123					
	JRP  		 B124					

Chip control range



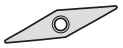
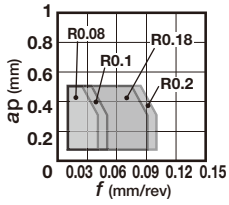
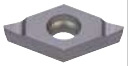
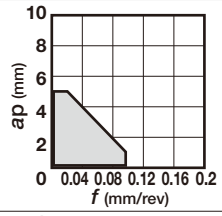
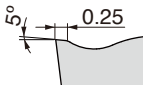
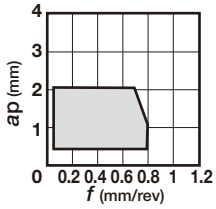
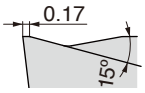
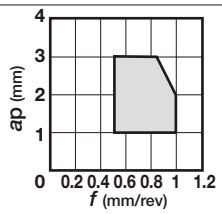
*-M,G: Without chipbreaker



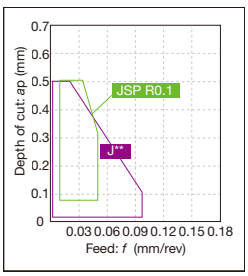
*Chip control range with typical R0.1

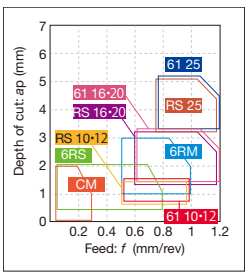
Please see the page B*** for the product details.

Chipbreaker Overview

Application	Positive 7° with hole	C	D	R	S	T	V	Y
								
		80°	55°		90°	60°	35°	25°
For external turning on Swiss lathes (sharp edge)	**JSP**  		 B124					
	J**  	 B115	 B124			 B140, B141		
Low cutting force	**6RS**  			 B129				
Medium cutting	**6RM**  			 B129				

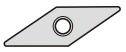
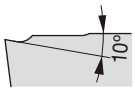
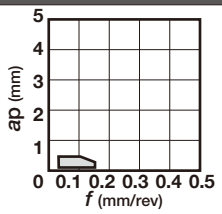
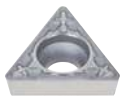
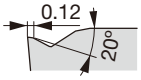
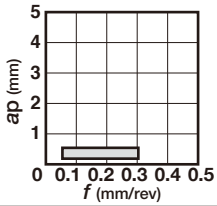
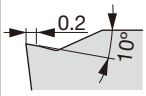
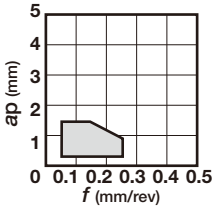
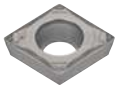
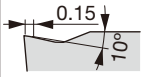
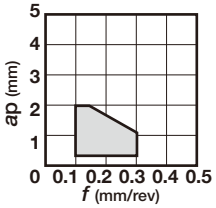
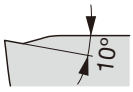
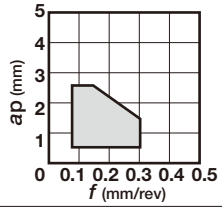
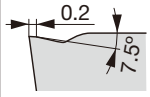
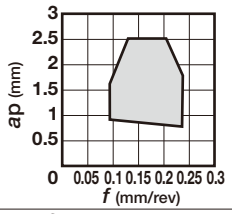
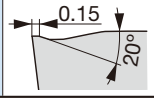
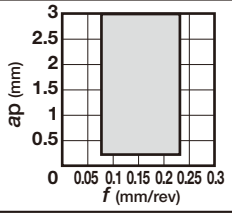
Chip control range



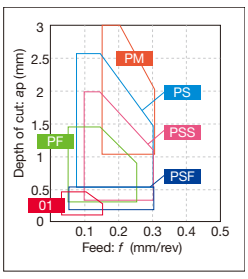


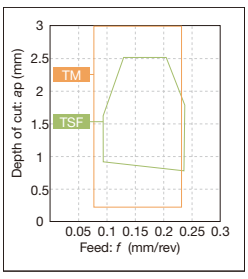
Please see the page B*** for the product details.

Chipbreaker Overview

Application	Positive 11° with hole	C	E	S	T	V
						
		80°	75°	90°	60°	35°
Precision finishing	**01**  				 B142	
Finishing	**PSF**  	 B116			 B142	
	PF  	 B116			 B142	
Finishing to light cutting	**PSS**  	 B116			 B143	
Finishing to medium cutting	**PS**  	 B116		 B134	 B143	
	TSF  	 B116			 B143	
	TM  	 B116			 B144	

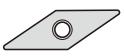
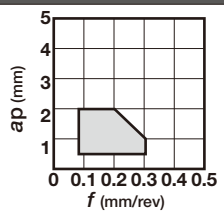
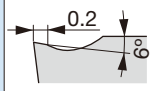
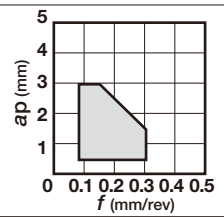
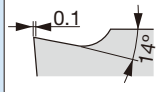
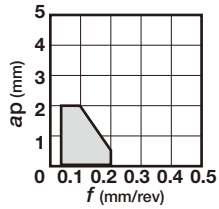
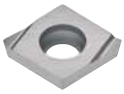
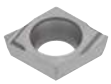
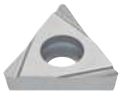
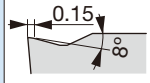
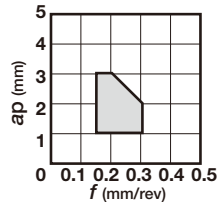
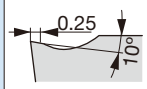
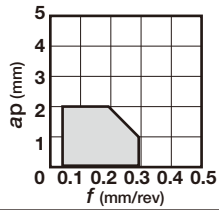
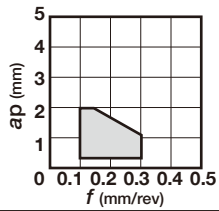
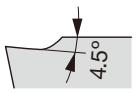
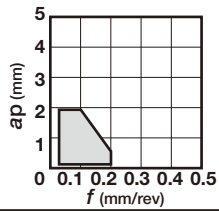
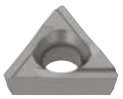
Chip control range



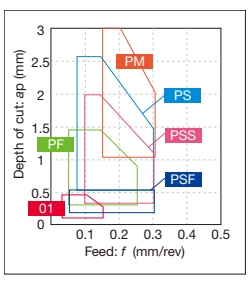


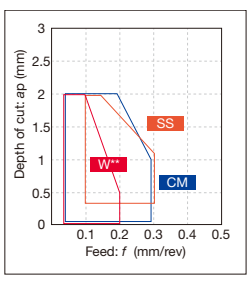
Please see the page B*** for the product details.

Chipbreaker Overview

Application	Positive 11° with hole	C	E	S	T	V
						
		80°	75°	90°	60°	35°
Finishing to medium cutting	**23**  			 B134	 B144	
Medium cutting	**24**  	 B117		 B134	 B144	
Finishing	**W****  	 B117	 B127	 B134	 B144, B145	
Medium cutting	**PM**  	 B118			 B146	
Finishing to medium cutting	**CM**  	 B118		 B135	 B146	
	SS  				 B146	
	H**  				 B146	

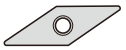
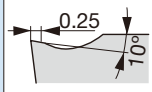
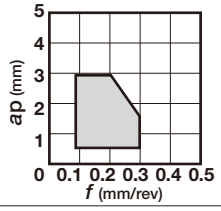
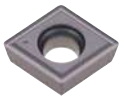
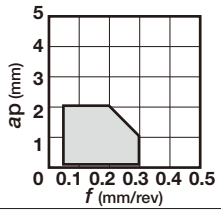
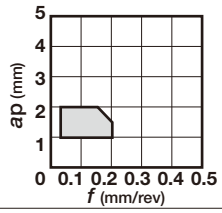
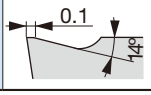
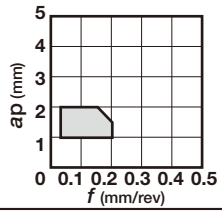
Chip control range



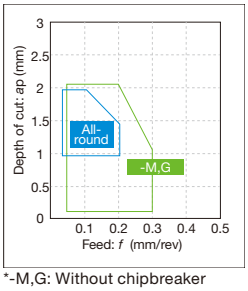


Please see the page B*** for the product details.

Chipbreaker Overview

Application	Positive 11° with hole	C	E	S	T	V
						
		80°	75°	90°	60°	35°
Medium cutting	**All-round**  	 B118				
Finishing to medium cutting	— **M,G-class**  	 B118		 B135	 B147, B148	
Finishing to medium cutting	— (with hand)  			 (Tungaloy standard hole specification) ISO non-compliant B135		
Finishing to medium cutting	— (with hand)  				 (Tungaloy standard hole specification) ISO non-compliant B147	

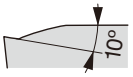
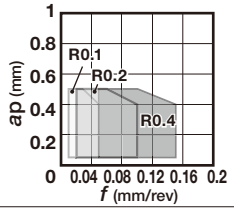
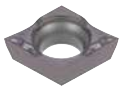
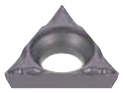
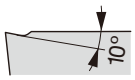
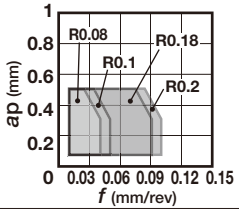
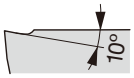
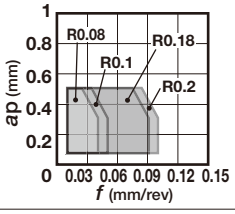
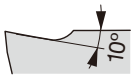
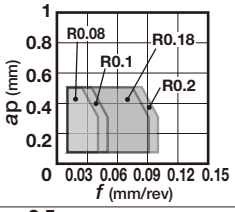
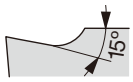
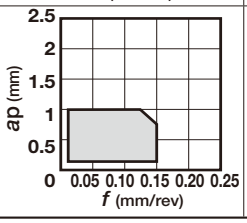
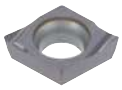
Chip control range

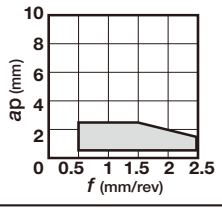


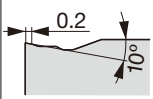
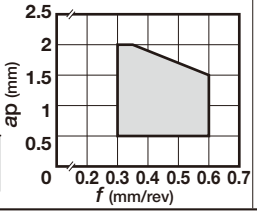
*-M,G: Without chipbreaker

Please see the page B*** for the product details.

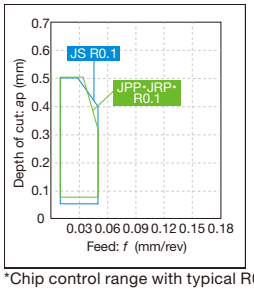
Chipbreaker Overview

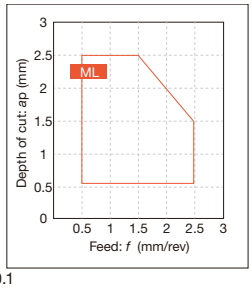
Application	Positive 11° with hole	C	E	S	T	V
		80°	75°	90°	60°	35°
For internal turning on Swiss lathes	**JS**  		 B128		 B148	
For external turning on Swiss lathes (sharp edge)	**JPP**  					 B155
	JRP  					 B155
	JSP  					 B156
Finishing	**J08**  		 B128			

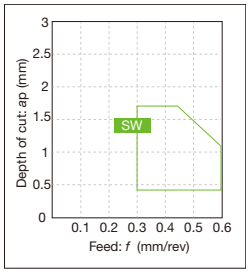
Application	Positive 11° with hole	W
		80°
Heavy cutting	**ML**  	 B156

Application	Positive 7° with hole	C
		80°
Medium cutting (wiper)	**SW**  	 B110

Chip control range







*Chip control range with typical R0.1

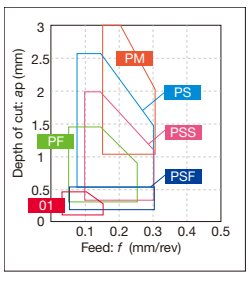
Please see the page B*** for the product details.

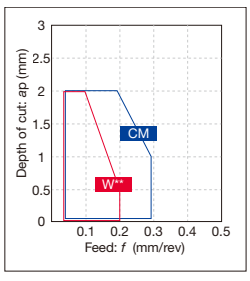
Chipbreaker Overview

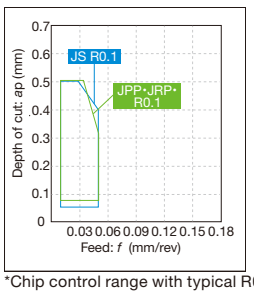
Application	Positive 5° with hole	V 35°	W 80°
Finishing	PSF		B150
	PF		B151
Finishing to light cutting	PSS		B151
Finishing to medium cutting	PS		B151
	TSF		B151
	TM		B151
Finishing	W08		B158

Application	Positive 5° with hole	V 35°	W 80°
Finishing	W11		B158
Medium cutting	24	B152	
Finishing to medium cutting	CM	B152	
For external turning on Swiss lathes (sharp edge)	JS	B152	
For internal turning on Swiss lathes	JS		B158
For external turning on Swiss lathes (sharp edge)	J10	B152	
For external turning on Swiss lathes (honed edge)	J10	B152	

Chip control range



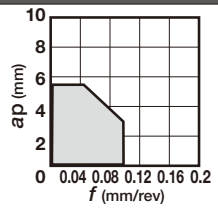


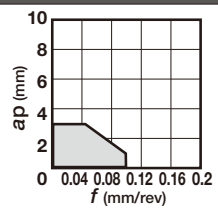


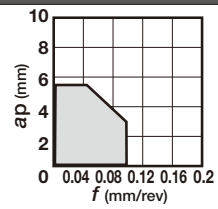
*Chip control range with typical R0.1

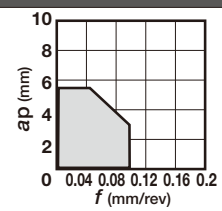
Please see the page B*** for the product details.

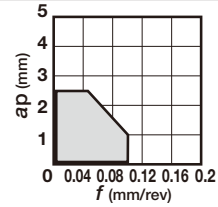
Chipbreaker Overview

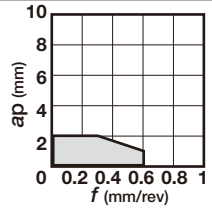
Application	Positive type with hole	JXF
Front turning	— 	 B160

Application	Positive type with hole	J10E
Back turning	— 	 B162, B163

Application	Positive type with hole	JXB
Back turning	— 	 B161

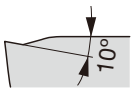
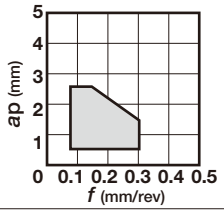
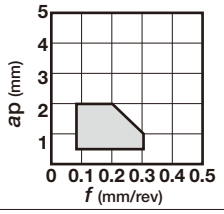
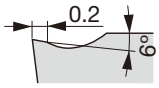
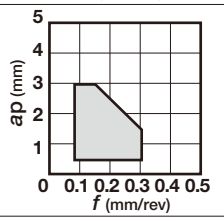
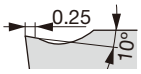
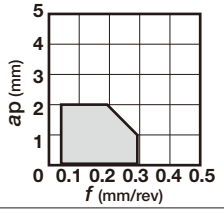
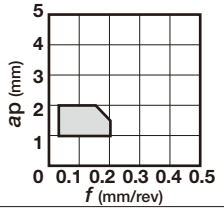
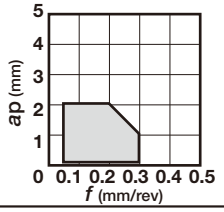
Application	Positive type with hole	JXR
Reverse turning	— 	 B161

Application	Positive type with hole	JTB
Back turning	— 	 B162

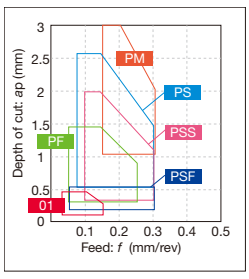
Application	Round	RT
Medium cutting	— 	 Special round insert B130

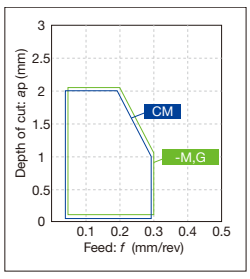
Please see the page B*** for the product details.

Chipbreaker Overview

Application	Positive 11° without hole	R	S	T
			90°	60°
Finishing to medium cutting	**PS**  			 B149
	23  		 B136	 B149
Medium cutting	**24**  			 B149
Finishing to medium cutting	**CM**  		 B136	 B149
	— (with hand)  		 B136	 B150
	— M,G-class  		 B136	 B150

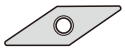
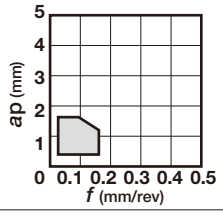
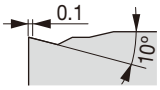
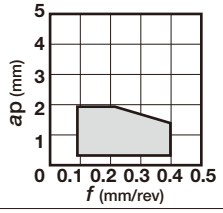
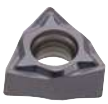
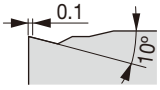
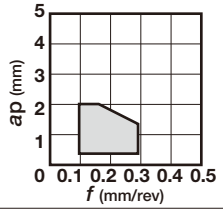
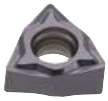
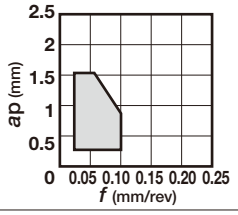
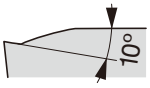
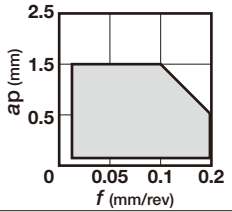
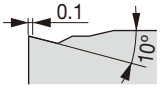
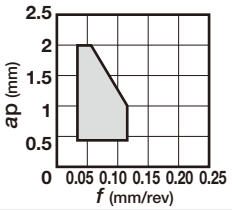
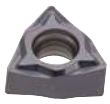
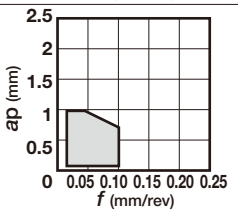
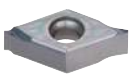
Chip control range



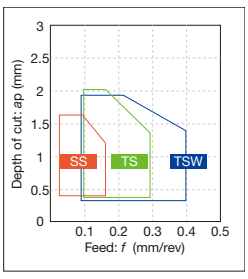


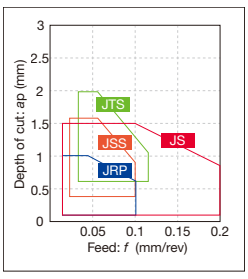
Please see the page B*** for the product details. *-M,G: Without chipbreaker

Chipbreaker Overview

Application	Double-sided positive type with hole	D	V	W
				
		55°	35°	80°
Finishing (low cutting force)	**SS**  	 B126		 B159
Finishing (wiper)	**TSW**  			 B159
Finishing to medium cutting	**TS**  	 B126		 B159
Finishing (low cutting force) (sharp edge)	**JSS**  	 B126		 B159
Finishing to medium cutting (sharp edge)	**JS**  	 B125	 B156	 B158
Finishing to medium cutting (sharp edge)	**JTS**  	 B126		 B158
Finishing (sharp edge)	**JRP**  	 B125	 B156	

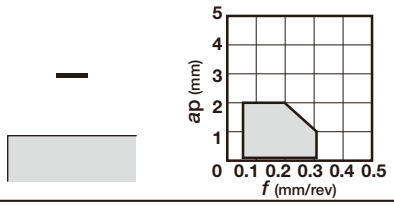
Chip control range





Please see the page B*** for the product details.

Chipbreaker Overview

Application	Positive 7° without hole	RCGX
		Special round insert
Medium cutting		 B131

Please see the page B*** for the product details.

Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN



Rhombic, 80° with hole

		Coated										Coated cermet		Cermet		Uncoated		Dimension (mm)			
Application	Chipbreaker	Designation	T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	AH120	GH110	GT9530	AT9530	NS9530	NS520	TH10		RE	IC	S	D1
Precision finishing	TF	CNMG120404-TF													●		●		0.4	12.7	4.76	5.16
		CNMG120408-TF													●				0.8	12.7	4.76	5.16
	01	CNGG090302-01													●				0.2	9.525	3.18	3.81
		CNGG090304-01													●				0.4	9.525	3.18	3.81
		CNGG090308-01													●				0.8	9.525	3.18	3.81
		CNGG120402-01													●	●	●		0.2	12.7	4.76	5.16
		CNGG120404-01													●	●	●		0.4	12.7	4.76	5.16
		CNGG120408-01													●	●	●		0.8	12.7	4.76	5.16
	C	CNGG120404R-C										●			●				0.4	12.7	4.76	5.16
		CNGG120404L-C													●				0.4	12.7	4.76	5.16
		CNGG120408R-C													●				0.8	12.7	4.76	5.16
		CNGG120408L-C													●				0.8	12.7	4.76	5.16
Finishing	TSF	CNMG090404E-TSF		●	●			▲	▲				●	●	●				0.4	9.525	4.76	3.81
		CNMG090408E-TSF		●	●			▲	▲				●	●	●				0.8	9.525	4.76	3.81
		CNMG120404-TSF	●	●	●		▲	▲	▲		●		●	●	●				0.4	12.7	4.76	5.16
		CNMG120408-TSF	●	●	●	●	▲	▲	▲	▲	●		●	●	●				0.8	12.7	4.76	5.16
		CNMG120412-TSF		●	●			▲	▲		●								1.2	12.7	4.76	5.16
Finishing (wiper)	FW	CNMG090404E-FW	●	●	●		▲	▲	▲				●		●				0.4	9.525	4.76	3.81
		CNMG090408E-FW	●	●	●		▲	▲	▲				●		●				0.8	9.525	4.76	3.81
		CNMG120404-FW		●				▲					●		●				0.4	12.7	4.76	5.16
		CNMG120408-FW	●	●	●		▲	▲	▲				●		●				0.8	12.7	4.76	5.16
		*Wiper																				
	AFW	CNMG120404-AFW		●	●			▲	▲				●		●				0.4	12.7	4.76	5.16
		CNMG120408-AFW	●	●	●	●	▲	▲	▲	▲			●						0.8	12.7	4.76	5.16

* Please see **L032-L036** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact our sales representatives if you have any question.

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C014 - | Internal toolholder → D019 -
J-Series toolholder → G044 | TungCap → K008 -
PINZBOHR® → K180 - | Cartridge → K199 -

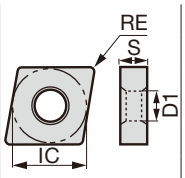
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

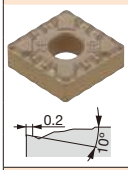
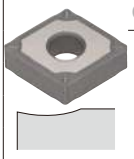
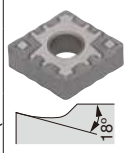
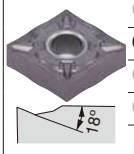
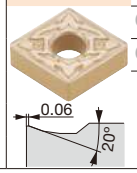
CN



Rhombic, 80° with hole

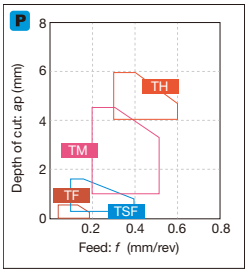
P	Steel	● ◐ ◐ ✣ ◐ ◐ ✣ ◐ ✣ ◐ ✣
M	Stainless	◐ ● ◐ ◐
K	Cast iron	◐ ◐ ◐ ● ◐ ◐ ◐ ◐ ◐ ●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	

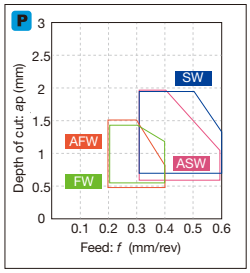


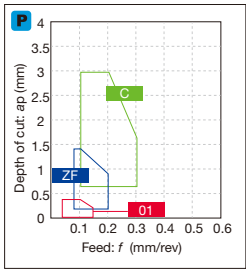
Application	Chipbreaker	Designation	Coated											Coated cermet			Cermet	Uncoated	Dimension (mm)			
			T9205	T9215	T9225	T9235	T9115	T9125	T9135	T6120	T6130	AH630	T5105	T5115	GT9530	AT9530	GT720	NS9530	TH10	RE	IC	S	D1
Finishing	ZF	CNMG090404E-ZF		●	●		▲	▲												0.4	9.525	4.76	3.81
		CNMG120404-ZF		●	●		▲	▲							●	●		●		0.4	12.7	4.76	5.16
		CNMG120408-ZF		●	●	●	▲	▲	▲						●	●		●		0.8	12.7	4.76	5.16
		11	CNMG120404-11												●			●	●	0.4	12.7	4.76	5.16
		CNMG120408-11													●		●	●	●	0.8	12.7	4.76	5.16
Finishing (for mild steel)	17	CNMG120404-17																●		0.4	12.7	4.76	5.16
		CNMG120408-17																●		0.8	12.7	4.76	5.16
Finishing	SF	CNMG090304-SF								●	●	●								0.4	9.525	3.18	3.81
		CNMG090308-SF								●	●	●								0.8	9.525	3.18	3.81
		CNMG120404-SF								●	●	●								0.4	12.7	4.76	5.16
		CNMG120408-SF								●	●	●								0.8	12.7	4.76	5.16
		CNMG120412-SF								●	●	●								1.2	12.7	4.76	5.16
	CF	CNMG120404-CF											●	●						0.4	12.7	4.76	5.16
		CNMG120408-CF											●	●						0.8	12.7	4.76	5.16
		CNMG120412-CF											●	●						1.2	12.7	4.76	5.16

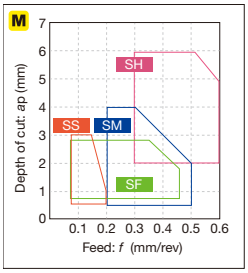
● : Line up
▲ : To be discontinued

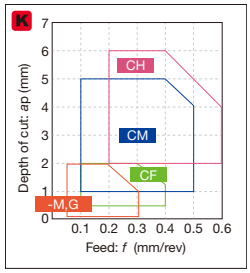
Chip control range











*-M,G: Without chipbreaker

Reference pages: External toolholder → C014 -
J-Series toolholder → G044
PINZBOHR® → K180 -
Internal toolholder → D019 -
TungCap → K008 -
Cartridge → K199 -

Insert NEGATIVE TYPE

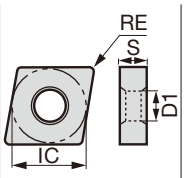
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN



Rhombic, 80° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6130	T515	T5115	AH8005	AH8015	GT9530	AT9530	NS9530	NS520
P	Steel	●	●ɔ	●ɔ✣	✣	●	●ɔ	●ɔ✣	✣	✣					●ɔ	●ɔ		●ɔ	●ɔ
M	Stainless		●ɔ							ɔ			●	ɔ				●ɔ	●ɔ
K	Cast iron	●ɔ	●ɔ			●ɔ	●ɔ				●ɔ	ɔ			●ɔ	●ɔ		●ɔ	●ɔ
N	Non-ferrous																		
S	Superalloy												●	ɔ					
H	Hard material																		



Application	Chipbreaker	Designation	RE	IC	S	D1
Finishing	HRF	CNMG120404-HRF	0.4	12.7	4.76	5.16
		CNMG120408-HRF	0.8	12.7	4.76	5.16
		CNMG120412-HRF	1.2	12.7	4.76	5.16
	TS	CNMG120404-TS	0.4	12.7	4.76	5.16
		CNMG120408-TS	0.8	12.7	4.76	5.16
		CNMG120412-TS	1.2	12.7	4.76	5.16
Finishing to medium cutting (wiper)	SW	CNMG090408E-SW	0.8	9.525	4.76	3.81
		CNMG090412E-SW	1.2	9.525	4.76	3.81
		CNMG120408-SW	0.8	12.7	4.76	5.16
		CNMG120412-SW	1.2	12.7	4.76	5.16
		*Wiper				
	ASW	CNMG120408-ASW	0.8	12.7	4.76	5.16
		CNMG120412-ASW	1.2	12.7	4.76	5.16
High feed, small depth of cut	AS	CNMG120404-AS	0.4	12.7	4.76	5.16
		CNMG120408-AS	0.8	12.7	4.76	5.16
		CNMG120412-AS	1.2	12.7	4.76	5.16
Boring (double side)	CB	CNMG090304-CB	0.4	9.525	3.18	3.81
		CNMG090308-CB	0.8	9.525	3.18	3.81
Finishing	NS	CNMG120404-NS	0.4	12.7	4.76	5.16
		CNMG120408-NS	0.8	12.7	4.76	5.16

* Please see **L032-L036** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact our sales representatives if you have any question.

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C014 - | Internal toolholder → D019 -
J-Series toolholder → G044 | TungCap → K008 -
PINZBOHR® → K180 - | Cartridge → K199 -

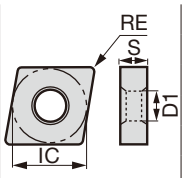
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN



Rhombic, 80° with hole

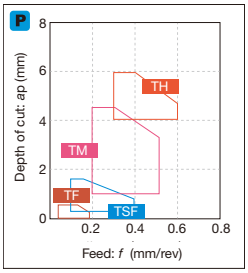
P	Steel	● ●ɔ ɔ✣ ✣ ● ●ɔ ɔ✣ ✣ ɔ ✣ ɔ✣ ✣ ● ●ɔ ɔ ●ɔ ●ɔ
M	Stainless	●ɔ ● ɔ ✣ ●ɔ ɔ ɔ ✣ ● ●ɔ ɔ ●ɔ
K	Cast iron	●ɔ ●ɔ ●ɔ ●ɔ ●ɔ ●ɔ ●ɔ ●ɔ
N	Non-ferrous	
S	Superalloy	● ●ɔ ● ɔ
H	Hard material	

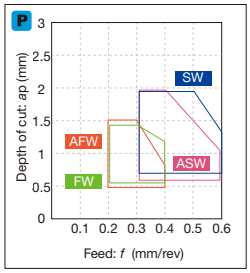


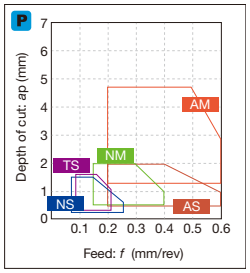
Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	T515	AH110	AH120	AH725	AH8015	GH330	Cermet NS9530	RE	IC	S	D1
Finishing	SS	CNMG090404E-SS											●	●								0.4	9.525	4.76	3.81
		CNMG090408E-SS											●	●								0.8	9.525	4.76	3.81
		CNMG120404-SS									●	●	●	●			●			●		0.4	12.7	4.76	5.16
		CNMG120408-SS									●	●	●	●			●			●		0.8	12.7	4.76	5.16
		CNMG120412-SS									●	●	●	●						●		1.2	12.7	4.76	5.16
Medium cutting	TM	CNMG090304-TM		●	●			▲	▲													0.4	9.525	3.18	3.81
		CNMG090308-TM		●	●	●		▲	▲	▲												0.8	9.525	3.18	3.81
		CNMG090404E-TM		●	●			▲	▲		●	●	●		●		●		●			0.4	9.525	4.76	3.81
		CNMG090408E-TM		●	●			▲	▲		●	●	●		●		●		●			0.8	9.525	4.76	3.81
		CNMG090412E-TM		●	●			▲	▲		●	●	●		●		●		●			1.2	9.525	4.76	3.81
		CNMG120404-TM	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●		●		●			0.4	12.7	4.76	5.16
		CNMG120408-TM	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●		●	●	●			0.8	12.7	4.76	5.16
		CNMG120412-TM	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●	●		●			1.2	12.7	4.76	5.16
		CNMG120416-TM		●	●	●		▲	▲	▲	●	●	●	●	●		●		●			1.6	12.7	4.76	5.16
		CNMG160612-TM	●	●	●	●	▲	▲	▲	▲							●					1.2	15.875	6.35	6.35
		CNMG190608-TM	●	●	●	●	▲	▲	▲	▲							●					0.8	19.05	6.35	7.93
		CNMG190612-TM	●	●	●	●	▲	▲	▲	▲							●					1.2	19.05	6.35	7.93
Finishing to medium cutting	AM	CNMG120408-AM		●	●			▲	▲													0.8	12.7	4.76	5.16
		CNMG120412-AM		●	●			▲	▲													1.2	12.7	4.76	5.16
		CNMG120416-AM		●	●			▲	▲													1.6	12.7	4.76	5.16
	NM	CNMG120408-NM	●	●	●	●	▲	▲	▲	▲											●	0.8	12.7	4.76	5.16
		CNMG120412-NM		●	●	●		▲	▲	▲												1.2	12.7	4.76	5.16

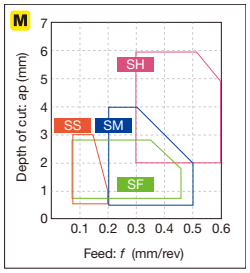
● : Line up
▲ : To be discontinued

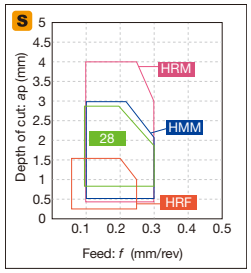
Chip control range











Reference pages: External toolholder → C014 - | Internal toolholder → D019 -
J-Series toolholder → G044 | TungCap → K008 -
PINZBOHR® → K180 - | Cartridge → K199 -

Insert NEGATIVE TYPE

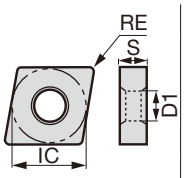
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

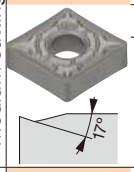
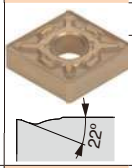
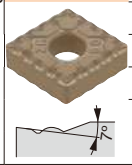
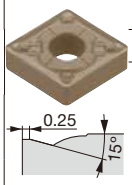
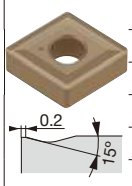
CN



Rhombic, 80° with hole

P	Steel	●	●ɔ	●✣	✣	●	●ɔ	●✣	✣					●	●ɔ		●ɔ	●ɔ	●ɔ		●ɔ	●ɔ			●				
M	Stainless		●ɔ											●	●ɔ										●				
K	Cast iron	●ɔ	●ɔ			●ɔ	●ɔ			●ɔ	●	ɔ	✣	●	●ɔ		●ɔ	●ɔ	●ɔ		●ɔ	●ɔ			●				
N	Non-ferrous																								●				
S	Superalloy													●	●ɔ														
H	Hard material																												



Application	Chipbreaker	Designation	Coated													Coated cermet			Cermet		Un-coated	Dimension (mm)			
			T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	T5105	T5115	T5125	AH110	AH120	GT9530	AT9530	GT720	NS9530	NS520	TH10	RE	IC	S	D1
Finishing to medium cutting	**TQ**	**CNMG120404-TQ**		●	●												●	●		●			0.4	12.7	4.76	5.16
		CNMG120408-TQ		●	●												●	●		●			0.8	12.7	4.76	5.16
Medium cutting	**TA**	**CNMG120408-TA**		●	●																		0.8	12.7	4.76	5.16
		CNMG120412-TA		●	●																		1.2	12.7	4.76	5.16
Finishing to medium cutting	**ZM**	**CNMG090408E-ZM**		●	●			▲	▲														0.8	9.525	4.76	3.81
		**CNMG120408-ZM**		●	●	●		▲	▲	▲							●			●			0.8	12.7	4.76	5.16
		CNMG120412-ZM		●	●	●		▲	▲	▲							●						1.2	12.7	4.76	5.16
		CNMG120416-ZM		●	●			▲	▲														1.6	12.7	4.76	5.16
Medium cutting	**DM**	**CNMG120404-DM**		●	●			▲	▲														0.4	12.7	4.76	5.16
		CNMG120408-DM	●	●	●	●	▲	▲	▲	▲													0.8	12.7	4.76	5.16
		CNMG120412-DM	●	●	●	●	▲	▲	▲	▲													1.2	12.7	4.76	5.16
	All-round	**CNMG090304**		●	●			▲	▲											●			0.4	9.525	3.18	3.81
		CNMG090308	●	●	●	●	▲	▲	▲	▲									●	●			0.8	9.525	3.18	3.81
		CNMG120404	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●	●			●		●	0.4	12.7	4.76	5.16
		CNMG120408	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●	●			●	●	●	0.8	12.7	4.76	5.16
		CNMG120412	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●					●	●	1.2	12.7	4.76	5.16
		CNMG120416	●	●	●	●	▲	▲	▲	▲	●	●	●	●									1.6	12.7	4.76	5.16
		CNMG160608	●	●	●	●	▲	▲	▲	▲		●	●	●		●							0.8	15.875	6.35	6.35
		CNMG160612	●	●	●	●	▲	▲	▲	▲	●	●	●	●		●							1.2	15.875	6.35	6.35
		CNMG160616	●	●	●	●	▲	▲	▲	▲	●	●	●	●									1.6	15.875	6.35	6.35
		CNMG190608		●	●	●		▲	▲	▲													0.8	19.05	6.35	7.93
		CNMG190612	●	●	●	●	▲	▲	▲	▲	●	●	●	●		●							1.2	19.05	6.35	7.93
		CNMG190616		●	●	●		▲	▲	▲	●	●	●	●		●							1.6	19.05	6.35	7.93

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C014 - Internal toolholder → D019 -
J-Series toolholder → G044 TungCap → K008 -
PINZBOHR® → K180 - Cartridge → K199 -

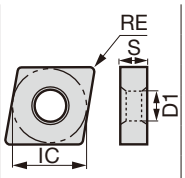
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN



Rhombic, 80° with hole

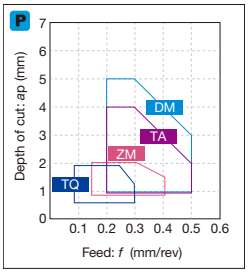
P	Steel	● ●ɔ ɔ✣ ✣ ●ɔ ɔ✣ ✣ ● ●ɔ ɔ ●ɔ ●ɔ ●ɔ ●
M	Stainless	●ɔ ● ɔ ● ɔ ●ɔ ●ɔ ●ɔ ●
K	Cast iron	●ɔ ●ɔ ●ɔ ● ●ɔ ɔ ●ɔ ●ɔ ●ɔ ●
N	Non-ferrous	●
S	Superalloy	● ●ɔ ● ● ɔ
H	Hard material	

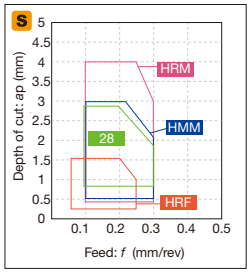


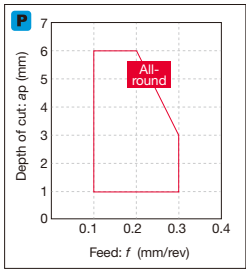
Application	Chipbreaker	Designation	Coated												Coated cermet	Cermet	Un-coated	Dimension (mm)			
			T9205	T9215	T9225	T9235	T9115	T9125	T9135	AH110	AH120	AH725	AH8005	AH8015	GH330	GT720	NS9530	TH10	RE	IC	S	D1
Finishing to medium cutting	27	CNMG120404-27		●	●		▲	▲									●		0.4	12.7	4.76	5.16
		CNMG120408-27		●	●	●	▲	▲	▲								●		0.8	12.7	4.76	5.16
		CNMG120412-27			●			▲											1.2	12.7	4.76	5.16
Medium cutting	28	CNMG120404-28			●			▲		●	●		●	●					0.4	12.7	4.76	5.16
		CNMG120408-28								●	●		●	●					0.8	12.7	4.76	5.16
		CNMG120412-28											●	●					1.2	12.7	4.76	5.16
	33	CNMG120408-33								●						●			0.8	12.7	4.76	5.16
		CNMG120416-33		●	●		▲												1.6	12.7	4.76	5.16
		CNMG160612-33		●	●		▲												1.2	15.875	6.35	6.35
		CNMG190612-33		●	●		▲												1.2	19.05	6.35	7.93
	37	CNMG120404-37		●	●		▲										●		0.4	12.7	4.76	5.16
		CNMG120408-37		●	●		▲								●		●	●	0.8	12.7	4.76	5.16
		CNMG120412-37		●	●		▲												1.2	12.7	4.76	5.16
	38	CNMG120404-38													●				0.4	12.7	4.76	5.16
		CNMG120408-38		●	●		▲					●			●				0.8	12.7	4.76	5.16

● : Line up
▲ : To be discontinued

Chip control range







Reference pages: External toolholder → C016 - | Internal toolholder → D021 -
J-Series toolholder → G044 | TungCap → K008 -
PINZBOHR® → K180 - | Cartridge → K199 -

Insert NEGATIVE TYPE

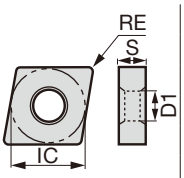
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

CN



Rhombic, 80° with hole

		T9225	T9235	T9125	T9135	T6120	T6130	AH630	AH645	AH110	AH120	T515	T5105	T5115	T5125	AH725	AH8005	AH8015	AH905	GH110	GH330	GT720	NS9530	TH10	KS05F	KS20	RE	IC	S	D1
P	Steel	ⓒ✠	✠	ⓒ✠	✠	ⓒ	✠	ⓒ✠	✠	●	●ⓒ					ⓒ				●	●ⓒ	●ⓒ	●ⓒ	●						
M	Stainless					●	ⓒ	ⓒ	✠	●	●ⓒ					ⓒ	●	ⓒ		●	●ⓒ			●						
K	Cast iron									●	●ⓒ	●ⓒ	●	ⓒ	✠	ⓒ				●	●ⓒ	●ⓒ	●ⓒ	●	●	ⓒ✠				
N	Non-ferrous																			●	●	ⓒ✠								
S	Superalloy									●	●ⓒ					●	●	ⓒ	ⓒ	●					●	ⓒ✠				
H	Hard material																													



Application	Chipbreaker	Designation	T9225	T9235	T9125	T9135	T6120	T6130	AH630	AH645	AH110	AH120	T515	T5105	T5115	T5125	AH725	AH8005	AH8015	AH905	GH110	GH330	GT720	NS9530	TH10	KS05F	KS20	RE	IC	S	D1
Medium cutting	SM	CNMG090404E-SM					●	●	●																			0.4	9.525	4.76	3.81
		CNMG090408E-SM					●	●	●																			0.8	9.525	4.76	3.81
		CNMG090412E-SM					●	●	●																			1.2	9.525	4.76	3.81
		CNMG120404-SM					●	●	●	●							●											0.4	12.7	4.76	5.16
		CNMG120408-SM					●	●	●	●							●			●								0.8	12.7	4.76	5.16
		CNMG120412-SM					●	●	●	●							●											1.2	12.7	4.76	5.16
	CM	CNMG120404-CM											●	●	●	●												0.4	12.7	4.76	5.16
		CNMG120408-CM											●	●	●	●												0.8	12.7	4.76	5.16
		CNMG120412-CM											●	●	●	●												1.2	12.7	4.76	5.16
		CNMG160608-CM												●	●	●												0.8	15.875	6.35	6.35
		CNMG160612-CM											●	●	●	●												1.2	15.875	6.35	6.35
	P	CNGG120404R-P																			●			●	●			0.4	12.7	4.76	5.16
		CNGG120404L-P																			●			●	●			0.4	12.7	4.76	5.16
		CNGG120408R-P																			●				●			0.8	12.7	4.76	5.16
		CNGG120408L-P																			●				●			0.8	12.7	4.76	5.16
Finishing to medium cutting	HRM	CNMG120404-HRM																●	●									0.4	12.7	4.76	5.16
		CNMG120408-HRM																●	●									0.8	12.7	4.76	5.16
		CNMG120412-HRM																●	●									1.2	12.7	4.76	5.16
		CNMG160608-HRM																●	●									0.8	15.875	6.35	6.35
		CNMG160612-HRM																●	●									1.2	15.875	6.35	6.35
		CNMG190612-HRM																●	●									1.2	19.05	6.35	7.93
		CNMG190616-HRM																●	●									1.6	19.05	6.35	7.93
Medium cutting	HMM	CNMG120404-HMM																		●								0.4	12.7	4.76	5.16
		CNMG120408-HMM																		●						●		0.8	12.7	4.76	5.16
		CNMG120412-HMM																		●								1.2	12.7	4.76	5.16
		CNMG160608-HMM																		●								0.8	15.875	6.35	6.35
		CNMG160612-HMM																		●								1.2	15.875	6.35	6.35
		CNMG160616-HMM																		●								1.6	15.875	6.35	6.35
	SA	CNMG120404-SA					●	●	●	●		●																0.4	12.7	4.76	5.16
		CNMG120408-SA					●	●	●	●	●	●															●	0.8	12.7	4.76	5.16
		CNMG120412-SA					●	●	●	●		●															●	1.2	12.7	4.76	5.16
		CNMG190612-SA										●															●	1.2	19.05	6.35	7.93
		CNMG190616-SA										●															●	1.6	19.05	6.35	7.93
	S	CNMG120404R-S	●	●	▲	▲		●	●	●												●	●	●				0.4	12.7	4.76	5.16
		CNMG120404L-S	●	●	▲	▲		●	●	●												●		●				0.4	12.7	4.76	5.16
		CNMG120408R-S	●	●	▲	▲		●	●	●												●	●	●				0.8	12.7	4.76	5.16
		CNMG120408L-S	●	●	▲	▲		●	●	●												●		●				0.8	12.7	4.76	5.16

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C014 - Internal toolholder → D021 -
J-Series toolholder → G044 TungCap → K008 -
PINZBOHR® → K180 - Cartridge → K199 -

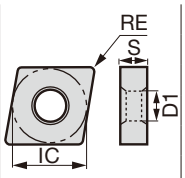
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

CN



Rhombic, 80° with hole

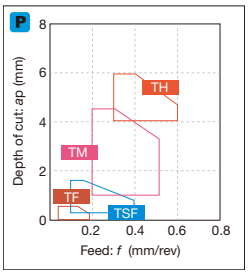
P	Steel	●	●◐	◐✠	✠	●	●◐	◐✠	✠	✠	●◐																						
M	Stainless		●◐							◐	●◐																						
K	Cast iron	●◐	●◐			●◐	●◐				●◐																						
N	Non-ferrous																																
S	Superalloy										●◐																						
H	Hard material																																

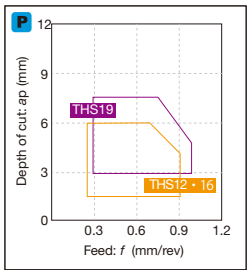


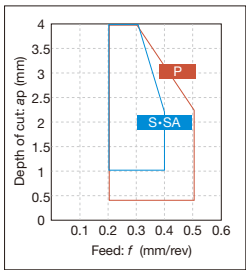
Application	Chipbreaker	Designation	Coated										Dimension (mm)			
			T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6130	AH120	RE	IC	S	D1
Medium to heavy cutting	TH	CNMG120408-TH	●	●	●	●	▲	▲	▲	▲	●	●	0.8	12.7	4.76	5.16
		CNMG12**0412-TH**	●	●	●	●	▲	▲	▲	▲	●	●	1.2	12.7	4.76	5.16
		CNMG12**0416-TH**	●	●	●	●	▲	▲	▲	▲			1.6	12.7	4.76	5.16
		CNMG160612-TH	●	●	●	●	▲	▲	▲	▲		●	1.2	15.875	6.35	6.35
		CNMG16**0616-TH**	●	●	●	●	▲	▲	▲	▲		●	1.6	15.875	6.35	6.35
		CNMG190612-TH	●	●	●	●	▲	▲	▲	▲		●	1.2	19.05	6.35	7.93
		CNMG19**0616-TH**	●	●	●	●	▲	▲	▲	▲		●	1.6	19.05	6.35	7.93
	THS	CNMG120408-THS	●	●	●	●	▲	▲	▲	▲			0.8	12.7	4.76	5.16
		CNMG12**0412-THS**	●	●	●	●	▲	▲	▲	▲			1.2	12.7	4.76	5.16
		CNMG12**0416-THS**	●	●	●	●	▲	▲	▲	▲			1.6	12.7	4.76	5.16
		CNMG160612-THS	●	●	●	●	▲	▲	▲	▲			1.2	15.875	6.35	6.35
		CNMG16**0616-THS**	●	●	●	●	▲	▲	▲	▲			1.6	15.875	6.35	6.35
		CNMG190612-THS		●	●	●		▲	▲	▲			1.2	19.05	6.35	7.93
		CNMG19**0616-THS**		●	●	●		▲	▲	▲			1.6	19.05	6.35	7.93
		CNMG19**0624-THS**		●	●	●		▲	▲	▲			2.4	19.05	6.35	7.93
		CNMG250924-THS		●	●	●		▲	▲	▲			2.4	25.4	9.52	9.12
Medium to heavy cutting (single side)	57	CNMM120404-57			●				▲				0.4	12.7	4.76	5.16
		CNMM12**0408-57**		●	●			▲	▲				0.8	12.7	4.76	5.16
		CNMM12**0412-57**			●				▲				1.2	12.7	4.76	5.16
		CNMM190612-57			●				▲				1.2	12.7	4.76	5.16
		CNMM19**0616-57**			●				▲				1.6	12.7	4.76	5.16

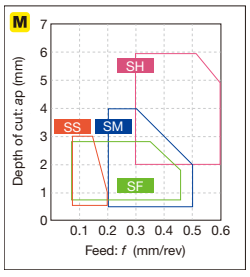
● : Line up
▲ : To be discontinued

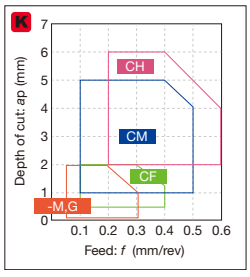
Chip control range



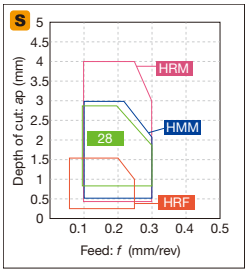








*-M,G: Without chipbreaker



Reference pages: External toolholder → C016 - Internal toolholder → D021 -
J-Series toolholder → G044 TungCap → K008 -
PINZBOHR® → K180 - Cartridge → K199 -

Insert NEGATIVE TYPE

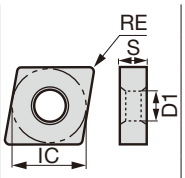
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

CN



Rhombic, 80° with hole

		T9205	T9215	T9225	T9235	T9115	T9125	T9135	T6130	AH630	AH645	T515	T5105	T5115	T5125
P	Steel	●	●ɔ	ɔ✠	✠	●ɔ	ɔ✠	✠	✠	ɔ✠	✠				
M	Stainless		●ɔ						ɔ	ɔ	✠				
K	Cast iron	●ɔ	●ɔ			●ɔ						●ɔ	●	ɔ	✠
N	Non-ferrous														
S	Superalloy														
H	Hard material														



Application	Chipbreaker	Designation	RE	IC	S	D1
Medium to heavy cutting (single side)	**TRS**	**CNMM120408-TRS**	0.8	12.7	4.76	5.16
		CNMM12041**2-TRS**	1.2	12.7	4.76	5.16
		CNMM160612-TRS	1.2	15.875	6.35	6.35
		CNMM16061**6-TRS**	1.6	15.875	6.35	6.35
		CNMM190616-TRS	1.6	19.05	6.35	7.93
		CNMM19062**4-TRS**	2.4	19.05	6.35	7.93
		CNMM250924-TRS	2.4	25.4	9.52	9.12
Heavy cutting (single side)	**TU**	**CNMM190612-TU**	1.2	19.05	6.35	7.93
		CNMM19061**6-TU**	1.6	19.05	6.35	7.93
		CNMM19062**4-TU**	2.4	19.05	6.35	7.93
		CNMM250924-TU	2.4	25.4	9.52	9.12
	TUS	**CNMM190608-TUS**	0.8	19.05	6.35	7.93
		CNMM19061**2-TUS**	1.2	19.05	6.35	7.93
		CNMM19061**6-TUS**	1.6	19.05	6.35	7.93
		CNMM19062**4-TUS**	2.4	19.05	6.35	7.93
		CNMM19063**2-TUS**	3.2	19.05	6.35	7.93
		CNMM250916-TUS	1.6	25.4	9.52	9.12
		CNMM25092**4-TUS**	2.4	25.4	9.52	9.12
		CNMM25093**2-TUS**	3.2	25.4	9.52	9.12
Medium to heavy cutting (single side)	**65**	**CNMM120412-65**	1.2	12.7	4.76	5.16
Medium to heavy cutting	**SH**	**CNMG120408-SH**	0.8	12.7	4.76	5.16
		CNMG12041**2-SH**	1.2	12.7	4.76	5.16
		CNMG12041**6-SH**	1.6	12.7	4.76	5.16
		CNMG160612-SH	1.2	15.875	6.35	6.35
		CNMG16061**6-SH**	1.6	15.875	6.35	6.35
		CNMG190612-SH	1.2	19.05	6.35	7.93
		CNMG19061**6-SH**	1.6	19.05	6.35	7.93
	CH	**CNMG120404-CH**	0.4	12.7	4.76	5.16
		CNMG12040**8-CH**	0.8	12.7	4.76	5.16
		CNMG12041**2-CH**	1.2	12.7	4.76	5.16
		CNMG160612-CH	1.2	15.875	6.35	6.35
		CNMG16061**6-CH**	1.6	15.875	6.35	6.35
		CNMG190612-CH	1.2	19.05	6.35	7.93
		CNMG19061**6-CH**	1.6	19.05	6.35	7.93

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C016 - Internal toolholder → D021 -
J-Series toolholder → G044 TungCap → K008 -
PINZBOHR® → K180 - Cartridge → K199 -

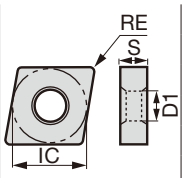
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN



Rhombic, 80° with hole

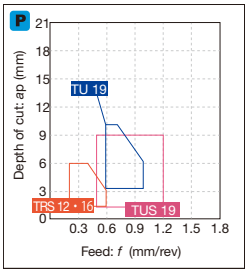
P	Steel	●	●								●ɔ				●														
M	Stainless														●														
K	Cast iron	●ɔ	●ɔ	●ɔ	●	ɔ	✣				●ɔ				●					●ɔ	●								
N	Non-ferrous														●														
S	Superalloy																												
H	Hard material																				●								

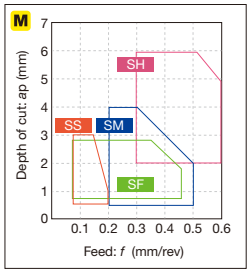


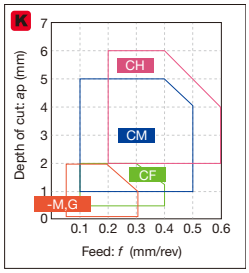
Application	Chipbreaker	Designation	Coated								Cermet		Uncoated		Ceramic				Dimension (mm)			
			T9205	T9105	T515	T5105	T5115	T5125			NS520		TH10		FX105	LX21	LX11		RE	IC	S	D1
Finishing to medium cutting	-	CNMA090404E			●														0.4	9.525	4.76	3.81
		CNMA090408E			●														0.8	9.525	4.76	3.81
		CNMA090412E			●														1.2	9.525	4.76	3.81
		CNMA090416E			●														1.6	9.525	4.76	3.81
		CNMA120404				●	●	●					●						0.4	12.7	4.76	5.16
		CNMA120408	●	▲	●	●	●	●			●		●		●				0.8	12.7	4.76	5.16
		CNMA120412	●	▲	●	●	●	●					●		●				1.2	12.7	4.76	5.16
		CNMA120416	●	▲		●	●	●					●		●				1.6	12.7	4.76	5.16
		CNMA160608				●	●	●											0.8	15.875	6.35	6.35
		CNMA160612			●	●	●	●											1.2	15.875	6.35	6.35
		CNMA160616			●	●	●	●											1.6	15.875	6.35	6.35
		CNMA190612			●	●	●	●											1.2	19.05	6.35	7.93
		CNMA190616			●	●	●	●											1.6	19.05	6.35	7.93
	Wiper	CNMA120408W													●				0.8	12.7	4.76	5.16
		CNMA120412W													●		●		1.2	12.7	4.76	5.16
		CNMA120416W													●				1.6	12.7	4.76	5.16
	-	CNGA120404														●	●		0.4	12.7	4.76	5.16
		CNGA120408									●				●	●	●		0.8	12.7	4.76	5.16
		CNGA120412													●	●	●		1.2	12.7	4.76	5.16
		CNGA120416													●		●		1.6	12.7	4.76	5.16
		CNGA120420															●		2	12.7	4.76	5.16

● : Line up
▲ : To be discontinued

Chip control range







*-M,G: Without chipbreaker

Reference pages: External toolholder → C016 - | Internal toolholder → D019 -
J-Series toolholder → G044 | TungCap → K008 -
PINZBOHR® → K180 - | Cartridge → K199 -

Insert NEGATIVE TYPE

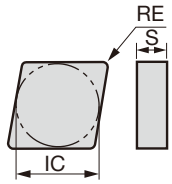
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN



Rhombic, 80° without hole

P	Steel	
M	Stainless	
K	Cast iron	●◐ ● ●◐
N	Non-ferrous	
S	Superalloy	●◐
H	Hard material	●



Application	Chipbreaker	Designation	Ceramic FX105	LX21	LX11	CX710	WG300	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	-	**CNGD120712**	●					1.2	12.7	7.94	-
		CNGD120716	●					1.6	12.7	7.94	-
	-	**CNMN120408**	●					0.8	12.7	4.76	-
		CNMN120412	●					1.2	12.7	4.76	-
	-	**CNGN120404**			●			0.4	12.7	4.76	-
		CNGN120408	●		●			0.8	12.7	4.76	-
		CNGN120412	●		●			1.2	12.7	4.76	-
		CNGN120416	●	●	●			1.6	12.7	4.76	-
		CNGN120420	●					2	12.7	4.76	-
		CNGN120708	●		●			0.8	12.7	7.94	-
		CNGN120712	●		●			1.2	12.7	7.94	-
		CNGN120716	●		●			1.6	12.7	7.94	-
		CNGN120720			●			2	12.7	7.94	-

● : Line up

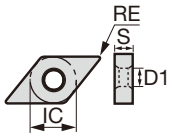
Reference pages: CNGD...: External toolholder → C020

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

P	Steel	● ◐ ◐ ✣ ● ◐ ◐ ✣ ✣ ◐ ●
M	Stainless	◐ ● ◐ ●
K	Cast iron	◐ ◐ ◐ ◐ ◐ ◐ ●
N	Non-ferrous	●
S	Superalloy	◐ ●
H	Hard material	

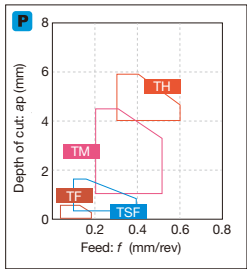


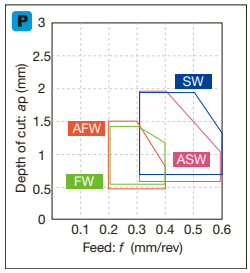
Application	Chipbreaker	Designation	Coated										Coated cermet			Cermet		Uncoated		Dimension (mm)			
			T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	AH120	GH110	GT9530	AT9530	GT720	NS9530	NS520	TH10		RE	IC	S	D1
Precision finishing	TF	DNMG150404-TF														●		●		0.4	12.7	4.76	5.16
		DNMG150408-TF														●				0.8	12.7	4.76	5.16
	01	DNGG110402-01														●				0.2	9.525	4.76	3.81
		DNGG110404-01														●	●			0.4	9.525	4.76	3.81
		DNGG110408-01													●	●				0.8	9.525	4.76	3.81
		DNGG150402-01														●	●	●		0.2	12.7	4.76	5.16
		DNGG150404-01										●				●	●	●		0.4	12.7	4.76	5.16
		DNGG150408-01										●				●	●	●		0.8	12.7	4.76	5.16
Finishing	TSF	DNMG110404E-TSF		●	●			▲	▲				●	●		●				0.4	9.525	4.76	3.81
		DNMG110408E-TSF		●	●			▲	▲				●	●		●				0.8	9.525	4.76	3.81
		DNMG110412E-TSF		●	●			▲	▲				●	●		●				1.2	9.525	4.76	3.81
		DNMG150404-TSF	●	●	●	●	▲	▲	▲	▲	●		●	●		●				0.4	12.7	4.76	5.16
		DNMG150408-TSF	●	●	●	●	▲	▲	▲	▲	●		●	●		●				0.8	12.7	4.76	5.16
		DNMG150412-TSF	●	●	●	●	▲	▲	▲	▲	●									1.2	12.7	4.76	5.16
		DNMG150604-TSF		●	●			▲	▲				●	●		●				0.4	12.7	6.35	5.16
		DNMG150608-TSF	●	●	●	●	▲	▲	▲	▲			●	●		●				0.8	12.7	6.35	5.16
		DNMG150612-TSF	●	●	●	●	▲	▲	▲	▲										1.2	12.7	6.35	5.16
Finishing (wiper)	FW	DNMG110404E-FW		●				▲												0.4	9.525	4.76	3.81
		DNMG110408E-FW		●				▲												0.8	9.525	4.76	3.81
		DNMG150404-FW		●				▲												0.4	12.7	4.76	5.16
		DNMG150408-FW		●				▲												0.8	12.7	4.76	5.16
		DNMG150604-FW		●				▲												0.4	12.7	6.35	5.16
		DNMG150608-FW		●				▲												0.8	12.7	6.35	5.16
		*Wiper																					

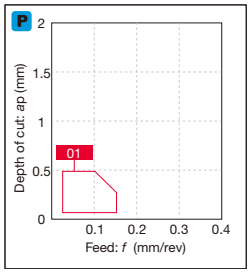
* Please see L032-L036 about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact our sales representatives if you have any question.

● : Line up
▲ : To be discontinued

Chip control range







Reference pages: External toolholder → C035 - Internal toolholder → D050 -
J-Series toolholder → G046 TungCap → C043, K012 -

Insert NEGATIVE TYPE

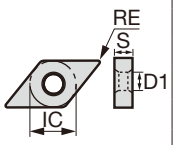
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN



Rhombic, 55° with hole

		T9205	T9215	T9225	T9235	T9115	T9125	T9135	T6120	T6130	AH630	T5105	T5115	AH8005	AH8015	GH330	GT9530	AT9530	NS9530	NS520	TH10
P	Steel	●	●ɔ	●✣	✣	●ɔ	●✣	✣	ɔ	✣	ɔ✣					●ɔ	●ɔ	●ɔ		●ɔ	●
M	Stainless		●ɔ						●	ɔ	ɔ			●	ɔ	●ɔ					●
K	Cast iron	●ɔ	●ɔ			●ɔ						●	ɔ			●ɔ	●ɔ	●ɔ		●ɔ	●
N	Non-ferrous																				●
S	Superalloy													●	ɔ						
H	Hard material																				



Application	Chipbreaker	Designation	RE	IC	S	D1
Finishing	ZF	DNMG110404E-ZF	0.4	9.525	4.76	3.81
		DNMG150404-ZF	0.4	12.7	4.76	5.16
		DNMG150408-ZF	0.8	12.7	4.76	5.16
		DNMG150412-ZF	1.2	12.7	4.76	5.16
		DNMG150604-ZF	0.4	12.7	6.35	5.16
		DNMG150608-ZF	0.8	12.7	6.35	5.16
		DNMG150612-ZF	1.2	12.7	6.35	5.16
Finishing	11	DNMG110404-11	0.4	9.525	4.76	3.81
		DNMG110408-11	0.8	9.525	4.76	3.81
		DNMG150404-11	0.4	12.7	4.76	5.16
		DNMG150408-11	0.8	12.7	4.76	5.16
Finishing (for mild steel)	17	DNMG150404-17	0.4	12.7	4.76	5.16
		DNMG150408-17	0.8	12.7	4.76	5.16
Finishing	SF	DNMG150404-SF	0.4	12.7	4.76	5.16
		DNMG150408-SF	0.8	12.7	4.76	5.16
		DNMG150604-SF	0.4	12.7	6.35	5.16
		DNMG150608-SF	0.8	12.7	6.35	5.16
	CF	DNMG150404-CF	0.4	12.7	4.76	5.16
		DNMG150408-CF	0.8	12.7	4.76	5.16
		DNMG150412-CF	1.2	12.7	4.76	5.16
		DNMG150604-CF	0.4	12.7	6.35	5.16
		DNMG150608-CF	0.8	12.7	6.35	5.16
		DNMG150612-CF	1.2	12.7	6.35	5.16
	HRF	DNMG150404-HRF	0.4	12.7	4.76	5.16
		DNMG150408-HRF	0.8	12.7	4.76	5.16
		DNMG150604-HRF	0.4	12.7	6.35	5.16
		DNMG150608-HRF	0.8	12.7	6.35	5.16

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C035 - Internal toolholder → D050 -
J-Series toolholder → G046 TungCap → C043, K012 -

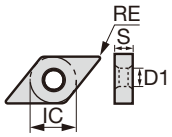
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN



Rhombic, 55° with hole

P	Steel	● ◐ ◐ ✣ ● ◐ ◐ ✣ ● ◐ ◐ ◐ ◐ ◐
M	Stainless	◐
K	Cast iron	◐ ◐ ◐ ◐ ◐ ◐ ◐ ◐ ◐
N	Non-ferrous	
S	Superalloy	
H	Hard material	

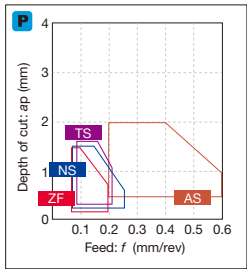


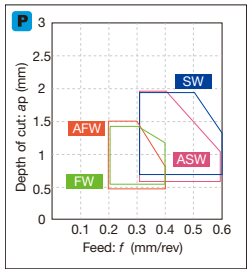
Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	Coated cermet GT9530	AT9530	Cermet NS9530	NS520	Dimension (mm) RE	IC	S	D1
Finishing	TS	DNMG150404-TS		●	●	●		▲	▲	▲	●	●	●	●	0.4	12.7	4.76	5.16
		DNMG150408-TS	●	●	●	●	▲	▲	▲	▲	●	●	●	●	0.8	12.7	4.76	5.16
		DNMG150412-TS	●	●	●	●	▲	▲	▲	▲					1.2	12.7	4.76	5.16
		DNMG150604-TS									●	●	●	●	0.4	12.7	6.35	5.16
		DNMG150608-TS		●	●			▲	▲		●	●	●	●	0.8	12.7	6.35	5.16
		DNMG150612-TS		●	●			▲	▲						1.2	12.7	6.35	5.16
Finishing to medium cutting (wiper)	SW	DNMG110408E-SW		●				▲							0.8	9.525	4.76	3.81
		DNMG110412E-SW		●				▲							1.2	9.525	4.76	3.81
		DNMG150408-SW		●				▲							0.8	12.7	4.76	5.16
		DNMG150412-SW		●				▲							1.2	12.7	4.76	5.16
		DNMG150608-SW		●				▲							0.8	12.7	6.35	5.16
		DNMG150612-SW		●				▲							1.2	12.7	6.35	5.16
		*Wiper																
High feed, small depth of cut	AS	DNMG150404-AS		●		●		▲		▲			●		0.4	12.7	4.76	5.16
		DNMG150408-AS		●	●	●		▲	▲	▲			●		0.8	12.7	4.76	5.16
		DNMG150412-AS		●	●	●		▲	▲	▲					1.2	12.7	4.76	5.16
		DNMG150604-AS		●				▲							0.4	12.7	6.35	5.16
		DNMG150608-AS		●	●			▲	▲						0.8	12.7	6.35	5.16
		DNMG150612-AS		●				▲							1.2	12.7	6.35	5.16
Boring (double side)	CB	DNMG110404-CB									●		●		0.4	9.525	4.76	3.81
		DNMG110408-CB		●				▲			●		●		0.8	9.525	4.76	3.81
Finishing	NS	DNMG150404-NS			●				▲				●		0.4	12.7	4.76	5.16
		DNMG150408-NS	●	●	●		▲	▲	▲				●		0.8	12.7	4.76	5.16

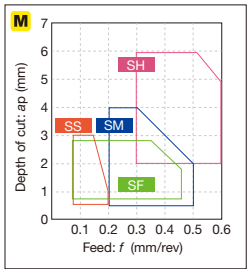
* Please see L032-L036 about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact our sales representatives if you have any question.

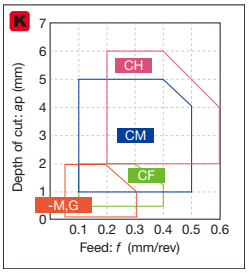
● : Line up
▲ : To be discontinued

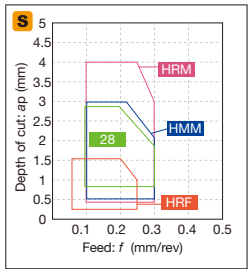
Chip control range











*-M,G: Without chipbreaker

Reference pages: External toolholder → C035 - Internal toolholder → D050 -
J-Series toolholder → G046 TungCap → C043, K012 -

Insert NEGATIVE TYPE

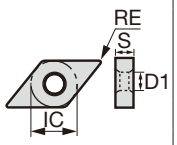
● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN



Rhombic, 55° with hole

P	Steel	●	●ⓒ	●✣	✣	●	●ⓒ	●✣	✣	ⓒ	✣	ⓒ✣	✣	●	●ⓒ	●ⓒ		●ⓒ				●ⓒ									
M	Stainless		●ⓒ							●	ⓒ	ⓒ	✣	●	●ⓒ	●ⓒ															
K	Cast iron	●ⓒ	●ⓒ			●ⓒ	●ⓒ							●	●ⓒ	●ⓒ		●ⓒ				●ⓒ				ⓒ✣					
N	Non-ferrous																									ⓒ✣					
S	Superalloy													●	●ⓒ											ⓒ✣					
H	Hard material																														



Application	Chipbreaker	Designation	Coated														Coated cermet			Cermet		Un-coated	Dimension (mm)			
			T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	AH110	AH120	GH330	GT9530			NS9530		KS20	RE	IC	S	D1
Finishing	SS	DNMG110404E-SS											●	●										0.4	9.525	4.76	3.81
		DNMG110408E-SS											●	●										0.8	9.525	4.76	3.81
		DNMG150404-SS									●	●	●	●			●							0.4	12.7	4.76	5.16
		DNMG150408-SS									●	●	●	●			●						●	0.8	12.7	4.76	5.16
		DNMG150412-SS									●	●	●	●										1.2	12.7	4.76	5.16
		DNMG150604-SS									●	●	●	●		●	●							0.4	12.7	6.35	5.16
		DNMG150608-SS									●	●	●	●		●	●							0.8	12.7	6.35	5.16
		DNMG150612-SS									●	●	●	●										1.2	12.7	6.35	5.16
Medium cutting	TM	DNMG110404E-TM		●	●			▲	▲															0.4	9.525	4.76	3.81
		DNMG110408E-TM		●	●			▲	▲															0.8	9.525	4.76	3.81
		DNMG110412E-TM		●	●			▲	▲															1.2	9.525	4.76	3.81
		DNMG110404-TM		●	●	●		▲	▲	▲														0.4	9.525	4.76	3.81
		DNMG110408-TM		●	●	●		▲	▲	▲														0.8	9.525	4.76	3.81
		DNMG150404-TM	●	●	●	●	▲	▲	▲	▲						●								0.4	12.7	4.76	5.16
		DNMG150408-TM	●	●	●	●	▲	▲	▲	▲						●								0.8	12.7	4.76	5.16
		DNMG150412-TM	●	●	●	●	▲	▲	▲	▲					●	●								1.2	12.7	4.76	5.16
		DNMG150416-TM		●	●			▲	▲															1.6	12.7	4.76	5.16
		DNMG150604-TM	●	●	●	●	▲	▲	▲	▲						●								0.4	12.7	6.35	5.16
		DNMG150608-TM	●	●	●	●	▲	▲	▲	▲						●								0.8	12.7	6.35	5.16
		DNMG150612-TM	●	●	●	●	▲	▲	▲	▲						●								1.2	12.7	6.35	5.16
		DNMG150616-TM	●	●	●	●	▲	▲	▲	▲														1.6	12.7	6.35	5.16
Finishing to medium cutting	AM	DNMG150408-AM		●	●			▲	▲															0.8	12.7	4.76	5.16
		DNMG150412-AM		●	●			▲	▲															1.2	12.7	4.76	5.16
		DNMG150416-AM		●	●			▲	▲															1.6	12.7	4.76	5.16
		DNMG150608-AM		●	●			▲	▲															0.8	12.7	6.35	5.16
		DNMG150612-AM		●	●			▲	▲															1.2	12.7	6.35	5.16
		DNMG150616-AM		●	●			▲	▲															1.6	12.7	6.35	5.16
	NM	DNMG150408-NM		●	●	●		▲	▲	▲								●			●			0.8	12.7	4.76	5.16
		DNMG150412-NM		●	●	●		▲	▲	▲														1.2	12.7	4.76	5.16
		DNMG150608-NM																●			●			0.8	12.7	6.35	5.16

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C035 - Internal toolholder → D050 -
J-Series toolholder → G046 TungCap → C043, K012 -

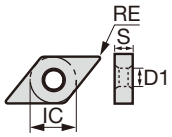
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

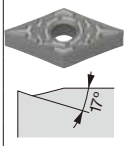
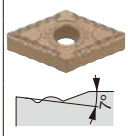
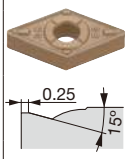
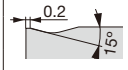
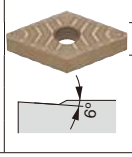
DN



Rhombic, 55° with hole

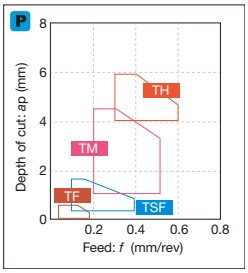
P	Steel	●	◐	◐	✣	●	◐	◐	✣					●	◐		◐	◐			◐	◐			●						
M	Stainless		◐											●	◐										●						
K	Cast iron	◐	◐			◐	◐			◐	●	◐	✣	●	◐		◐	◐			◐	◐			●						
N	Non-ferrous																								●						
S	Superalloy													●	◐																
H	Hard material																														

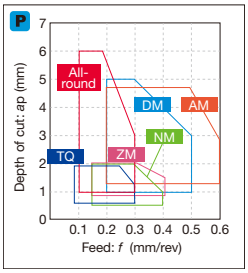


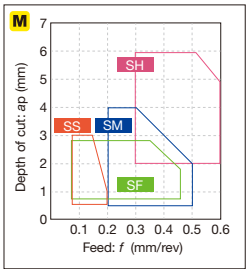
Application	Chipbreaker	Designation	Coated														Coated cermet		Cermet		Un-coated	Dimension (mm)			
			T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	T5105	T5115	T5125	AH110	AH120	GT9530	AT9530	NS9530	NS520	TH10	RE	IC	S	D1
Finishing to medium cutting	**TQ**	**DNMG150404-TQ**			●												●	●	●			0.4	12.7	4.76	5.16
		DNMG150408-TQ			●												●	●	●			0.8	12.7	4.76	5.16
																									
	ZM	**DNMG110408E-ZM**		●	●			▲	▲													0.8	9.525	4.76	3.81
		DNMG150408-ZM		●	●	●		▲	▲	▲							●		●			0.8	12.7	4.76	5.16
		DNMG150412-ZM		●	●	●		▲	▲	▲												1.2	12.7	4.76	5.16
		DNMG150608-ZM		●	●	●		▲	▲	▲												0.8	12.7	6.35	5.16
		DNMG150612-ZM		●	●			▲	▲													1.2	12.7	6.35	5.16
Medium cutting	**DM**	**DNMG150408-DM**		●	●	●		▲	▲	▲												0.8	12.7	4.76	5.16
		DNMG150412-DM	●	●	●	●	▲	▲	▲	▲												1.2	12.7	4.76	5.16
		**DNMG150604-DM**		●				▲														0.4	12.7	6.35	5.16
		DNMG150608-DM		●	●	●		▲	▲	▲												0.8	12.7	6.35	5.16
		DNMG150612-DM	●	●	●	●	▲	▲	▲	▲												1.2	12.7	6.35	5.16
		DNMG150616-DM	●				▲															1.6	12.7	6.35	5.16
	All-round	**DNMG110404**		●	●			▲	▲			●	●	●			●		●			0.4	9.525	4.76	3.81
		DNMG110408	●	●	●	●	▲	▲	▲	▲		●	●	●			●		●			0.8	9.525	4.76	3.81
		DNMG150404		●	●	●		▲	▲	▲		●	●	●	●	●	●		●	●	●	0.4	12.7	4.76	5.16
		DNMG150408	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●	●		●	●	●	0.8	12.7	4.76	5.16
		DNMG150412	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●			●	●	●	1.2	12.7	4.76	5.16
		DNMG150416		●	●			▲	▲			●	●	●								1.6	12.7	4.76	5.16
		DNMG150604		●	●			▲	▲			●	●	●							●	0.4	12.7	6.35	5.16
		DNMG150608	●	●	●	●	▲	▲	▲	▲	●	●	●	●							●	0.8	12.7	6.35	5.16
		DNMG150612	●	●	●	●	▲	▲	▲	▲	●	●	●	●							●	1.2	12.7	6.35	5.16
		DNMG150616		●	●			▲	▲													1.6	12.7	6.35	5.16
Finishing to medium cutting	**27**	**DNMG150404-27**			●				▲										●			0.4	12.7	4.76	5.16
		DNMG150408-27		●	●			▲	▲										●			0.8	12.7	4.76	5.16
		DNMG150412-27			●				▲													1.2	12.7	4.76	5.16

● : Line up
▲ : To be discontinued

Chip control range







Reference pages: External toolholder → C035 - Internal toolholder → D050 -
J-Series toolholder → G046 TungCap → C043, K012 -

Insert NEGATIVE TYPE

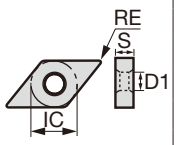
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

DN



Rhombic, 55° with hole

P	Steel	●ɔ	●ɔ	ɔ	✠					ɔ✠	✠			●	●ɔ	●ɔ	●ɔ				●ɔ					●			
M	Stainless	●ɔ		●	ɔ					ɔ	✠	●	ɔ	●	●ɔ	●ɔ										●			
K	Cast iron	●ɔ	●ɔ			●ɔ	●	ɔ	✠					●	●ɔ	●ɔ	●ɔ				●ɔ					●			
N	Non-ferrous																									●			
S	Superalloy											●	ɔ	●	●ɔ														
H	Hard material																												



Application	Chipbreaker	Designation	Coated														Coated cermet			Cermet			Un-coated	Dimension (mm)			
			T9215	T9115	T6120	T6130	T515	T5105	T5115	T5125	AH630	AH645	AH8005	AH8015	AH110	AH120	GH330	GT9530			NS9530			TH10	RE	IC	S	D1
Medium cutting	28	DNMG150404-28											●	●		●									0.4	12.7	4.76	5.16
		DNMG150408-28											●	●		●									0.8	12.7	4.76	5.16
		DNMG150604-28											●	●											0.4	12.7	6.35	5.16
		DNMG150608-28											●	●											0.8	12.7	6.35	5.16
	33	DNMG150404-33													●										0.4	12.7	4.76	5.16
		DNMG150408-33													●									●	0.8	12.7	4.76	5.16
	37	DNMG150404-37																			●				0.4	12.7	4.76	5.16
		DNMG150408-37															●				●				0.8	12.7	4.76	5.16
		DNMG150608-37	●	▲																					0.8	12.7	6.35	5.16
	38	DNMG150412-38	●	▲																					1.2	12.7	4.76	5.16
	Parallel	DNGG150404R																●			●				0.4	12.7	4.76	5.16
		DNGG150404L																●			●				0.4	12.7	4.76	5.16
		DNGG150408R																			●				0.8	12.7	4.76	5.16
		DNGG150408L																			●				0.8	12.7	4.76	5.16
	SM	DNMG110404E-SM			●	●					●														0.4	9.525	4.76	3.81
		DNMG110408E-SM			●	●					●														0.8	9.525	4.76	3.81
		DNMG150404-SM			●	●					●	●													0.4	12.7	4.76	5.16
		DNMG150408-SM			●	●					●	●													0.8	12.7	4.76	5.16
		DNMG150412-SM			●	●					●	●													1.2	12.7	4.76	5.16
		DNMG150604-SM			●	●					●	●													0.4	12.7	6.35	5.16
		DNMG150608-SM			●	●					●	●													0.8	12.7	6.35	5.16
		DNMG150612-SM			●	●					●	●													1.2	12.7	6.35	5.16
Medium cutting	CM	DNMG150404-CM					●	●	●	●															0.4	12.7	4.76	5.16
		DNMG150408-CM					●	●	●	●															0.8	12.7	4.76	5.16
		DNMG150412-CM					●	●	●	●															1.2	12.7	4.76	5.16
		DNMG150604-CM						●	●	●															0.4	12.7	6.35	5.16
		DNMG150608-CM						●	●	●															0.8	12.7	6.35	5.16
		DNMG150612-CM						●	●	●															1.2	12.7	6.35	5.16

● : Line up
▲ : To be discontinued

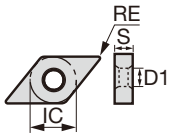
Reference pages: External toolholder → C035 - Internal toolholder → D050 -
J-Series toolholder → G046 TungCap → C043, K012 -

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

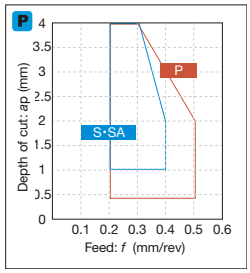
P	Steel	ɔ✣	✣	ɔ✣	✣	✣	ɔ✣	✣	●ɔ				●	●ɔ		●ɔ				●						
M	Stainless					ɔ	ɔ	✣	●ɔ	●	ɔ		●	●ɔ						●						
K	Cast iron								●ɔ				●	●ɔ		●ɔ				●						
N	Non-ferrous																			●						
S	Superalloy								●ɔ	●	ɔ	ɔ	●													
H	Hard material																									

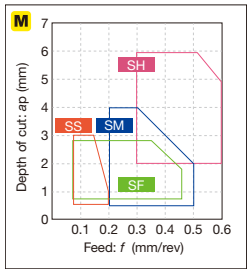


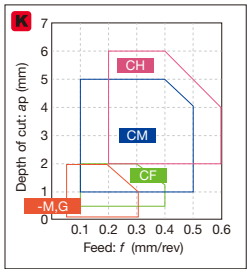
Application	Chipbreaker	Designation	Coated												Cermet	Uncoated		Dimension (mm)			
			T9225	T9235	T9125	T9135	T6130	AH630	AH645	AH120	AH8005	AH8015	AH905	GH110	GH330	NS9530	TH10		RE	IC	S	D1
Medium cutting	P	DNGG150402R-P												●			●		0.2	12.7	4.76	5.16
		DNGG150402L-P												●			●		0.2	12.7	4.76	5.16
		DNGG150404R-P												●			●		0.4	12.7	4.76	5.16
		DNGG150404L-P												●			●		0.4	12.7	4.76	5.16
		DNGG150408R-P															●		0.8	12.7	4.76	5.16
		DNGG150408L-P															●		0.8	12.7	4.76	5.16
Finishing to medium cutting	HRM	DNMG150404-HRM									●	●							0.4	12.7	4.76	5.16
		DNMG150408-HRM									●	●							0.8	12.7	4.76	5.16
		DNMG150412-HRM									●	●							1.2	12.7	4.76	5.16
		DNMG150604-HRM									●	●							0.4	12.7	6.35	5.16
		DNMG150608-HRM									●	●							0.8	12.7	6.35	5.16
		DNMG150612-HRM									●	●							1.2	12.7	6.35	5.16
Medium cutting	HMM	DNMG150404-HMM											●						0.4	12.7	4.76	5.16
		DNMG150408-HMM											●						0.8	12.7	4.76	5.16
		DNMG150412-HMM											●						1.2	12.7	4.76	5.16
	SA	DNMG150404-SA								●									0.4	12.7	4.76	5.16
		DNMG150408-SA								●									0.8	12.7	4.76	5.16
		DNMG150604-SA								●									0.4	12.7	6.35	5.16
		DNMG150608-SA								●									0.8	12.7	6.35	5.16
	S	DNMG150404R-S	●	●	▲	▲	●	●	●					●		●			0.4	12.7	4.76	5.16
		DNMG150404L-S	●	●	▲	▲	●	●	●					●		●			0.4	12.7	4.76	5.16
		DNMG150408R-S	●	●	▲	▲	●	●	●					●		●			0.8	12.7	4.76	5.16
		DNMG150408L-S	●	●	▲	▲	●	●	●					●		●			0.8	12.7	4.76	5.16
		DNMG150604R-S	●	●	▲	▲	●	●	●										0.4	12.7	6.35	5.16
		DNMG150604L-S	●	●	▲	▲	●	●	●										0.4	12.7	6.35	5.16
		DNMG150608R-S	●	●	▲	▲	●	●	●						●				0.8	12.7	6.35	5.16
		DNMG150608L-S	●	●	▲	▲	●	●	●										0.8	12.7	6.35	5.16

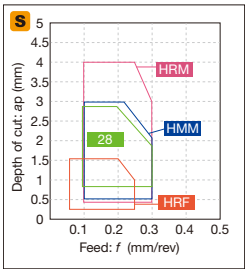
● : Line up
▲ : To be discontinued

Chip control range









*-M,G: Without chipbreaker

Reference pages: External toolholder → C040 - Internal toolholder → D050 -
J-Series toolholder → G046 TungCap → C043, K012 -

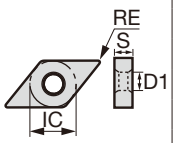
Insert NEGATIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

		T9205	T9215	T9225	T9235	T9115	T9125	T9135	T6130	AH630	AH645	T515	T5105	T5115	T5125	AH120	GT720	NS520	TH10
P	Steel	●	●ɔ	ɔ✣	✣	●ɔ	ɔ✣	✣	✣	ɔ✣	✣					●ɔ	●ɔ	●ɔ	●
M	Stainless		●ɔ						ɔ	ɔ	✣					●ɔ			●
K	Cast iron	●ɔ	●ɔ			●ɔ						●ɔ	●	ɔ	✣	●ɔ	●ɔ	●ɔ	●
N	Non-ferrous																		●
S	Superalloy															●ɔ			
H	Hard material																		



Application	Chipbreaker	Designation	RE	IC	S	D1
Medium to heavy cutting (single side)	57	DNMM150608-57	0.8	12.7	6.35	5.16
		DNMM150612-57	1.2	12.7	6.35	5.16
Medium to heavy cutting	TH	DNMG150408-TH	0.8	12.7	4.76	5.16
		DNMG150412-TH	1.2	12.7	4.76	5.16
		DNMG150416-TH	1.6	12.7	4.76	5.16
		DNMG150608-TH	0.8	12.7	6.35	5.16
		DNMG150612-TH	1.2	12.7	6.35	5.16
		DNMG150616-TH	1.6	12.7	6.35	5.16
	THS	DNMG150408-THS	0.8	12.7	4.76	5.16
		DNMG150412-THS	1.2	12.7	4.76	5.16
		DNMG150416-THS	1.6	12.7	4.76	5.16
		DNMG150608-THS	0.8	12.7	6.35	5.16
		DNMG150612-THS	1.2	12.7	6.35	5.16
		DNMG150616-THS	1.6	12.7	6.35	5.16
	SH	DNMG150408-SH	0.8	12.7	4.76	5.16
		DNMG150412-SH	1.2	12.7	4.76	5.16
		DNMG150416-SH	1.6	12.7	4.76	5.16
		DNMG150608-SH	0.8	12.7	6.35	5.16
		DNMG150612-SH	1.2	12.7	6.35	5.16
	CH	DNMG150404-CH	0.4	12.7	4.76	5.16
		DNMG150408-CH	0.8	12.7	4.76	5.16
		DNMG150412-CH	1.2	12.7	4.76	5.16
		DNMG150604-CH	0.4	12.7	6.35	5.16
		DNMG150608-CH	0.8	12.7	6.35	5.16
		DNMG150612-CH	1.2	12.7	6.35	5.16
Finishing to medium cutting	-	DNMA110404E	0.4	9.525	4.76	3.81
		DNMA110408E	0.8	9.525	4.76	3.81
		DNMA110412E	1.2	9.525	4.76	3.81
		DNMA150404	0.4	12.7	4.76	5.16
		DNMA150408	0.8	12.7	4.76	5.16
		DNMA150412	1.2	12.7	4.76	5.16
		DNMA150604	0.4	12.7	6.35	5.16
		DNMA150608	0.8	12.7	6.35	5.16
		DNMA150612	1.2	12.7	6.35	5.16

● : Line up
▲ : To be discontinued

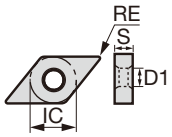
Reference pages: External toolholder → C035 - Internal toolholder → D050 -
J-Series toolholder → G046 TungCap → C043, K012 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

P	Steel	●◐ ●
M	Stainless	●
K	Cast iron	●◐ ● ●◐ ●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	●

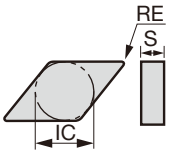


Application	Chipbreaker	Designation	Cermet NS520	Uncoated TH10	Ceramic FX105	Ceramic LX21	Ceramic LX11	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	-	DNGA150404	●	●		●	●	0.4	12.7	4.76	5.16
		DNGA150408	●	●	●	●	●	0.8	12.7	4.76	5.16
		DNGA150412			●	●	●	1.2	12.7	4.76	5.16
		DNGA150416			●			1.6	12.7	4.76	5.16
		DNGA150604					●	-	-	-	-
		DNGA150608					●	0.8	12.7	6.35	5.16
		DNGA150612					●	1.2	12.7	6.35	5.16
		DNGA150616					●	1.6	12.7	6.35	5.16
		DNGA150620					●	2	12.7	6.35	5.16

DN

Rhombic, 55° without hole

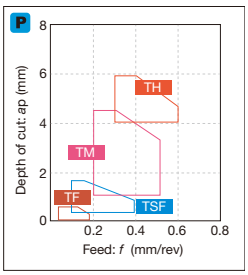
P	Steel	
M	Stainless	
K	Cast iron	●◐
N	Non-ferrous	
S	Superalloy	●◐
H	Hard material	●

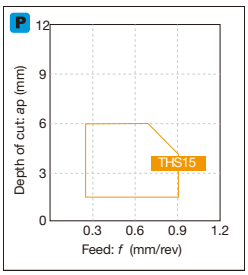


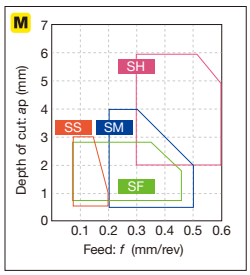
Application	Chipbreaker	Designation	Ceramic FX105	Ceramic LX11	Ceramic WG300	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	-	DNGD150708	●			0.8	12.7	7.94	-
		DNGD150712	●			1.2	12.7	7.94	-
		DNGD150716	●			1.6	12.7	7.94	-
	-	DNGN150404		●		0.4	12.7	4.76	-
		DNGN150408		●		0.8	12.7	4.76	-
		DNGN150412	●	●		1.2	12.7	4.76	-
		DNGN150416	●			1.6	12.7	4.76	-
		DNGN150708		●		0.8	12.7	7.94	-
		DNGN150712		●		1.2	12.7	7.94	-
		DNGN150716		●		1.6	12.7	7.94	-

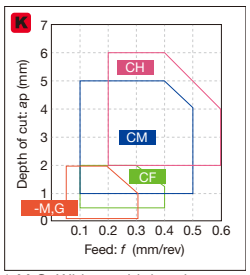
● : Line up

Chip control range









*-M,G: Without chipbreaker

Reference pages: DNGA...: External toolholder → C040 -, Internal toolholder → D050 -, J-Series toolholder → G046, TungCap → C043, K012 - DNGD...: External toolholder → C044 -

Insert NEGATIVE TYPE

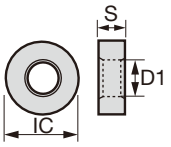
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

RN

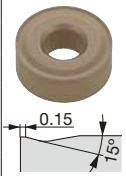


Round, with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	AH120	TH10	LX11
P	Steel	●	●◐	◐✠	✠	●	●◐	◐✠	✠	●◐	●	
M	Stainless		●◐							●◐	●	
K	Cast iron	●◐	●◐			●◐	●◐			●◐	●	
N	Non-ferrous										●	
S	Superalloy									●◐		
H	Hard material											●



Application	Chipbreaker	Designation	Coated T9205	Coated T9215	Coated T9225	Coated T9235	Coated T9105	Coated T9115	Coated T9125	Coated T9135	Coated AH120	Uncoated TH10	Ceramic LX11	Dimension (mm) RE	IC	S	D1
Heavy cutting	61	RNMG090300-61		●	●			▲	▲					-	9.525	3.18	3.81
		RNMG120400-61	●	●	●	●	▲	▲	▲	▲	●	●		-	12.7	4.76	5.16
		RNMG150600-61		●	●			▲	▲					-	15.875	6.35	6.43
		RNMG190600-61		●	●	●		▲	▲	▲				-	19.05	6.35	7.93
		RNMG250900-61		●	●			▲	▲					-	25.4	9.52	9.22
Finishing to medium cutting	-	RNGA120400											●	-	12.7	4.76	5.16



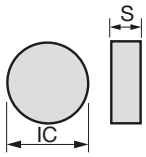


RN



Round, without hole

		FX105	LX11	WG300
P	Steel			
M	Stainless			
K	Cast iron	●◐		
N	Non-ferrous			
S	Superalloy			●◐
H	Hard material		●	



Application	Chipbreaker	Designation	Ceramic FX105	Ceramic LX11	Ceramic WG300	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	-	RNGN120400	●	●		-	12.7	4.76	-
		RNGN120700	●	●		-	12.7	7.94	-



● : Line up
▲ : To be discontinued

Reference pages: RNMG..., RNGA...:External toolholder → C078 -

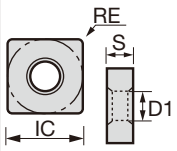
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

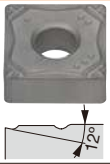
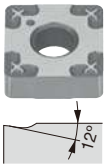
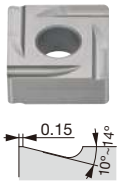
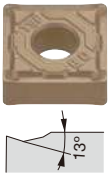
SN



Square, 90° with hole

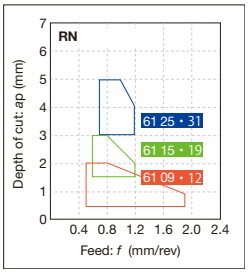
P	Steel	●◐ ◐✣ ●◐ ◐✣ ●◐ ●◐ ●◐ ●◐ ●
M	Stainless	●◐
K	Cast iron	●◐ ●◐ ●◐ ●◐ ●◐ ●
N	Non-ferrous	
S	Superalloy	
H	Hard material	

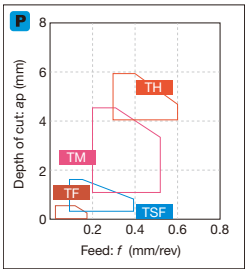


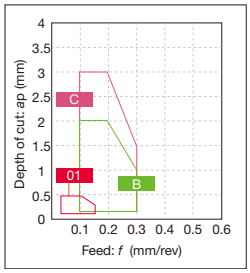
Application	Chipbreaker	Designation	Coated T9215	Coated T9225	Coated T9115	Coated T9125	Coated cermet GT9530	Coated cermet AT9530	Cermet NS9530	Cermet NS520	Cermet X407	RE	IC	S	D1
Precision finishing	TF	SNMG120404-TF							●			0.4	12.7	4.76	5.16
		SNMG120408-TF							●			0.8	12.7	4.76	5.16
	01	SNGG090302-01							●	●		0.2	9.525	3.18	3.81
		SNGG090304-01							●			0.4	9.525	3.18	3.81
		SNGG090308-01							●	●		0.8	9.525	3.18	3.81
		SNGG120402-01							●			0.2	12.7	4.76	5.16
		SNGG120404-01							●			0.4	12.7	4.76	5.16
		SNGG120408-01							●	●		0.8	12.7	4.76	5.16
	B ~ D	SNGG090304R-B					●		●		●	0.4	9.525	3.18	3.81
		SNGG090304L-B					●		●		●	0.4	9.525	3.18	3.81
		SNGG090308R-B							●		●	0.8	9.525	3.18	3.81
		SNGG090308L-B							●		●	0.8	9.525	3.18	3.81
		SNGG120404R-C					●		●			0.4	12.7	4.76	5.16
		SNGG120404L-C					●		●		●	0.4	12.7	4.76	5.16
		SNGG120408R-C							●			0.8	12.7	4.76	5.16
		SNGG120408L-C							●		●	0.8	12.7	4.76	5.16
		SNGG120408R-D							●			0.8	12.7	4.76	5.16
		SNGG120408L-D							●			0.8	12.7	4.76	5.16
Finishing	TSF	SNMG120404-TSF	●	●	▲	▲	●	●	●			0.4	12.7	4.76	5.16
		SNMG120408-TSF	●	●	▲	▲	●	●	●			0.8	12.7	4.76	5.16
		SNMG120412-TSF	●	●	▲	▲						1.2	12.7	4.76	5.16

● : Line up
▲ : To be discontinued

Chip control range







Reference pages: External toolholder → C091 - Internal toolholder → D038 -
Cartridge → K197

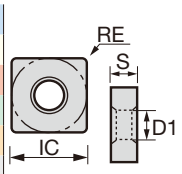
Insert NEGATIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

SN

Square, 90° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	T5105	T5115	AH8005	AH8015	GT9530	AT9530	NS9530	TH10
P	Steel	●	●ɔ	ɔ✠	✠	●	●ɔ	ɔ✠	✠	ɔ	✠	ɔ✠					●ɔ	●ɔ	●ɔ	●
M	Stainless		●ɔ							●	ɔ	ɔ			●	ɔ				●
K	Cast iron	●ɔ	●ɔ			●ɔ	●ɔ						●	ɔ			●ɔ	●ɔ	●ɔ	●
N	Non-ferrous																			●
S	Superalloy														●	ɔ				
H	Hard material																			



Application	Chipbreaker	Designation	RE	IC	S	D1
Finishing	11	SNMG120404-11	0.4	12.7	4.76	5.16
		SNMG120408-11	0.8	12.7	4.76	5.16
Finishing (for mild steel)	17	SNMG120408-17	0.8	12.7	4.76	5.16
Finishing	SF	SNMG120404-SF	0.4	12.7	4.76	5.16
		SNMG120408-SF	0.8	12.7	4.76	5.16
	CF	SNMG120408-CF	0.8	12.7	4.76	5.16
		SNMG120412-CF	1.2	12.7	4.76	5.16
	HRF	SNMG120408-HRF	0.8	12.7	4.76	5.16
		SNMG120412-HRF	1.2	12.7	4.76	5.16
Finishing	TS	SNMG120404-TS	0.4	12.7	4.76	5.16
		SNMG120408-TS	0.8	12.7	4.76	5.16
		SNMG120412-TS	1.2	12.7	4.76	5.16
High feed, small depth of cut	AS	SNMG120404-AS	0.4	12.7	4.76	5.16
		SNMG120408-AS	0.8	12.7	4.76	5.16

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C091 - Internal toolholder → D038 -
Cartridge → K197

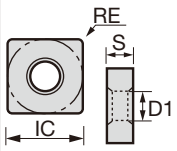
● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN



Square, 90° with hole

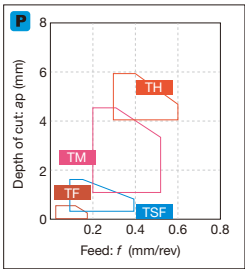
P	Steel	● ●ⓒ ⓒ✣ ✣ ● ●ⓒ ⓒ✣ ✣ ⓒ ✣ ⓒ✣ ✣ ●ⓒ ●ⓒ
M	Stainless	●ⓒ ● ⓒ ⓒ ✣ ●ⓒ ●ⓒ
K	Cast iron	●ⓒ ●ⓒ ●ⓒ ●ⓒ ●ⓒ
N	Non-ferrous	
S	Superalloy	●ⓒ
H	Hard material	

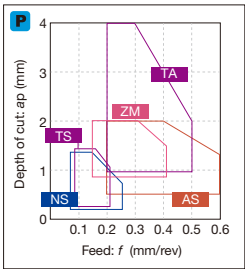


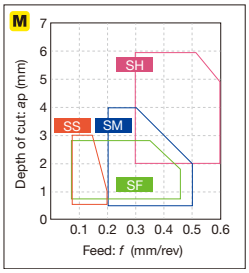
Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	AH120	GH330	Dimension (mm) RE	IC	S	D1
Finishing	NS	SNMG120408-NS		●	●			▲	▲								0.8	12.7	4.76	5.16
	SS	SNMG120404-SS									●	●	●	●		●	0.4	12.7	4.76	5.16
		SNMG120408-SS									●	●	●	●		●	0.8	12.7	4.76	5.16
		SNMG120412-SS									●	●	●	●			1.2	12.7	4.76	5.16
Medium cutting	TM	SNMG090304-TM		●	●	●		▲	▲	▲							0.4	9.525	3.18	3.81
		SNMG090308-TM		●	●	●		▲	▲	▲							0.8	9.525	3.18	3.81
		SNMG120404-TM		●	●			▲	▲						●		0.4	12.7	4.76	5.16
		SNMG120408-TM	●	●	●	●	▲	▲	▲	▲					●		0.8	12.7	4.76	5.16
		SNMG120412-TM	●	●	●	●	▲	▲	▲	▲					●		1.2	12.7	4.76	5.16
		SNMG120416-TM		●	●	●		▲	▲	▲							1.6	12.7	4.76	5.16
		SNMG150608-TM		●				▲									0.8	15.875	6.35	6.35
		SNMG150612-TM		●				▲							●		1.2	15.875	6.35	6.35
		SNMG190608-TM		●				▲									0.8	19.05	6.35	7.93
		SNMG190612-TM		●				▲							●		1.2	19.05	6.35	7.93
Medium cutting	TA	SNMG120408-TA		●	●												0.8	12.7	4.76	5.16
		SNMG120412-TA		●	●												1.2	12.7	4.76	5.16
Finishing to medium cutting	ZM	SNMG120408-ZM		●	●	●		▲	▲	▲							0.8	12.7	4.76	5.16
		SNMG120412-ZM		●	●	●		▲	▲	▲							1.2	12.7	4.76	5.16

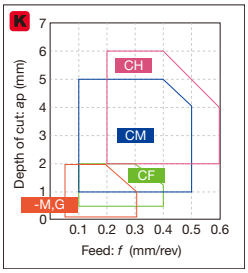
● : Line up
▲ : To be discontinued

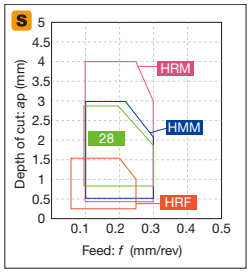
Chip control range











*-M,G: Without chipbreaker

Reference pages: External toolholder → C091 - Internal toolholder → D038 -
Cartridge → K197

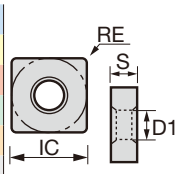
Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

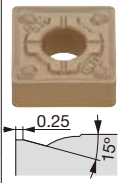
SN

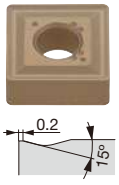
Square, 90° with hole

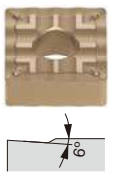
P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣	◐	✣	◐✣	✣					◐	●	●◐	◐●	◐●		●◐	●◐	●
M	Stainless		●◐							●	◐	◐	✣					◐	●	●◐	◐●					●
K	Cast iron	●◐	●◐			●◐	●◐							●◐	●	◐	✣	◐	●	●◐	◐●	◐●		●◐	●◐	●
N	Non-ferrous																									●
S	Superalloy																	●	●	●◐						
H	Hard material																									

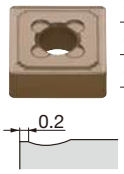


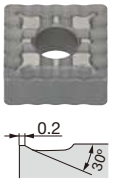
Application	Chipbreaker	Designation	Coated																			Coated cermet		Cermet		Un-coated	Dimension (mm)			
			T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	T515	T5105	T5115	T5125	AH725	AH110	AH120	GH330	GT720		NS9530	NS520	TH10	RE	IC	S	D1
Medium cutting	DM	SNMG120408-DM		●	●			▲	▲																		0.8	12.7	4.76	5.16
		SNMG12012-DM		●	●	●		▲	▲	▲																	1.2	12.7	4.76	5.16
	全周	SNMG090304		●	●			▲	▲																●		●	0.4	9.525	3.18	3.81
		SNMG090308		●	●	●		▲	▲	▲															●		●	0.8	9.525	3.18	3.81
		SNMG120404		●	●	●		▲	▲	▲						●	●	●		●	●				●	●	●	0.4	12.7	4.76	5.16
		SNMG120408	●	●	●	●	▲	▲	▲	▲					●	●	●	●		●	●		●		●	●	●	0.8	12.7	4.76	5.16
		SNMG120412	●	●	●	●	▲	▲	▲	▲					●	●	●	●		●	●						●	1.2	12.7	4.76	5.16
		SNMG120416	●	●	●	●	▲	▲	▲	▲						●	●	●										1.6	12.7	4.76	5.16
		SNMG120420		●	●	●		▲	▲	▲						●	●	●										2	12.7	4.76	5.16
		SNMG150612		●	●	●		▲	▲	▲		●			●													1.2	15.875	6.35	6.35
		SNMG150616		●	●			▲	▲						●													1.6	15.875	6.35	6.35
		SNMG190612		●	●	●		▲	▲	▲		●			●	●	●	●			●							1.2	19.05	6.35	7.93
		SNMG190616		●	●	●		▲	▲	▲					●	●	●	●			●							1.6	19.05	6.35	7.93
		SNMG250724		●	●	●		▲	▲	▲																		2.4	25.4	7.94	9.12
Finishing to medium cutting	27	SNMG120408-27			●				▲																●			0.8	12.7	4.76	5.16
		SNMG12012-27			●				▲																			1.2	12.7	4.76	5.16
Medium cutting	33	SNMG120408-33		●	●			▲	▲																			0.8	12.7	4.76	5.16
		SNMG12012-33			●				▲																			1.2	12.7	4.76	5.16
		SNMG150612-33		●	●			▲	▲																			1.2	15.875	6.35	6.35
		SNMG190616-33			●	●			▲	▲																		1.6	19.05	6.35	7.93
	37	SNMG120408-37		●				▲														●			●			0.8	12.7	4.76	5.16
		SNMG12012-37		●				▲																				1.2	12.7	4.76	5.16
	SM	SNMG120408-SM									●	●	●	●					●									0.8	12.7	4.76	5.16
		SNMG12012-SM									●	●	●	●														1.2	12.7	4.76	5.16

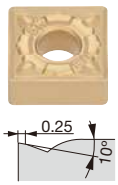












● : Line up
▲ : To be discontinued

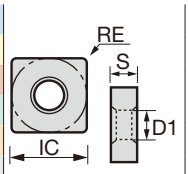
Reference pages: External toolholder → C091 - Internal toolholder → D038 -
Cartridge → K197

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

SN

Square, 90° with hole

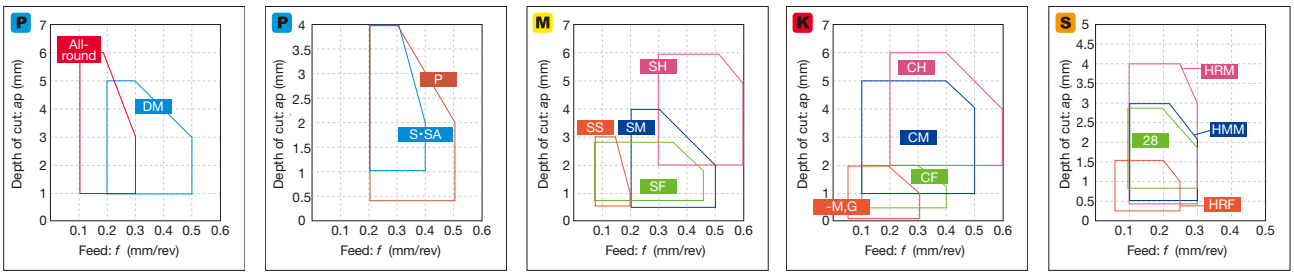
P	Steel	◐	✠	◐✠	✠	●◐							●		●◐				●◐										
M	Stainless	●	◐	◐	✠	●◐				●	◐		●		●◐														
K	Cast iron					●◐	●◐	●	◐	✠			●		●◐				●◐	◐✠									
N	Non-ferrous																			◐✠									
S	Superalloy					●◐					●	◐	●	◐						◐✠									
H	Hard material																												



Application	Chipbreaker	Designation	Coated													Uncoated		Dimension (mm)			
			T6120	T6130	AH630	AH645	AH120	T515	T5105	T5115	T5125	AH8005	AH8015	GH110	AH905	GH330	TH10	KS20	RE	IC	S	D1
Medium cutting	CM	SNMG120408-CM						●	●	●	●								0.8	12.7	4.76	5.16
		SNMG12012-CM						●	●	●	●								1.2	12.7	4.76	5.16
	P	SNGG090304R-P												●			●		0.4	9.525	3.18	3.81
		SNGG09030 4L-P												●			●		0.4	9.525	3.18	3.81
		SNGG09030 8R-P												●		●	●		0.8	9.525	3.18	3.81
		SNGG09030 8L-P															●		0.8	9.525	3.18	3.81
		SNGG120404R-P												●			●		0.4	12.7	4.76	5.16
		SNGG12040 4L-P												●			●		0.4	12.7	4.76	5.16
		SNGG12040 8R-P												●			●		0.8	12.7	4.76	5.16
		SNGG12040 8L-P												●			●		0.8	12.7	4.76	5.16
Finishing to medium cutting	HRM	SNMG120408-HRM										●	●						0.8	12.7	4.76	5.16
		SNMG12012-HRM										●	●						1.2	12.7	4.76	5.16
		SNMG150608-HRM										●	●						0.8	15.875	6.35	6.35
		SNMG15061 2-HRM										●	●						1.2	15.875	6.35	6.35
		SNMG190612-HRM										●	●						1.2	19.05	6.35	7.93
		SNMG19061 6-HRM										●	●						1.6	19.05	6.35	7.93
Medium cutting	HMM	SNMG120408-HMM													●				0.8	12.7	4.76	5.16
		SNMG12012-HMM													●				1.2	12.7	4.76	5.16
	SA	SNMG120404-SA	●	●	●	●	●												0.4	12.7	4.76	5.16
		SNMG12040 8-SA	●	●	●	●	●											●	0.8	12.7	4.76	5.16
		SNMG12012-SA	●	●	●	●	●												1.2	12.7	4.76	5.16
		SNMG190612-SA					●											●	1.2	19.05	6.35	7.93

● : Line up

Chip control range



*-M,G: Without chipbreaker

Reference pages: External toolholder → C091 - Internal toolholder → D038 -
Cartridge → K197

Insert NEGATIVE TYPE

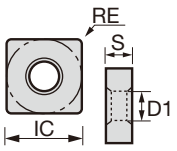
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

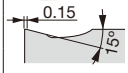
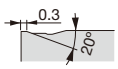
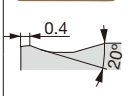
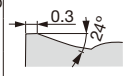
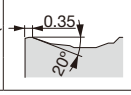
SN



Square, 90° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6130	AH630	AH645	AH120	GH330	NS9530	RE	IC	S	D1
P	Steel	●	◐	✣	✣	●	◐	✣	✣	✣	✣	✣	◐	◐	◐				
M	Stainless		◐							◐	◐	✣	◐	◐					
K	Cast iron	◐	◐			◐	◐						◐	◐	◐				
N	Non-ferrous																		
S	Superalloy												◐						
H	Hard material																		



Application	Chipbreaker	Designation	Coated													Cermet	Dimension (mm)			
			T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6130	AH630	AH645	AH120	GH330	NS9530	RE	IC	S	D1
Medium cutting	S	SNMG120404R-S			●	●			▲	▲	●	●	●			●	0.4	12.7	4.76	5.16
	 	SNMG120404L-S			●	●			▲	▲	●	●	●			●	0.4	12.7	4.76	5.16
		SNMG120408R-S			●	●			▲	▲	●	●	●		●	●	0.8	12.7	4.76	5.16
		SNMG120408L-S			●	●			▲	▲	●	●	●		●	●	0.8	12.7	4.76	5.16
Medium to heavy cutting	TH	SNMG120408-TH		●	●	●		▲	▲	▲				●			0.8	12.7	4.76	5.16
	 	SNMG120412-TH		●	●	●		▲	▲	▲				●			1.2	12.7	4.76	5.16
		SNMG150612-TH	●	●	●		▲	▲	▲					●			1.2	15.875	6.35	6.35
		SNMG150616-TH	●	●	●		▲	▲	▲					●			1.6	15.875	6.35	6.35
		SNMG190612-TH	●	●	●	●	▲	▲	▲	▲				●			1.2	19.05	6.35	7.93
		SNMG190616-TH	●	●	●	●	▲	▲	▲	▲				●			1.6	19.05	6.35	7.93
	THS	SNMG120408-THS		●	●	●		▲	▲	▲							0.8	12.7	4.76	5.16
		SNMG120412-THS		●	●	●		▲	▲	▲							1.2	12.7	4.76	5.16
		SNMG150612-THS		●	●			▲	▲								1.2	15.875	6.35	6.35
	 	SNMG150616-THS		●	●			▲	▲								1.6	15.875	6.35	6.35
		SNMG190608-THS		●	●	●		▲	▲	▲							0.8	19.05	6.35	7.93
		SNMG190612-THS		●	●	●		▲	▲	▲							1.2	19.05	6.35	7.93
		SNMG190616-THS		●	●	●		▲	▲	▲							1.6	19.05	6.35	7.93
		SNMG190624-THS		●	●	●		▲	▲	▲							2.4	19.05	6.35	7.93
		SNMG250716-THS		●	●	●		▲	▲	▲							1.6	25.4	7.94	9.12
		SNMG250724-THS		●	●	●		▲	▲	▲							2.4	25.4	7.94	9.12
Medium to heavy cutting (single side)	TRS	SNMM150612-TRS		●	●	●		▲	▲	▲							1.2	15.875	6.35	6.35
	 	SNMM150616-TRS		●	●	●		▲	▲	▲							1.6	15.875	6.35	6.35
		SNMM190616-TRS		●	●	●		▲	▲	▲							1.6	19.05	6.35	7.93
		SNMM190624-TRS		●	●	●		▲	▲	▲							2.4	19.05	6.35	7.93
		SNMM250924-TRS		●	●	●		▲	▲	▲							2.4	25.4	9.52	9.12
Heavy cutting (single side)	TU	SNMM190616-TU				●				▲							1.6	19.05	6.35	7.93
	 	SNMM190624-TU			●	●			▲	▲							2.4	19.05	6.35	7.93
		SNMM250724-TU			●	●			▲	▲							2.4	25.4	7.94	9.12
		SNMM250924-TU		●	●			▲	▲								2.4	25.4	9.52	9.12

● : Line up
▲ : To be discontinued

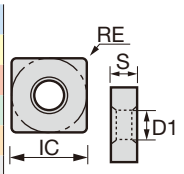
Reference pages: External toolholder → C091 - Internal toolholder → D038 -
Cartridge → K197

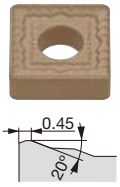
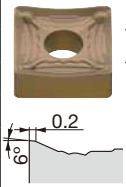
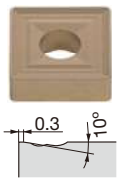
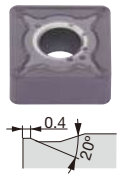
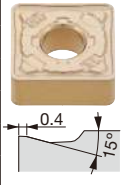
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square, 90° with hole

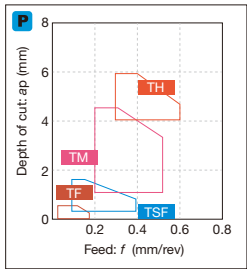
		T9205	T9215	T9225	T9235	T9115	T9125	T9135	T6130	AH630	AH645	T5105	T5115	T5125
P	Steel	●	●ɔ	ɔ✣	✣	●ɔ	ɔ✣	✣	✣	ɔ✣	✣			
M	Stainless		●ɔ						ɔ	ɔ	✣			
K	Cast iron	●ɔ	●ɔ			●ɔ						●	ɔ	✣
N	Non-ferrous													
S	Superalloy													
H	Hard material													

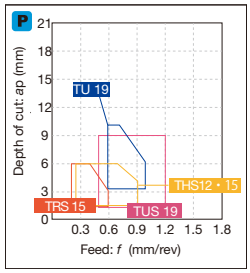


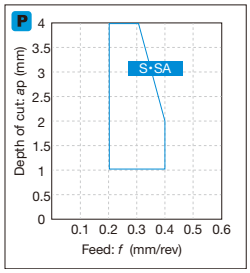
Application	Chipbreaker	Designation	T9205	T9215	T9225	T9235	T9115	T9125	T9135	T6130	AH630	AH645	T5105	T5115	T5125	RE	IC	S	D1
Heavy cutting (single side)	TUS	SNMM190612-TUS		●	●	●	▲	▲	▲							1.2	19.05	6.35	7.93
		SNMM190616-TUS		●	●	●	▲	▲	▲							1.6	19.05	6.35	7.93
		SNMM190624-TUS		●	●	●	▲	▲	▲							2.4	19.05	6.35	7.93
		SNMM250724-TUS		●	●	●	▲	▲	▲							2.4	25.4	7.94	9.12
		SNMM250732-TUS		●	●		▲	▲								3.2	25.4	7.94	9.12
		SNMM250924-TUS		●	●	●	▲	▲	▲							2.4	25.4	9.52	9.12
		SNMM250932-TUS		●	●		▲	▲								3.2	25.4	9.52	9.12
	57	SNMM120408-57		●	●		▲	▲								0.8	12.7	4.76	5.16
		SNMM150616-57			●											1.6	15.875	6.35	6.35
		SNMM190612-57			●											1.2	19.05	6.35	7.93
Medium to heavy cutting (single side)	65	SNMM190612-65			●			▲								1.2	19.05	6.35	7.93
		SNMM310924-65			●			▲								2.4	31.75	9.52	8.8
Medium to heavy cutting	SH	SNMG120408-SH								●	●	●				0.8	12.7	4.76	5.16
		SNMG120412-SH								●	●	●				1.2	12.7	4.76	5.16
		SNMG150612-SH								●	●	●				1.2	15.875	6.35	6.35
		SNMG150616-SH								●	●	●				1.6	15.875	6.35	6.35
		SNMG190612-SH								●	●	●				1.2	19.05	6.35	7.93
		SNMG190616-SH								●	●	●				1.6	19.05	6.35	7.93
	CH	SNMG120408-CH											●	●	●	0.8	12.7	4.76	5.16
		SNMG120412-CH											●	●	●	1.2	12.7	4.76	5.16
		SNMG120416-CH											●	●	●	1.6	12.7	4.76	5.16

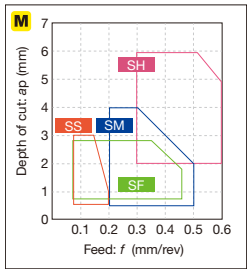
● : Line up
▲ : To be discontinued

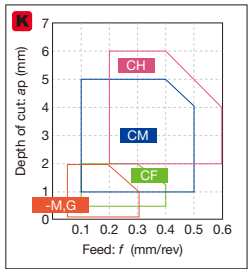
Chip control range











*-M,G: Without chipbreaker

Reference pages: External toolholder → C091 - Internal toolholder → D038 -
Cartridge → K197

Insert NEGATIVE TYPE

● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

SN



Square, 90° with hole

		Coated				Coated cermet	Cermet	Uncoated	Ceramic			Dimension (mm)			
Application	Chipbreaker	Designation	T515	T5105	T5115	T5125	GT720	NS520	TH10	FX105	LX21	LX11	RE	IC	S	D1
Finishing to medium cutting	-	SNMA090308		●					●				0.8	9.525	3.18	3.81
		SNMA120404		●	●	●	●						0.4	12.7	4.76	5.16
		SNMA120408	●	●	●	●		●	●	●			0.8	12.7	4.76	5.16
		SNMA120412	●	●	●	●		●	●	●			1.2	12.7	4.76	5.16
		SNMA120416		●	●	●							1.6	12.7	4.76	5.16
	-	SNGA090304							●				0.4	9.525	3.18	3.81
		SNGA120404					●		●			●	0.4	12.7	4.76	5.16
		SNGA120408						●	●	●		●	0.8	12.7	4.76	5.16
		SNGA120412							●	●	●	●	1.2	12.7	4.76	5.16
		SNGA120416								●		●	1.6	12.7	4.76	5.16

● : Line up

SN



Square, 90° without hole

		Uncoated	Ceramic									Dimension (mm)			
Application	Chipbreaker	Designation	TH10	FX105	LX21	LX11							RE	IC	S	D1
Finishing to medium cutting	-	SNGD120712		●									1.2	12.7	7.94	-
		SNGD120716		●									1.6	12.7	7.94	-
	-	SNGN090308			●	●							0.8	9.525	3.18	-
		SNGN120304				●							0.4	12.7	3.18	-
		SNGN120312				●							1.2	12.7	3.18	-
		SNGN120404				●							0.4	12.7	4.76	-
		SNGN120408	●	●	●	●							0.8	12.7	4.76	-
		SNGN120412		●	●	●							1.2	12.7	4.76	-
		SNGN120416		●	●	●							1.6	12.7	4.76	-
		SNGN120420		●	●								2	12.7	4.76	-
		SNGN120424		●									2.4	12.7	4.76	-
		SNGN120708				●							0.8	12.7	7.94	-
		SNGN120712		●		●							1.2	12.7	7.94	-
		SNGN120716		●		●							1.6	12.7	7.94	-
		SNGN120720				●							2	12.7	7.94	-

● : Line up

Reference pages: External toolholder → C091 - Cartridge → K197
SNGD...: External toolholder → C106

● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

SN



Square, 90° without hole

| | | Coated | | Uncoated | | Ceramic | | |

Insert NEGATIVE TYPE

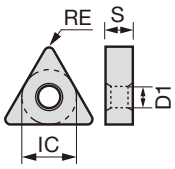
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

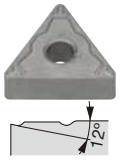
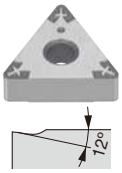
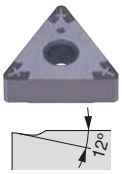
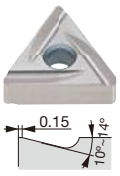
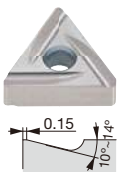
TN



Triangular, 60° with hole

P	Steel	●	◐	◐				✠	✠				✠	✠	●			●																		
M	Stainless	●	◐	◐														●																		
K	Cast iron	●	◐					✠	✠				✠	✠	●			●																		
N	Non-ferrous																	●																		
S	Superalloy	●																																	
H	Hard material																																		



Application	Chipbreaker	Designation	Coated			Coated cermet		Cermet			Uncoated		Dimension (mm)			
			GH110	GH330	SH725	GT9530	GT720	NS9530	NS520	X407	TH10		RE	IC	S	D1
Precision finishing	TF	TNMG160404-TF						●	●		●		0.4	9.525	4.76	3.81
		TNMG160408-TF						●	●				0.8	9.525	4.76	3.81
	01	TNGG110302-01						●					0.2	6.35	3.18	2.26
		TNGG110304-01						●					0.4	6.35	3.18	2.26
		TNGG110308-01						●	●				0.8	6.35	3.18	2.26
		TNGG160402-01	●					●	●		●		0.2	9.525	4.76	3.81
		TNGG160404-01	●					●	●		●		0.4	9.525	4.76	3.81
		TNGG160408-01	●					●	●				0.8	9.525	4.76	3.81
		TNGG160412-01					●	●					1.2	9.525	4.76	3.81
Precision finishing (sharp edge)	01	TNGG160402F-01			●								0.2	9.525	4.76	3.81
		TNGG160404F-01			●								0.4	9.525	4.76	3.81
		TNGG160408F-01			●								0.8	9.525	4.76	3.81
Precision finishing	A, C	TNGG110304R-A				●		●					0.4	6.35	3.18	2.26
		TNGG110304L-A				●		●					0.4	6.35	3.18	2.26
		TNGG110308R-A				●		●					0.8	6.35	3.18	2.26
		TNGG110308L-A				●		●					0.8	6.35	3.18	2.26
		TNGG160304R-C						●		●			0.4	9.525	3.18	3.81
		TNGG160304L-C						●					0.4	9.525	3.18	3.81
		TNGG160308R-C						●					0.8	9.525	3.18	3.81
		TNGG160308L-C						●					0.8	9.525	3.18	3.81
		TNGG160400R-C						●					0.03	9.525	4.76	3.81
		TNGG160400L-C						●					0.03	9.525	4.76	3.81
		TNGG160402R-C				●		●		●	●		0.2	9.525	4.76	3.81
		TNGG160402L-C				●		●					0.2	9.525	4.76	3.81
		TNGG160404R-C	●	●		●		●	●	●	●		0.4	9.525	4.76	3.81
		TNGG160404L-C	●	●		●		●		●	●		0.4	9.525	4.76	3.81
		TNGG160408R-C	●	●		●		●	●	●	●		0.8	9.525	4.76	3.81
		TNGG160408L-C	●	●		●		●		●	●		0.8	9.525	4.76	3.81
	D	TNGG220404R-D						●		●			0.4	12.7	4.76	5.16
		TNGG220404L-D						●					0.4	12.7	4.76	5.16
		TNGG220408R-D						●		●			0.8	12.7	4.76	5.16
		TNGG220408L-D						●					0.8	12.7	4.76	5.16

● : Line up

Reference pages: External toolholder → C025 - Internal toolholder → D044 -
J-Series toolholder → G045 - Cartridge → K193 -

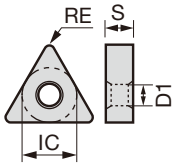
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

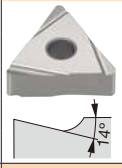
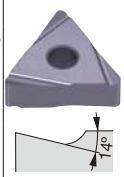
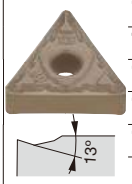
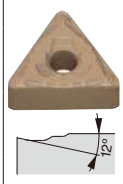
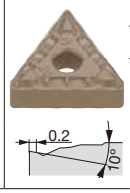
TN



Triangular, 60° with hole

P	Steel	●	◐	✣	✣	●	◐	✣	✣	◐	◐			◐	◐			◐				●					
M	Stainless		◐							◐	◐											●					
K	Cast iron	◐	◐			◐	◐			◐				◐	◐			◐				●					
N	Non-ferrous																					●					
S	Superalloy									◐																	
H	Hard material																										

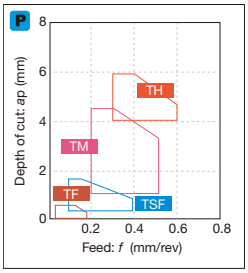


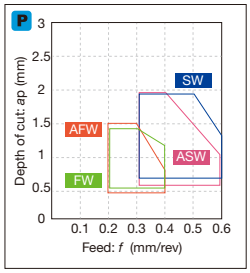
Application	Chipbreaker	Designation	Coated										Coated cermet		Cermet	Uncoated		Dimension (mm)			
			T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	AH120	SH725	GT9530	AT9530	NS9530	TH10		RE	IC	S	D1
Precision finishing	W	TNGG160404R-W													●	●		0.4	9.525	4.76	3.81
		TNGG160404L-W													●	●		0.4	9.525	4.76	3.81
		TNGG160408R-W													●			0.8	9.525	4.76	3.81
		TNGG160408L-W													●			0.8	9.525	4.76	3.81
Precision finishing (sharp edge)	W	TNGG160402FR-W										●						0.2	9.525	4.76	3.81
		TNGG160402FL-W										●						0.2	9.525	4.76	3.81
		TNGG160404FR-W										●						0.4	9.525	4.76	3.81
		TNGG160404FL-W										●						0.4	9.525	4.76	3.81
		TNGG160408FR-W										●						0.8	9.525	4.76	3.81
		TNGG160408FL-W										●						0.8	9.525	4.76	3.81
Finishing	TSF	TNMG110404E-TSF		●	●			▲	▲				●	●	●			0.4	6.35	4.76	2.26
		TNMG110408E-TSF		●	●			▲	▲				●	●	●			0.8	6.35	4.76	2.26
		TNMG160402-TSF									●		●	●	●			0.2	9.525	4.76	3.81
		TNMG160404-TSF		●	●	●		▲	▲	▲	●		●	●	●			0.4	9.525	4.76	3.81
		TNMG160408-TSF	●	●	●	●	▲	▲	▲	▲	●		●	●	●			0.8	9.525	4.76	3.81
		TNMG160412-TSF		●	●	●		▲	▲	▲			●					1.2	9.525	4.76	3.81
Finishing (wiper)	FW	TNMG110404E-FW		●				▲										0.4	6.35	4.76	2.26
		TNMG110408E-FW		●				▲										0.8	6.35	4.76	2.26
		TNMG160404-FW		●				▲										0.4	9.525	4.76	3.81
		TNMG160408-FW		●				▲										0.8	9.525	4.76	3.81
		*Wiper																			
Finishing	ZF	TNMG160404-ZF		●	●	●		▲	▲	▲			●	●	●			0.4	9.525	4.76	3.81
		TNMG160408-ZF		●	●	●		▲	▲	▲			●	●	●			0.8	9.525	4.76	3.81
		TNMG160412-ZF			●				▲									1.2	9.525	4.76	3.81

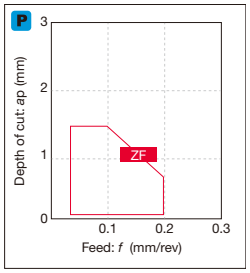
* Please see **L032-L036** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact our sales representatives if you have any question.

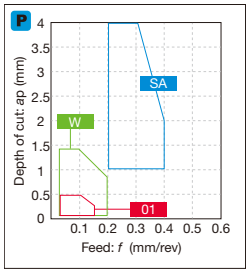
● : Line up
▲ : To be discontinued

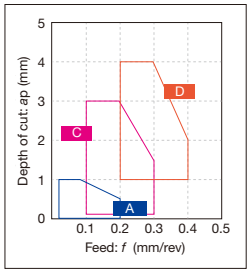
Chip control range











Reference pages: External toolholder → C025 - Internal toolholder → D044 -
J-Series toolholder → G045 - Cartridge → K193 -

Insert NEGATIVE TYPE

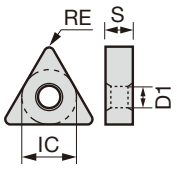
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

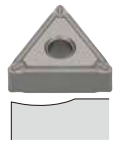
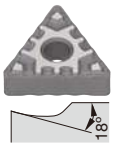
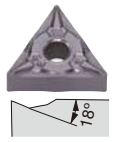
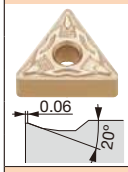
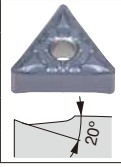
TN



Triangular, 60° with hole

		T9125	T9225	T6120	T6130	AH630	T5105	T5115	AH8005	AH8015	GH330	NS9530	TH10
P	Steel	ɔ✣	ɔ✣	ɔ	✣	ɔ✣					●ɔ	●ɔ	●
M	Stainless			●	ɔ	ɔ			●	ɔ	●ɔ		●
K	Cast iron						●	ɔ			●ɔ	●ɔ	●
N	Non-ferrous												●
S	Superalloy								●	ɔ			
H	Hard material												



Application	Chipbreaker	Designation	Coated										Coated cermet		Uncoated		Dimension (mm)			
			T9125	T9225	T6120	T6130	AH630	T5105	T5115	AH8005	AH8015	GH330	NS9530		TH10		RE	IC	S	D1
Finishing	11	TNMG110304-11											●				0.4	6.35	3.18	2.26
		TNMG110308-11											●				0.8	6.35	3.18	2.26
		TNMG160402-11											●				0.2	9.525	4.76	3.81
		TNMG160404-11										●	●		●		0.4	9.525	4.76	3.81
		TNMG160408-11											●				0.8	9.525	4.76	3.81
		TNMG220404-11											●				0.4	12.7	4.76	5.16
		TNMG220408-11											●				0.8	12.7	4.76	5.16
Finishing (for mild steel)	17	TNMG160404-17	▲	●								●	●				0.4	9.525	4.76	3.81
		TNMG160408-17	▲	●									●				0.8	9.525	4.76	3.81
Finishing	SF	TNMG160404-SF			●	●	●										0.4	9.525	4.76	3.81
		TNMG160408-SF			●	●	●										0.8	9.525	4.76	3.81
		TNMG160412-SF			●	●	●										1.2	9.525	4.76	3.81
	CF	TNMG160404-CF						●	●								0.4	9.525	4.76	3.81
		TNMG160408-CF						●	●								0.8	9.525	4.76	3.81
	HRF	TNMG160404-HRF								●	●						0.4	9.525	4.76	3.81
		TNMG160408-HRF								●	●						0.8	9.525	4.76	3.81

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C025 - Internal toolholder → D044 -
J-Series toolholder → G045 - Cartridge → K193 -

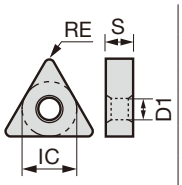
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

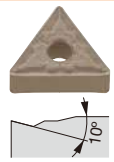
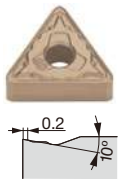
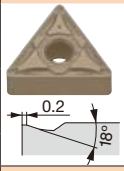
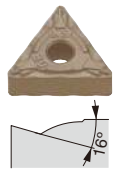
TN



Triangular, 60° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	GT9530	AT9530	NS9530	NS520
P	Steel	●	◐	◐	✣	●	◐	◐	✣	◐	◐	◐	◐
M	Stainless		◐										
K	Cast iron	◐	◐			◐	◐			◐	◐	◐	◐
N	Non-ferrous												
S	Superalloy												
H	Hard material												

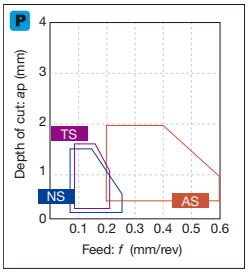


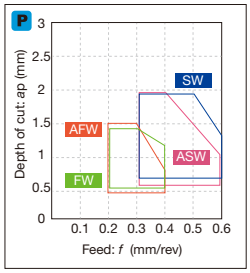
Application	Chipbreaker	Designation	Coated								Coated cermet		Cermet			Dimension (mm)			
			T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	GT9530	AT9530	NS9530	NS520		RE	IC	S	D1
Finishing	TS	TNMG160404-TS		●	●	●		▲	▲	▲	●	●	●	●		0.4	9.525	4.76	3.81
		TNMG160408-TS	●	●	●	●	▲	▲	▲	▲	●	●	●	●		0.8	9.525	4.76	3.81
		TNMG160412-TS	●	●	●	●	▲	▲	▲	▲						1.2	9.525	4.76	3.81
Finishing to medium cutting (wiper)	SW	TNMG110408E-SW		●				▲								0.8	6.35	4.76	2.26
		TNMG110412E-SW		●				▲								1.2	6.35	4.76	2.26
		TNMG160408-SW		●				▲								0.8	9.525	4.76	3.81
		TNMG160412-SW		●				▲								1.2	9.525	4.76	3.81
		*Wiper																	
High feed, small depth of cut	AS	TNMG160404-AS			●	●			▲	▲			●			0.4	9.525	4.76	3.81
		TNMG160408-AS	●	●	●	●	▲	▲	▲	▲			●			0.8	9.525	4.76	3.81
		TNMG160412-AS	●	●	●		▲	▲	▲							1.2	9.525	4.76	3.81
Boring (double side)	CB	TNMG110304-CB		●				▲					●			0.4	6.35	3.18	2.26
		TNMG110308-CB		●				▲					●			0.8	6.35	3.18	2.26
Finishing	NS	TNMG160404-NS		●	●			▲	▲				●			0.4	9.525	4.76	3.81
		TNMG160408-NS	●	●	●		▲	▲	▲				●			0.8	9.525	4.76	3.81

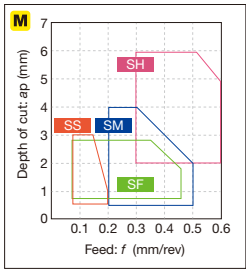
* Please see **L032-L036** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact our sales representatives if you have any question.

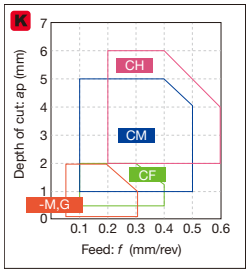
● : Line up
▲ : To be discontinued

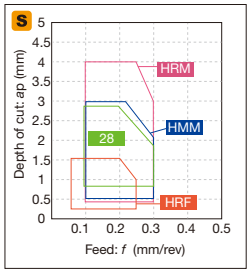
Chip control range











*-M,G: Without chipbreaker

Reference pages: External toolholder → C025 - Internal toolholder → D044 -
J-Series toolholder → G045 - Cartridge → K193 -

Insert NEGATIVE TYPE

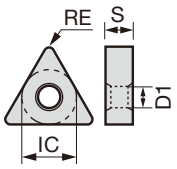
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN



Triangular, 60° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	AH120	AH725	GH330	GT9530	AT9530	NS9530	KS20
P	Steel	●	●ɔ	ɔ✣	✣	●	●ɔ	ɔ✣	✣	ɔ	✣	ɔ✣	✣	●ɔ	ɔ	●ɔ				
M	Stainless		●ɔ							●	ɔ	ɔ	✣	●ɔ	ɔ	●ɔ				
K	Cast iron	●ɔ	●ɔ			●ɔ	●ɔ							●ɔ	ɔ	●ɔ	●ɔ	●ɔ	●ɔ	ɔ✣
N	Non-ferrous																			ɔ✣
S	Superalloy													●ɔ	●					ɔ✣
H	Hard material																			



Application	Chipbreaker	Designation	RE	IC	S	D1
Finishing	SS	TNMG110404E-SS	0.4	6.35	4.76	2.26
		TNMG110408E-SS	0.8	6.35	4.76	2.26
		TNMG160404-SS	0.4	9.525	4.76	3.81
		TNMG160408-SS	0.8	9.525	4.76	3.81
		TNMG160412-SS	1.2	9.525	4.76	3.81
		TNMG220404-SS	0.4	12.7	4.76	5.16
		TNMG220408-SS	0.8	12.7	4.76	5.16
		TNMG220412-SS	1.2	12.7	4.76	5.16
Medium cutting	TM	TNMG110304-TM	0.4	6.35	3.18	2.26
		TNMG110308-TM	0.8	6.35	3.18	2.26
		TNMG110404E-TM	0.4	6.35	4.76	2.26
		TNMG110408E-TM	0.8	6.35	4.76	2.26
		TNMG110412E-TM	1.2	6.35	4.76	2.26
		TNMG160404-TM	0.4	9.525	4.76	3.81
		TNMG160408-TM	0.8	9.525	4.76	3.81
		TNMG160412-TM	1.2	9.525	4.76	3.81
		TNMG220404-TM	0.4	12.7	4.76	5.16
		TNMG220408-TM	0.8	12.7	4.76	5.16
		TNMG220412-TM	1.2	12.7	4.76	5.16
		TNMG220416-TM	1.6	12.7	4.76	5.16
Finishing to medium cutting	AM	TNMG160408-AM	0.8	9.525	4.76	3.81
		TNMG160412-AM	1.2	9.525	4.76	3.81
	NM	TNMG160408-NM	0.8	9.525	4.76	3.81
		TNMG160412-NM	1.2	9.525	4.76	3.81
	TQ	TNMG160404-TQ	0.4	9.525	4.76	3.81
		TNMG160408-TQ	0.8	9.525	4.76	3.81
Medium cutting	TA	TNMG160404-TA	0.4	9.525	4.76	3.81
		TNMG160408-TA	0.8	9.525	4.76	3.81
		TNMG160412-TA	1.2	9.525	4.76	3.81

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C025 - Internal toolholder → D044 -
J-Series toolholder → G045 - Cartridge → K193 -

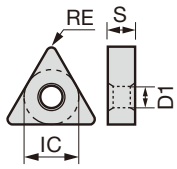
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN



Triangular, 60° with hole

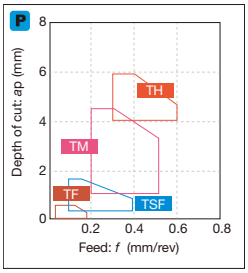
P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣	◐✣					●	●◐		●◐	●◐			●◐	●◐		●						
M	Stainless		●◐							◐					●	●◐									●						
K	Cast iron	●◐	●◐			●◐	●◐				●◐	●	◐	✣	●	●◐		●◐	●◐			●◐	●◐		●						
N	Non-ferrous																								●						
S	Superalloy														●	●◐															
H	Hard material																														

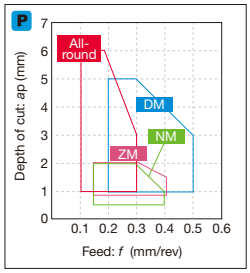


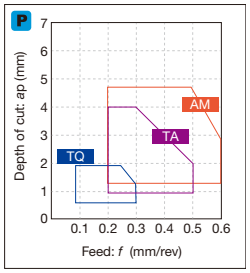
Application	Chipbreaker	Designation	Coated														Coated cermet			Cermet		Un-coated	Dimension (mm)			
			T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	AH630	T515	T5105	T5115	T5125	AH110	AH120	GT9530	GT720		NS9530	NS520	TH10	RE	IC	S	D1
Finishing to medium cutting	ZM	TNMG160404-ZM		●	●	●		▲	▲	▲								●			●			0.4	9.525	4.76	3.81
		TNMG160408-ZM		●	●	●		▲	▲	▲								●			●			0.8	9.525	4.76	3.81
		TNMG160412-ZM		●	●	●		▲	▲	▲														1.2	9.525	4.76	3.81
		TNMG220412-ZM			●				▲															1.2	12.7	4.76	5.16
Medium cutting	DM	TNMG160408-DM	●	●	●	●	▲	▲	▲	▲														0.8	9.525	4.76	3.81
		TNMG160412-DM		●	●			▲	▲															1.2	9.525	4.76	3.81
	All-round	TNMG110304		●	●			▲	▲				●	●	●						●		●	0.4	6.35	3.18	2.26
		TNMG110308		●	●			▲	▲				●	●	●						●		●	0.8	6.35	3.18	2.26
		TNMG160304																					●	0.4	9.525	3.18	3.81
		TNMG160308																					●	0.8	9.525	3.18	3.81
		TNMG160404	●	●	●	●	▲	▲	▲	▲		●	●	●	●	●	●				●	●	●	0.4	9.525	4.76	3.81
		TNMG160408	●	●	●	●	▲	▲	▲	▲		●	●	●	●	●	●		●		●	●	●	0.8	9.525	4.76	3.81
		TNMG160412	●	●	●	●	▲	▲	▲	▲		●	●	●	●	●	●						●	1.2	9.525	4.76	3.81
		TNMG160416		●	●	●		▲	▲	▲			●	●	●								●	1.6	9.525	4.76	3.81
		TNMG160420		●	●	●		▲	▲	▲														2	9.525	4.76	3.81
		TNMG220408	●	●	●	●	▲	▲	▲	▲			●	●	●								●	0.8	12.7	4.76	5.16
		TNMG220412	●	●	●	●	▲	▲	▲	▲	●		●	●	●								●	1.2	12.7	4.76	5.16
		TNMG220416		●	●			▲	▲		●		●	●	●								●	1.6	12.7	4.76	5.16
		TNMG270608			●				▲								●							0.8	15.875	6.35	6.35
		TNMG270612			●				▲								●							1.2	15.875	6.35	6.35
		TNMG270616															●							1.6	15.875	6.35	6.35
Finishing to medium cutting	27	TNMG160404-27		●	●			▲	▲															0.4	9.525	4.76	3.81
		TNMG160408-27		●	●			▲	▲												●			0.8	9.525	4.76	3.81
		TNMG160412-27		●	●			▲	▲															1.2	9.525	4.76	3.81
		TNMG220404-27			●				▲															0.4	12.7	4.76	5.16
		TNMG220408-27			●				▲															0.8	12.7	4.76	5.16
		TNMG220412-27			●				▲															1.2	12.7	4.76	5.16

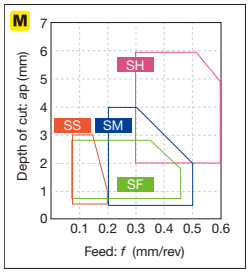
● : Line up
▲ : To be discontinued

Chip control range









Reference pages: External toolholder → C025 - Internal toolholder → D044 -
J-Series toolholder → G045 - Cartridge → K193 -

Insert NEGATIVE TYPE

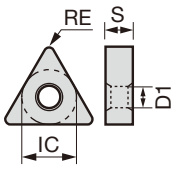
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN



Triangular, 60° with hole

		T9205	T9215	T9225	T9235	T9115	T9125	T9135	T6120	T6130	AH630	AH645	AH8005	AH8015	T515	T5105	T5115	T5125	AH120	AH725	GH330	GT720	NS9530	TH10
P	Steel	●	●ɔ	ɔ✣	✣	●ɔ	ɔ✣	✣	ɔ	✣	ɔ✣	✣							●ɔ	ɔ	●ɔ	●ɔ		●ɔ	●
M	Stainless		●ɔ						●	ɔ	ɔ	✣	●	ɔ					●ɔ	ɔ	●ɔ				●
K	Cast iron	●ɔ	●ɔ			●ɔ									●ɔ	●	ɔ	✣	●ɔ	ɔ	●ɔ	●ɔ		●ɔ	●
N	Non-ferrous																								●
S	Superalloy												●	ɔ					●ɔ	●					
H	Hard material																								



Application	Chipbreaker	Designation	RE	IC	S	D1
Medium cutting	28	TNMG160404-28	0.4	9.525	4.76	3.81
		TNMG160408-28	0.8	9.525	4.76	3.81
		TNMG220404-28	0.4	12.7	4.76	5.16
		TNMG220408-28	0.8	12.7	4.76	5.16
	33	TNMG160404-33	0.4	9.525	4.76	3.81
		TNMG160408-33	0.8	9.525	4.76	3.81
		TNMG160416-33	1.6	9.525	4.76	3.81
		TNMG220404-33	0.4	12.7	4.76	5.16
		TNMG220412-33	1.2	12.7	4.76	5.16
		TNMG220416-33	1.6	12.7	4.76	5.16
	37	TNMG160404-37	0.4	9.525	4.76	3.81
		TNMG160408-37	0.8	9.525	4.76	3.81
	38	TNMG160404-38	0.4	9.525	4.76	3.81
		TNMG160408-38	0.8	9.525	4.76	3.81
	SM	TNMG110404E-SM	0.4	6.35	4.76	2.26
		TNMG110408E-SM	0.8	6.35	4.76	2.26
		TNMG160404-SM	0.4	9.525	4.76	3.81
		TNMG160408-SM	0.8	9.525	4.76	3.81
		TNMG160412-SM	1.2	9.525	4.76	3.81
		TNMG220408-SM	0.8	12.7	4.76	5.16
		TNMG220412-SM	1.2	12.7	4.76	5.16
	CM	TNMG160404-CM	0.4	9.525	4.76	3.81
		TNMG160408-CM	0.8	9.525	4.76	3.81
		TNMG160412-CM	1.2	9.525	4.76	3.81
		TNMG220408-CM	0.8	12.7	4.76	5.16
		TNMG220412-CM	1.2	12.7	4.76	5.16

● : Line up
▲ : To be discontinued

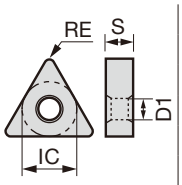
Reference pages: External toolholder → C025 - Internal toolholder → D044 -
J-Series toolholder → G045 - Cartridge → K193 -

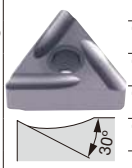
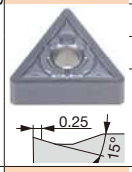
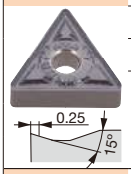
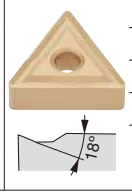
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

TN

Triangular, 60° with hole

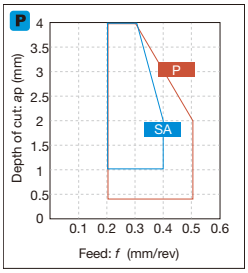
P	Steel	ɔ	✠	ɔ✠	✠	●ɔ				●	●ɔ	●ɔ				●ɔ				●							
M	Stainless	●	ɔ	ɔ	✠	●ɔ	●	ɔ		●	●ɔ	●ɔ								●							
K	Cast iron					●ɔ				●	●ɔ					●ɔ				●	ɔ✠						
N	Non-ferrous																			●	ɔ✠						
S	Superalloy					●ɔ	●	ɔ	ɔ	●											ɔ✠						
H	Hard material																										

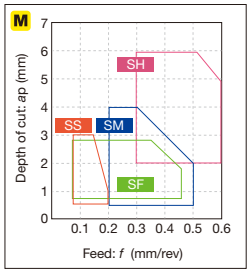


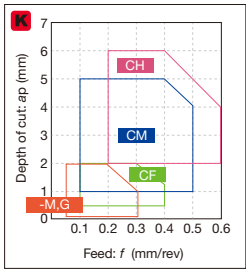
Application	Chipbreaker	Designation	Coated											Cermet		Uncoated			Dimension (mm)			
			T6120	T6130	AH630	AH645	AH120	AH8005	AH8015	AH905	GH110	GH330	SH725	NS9530		TH10	KS20		RE	IC	S	D1
Medium cutting	P	TNGG160402R-P									●	●		●		●			0.2	9.525	4.76	3.81
		TNGG160402L-P									●	●		●		●			0.2	9.525	4.76	3.81
		TNGG160404R-P									●	●		●		●			0.4	9.525	4.76	3.81
		TNGG160404L-P									●	●		●		●			0.4	9.525	4.76	3.81
		TNGG160408R-P									●	●		●		●			0.8	9.525	4.76	3.81
		TNGG160408L-P									●	●		●		●			0.8	9.525	4.76	3.81
Medium cutting (sharp edge)	P	TNGG160402FR-P											●						0.2	9.525	4.76	3.81
		TNGG160402FL-P											●						0.2	9.525	4.76	3.81
		TNGG160404FR-P											●						0.4	9.525	4.76	3.81
		TNGG160404FL-P											●						0.4	9.525	4.76	3.81
		TNGG160408FR-P											●						0.8	9.525	4.76	3.81
		TNGG160408FL-P											●						0.8	9.525	4.76	3.81
Finishing to medium cutting	HRM	TNMG160404-HRM						●	●										0.4	9.525	4.76	3.81
		TNMG160408-HRM						●	●										0.8	9.525	4.76	3.81
		TNMG160412-HRM						●	●										1.2	9.525	4.76	3.81
Medium cutting	HMM	TNMG160404-HMM								●									0.4	9.525	4.76	3.81
		TNMG160408-HMM								●									0.8	9.525	4.76	3.81
		TNMG160412-HMM								●									1.2	9.525	4.76	3.81
	SA	TNMG160404-SA	●	●	●	●	●												0.4	9.525	4.76	3.81
		TNMG160408-SA	●	●	●	●	●										●		0.8	9.525	4.76	3.81
		TNMG160412-SA	●	●	●	●	●										●		1.2	9.525	4.76	3.81
		TNMG220408-SA	●	●	●	●	●										●		0.8	12.7	4.76	5.16
		TNMG220412-SA	●	●	●	●													1.2	12.7	4.76	5.16

● : Line up

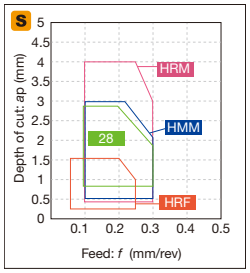
Chip control range







*-M,G: Without chipbreaker



Reference pages: External toolholder → C025 - Internal toolholder → D044 -
J-Series toolholder → G045 - Cartridge → K193 -

Insert NEGATIVE TYPE

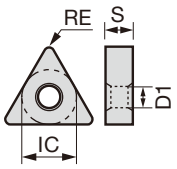
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN



Triangular, 60° with hole

		T9205	T9215	T9225	T9235	T9115	T9125	T9135	T6130	AH630	AH645	T515	T5105	T5115	T5125	AH120	AH725	GH330	NS9530
P	Steel	●	●ɔ	●✣	✣	●ɔ	ɔ✣	✣	✣	ɔ✣	✣					●ɔ	ɔ	●ɔ	●ɔ
M	Stainless		●ɔ					✣	ɔ	ɔ	✣					●ɔ	ɔ	●ɔ	
K	Cast iron	●ɔ	●ɔ			●ɔ						●ɔ	●	ɔ	✣	●ɔ	ɔ	●ɔ	●ɔ
N	Non-ferrous																		
S	Superalloy															●ɔ	●		
H	Hard material																		



Application	Chipbreaker	Designation	RE	IC	S	D1
Medium cutting	S	TNMG160404R-S	0.4	9.525	4.76	3.81
		TNMG160404L-S	0.4	9.525	4.76	3.81
		TNMG160408R-S	0.8	9.525	4.76	3.81
		TNMG160408L-S	0.8	9.525	4.76	3.81
		TNMG220404R-S	0.4	12.7	4.76	5.16
		TNMG220404L-S	0.4	12.7	4.76	5.16
		TNMG220408R-S	0.8	12.7	4.76	5.16
		TNMG220408L-S	0.8	12.7	4.76	5.16
Medium to heavy cutting	TH	TNMG220408-TH	0.8	12.7	4.76	5.16
		TNMG220412-TH	1.2	12.7	4.76	5.16
	THS	TNMG220408-THS	0.8	12.7	4.76	5.16
		TNMG220412-THS	1.2	12.7	4.76	5.16
	CH	TNMG160404-CH	0.4	9.525	4.76	3.81
		TNMG160408-CH	0.8	9.525	4.76	3.81
		TNMG160412-CH	1.2	9.525	4.76	3.81
		TNMG220408-CH	0.8	12.7	4.76	5.16
		TNMG220412-CH	1.2	12.7	4.76	5.16
		TNMG220416-CH	1.6	12.7	4.76	5.16
Medium to heavy cutting (single side)	57	TNMM160408-57	0.8	9.525	4.76	3.81
		TNMM220408-57	0.8	12.7	4.76	5.16
		TNMM220412-57	1.2	12.7	4.76	5.16

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C025 - Internal toolholder → D044 -
J-Series toolholder → G045 - Cartridge → K193 -

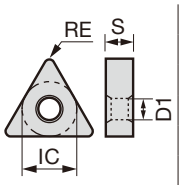
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

TN



Triangular, 60° with hole

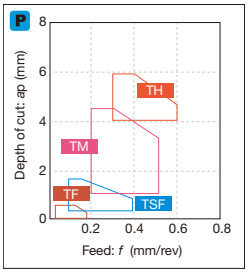
P	Steel					●					●ɔ				●ɔ			●	●						
M	Stainless					●												●	●						
K	Cast iron	●ɔ	●	ɔ	✠	●					●ɔ				●ɔ			●	●			●ɔ	●		
N	Non-ferrous																	●	●						
S	Superalloy					●																			
H	Hard material																						●		

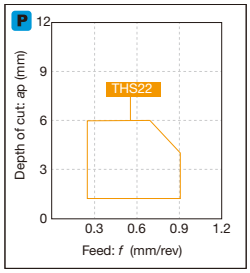


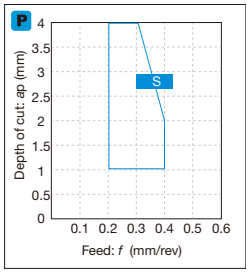
Application	Chipbreaker	Designation	Coated								Coated cermet			Cermet			Uncoated			Ceramic			Dimension (mm)			
			T515	T5105	T5115	T5125	GH110				GT720			NS520			TH03	TH10		FX105	LX21	LX11	RE	IC	S	D1
Finishing to medium cutting	-	TNMA110404E	●																				0.4	6.35	4.76	2.26
		TNMA110408E	●																				0.8	6.35	4.76	2.26
		TNMA110412E	●																				1.2	6.35	4.76	2.26
		TNMA160404	●	●	●	●												●					0.4	9.525	4.76	3.81
		TNMA160408	●	●	●	●					●			●				●			●		0.8	9.525	4.76	3.81
		TNMA160412	●	●	●	●															●		1.2	9.525	4.76	3.81
		TNMA160416		●	●	●																	1.6	9.525	4.76	3.81
		TNMA160420		●	●	●																	2	9.525	4.76	3.81
		TNMA220404		●	●	●																	0.4	12.7	4.76	5.16
		TNMA220408		●	●	●																	0.8	12.7	4.76	5.16
		TNMA220412		●	●	●																	1.2	12.7	4.76	5.16
		TNMA220416		●	●	●																	1.6	12.7	4.76	5.16
	-	TNGA110304																●					0.4	6.35	3.18	2.26
		TNGA110308																●					0.8	6.35	3.18	2.26
		TNGA160304																●					0.4	9.525	3.18	3.81
		TNGA160308																●					0.8	9.525	3.18	3.81
		TNGA160402																				●	0.2	9.525	4.76	3.81
		TNGA160404					●							●			●	●			●	●	0.4	9.525	4.76	3.81
		TNGA160408					●							●			●	●		●	●	●	0.8	9.525	4.76	3.81
		TNGA160412												●				●		●	●	●	1.2	9.525	4.76	3.81
		TNGA160416																●		●		●	1.6	9.525	4.76	3.81
		TNGA220408																●					0.8	12.7	4.76	5.16

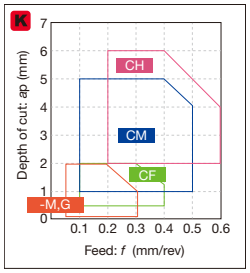
● : Line up

Chip control range









*-M,G: Without chipbreaker

Reference pages: External toolholder → C025 - Internal toolholder → D044 -
J-Series toolholder → G045 - Cartridge → K193 -

Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN



Triangular, 60° without hole

| | | |

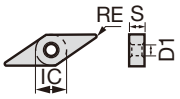
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

VN



Rhombic, 35°
with hole

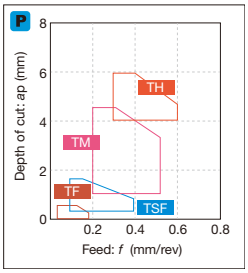
P	Steel	● ●ɔ ɔ✣ ✣ ● ●ɔ ɔ✣ ✣ ɔ ✣ ɔ✣ ●ɔ ●ɔ ●ɔ ●ɔ ●ɔ ●
M	Stainless	●ɔ ɔ ●ɔ ●ɔ ●ɔ ●
K	Cast iron	●ɔ ●ɔ ●ɔ ●ɔ ●ɔ ●ɔ ●ɔ ●ɔ ●
N	Non-ferrous	●
S	Superalloy	●ɔ
H	Hard material	

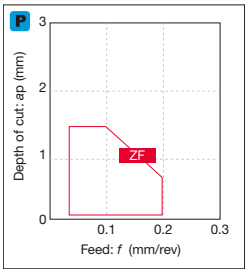


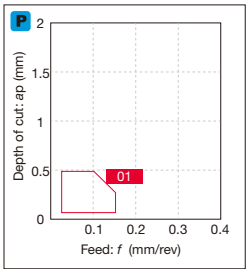
Application	Chipbreaker	Designation	Coated												Coated cermet		Cermet		Uncoated	Dimension (mm)			
			T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH120	GH330	GT9530	AT9530	NS9530	TH10	RE	IC	S	D1
Finishing	TSF	VNMG120402E-TSF		●	●			▲	▲							●	●	●		0.2	7.15	4.76	3.81
		VNMG120404E-TSF		●	●			▲	▲							●	●	●		0.4	7.15	4.76	3.81
		VNMG120408E-TSF		●	●			▲	▲							●	●	●		0.8	7.15	4.76	3.81
		VNMG160402-TSF												●		●	●	●		0.2	9.525	4.76	3.81
		VNMG160404-TSF	●	●	●	●	▲	▲	▲	▲				●		●	●	●		0.4	9.525	4.76	3.81
		VNMG160408-TSF	●	●	●	●	▲	▲	▲	▲				●		●	●	●		0.8	9.525	4.76	3.81
		VNMG160412-TSF	●	●	●	●	▲	▲	▲	▲										1.2	9.525	4.76	3.81
	ZF	VNMG160404-ZF		●	●	●		▲	▲	▲						●	●	●		0.4	9.525	4.76	3.81
		VNMG160408-ZF		●	●	●		▲	▲	▲						●	●	●		0.8	9.525	4.76	3.81
		VNMG160412-ZF		●	●	●		▲	▲	▲										1.2	9.525	4.76	3.81
	11	VNMG160404-11													●			●	●	0.4	9.525	4.76	3.81
		VNMG160408-11																●		0.8	9.525	4.76	3.81
		VNMG160412-11														●		●		1.2	9.525	4.76	3.81
	SF	VNMG160404-SF									●	●	●							0.4	9.525	4.76	3.81
		VNMG160408-SF									●	●	●							0.8	9.525	4.76	3.81

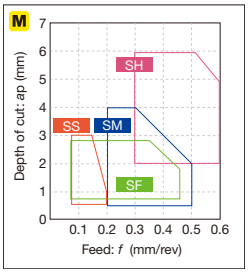
● : Line up
▲ : To be discontinued

Chip control range









Reference pages: External toolholder → C052 - Internal toolholder → D068 -
TungCap → C059, K015 -

Insert NEGATIVE TYPE

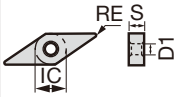
● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

VN



Rhombic, 35° with hole

P	Steel	● ●ⓒ ⓒ✣ ✣ ● ●ⓒ ⓒ✣ ✣ ⓒ ✣ ⓒ✣ ✣ ● ●ⓒ ●ⓒ ⓒ✣ ●ⓒ ●ⓒ ●ⓒ ●ⓒ ●ⓒ
M	Stainless	●ⓒ ● ⓒ ⓒ ✣ ● ⓒ
K	Cast iron	●ⓒ ●ⓒ ●ⓒ ●ⓒ ● ⓒ ● ●ⓒ ●ⓒ ●ⓒ ●ⓒ ●ⓒ ●ⓒ
N	Non-ferrous	
S	Superalloy	● ●ⓒ ● ⓒ
H	Hard material	



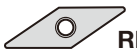
Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	T5105	T5115	AH110	AH120	AH8005	AH8015	GH330	Coated cermet GT9530	AT9530	Cermet NS9530	NS520	RE	IC	S	D1
Finishing	CF	VNMG160404-CF													●	●										0.4	9.525	4.76	3.81
		VNMG160408-CF													●	●										0.8	9.525	4.76	3.81
	HRF	VNMG160404-HRF																	●	●						0.4	9.525	4.76	3.81
		VNMG160408-HRF																	●	●						0.8	9.525	4.76	3.81
	TS	VNMG160404-TS		●	●	●		▲	▲	▲												●	●	●	●	0.4	9.525	4.76	3.81
		VNMG160408-TS		●	●	●		▲	▲	▲												●	●	●	●	0.8	9.525	4.76	3.81
		VNMG160412-TS		●	●	●		▲	▲	▲																1.2	9.525	4.76	3.81
	SS	VNMG120404E-SS									●	●	●	●												0.4	7.15	4.76	3.81
		VNMG120408E-SS									●	●	●	●												0.8	7.15	4.76	3.81
		VNMG160404-SS									●	●	●	●				●			●					0.4	9.525	4.76	3.81
		VNMG160408-SS									●	●	●	●				●			●					0.8	9.525	4.76	3.81
		VNMG160412-SS									●	●	●	●							●					1.2	9.525	4.76	3.81
Medium cutting	TM	VNMG120404E-TM		●	●			▲	▲																	0.4	7.15	4.76	3.81
		VNMG120408E-TM		●	●			▲	▲																	0.8	7.15	4.76	3.81
		VNMG160404-TM	●	●	●	●	▲	▲	▲	▲		●						●								0.4	9.525	4.76	3.81
		VNMG160408-TM	●	●	●	●	▲	▲	▲	▲							●	●								0.8	9.525	4.76	3.81
		VNMG160412-TM	●	●	●	●	▲	▲	▲	▲							●									1.2	9.525	4.76	3.81
Finishing to medium cutting	TQ	VNMG160404-TQ		●	●																	●	●	●		0.4	9.525	4.76	3.81
		VNMG160408-TQ		●	●																	●	●	●		0.8	9.525	4.76	3.81

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C052 - Internal toolholder → D068 -
TungCap → C059, K015 -

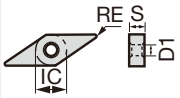
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

VN



Rhombic, 35° with hole

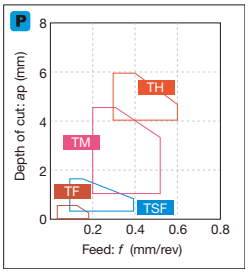
P	Steel	● ●ɔ ɔ✣ ✣ ● ●ɔ ɔ✣ ✣ ● ●ɔ
M	Stainless	●ɔ ● ●ɔ
K	Cast iron	●ɔ ●ɔ ●ɔ ●ɔ ●ɔ ● ɔ ✣ ● ●ɔ
N	Non-ferrous	●
S	Superalloy	● ●ɔ ● ɔ
H	Hard material	

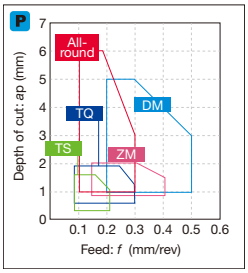


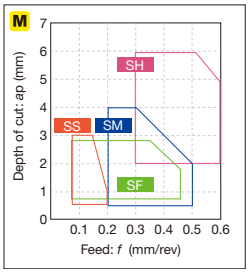
Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	T5105	T5115	T5125	AH110	AH120	AH8005	AH8015	Cermet NS9530	Uncoated TH10	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	ZM	VNMG160408-ZM		●	●	●		▲	▲	▲											0.8	9.525	4.76	3.81
		VNMG160412-ZM		●	●	●		▲	▲	▲											1.2	9.525	4.76	3.81
Medium cutting	DM	VNMG160408-DM	●	●	●	●	▲	▲	▲	▲											0.8	9.525	4.76	3.81
		VNMG160412-DM		●	●	●		▲	▲	▲											1.2	9.525	4.76	3.81
	All-round	VNMG160404	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●			●	●	0.4	9.525	4.76	3.81
		VNMG160408	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●			●	●	0.8	9.525	4.76	3.81
		VNMG160412		●	●			▲	▲		●	●	●	●					●		1.2	9.525	4.76	3.81
	28	VNMG160404-28														●	●	●			0.4	9.525	4.76	3.81
		VNMG160408-28														●	●	●			0.8	9.525	4.76	3.81
	33	VNMG160404-33			●			▲							●					●	0.4	9.525	4.76	3.81
		VNMG160408-33		●	●			▲	▲											●	0.8	9.525	4.76	3.81

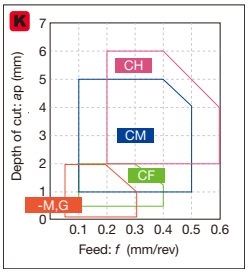
● : Line up
▲ : To be discontinued

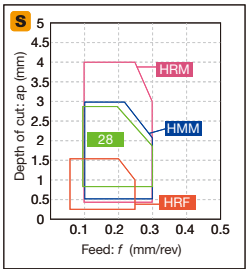
Chip control range











*-M,G: Without chipbreaker

Reference pages: External toolholder → C057 - Internal toolholder → D068 -
TungCap → C059, K015 -

Insert NEGATIVE TYPE

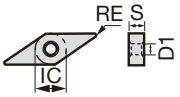
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

VN



Rhombic, 35° with hole

P	Steel	ɔ	✣	ɔ✣	✣										●ɔ				●						
M	Stainless	●	ɔ	ɔ	✣					●	ɔ								●						
K	Cast iron					●ɔ	●	ɔ	✣						●ɔ				●						
N	Non-ferrous																		●						
S	Superalloy									●	ɔ	ɔ													
H	Hard material																				●				



Application	Chipbreaker	Designation	Coated											Cermet		Uncoated		Ceramic		Dimension (mm)			
			T6120	T6130	AH630	AH645	T515	T5105	T5115	T5125	AH8005	AH8015	AH905	NS520		TH10		LX11		RE	IC	S	D1
Medium cutting	SM	VNMG120404E-SM	●	●	●	●														0.4	7.15	4.76	3.81
		VNMG120408E-SM	●	●	●	●														0.8	7.15	4.76	3.81
		VNMG160404-SM	●	●	●	●														0.4	9.525	4.76	3.81
		VNMG160408-SM	●	●	●	●														0.8	9.525	4.76	3.81
		VNMG160412-SM	●	●	●	●														1.2	9.525	4.76	3.81
	CM	VNMG160408-CM					●	●	●	●										0.8	9.525	4.76	3.81
		VNMG160412-CM						●	●	●										1.2	9.525	4.76	3.81
Finishing to medium cutting	HRM	VNMG160404-HRM									●	●								0.4	9.525	4.76	3.81
		VNMG160408-HRM									●	●								0.8	9.525	4.76	3.81
		VNMG160412-HRM									●	●								1.2	9.525	4.76	3.81
Medium cutting	HMM	VNMG160404-HMM											●							0.4	9.525	4.76	3.81
		VNMG160408-HMM											●							0.8	9.525	4.76	3.81
		VNMG160412-HMM											●							1.2	9.525	4.76	3.81
Finishing to medium cutting	-	VNMA120404E					●													0.4	7.15	4.76	3.81
		VNMA120408E					●													0.8	7.15	4.76	3.81
		VNMA160402														●				0.2	9.525	4.76	3.81
		VNMA160404						●	●	●				●		●				0.4	9.525	4.76	3.81
		VNMA160408						●	●	●				●		●				0.8	9.525	4.76	3.81
		VNGA160404																●		0.4	9.525	4.76	3.81
		VNGA160408																●		0.8	9.525	4.76	3.81

* Please see **L032-L036** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact our sales representatives if you have any question.

● : Line up

Reference pages: External toolholder → C052 - Internal toolholder → D068 -
TungCap → C059, K015 -

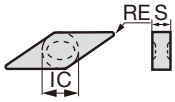
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

VN



Rhombic, 35° without hole

P	Steel	
M	Stainless	
K	Cast iron	●◐
N	Non-ferrous	
S	Superalloy	
H	Hard material	



Application	Chipbreaker	Designation	Ceramic	Dimension (mm)			
			FX105	RE	IC	S	D1
Finishing to medium cutting	-	VNGD160712	●	1.2	9.525	4.76	-

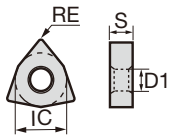


WN

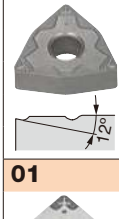


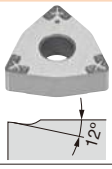
Trigon, 80° with hole

P	Steel	●◐ ●◐●
M	Stainless	
K	Cast iron	●◐ ●◐●
N	Non-ferrous	
S	Superalloy	
H	Hard material	



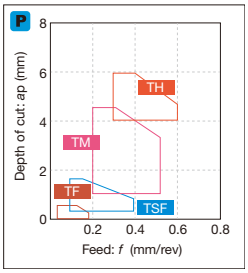
Application	Chipbreaker	Designation	Coated cermet	Cermet		Dimension (mm)			
			GT720	NS9530	NS520	RE	IC	S	D1
Precision finishing	TF	WNMG080404-TF		●		0.4	12.7	4.76	5.16
		WNMG080808-TF		●		0.8	12.7	4.76	5.16
	01	WNGG080402-01		●	●	0.2	12.7	4.76	5.16
		WNGG080404-01	●	●	●	0.4	12.7	4.76	5.16
		WNGG080808-01	●	●		0.8	12.7	4.76	5.16

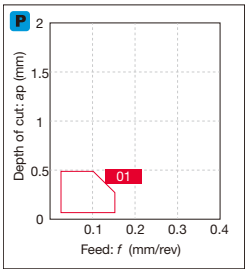


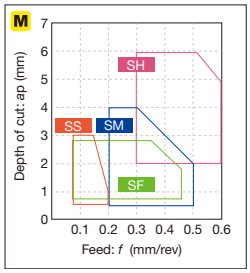


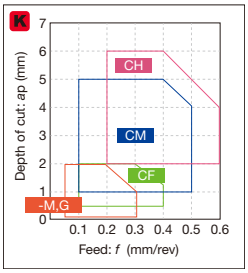
● : Line up

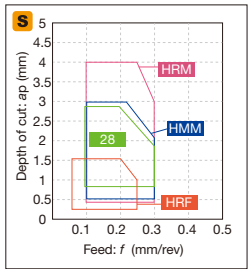
Chip control range











*-M,G: Without chipbreaker

Reference pages: VNGD...: External toolholder → C068
WNMG..., WNGG...: External toolholder → C032 -, Internal toolholder → D029 -, TungCap → C033 -, K011 -

Insert NEGATIVE TYPE

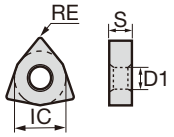
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN



Trigon, 80°
with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	AH120	GT9530	AT9530	NS9530
P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣	●◐	●◐	●◐	◐
M	Stainless		●◐							●◐			
K	Cast iron	●◐	●◐			●◐	●◐			●◐	●◐	●◐	◐
N	Non-ferrous												
S	Superalloy									●◐			
H	Hard material												



Application	Chipbreaker	Designation	T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	AH120	GT9530	AT9530	NS9530	RE	IC	S	D1
			Coated									Coated cermet		Cermet	Dimension (mm)			
Finishing	TSF	WNMG060404E-TSF		●	●			▲	▲			●	●	●	0.4	9.525	4.76	3.81
		WNMG060408E-TSF		●	●			▲	▲			●	●	●	0.8	9.525	4.76	3.81
		WNMG060412E-TSF		●	●			▲	▲			●		●	1.2	9.525	4.76	3.81
		WNMG060404-TSF		●	●			▲	▲						0.4	9.525	4.76	3.81
		WNMG060408-TSF		●	●			▲	▲						0.8	9.525	4.76	3.81
		WNMG080404-TSF		●	●	●		▲	▲	▲	●	●	●	●	0.4	12.7	4.76	5.16
		WNMG080408-TSF		●	●	●		▲	▲	▲	●	●	●	●	0.8	12.7	4.76	5.16
		WNMG080412-TSF	●	●	●	●	▲	▲	▲	▲	●				1.2	12.7	4.76	5.16
Finishing (wiper)	FW	WNMG060404E-FW	●	●	●		▲	▲	▲			●		●	0.4	9.525	4.76	3.81
		WNMG060408E-FW	●	●	●		▲	▲	▲			●		●	0.8	9.525	4.76	3.81
		WNMG080404-FW		●	●			▲	▲			●		●	0.4	12.7	4.76	5.16
		WNMG080408-FW	●	●	●		▲	▲	▲			●		●	0.8	12.7	4.76	5.16
		*Wiper																
	AFW	WNMG060404-AFW		●	●			▲	▲					●	0.4	9.525	4.76	3.81
		WNMG060408-AFW	●	●	●	●	▲	▲	▲	▲				●	0.8	9.525	4.76	3.81
		WNMG080404-AFW		●	●			▲	▲					●	0.4	12.7	4.76	5.16
		WNMG080408-AFW	●	●	●	●	▲	▲	▲	▲				●	0.8	12.7	4.76	5.16
Finishing	ZF	WNMG060404E-ZF		●	●			▲	▲						0.4	9.525	4.76	3.81
		WNMG060404-ZF		●	●			▲	▲						0.4	9.525	4.76	3.81
		WNMG060408-ZF		●	●			▲	▲						0.8	9.525	4.76	3.81
		WNMG080404-ZF		●	●	●		▲	▲	▲		●	●	●	0.4	12.7	4.76	5.16
		WNMG080408-ZF		●	●	●		▲	▲	▲		●	●	●	0.8	12.7	4.76	5.16
		WNMG080412-ZF		●				▲							1.2	12.7	4.76	5.16
	11	WNMG080404-11												●	0.4	12.7	4.76	5.16
		WNMG080408-11												●	0.8	12.7	4.76	5.16
Finishing (for mild steel)	17	WNMG080404-17												●	0.4	12.7	4.76	5.16
		WNMG080408-17												●	0.8	12.7	4.76	5.16

* Please see **L032-L036** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact our sales representatives if you have any question.

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C027 - Internal toolholder → D027 -
TungCap → C033 -, K011 -

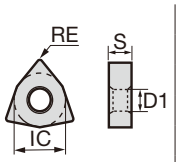
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN



Trigon, 80°
with hole

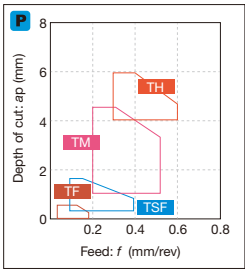
		T9205	T9215	T9225	T9235	T9115	T9125	T9135	T6120	T6130	AH630	T5105	T5115	AH8005	AH8015	GT9530	AT9530	NS9530	NS520
P	Steel	●	◐	✣	✣	◐	✣	✣	◐	✣	✣					◐	◐	◐	◐
M	Stainless		◐						●	◐	◐			●	◐				
K	Cast iron	◐	◐			◐						●	◐			◐	◐	◐	◐
N	Non-ferrous																		
S	Superalloy													●	◐				
H	Hard material																		

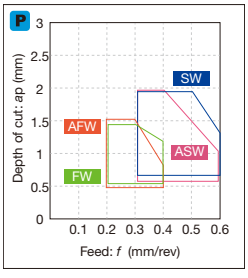


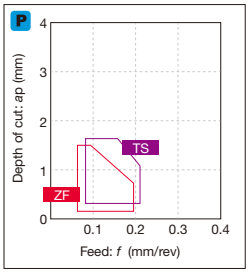
Application	Chipbreaker	Designation	RE	IC	S	D1
Finishing	SF	WNMG060404-SF	0.4	9.525	4.76	3.81
		WNMG060408-SF	0.8	9.525	4.76	3.81
		WNMG080404-SF	0.4	12.7	4.76	5.16
		WNMG080408-SF	0.8	12.7	4.76	5.16
	CF	WNMG080404-CF	0.4	12.7	4.76	5.16
		WNMG080408-CF	0.8	12.7	4.76	5.16
		WNMG080412-CF	1.2	12.7	4.76	5.16
	HRF	WNMG080404-HRF	0.4	12.7	4.76	5.16
		WNMG080408-HRF	0.8	12.7	4.76	5.16
	TS	WNMG080404-TS	0.4	12.7	4.76	5.16
		WNMG080408-TS	0.8	12.7	4.76	5.16
		WNMG080412-TS	1.2	12.7	4.76	5.16

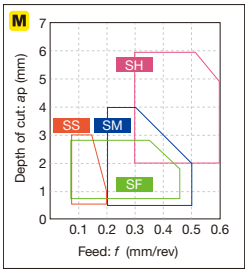
● : Line up
▲ : To be discontinued

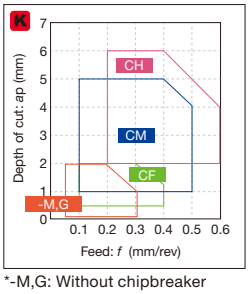
Chip control range



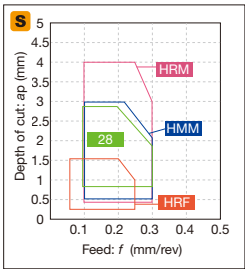








*-M,G: Without chipbreaker



Reference pages: External toolholder → C027 - Internal toolholder → D027 -
TungCap → C033 -, K011 -

Insert NEGATIVE TYPE

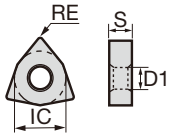
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN



Trigon, 80° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	T515	T5115	GH330	NS9530
P	Steel	●	●ɔ	●✣	✣	●	●ɔ	●✣	✣	ɔ	✣	ɔ✣	✣			●ɔ	●ɔ
M	Stainless		●ɔ							●	ɔ	ɔ	✣			●ɔ	
K	Cast iron	●ɔ	●ɔ			●ɔ	●ɔ							●ɔ	ɔ	●ɔ	●ɔ
N	Non-ferrous																
S	Superalloy																
H	Hard material																



Application	Chipbreaker	Designation	RE	IC	S	D1
Finishing to medium cutting (wiper)	SW	WNMG060408E-SW	0.8	9.525	4.76	3.81
		WNMG060412E-SW	1.2	9.525	4.76	3.81
		WNMG080408-SW	0.8	12.7	4.76	5.16
		WNMG080412-SW	1.2	12.7	4.76	5.16
		*Wiper				
	ASW	WNMG060408-ASW	0.8	9.525	4.76	3.81
		WNMG060412-ASW	1.2	9.525	4.76	3.81
		WNMG080408-ASW	0.8	12.7	4.76	5.16
		WNMG080412-ASW	1.2	12.7	4.76	5.16
High feed, small depth of cut	AS	WNMG080404-AS	0.4	12.7	4.76	5.16
		WNMG080408-AS	0.8	12.7	4.76	5.16
		WNMG080412-AS	1.2	12.7	4.76	5.16
Boring (double side)	CB	WNMG060404-CB	0.4	9.525	4.76	3.81
		WNMG060408-CB	0.8	9.525	4.76	3.81
Finishing	NS	WNMG080404-NS	0.4	12.7	4.76	5.16
		WNMG080408-NS	0.8	12.7	4.76	5.16
	SS	WNMG060404E-SS	0.4	9.525	4.76	3.81
		WNMG060408E-SS	0.8	9.525	4.76	3.81
		WNMG060412E-SS	1.2	9.525	4.76	3.81
		WNMG080404-SS	0.4	12.7	4.76	5.16
		WNMG080408-SS	0.8	12.7	4.76	5.16
		WNMG080412-SS	1.2	12.7	4.76	5.16

* Please see **L032-L036** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact our sales representatives if you have any question.

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C027 - Internal toolholder → D027 -
TungCap → C033 -, K011 -

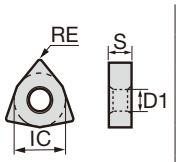
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN



Trigon, 80° with hole

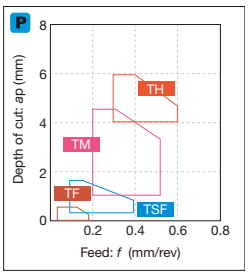
P	Steel	● ◐ ◐ ✣ ● ◐ ◐ ✣ ✣ ◐ ◐
M	Stainless	◐ ◐ ◐
K	Cast iron	◐ ◐ ◐ ◐ ◐ ◐ ◐ ◐ ◐
N	Non-ferrous	
S	Superalloy	◐ ●
H	Hard material	

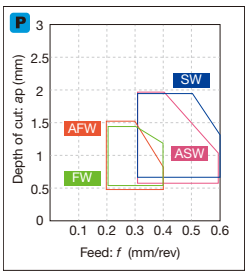


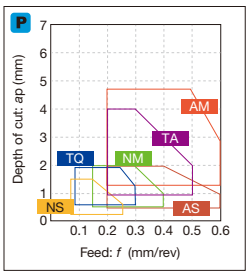
Application	Chipbreaker	Designation	Coated										Coated cermet		Cermet		Dimension (mm)			
			T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	AH120	AH725	GT9530	AT9530	NS9530		RE	IC	S	D1
Medium cutting	TM	WNMG060404E-TM		●	●			▲	▲								0.4	9.525	4.76	3.81
		WNMG060408E-TM		●	●			▲	▲								0.8	9.525	4.76	3.81
		WNMG060412E-TM		●	●			▲	▲								1.2	9.525	4.76	3.81
		WNMG060404-TM		●	●	●		▲	▲	▲							0.4	9.525	4.76	3.81
		WNMG060408-TM	●	●	●	●	▲	▲	▲	▲	●						0.8	9.525	4.76	3.81
		WNMG080404-TM	●	●	●	●	▲	▲	▲	▲	●	●					0.4	12.7	4.76	5.16
		WNMG080408-TM	●	●	●	●	▲	▲	▲	▲	●	●					0.8	12.7	4.76	5.16
		WNMG080412-TM	●	●	●	●	▲	▲	▲	▲	●						1.2	12.7	4.76	5.16
		WNMG080416-TM	●	●	●		▲	▲	▲		●						1.6	12.7	4.76	5.16
Finishing to medium cutting	AM	WNMG080408-AM		●	●			▲	▲								0.8	12.7	4.76	5.16
		WNMG080412-AM		●	●			▲	▲								1.2	12.7	4.76	5.16
		WNMG080416-AM		●	●			▲	▲								1.6	12.7	4.76	5.16
	TQ	WNMG080404-TQ			●								●	●		●	0.4	12.7	4.76	5.16
		WNMG080408-TQ			●								●	●		●	0.8	12.7	4.76	5.16
Medium cutting	TA	WNMG080408-TA		●	●												0.8	12.7	4.76	5.16
		WNMG080412-TA		●	●												1.2	12.7	4.76	5.16
Finishing to medium cutting	NM	WNMG060412E-NM			●				▲								1.2	9.525	4.76	3.81
		WNMG080408-NM	●	●	●		▲	▲	▲								0.8	12.7	4.76	5.16
		WNMG080412-NM	●	●	●	●	▲	▲	▲	▲							1.2	12.7	4.76	5.16

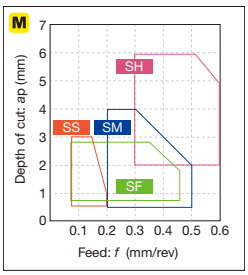
● : Line up
▲ : To be discontinued

Chip control range









Reference pages: External toolholder → C027 - Internal toolholder → D027 -
TungCap → C033 -, K011 -

Insert NEGATIVE TYPE

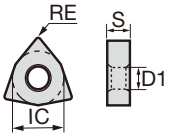
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

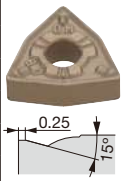
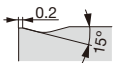
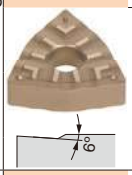
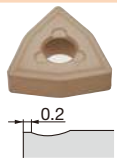
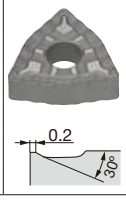
WN



Trigon, 80°
with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	T5105	T5115	T5125	AH110	AH120	GH330	GT720	GT9530	NS9530	NS520	TH10
P	Steel	●	●ɔ	●✣	✣	●	●ɔ	●✣	✣					●	●ɔ	●ɔ		●ɔ	●ɔ	●ɔ	●
M	Stainless		●ɔ											●	●ɔ	●ɔ					●
K	Cast iron	●ɔ	●ɔ			●ɔ	●ɔ			●ɔ	●	ɔ	✣	●	●ɔ	●ɔ	●ɔ	●ɔ	●ɔ	●ɔ	●
N	Non-ferrous																				●
S	Superalloy													●	●ɔ						
H	Hard material																				



Application	Chipbreaker	Designation	Coated														Coated cermet		Cermet		Uncoated	Dimension (mm)			
			T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	T5105	T5115	T5125	AH110	AH120	GH330	GT720	GT9530	NS9530	NS520	TH10	RE	IC	S	D1
Finishing to medium cutting	**ZM**	**WNMG060408E-ZM**		●	●			▲	▲														0.8	9.525	4.76	3.81
		WNMG060408-ZM		●	●	●		▲	▲	▲													0.8	9.525	4.76	3.81
		WNMG060412-ZM		●	●	●		▲	▲	▲													1.2	9.525	4.76	3.81
		WNMG080408-ZM		●	●	●		▲	▲	▲									●	●			0.8	12.7	4.76	5.16
		WNMG080412-ZM		●	●	●		▲	▲	▲													1.2	12.7	4.76	5.16
		WNMG080416-ZM		●	●			▲	▲														1.6	12.7	4.76	5.16
Medium cutting	**DM**	**WNMG080408-DM**	●	●	●	●	▲	▲	▲	▲													0.8	12.7	4.76	5.16
		WNMG080412-DM	●	●	●	●	▲	▲	▲	▲													1.2	12.7	4.76	5.16
	All-round	**WNMG060404**		●	●			▲	▲			●	●	●									0.4	9.525	4.76	3.81
		WNMG060408		●	●			▲	▲			●	●	●									0.8	9.525	4.76	3.81
		WNMG080404	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●				●		●	0.4	12.7	4.76	5.16
		WNMG080408	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●				●	●	●	0.8	12.7	4.76	5.16
		WNMG080412	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●						●	1.2	12.7	4.76	5.16
		WNMG080416	●	●	●	●	▲	▲	▲	▲	●	●	●	●									1.6	12.7	4.76	5.16
Finishing to medium cutting	**27**	**WNMG080408-27**			●				▲														0.8	12.7	4.76	5.16
																										
Medium cutting	**33**	**WNMG080404-33**																●					0.4	12.7	4.76	5.16
		WNMG080408-33					▲															●	0.8	12.7	4.76	5.16
	37	**WNMG080404-37**																		●			0.4	12.7	4.76	5.16
		WNMG080408-37		●				▲								●				●			0.8	12.7	4.76	5.16

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C027 - Internal toolholder → D027 -
TungCap → C033 -, K011 -

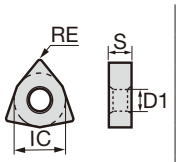
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN



Trigon, 80°
with hole

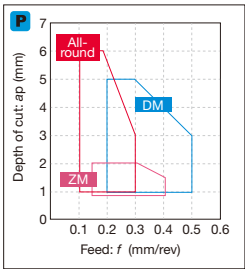
P	Steel	ɔ	✣	ɔ✣	✣					●ɔ	ɔ																		
M	Stainless	●	ɔ	ɔ	✣					●ɔ	ɔ	●	ɔ																
K	Cast iron					●ɔ	●	ɔ	✣	●ɔ	ɔ							●✣											
N	Non-ferrous																	●✣											
S	Superalloy									●ɔ	●	●	ɔ	ɔ				●✣											
H	Hard material																												

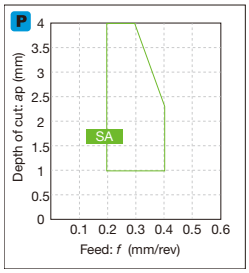


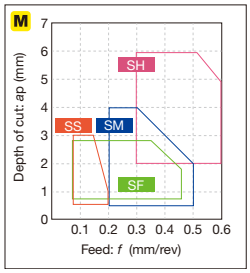
Application	Chipbreaker	Designation	Coated													Uncoated				Dimension (mm)			
			T6120	T6130	AH630	AH645	T515	T5105	T5115	T5125	AH120	AH725	AH8005	AH8015	AH905	KS20				RE	IC	S	D1
Medium cutting	SM	WNMG060404E-SM	●	●	●															0.4	9.525	4.76	3.81
		WNMG060408E-SM	●	●	●															0.8	9.525	4.76	3.81
		WNMG060412E-SM	●	●	●															1.2	9.525	4.76	3.81
		WNMG060408-SM										●								0.8	9.525	4.76	3.81
		WNMG080404-SM	●	●	●	●														0.4	12.7	4.76	5.16
		WNMG080408-SM	●	●	●	●						●								0.8	12.7	4.76	5.16
		WNMG080412-SM	●	●	●	●						●								1.2	12.7	4.76	5.16
	CM	WNMG080404-CM							●											0.4	12.7	4.76	5.16
		WNMG080408-CM					●	●	●	●										0.8	12.7	4.76	5.16
		WNMG080412-CM					●	●	●	●										1.2	12.7	4.76	5.16
Finishing to medium cutting	HRM	WNMG080404-HRM											●	●						0.4	12.7	4.76	5.16
		WNMG080408-HRM											●	●						0.8	12.7	4.76	5.16
		WNMG080412-HRM											●	●						1.2	12.7	4.76	5.16
Medium cutting	HMM	WNMG080404-HMM													●					0.4	12.7	4.76	5.16
		WNMG080408-HMM													●					0.8	12.7	4.76	5.16
		WNMG080412-HMM													●					1.2	12.7	4.76	5.16
	SA	WNMG080408-SA	●	●	●	●					●	●				●				0.8	12.7	4.76	5.16
		WNMG080412-SA	●	●	●	●					●									1.2	12.7	4.76	5.16

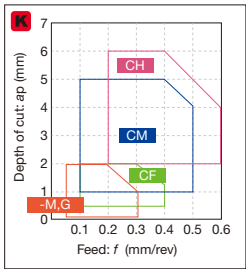
● : Line up

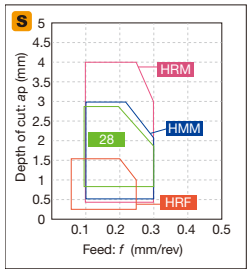
Chip control range











*-M,G: Without chipbreaker

Reference pages: External toolholder → C027 - Internal toolholder → D027 -
TungCap → C033 -, K011 -

Insert NEGATIVE TYPE

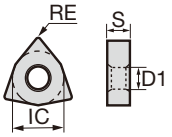
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

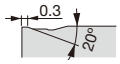
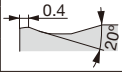
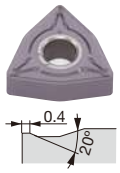
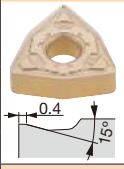
WN



Trigon, 80°
with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6130	AH630	AH645	T515	T5105	T5115	T5125	AH120	NS520	TH10	LX11
P	Steel	●	●ɔ	●✣	✣	●	●ɔ	●✣	✣	✣	ɔ✣	✣					●ɔ	●ɔ		●
M	Stainless		●ɔ							ɔ	ɔ	✣					●ɔ			●
K	Cast iron	●ɔ	●ɔ			●ɔ	●ɔ						●ɔ	●	ɔ	✣	●ɔ	●ɔ		●
N	Non-ferrous																			●
S	Superalloy																●ɔ			
H	Hard material																			



Application	Chipbreaker	Designation	Coated															Cermet	Uncoated	Ceramic	Dimension (mm)			
			T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6130	AH630	AH645	T515	T5105	T5115	T5125	AH120	NS520	TH10	LX11	RE	IC	S	D1
Medium to heavy cutting	TH	WNMG080408-TH	●	●	●	●	▲	▲	▲	▲	●							●				0.8	12.7	4.76	5.16
		WNMG080412-TH	●	●	●	●	▲	▲	▲	▲								●				1.2	12.7	4.76	5.16
		WNMG080416-TH	●	●	●		▲	▲	▲													1.6	12.7	4.76	5.16
		WNMG100612-TH		●	●			▲	▲													1.2	15.875	6.35	6.35
		WNMG100616-TH		●	●			▲	▲													1.6	15.875	6.35	6.35
	THS	WNMG080408-THS	●	●	●	●	▲	▲	▲	▲												0.8	12.7	4.76	5.16
		WNMG080412-THS	●	●	●	●	▲	▲	▲	▲												1.2	12.7	4.76	5.16
		WNMG080416-THS		●	●			▲	▲													1.6	12.7	4.76	5.16
		WNMG100612-THS		●	●	●		▲	▲	▲												1.2	15.875	6.35	6.35
		WNMG100616-THS		●	●	●		▲	▲	▲												1.6	15.875	6.35	6.35
	SH	WNMG080408-SH									●	●	●									0.8	12.7	4.76	5.16
		WNMG080412-SH									●	●	●									1.2	12.7	4.76	5.16
	CH	WNMG080408-CH													●	●	●					0.8	12.7	4.76	5.16
		WNMG080412-CH													●	●	●					1.2	12.7	4.76	5.16
Finishing to medium cutting	-	WNMA060404E												●								0.4	9.525	4.76	3.81
		WNMA060408E												●								0.8	9.525	4.76	3.81
		WNMA060412E												●								1.2	9.525	4.76	3.81
		WNMA060416E												●								1.6	9.525	4.76	3.81
		WNMA080404													●	●	●			●		0.4	12.7	4.76	5.16
		WNMA080408												●	●	●	●		●	●		0.8	12.7	4.76	5.16
		WNMA080412												●	●	●	●					1.2	12.7	4.76	5.16
		WNMA080416												●	●	●	●					1.6	12.7	4.76	5.16
		WNGA080404																				0.4	12.7	4.76	5.16
		WNGA080408																			●	0.8	12.7	4.76	5.16
		WNGA080412																			●	1.2	12.7	4.76	5.16
																					●				

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C027 - Internal toolholder → D027 -
TungCap → C033 -, K011 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

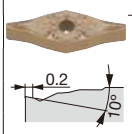
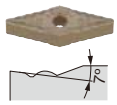
YN



Rhombic, 25° with hole

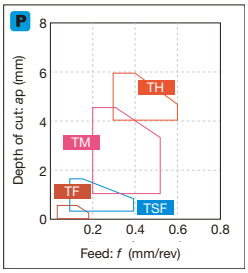
P	Steel	◐✣ ◐✣ ✣ ✣ ●◐ ●◐
M	Stainless	
K	Cast iron	●◐ ●◐
N	Non-ferrous	
S	Superalloy	
H	Hard material	

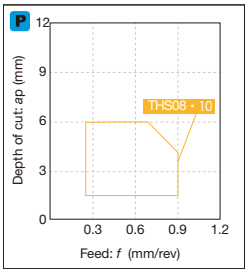


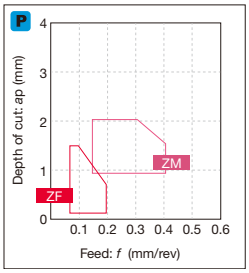
Application	Chipbreaker	Designation	Coated T9125	Coated T9225	Coated T9235	Coated T9135	Coated cermet GT9530	Cermet NS9530	RE	IC	S	D1
Finishing	ZF	YNMG160404-ZF	●	●	●	▲	●	●	0.4	9.525	4.76	3.81
		YNMG160408-ZF	●	●	●	▲	●	●	0.8	9.525	4.76	3.81
												
Finishing to medium cutting	ZM	YNMG160404-ZM	●	●	●	▲	●	●	0.4	9.525	4.76	3.81
		YNMG160408-ZM	●	●	●	▲	●	●	0.8	9.525	4.76	3.81
												

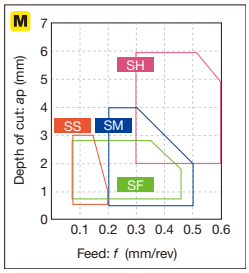
● : Line up
▲ : To be discontinued

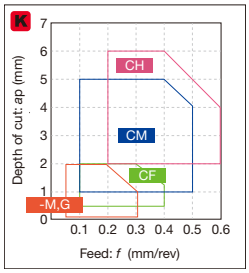
Chip control range











*-M,G: Without chipbreaker

Reference pages: YNMG...: External toolholder → C057 -, Internal toolholder → D071 -

Insert NEGATIVE TYPE

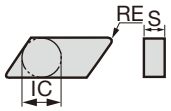
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

KN

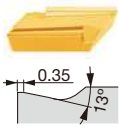


Parallelogram, 55° without hole

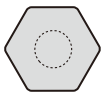
P	Steel	●ⓒ
M	Stainless	●ⓒ
K	Cast iron	●ⓒ
N	Non-ferrous	
S	Superalloy	
H	Hard material	



Application	Chipbreaker	Designation	Coated GH330	Dimension (mm) RE	IC	S	D1
Finishing	S1	KNMX160405R-S1	●	0.5	9.525	4.76	-
		KNMX160405L-S1	●	0.5	9.525	4.76	-

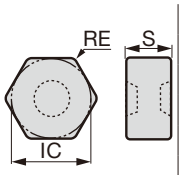


HN



Hexagonal, 120° without hole

P	Steel	
M	Stainless	
K	Cast iron	●ⓒ
N	Non-ferrous	
S	Superalloy	
H	Hard material	



Application	Chipbreaker	Designation	Ceramic FX105	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	-	HNGD050712	●	1.2	12.7	7.94	-
		HNGD050716	●	1.6	12.7	7.94	-



● : Line up

Reference pages: HNGD...: External toolholder → C103

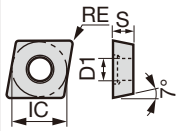
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

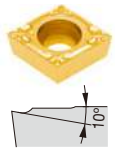
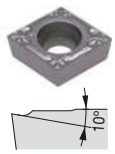
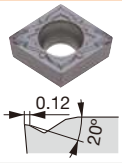
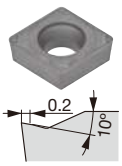
CC



Rhombic, 80° with hole Positive 7°

P	Steel	●ɔ	ɔ✠	●ɔ	ɔ✠	✠	ɔ			ɔ	●ɔ	●ɔ			●ɔ					●ɔ											
M	Stainless	●ɔ				ɔ	ɔ	●	ɔ	ɔ	●ɔ	●ɔ																			
K	Cast iron	●ɔ		●ɔ			ɔ			ɔ					●ɔ					●ɔ											
N	Non-ferrous																														
S	Superalloy						●	●	ɔ																						
H	Hard material																														

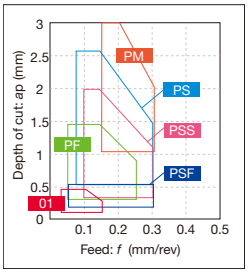


Application	Chipbreaker	Designation	Coated											Coated cermet		Cermet			Dimension (mm)			
			T9215	T9225	T9115	T9125	T6130	AH725	AH8005	AH8015	GH730	SH725	J740	GT9530		NS9530			RE	IC	S	D1
Precision finishing	01	CCGT060202-01											●						0.2	6.35	2.38	2.8
		CCGT09T302-01											●						0.2	9.525	3.97	4.4
Precision finishing (sharp edge)	01	CCGT060202F-01										●							<0.2	6.35	2.38	2.8
		CCGT060204F-01										●							<0.4	6.35	2.38	2.8
		CCGT09T302F-01										●							<0.2	9.525	3.97	4.4
		CCGT09T304F-01										●							<0.4	9.525	3.97	4.4
Finishing	PSF	CCMT060202-PSF						●						●		●			0.2	6.35	2.38	2.8
		CCMT060204-PSF	●	●	▲	▲		●	●	●				●		●			0.4	6.35	2.38	2.8
		CCMT09T302-PSF						●								●			0.2	9.525	3.97	4.4
		CCMT09T304-PSF	●	●	▲	▲		●	●	●				●		●			0.4	9.525	3.97	4.4
		CCMT09T308-PSF	●	●	▲	▲		●						●		●			0.8	9.525	3.97	4.4
	PF	CCMT060202-PF									●			●		●			0.2	6.35	2.38	2.8
		CCMT060204-PF					●				●			●		●			0.4	6.35	2.38	2.8
		CCMT060208-PF												●		●			0.8	6.35	2.38	2.8
		CCMT09T302-PF									●					●			0.2	9.525	3.97	4.4
		CCMT09T304-PF									●			●		●			0.4	9.525	3.97	4.4
		CCMT09T308-PF		●		▲								●		●			0.8	9.525	3.97	4.4

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up
▲ : To be discontinued

Chip control range



Reference pages: External toolholder → C022 - Internal toolholder → D012
J-Series toolholder → G019 - PINZBOHR® → K180 -

Insert POSITIVE TYPE

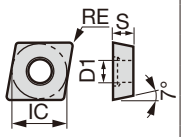
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

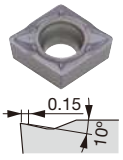
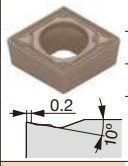
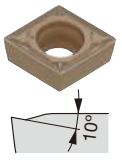
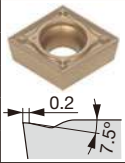
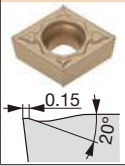
CC



Rhombic, 80° with hole Positive 7°

P	Steel	●ɔ	ɔ✣	●ɔ	ɔ✣	ɔ	✣	ɔ✣	✣	●ɔ	ɔ			ɔ			●ɔ	●ɔ			●ɔ				
M	Stainless	●ɔ				●	ɔ	ɔ	✣	●ɔ	ɔ	●	ɔ	ɔ											
K	Cast iron	●ɔ		●ɔ						●ɔ	ɔ			ɔ			●ɔ	●ɔ			●ɔ				
N	Non-ferrous																								
S	Superalloy									●ɔ	●	●	ɔ												
H	Hard material																								



Application	Chipbreaker	Designation	Coated												Coated cermet		Cermet		Dimension (mm)			
			T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH725	AH8005	AH8015	GH730	GT9530	AT9530	NS9530	RE	IC	S	D1
Finishing to light cutting	PSS	CCMT060204-PSS	●	●	▲	▲	●	●	●	●		●	●	●		●		●	0.4	6.35	2.38	2.8
		CCMT060208-PSS	●	●	▲	▲	●	●	●	●		●	●	●		●		●	0.8	6.35	2.38	2.8
		CCMT09T304-PSS	●	●	▲	▲	●	●	●	●		●	●	●		●		●	0.4	9.525	3.97	4.4
		CCMT09T308-PSS	●	●	▲	▲	●	●	●	●		●	●	●		●		●	0.8	9.525	3.97	4.4
		CCMT120404-PSS	●	●	▲	▲	●	●	●	●		●							0.4	12.7	4.76	5.5
		CCMT120408-PSS	●	●	▲	▲	●	●	●	●		●							0.8	12.7	4.76	5.5
		CCMT120412-PSS	●	●	▲	▲	●	●	●	●		●							1.2	12.7	4.76	5.5
Medium cutting (wiper)	SW	CCMT060204-SW	●	●	▲	▲													0.4	6.35	2.38	2.8
		CCMT060208-SW	●	●	▲	▲													0.8	6.35	2.38	2.8
		CCMT09T304-SW	●	●	▲	▲													0.4	9.525	3.97	4.4
		CCMT09T308-SW	●	●	▲	▲													0.8	9.525	3.97	4.4
		*Wiper																				
Finishing to medium cutting	PS	CCMT060202-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	0.2	6.35	2.38	2.8
		CCMT060204-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	0.4	6.35	2.38	2.8
		CCMT060208-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	0.8	6.35	2.38	2.8
		CCMT09T302-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	0.2	9.525	3.97	4.4
		CCMT09T304-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	0.4	9.525	3.97	4.4
		CCMT09T308-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	0.8	9.525	3.97	4.4
		CCMT120404-PS	●	●	▲	▲	●	●	●	●		●	●	●					0.4	12.7	4.76	5.5
		CCMT120408-PS	●	●	▲	▲	●	●	●	●		●	●	●					0.8	12.7	4.76	5.5
		CCMT120412-PS	●	●	▲	▲	●	●	●	●		●							1.2	12.7	4.76	5.5
	TSF	CCMT060204-TSF	●	●															0.4	6.35	2.38	2.8
		CCMT060208-TSF	●	●															0.8	6.35	2.38	2.8
		CCMT09T304-TSF	●	●															0.4	9.525	3.97	4.4
		CCMT09T308-TSF	●	●															0.8	9.525	3.97	4.4
	TM	CCMT060204-TM	●	●															0.4	6.35	2.38	2.8
		CCMT060208-TM	●	●															0.8	6.35	2.38	2.8
		CCMT09T304-TM	●	●															0.4	9.525	3.97	4.4
		CCMT09T308-TM	●	●															0.8	9.525	3.97	4.4

* Please see **L032-L036** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact our sales representatives if you have any question.

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C022 - Internal toolholder → D012
J-Series toolholder → G019 - PINZBOHR® → K180 -

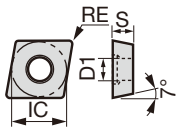
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

CC



Rhombic, 80° with hole Positive 7°

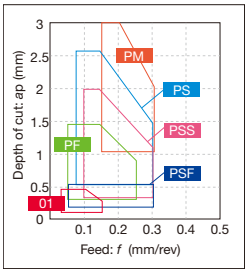
		T9215	T9225	T9115	T9125	T6130	AH120	SH730	NS9530	TH10
P	Steel	●◐	◐✠	●◐	◐✠	✠	●◐	●◐	●◐	●
M	Stainless	●◐				◐	●◐	●◐		●
K	Cast iron	●◐		●◐			●◐		●◐	●
N	Non-ferrous									●
S	Superalloy						●◐	●◐		
H	Hard material									

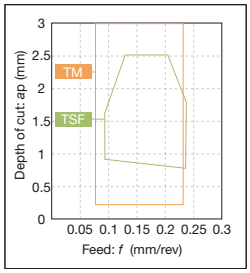


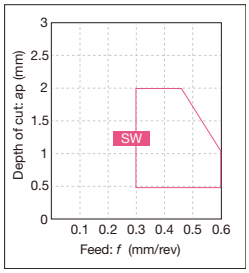
Application	Chipbreaker	Designation	RE	IC	S	D1
Finishing to medium cutting	23	CCMT060202-23	0.2	6.35	2.38	2.8
		CCMT060204-23	0.4	6.35	2.38	2.8
		CCMT060208-23	0.8	6.35	2.38	2.8
		CCMT09T304-23	0.4	9.525	3.97	4.4
		CCMT09T308-23	0.8	9.525	3.97	4.4
Medium cutting	24	CCMT060202-24	0.2	6.35	2.38	2.8
		CCMT060204-24	0.4	6.35	2.38	2.8
		CCMT060208-24	0.8	6.35	2.38	2.8
		CCMT09T302-24	0.2	9.525	3.97	4.4
		CCMT09T304-24	0.4	9.525	3.97	4.4
		CCMT09T308-24	0.8	9.525	3.97	4.4
		CCMT120408-24	0.8	12.7	4.76	5.5
Finishing	W08	CCGT03X100R-W08	0.03	3.57	1.39	1.9
		CCGT03X100L-W08	0.03	3.57	1.39	1.9
		CCGT03X101R-W08	0.1	3.57	1.39	1.9
		CCGT03X101L-W08	0.1	3.57	1.39	1.9
		CCGT03X102R-W08	0.2	3.57	1.39	1.9
		CCGT03X102L-W08	0.2	3.57	1.39	1.9
		CCGT03X104R-W08	0.4	3.57	1.39	1.9
		CCGT03X104L-W08	0.4	3.57	1.39	1.9
		CCGT04T100R-W08	0.03	4.37	1.79	2.2
		CCGT04T100L-W08	0.03	4.37	1.79	2.2
		CCGT04T101R-W08	0.1	4.37	1.79	2.2
		CCGT04T101L-W08	0.1	4.37	1.79	2.2
		CCGT04T102R-W08	0.2	4.37	1.79	2.2
		CCGT04T102L-W08	0.2	4.37	1.79	2.2
		CCGT04T104R-W08	0.4	4.37	1.79	2.2
		CCGT04T104L-W08	0.4	4.37	1.79	2.2

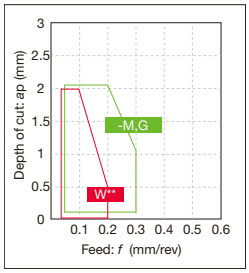
● : Line up
▲ : To be discontinued

Chip control range









*-M,G: Without chipbreaker

Reference pages: External toolholder → C022 - Internal toolholder → D012
J-Series toolholder → G019 - PINZBOHR® → K180 -

Insert POSITIVE TYPE

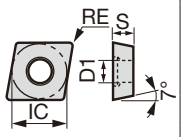
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CC

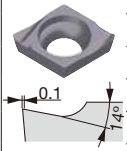


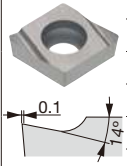
Rhombic, 80° with hole Positive 7°

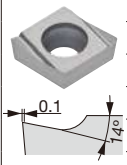
P	Steel	●ɔ	ɔ✣	●ɔ	ɔ✣	ɔ	✣	ɔ✣	✣			●ɔ	ɔ	●	●ɔ	ɔ	●ɔ	●ɔ			●ɔ			●	ɔ						
M	Stainless	●ɔ				●	ɔ	ɔ	✣			●ɔ	ɔ	●	●ɔ	ɔ	●ɔ							●	ɔ						
K	Cast iron	●ɔ		●ɔ						●ɔ	ɔ	●ɔ	ɔ	●	●ɔ	ɔ		●ɔ			●ɔ			●							
N	Non-ferrous																							●							
S	Superalloy											●ɔ	●	●																	
H	Hard material																														

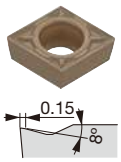


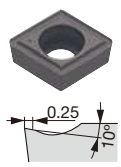
Application	Chipbreaker	Designation	Coated															Coated cermet			Cermet			Uncoated		Dimension (mm)			
			T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH120	AH725	GH110	GH330	GH730	SH725	GT9530			NS9530			TH10	UX30	RE	IC	S	D1
Finishing (sharp edge)	W08	CCGT03X100FL-W08																●									0.03	3.57	1.39	1.9
		CCGT03X100FR-W08																●									0.03	3.57	1.39	1.9
		CCGT03X101FL-W08																●									0.1	3.57	1.39	1.9
		CCGT03X101FR-W08																●									0.1	3.57	1.39	1.9
		CCGT03X102FL-W08																●									0.2	3.57	1.39	1.9
		CCGT03X102FR-W08																●									0.2	3.57	1.39	1.9
		CCGT03X104FL-W08																●									0.4	3.57	1.39	1.9
		CCGT03X104FR-W08																●									0.4	3.57	1.39	1.9
		CCGT04T100FL-W08																●									0.03	4.37	1.79	2.2
		CCGT04T100FR-W08																●									0.03	4.37	1.79	2.2
		CCGT04T101FL-W08																●									0.1	4.37	1.79	2.2
		CCGT04T101FR-W08																●									0.1	4.37	1.79	2.2
		CCGT04T102FL-W08																●									0.2	4.37	1.79	2.2
		CCGT04T102FR-W08																●									0.2	4.37	1.79	2.2
		CCGT04T104FL-W08																●									0.4	4.37	1.79	2.2
		CCGT04T104FR-W08																●									0.4	4.37	1.79	2.2
Finishing	W15	CCGT060200R-W15																							●		0.03	6.35	2.38	2.8
		CCGT060200L-W15																				●			●		0.03	6.35	2.38	2.8
		CCGT060202R-W15																				●			●		0.2	6.35	2.38	2.8
		CCGT060202L-W15																	●			●			●		0.2	6.35	2.38	2.8
		CCGT060204R-W15														●						●			●		0.4	6.35	2.38	2.8
		CCGT060204L-W15													●	●			●			●			●	●	0.4	6.35	2.38	2.8
	W20	CCGT09T302R-W20																				●			●		0.2	9.525	3.97	4.4
		CCGT09T302L-W20																	●			●			●		0.2	9.525	3.97	4.4
		CCGT09T304R-W20																				●					0.4	9.525	3.97	4.4
		CCGT09T304L-W20													●	●			●			●			●		0.4	9.525	3.97	4.4
		CCGT09T308R-W20																				●					0.8	9.525	3.97	4.4
		CCGT09T308L-W20																	●			●					0.8	9.525	3.97	4.4
Medium cutting	PM	CCMT060204-PM	●	●	▲	▲	●	●	●	●			●	●			●		●			●					0.4	6.35	2.38	2.8
		CCMT060208-PM	●	●	▲	▲	●	●	●	●			●	●			●		●			●					0.8	6.35	2.38	2.8
		CCMT09T304-PM	●	●	▲	▲	●	●	●	●			●	●			●		●			●					0.4	9.525	3.97	4.4
		CCMT09T308-PM	●	●	▲	▲	●	●	●	●			●	●			●		●			●					0.8	9.525	3.97	4.4
		CCMT09T312-PM	●	●	▲	▲	●	●	●	●				●													1.2	9.525	3.97	4.4
		CCMT120408-PM					●	●	●	●				●													0.8	12.7	4.76	5.5
		CCMT120412-PM					●	●	●	●				●													1.2	12.7	4.76	5.5
Finishing to medium cutting	CM	CCMT060204-CM									●	●															0.4	6.35	2.38	2.8
		CCMT060208-CM									●	●															0.8	6.35	2.38	2.8
		CCMT09T304-CM									●	●															0.4	9.525	3.97	4.4
		CCMT09T308-CM									●	●															0.8	9.525	3.97	4.4
		CCMT09T312-CM										●															1.2	9.525	3.97	4.4
		CCMT120404-CM										●															0.4	12.7	4.76	5.5
		CCMT120408-CM										●															0.8	12.7	4.76	5.5











● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C022 - Internal toolholder → D014 -
J-Series toolholder → G019 - PINZBOHR® → K180 -

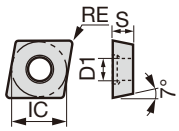
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

CC



Rhombic, 80° with hole Positive 7°

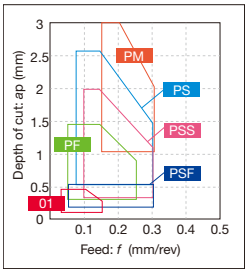
P	Steel	● ●ⓒ ●
M	Stainless	● ●
K	Cast iron	ⓒ ● ●ⓒ ● ●
N	Non-ferrous	● ●
S	Superalloy	● ●
H	Hard material	

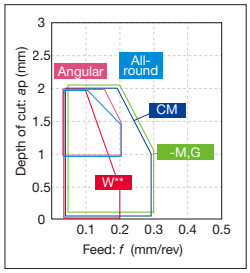


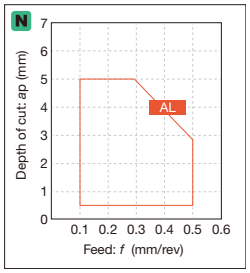
Application	Chipbreaker	Designation	Coated T5115	Coated GH110	Cermet NS9530	Uncoated TH10	Uncoated KS05F	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	**AL**	**CCGT060202-AL**					●	0.2	6.35	2.38	2.8
		CCGT060204-AL					●	0.4	6.35	2.38	2.8
		CCGT09T302-AL					●	0.2	9.525	3.97	4.4
		CCGT09T304-AL					●	0.4	9.525	3.97	4.4
		CCGT09T308-AL					●	0.8	9.525	3.97	4.4
		CCGT120402-AL					●	0.2	12.7	4.76	5.5
		CCGT120404-AL					●	0.4	12.7	4.76	5.5
		CCGT120408-AL					●	0.8	12.7	4.76	5.5
	All-round	**CCGT060202**			●			0.2	6.35	2.38	2.8
		CCGT060204			●			0.4	6.35	2.38	2.8
		CCGT09T302			●			0.2	9.525	3.97	4.4
		CCGT09T304			●			0.4	9.525	3.97	4.4
		CCGT09T308			●			0.8	9.525	3.97	4.4
	Angular	**CCGT060200R**				●		0.03	6.35	2.38	2.8
		CCGT060202R				●		0.2	6.35	2.38	2.8
		CCGT060202L				●		0.2	6.35	2.38	2.8
		CCGT060204L				●		0.4	6.35	2.38	2.8
		CCGT09T302R				●		0.2	9.525	3.97	4.4
		CCGT09T302L				●		0.2	9.525	3.97	4.4
		CCGT09T304R				●		0.4	9.525	3.97	4.4
		CCGT09T304L				●		0.4	9.525	3.97	4.4
	-	**CCMW060204**	●					0.4	6.35	2.38	2.8
		CCMW060208	●					0.8	6.35	2.38	2.8
		CCMW09T304	●					0.4	9.525	3.97	4.4
		CCMW09T308	●					0.8	9.525	3.97	4.4
	-	**CCGW060202**				●		0.2	6.35	2.38	2.8
		CCGW060204				●		0.4	6.35	2.38	2.8
		CCGW09T304		●		●		0.4	9.525	3.97	4.4

● : Line up

Chip control range







*-M,G: Without chipbreaker

Reference pages: External toolholder → C022 - Internal toolholder → D014 -
J-Series toolholder → G019 - PINZBOHR® → K180 -

Insert POSITIVE TYPE

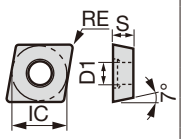
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CC



Rhombic, 80° with hole Positive 7°

P	Steel	ɔ	●ɔ	●ɔ
M	Stainless	ɔ	●ɔ	●ɔ
K	Cast iron	ɔ		
N	Non-ferrous			
S	Superalloy	●		●ɔ
H	Hard material			



Application	Chipbreaker	Designation	Coated AH725	Coated SH725	Coated SH730	Dimension (mm) RE	IC	S	D1
For internal turning on Swiss lathes	JS	CCGT03X101-JS			●	<0.1	3.57	1.39	1.9
		CCGT03X102-JS			●	<0.2	3.57	1.39	1.9
		CCGT03X104-JS			●	<0.4	3.57	1.39	1.9
		CCGT04T101-JS			●	<0.1	4.37	1.79	2.2
		CCGT04T102-JS			●	<0.2	4.37	1.79	2.2
		CCGT04T104-JS			●	<0.4	4.37	1.79	2.2
For internal turning on Swiss lathes (sharp edge)	JS	CCGT03X101F-JS		●		<0.1	3.57	1.39	1.9
		CCGT03X102F-JS		●		<0.2	3.57	1.39	1.9
		CCGT03X104F-JS		●		<0.4	3.57	1.39	1.9
		CCGT04T101F-JS		●		<0.1	4.37	1.79	2.2
		CCGT04T102F-JS		●		<0.2	4.37	1.79	2.2
		CCGT04T104F-JS		●		<0.4	4.37	1.79	2.2
For external turning on Swiss lathes	JS	CCGT060201N-JS	●			0.1	6.35	2.38	2.8
		CCGT060202N-JS	●			0.2	6.35	2.38	2.8
		CCGT060204N-JS	●			0.4	6.35	2.38	2.8
		CCGT09T301N-JS	●			0.1	9.525	3.97	4.4
		CCGT09T302N-JS	●			0.2	9.525	3.97	4.4
		CCGT09T304N-JS	●			0.4	9.525	3.97	4.4
For external turning on Swiss lathes (sharp edge)	JS	CCGT060200FN-JS		●	●	0.03	6.35	2.38	2.8
		CCGT060201FN-JS		●	●	<0.1	6.35	2.38	2.8
		CCGT060202FN-JS		●	●	<0.2	6.35	2.38	2.8
		CCGT060204FN-JS		●	●	<0.4	6.35	2.38	2.8
		CCGT09T300FN-JS		●	●	0.03	9.525	3.97	4.4
		CCGT09T301FN-JS		●	●	<0.1	9.525	3.97	4.4
		CCGT09T302FN-JS		●	●	<0.2	9.525	3.97	4.4
		CCGT09T304FN-JS		●	●	<0.4	9.525	3.97	4.4

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Reference pages: External toolholder → C022 - Internal toolholder → D014 -
J-Series toolholder → G019 - PINZBOHR® → K180 -

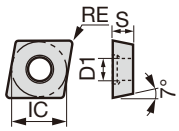
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

CC

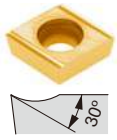


Rhombic, 80° with hole Positive 7°

P	Steel	◐ ◐ ● ◐
M	Stainless	◐ ◐ ●
K	Cast iron	● ◐ ●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	

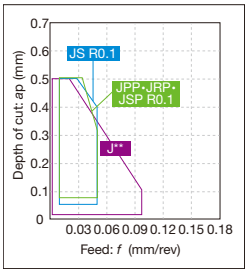


Application	Chipbreaker	Designation	Coated SH725	Coated J740	Cermet NS9530	Uncoated TH10	Dimension (mm) RE	IC	S	D1
For external turning on Swiss lathes (sharp edge)	J10	CCGT060200FR-J10	●	●		●	0.03	6.35	2.38	2.8
		CCGT060200FL-J10	●	●		●	0.03	6.35	2.38	2.8
		CCGT060201FR-J10	●	●	●	●	0.1	6.35	2.38	2.8
		CCGT060201FL-J10	●	●		●	0.1	6.35	2.38	2.8
		CCGT060202FR-J10	●	●	●	●	0.2	6.35	2.38	2.8
		CCGT060202FL-J10	●	●	●	●	0.2	6.35	2.38	2.8
		CCGT09T300FR-J10	●	●		●	0.03	9.525	3.97	4.4
		CCGT09T300FL-J10	●	●		●	0.03	9.525	3.97	4.4
		CCGT09T301FR-J10	●	●		●	0.1	9.525	3.97	4.4
		CCGT09T301FL-J10	●	●		●	0.1	9.525	3.97	4.4
		CCGT09T302FR-J10	●	●		●	0.2	9.525	3.97	4.4
		CCGT09T302FL-J10	●	●		●	0.2	9.525	3.97	4.4
		CCGT09T304FR-J10	●				0.4	9.525	3.97	4.4



● : Line up

Chip control range



*Chip control range with typical R0.1

Reference pages: External toolholder → C022 - Internal toolholder → D014 -
J-Series toolholder → G019 - PINZBOHR® → K180 -

Insert POSITIVE TYPE

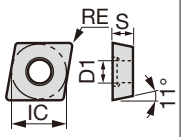
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CP



Rhombic, 80° with hole Positive 11°

		T9205	T9215	T9225	T9235	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH725	AH8005	AH8015	GH730	GT9530	AT9530	NS9530
P	Steel	●	●ɔ	ɔ✣	✣	●ɔ	ɔ✣	ɔ	✣	ɔ✣	✣	●ɔ	ɔ			ɔ	●ɔ	●ɔ	●ɔ
M	Stainless		●ɔ					●	ɔ	ɔ	✣	●ɔ	ɔ	●	ɔ	ɔ			
K	Cast iron	●ɔ	●ɔ			●ɔ						●ɔ	ɔ			ɔ	●ɔ	●ɔ	●ɔ
N	Non-ferrous																		
S	Superalloy											●ɔ	●	●	ɔ				
H	Hard material																		



Application	Chipbreaker	Designation	RE	IC	S	D1
Finishing	PSF	CPMT060202-PSF	0.2	6.35	2.38	2.8
		CPMT060204-PSF	0.4	6.35	2.38	2.8
		CPMT080202-PSF	0.2	7.94	2.38	3.4
		CPMT080204-PSF	0.4	7.94	2.38	3.4
		CPMT090302-PSF	0.2	9.525	3.18	4.4
		CPMT090304-PSF	0.4	9.525	3.18	4.4
		CPMT09T302-PSF	0.2	9.525	3.97	4.4
		CPMT09T304-PSF	0.4	9.525	3.97	4.4
	PF	CPMT090302-PF	0.2	9.525	3.18	4.4
		CPMT090304-PF	0.4	9.525	3.18	4.4
Finishing to light cutting	PSS	CPMT060204-PSS	0.4	6.35	2.38	2.8
		CPMT080204-PSS	0.4	7.94	2.38	3.4
		CPMT080208-PSS	0.8	7.94	2.38	3.4
		CPMT090304-PSS	0.4	9.525	3.18	4.4
		CPMT090308-PSS	0.8	9.525	3.18	4.4
		CPMT09T304-PSS	0.4	9.525	3.97	4.4
		CPMT09T308-PSS	0.8	9.525	3.97	4.4
Finishing to medium cutting	PS	CPMT060202-PS	0.2	6.35	2.38	2.8
		CPMT060204-PS	0.4	6.35	2.38	2.8
		CPMT080202-PS	0.2	7.94	2.38	3.4
		CPMT080204-PS	0.4	7.94	2.38	3.4
		CPMT080208-PS	0.8	7.94	2.38	3.4
		CPMT090304-PS	0.4	9.525	3.18	4.4
		CPMT090308-PS	0.8	9.525	3.18	4.4
		CPMT09T302-PS	0.2	9.525	3.97	4.4
		CPMT09T304-PS	0.4	9.525	3.97	4.4
		CPMT09T308-PS	0.8	9.525	3.97	4.4
	TSF	CPMT09T304-TSF	0.4	9.525	3.97	4.4
		CPMT09T308-TSF	0.8	9.525	3.97	4.4
	TM	CPMT09T304-TM	0.4	9.525	3.97	4.4
		CPMT09T308-TM	0.8	9.525	3.97	4.4

● : Line up
▲ : To be discontinued

Reference pages: Internal toolholder → D017 -

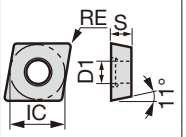
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

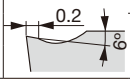
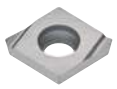
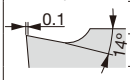
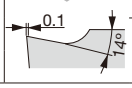
CP



Rhombic, 80° with hole Positive 11°

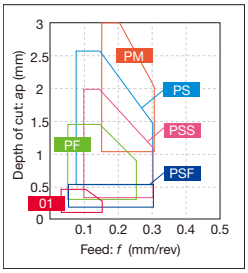
P	Steel	●ᑕ✣●ᑕ✣ ●ᑕ ●
M	Stainless	●ᑕ ●
K	Cast iron	●ᑕ ●ᑕ ●ᑕ ●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	

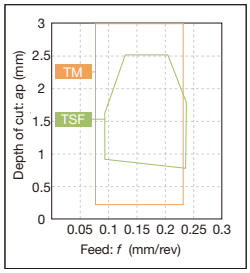


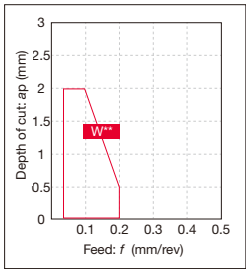
Application	Chipbreaker	Designation	Coated T9215	Coated T9225	Coated T9115	Coated T9125	Cermet NS9530	Uncoated TH10	Dimension (mm) RE	IC	S	D1
Medium cutting	24	CPMT080204-24	●		▲	▲			0.4	7.94	2.38	3.4
		CPMT120408-24		●			●		0.8	12.7	4.76	5.5
		CPMT160508-24		●		▲	●		0.8	15.875	5.56	5.5
		CPMT160512-24		●			●		1.2	15.875	5.56	5.5
												
Finishing	W15	CPGT050202L-W15					●		0.2	5.56	2.35	2.5
		CPGT050204L-W15					●		0.4	5.56	2.35	2.5
		CPGT080202R-W15						●	0.2	7.94	2.38	3.4
		CPGT080202L-W15					●	●	0.2	7.94	2.38	3.4
		CPGT080204R-W15						●	0.4	7.94	2.38	3.4
		CPGT080204L-W15					●	●	0.4	7.94	2.38	3.4
	W20	CPGT090302R-W20					●	●	0.2	9.525	3.18	4.4
		CPGT090302L-W20					●	●	0.2	9.525	3.18	4.4
		CPGT090304R-W20					●	●	0.4	9.525	3.18	4.4
		CPGT090304L-W20					●	●	0.4	9.525	3.18	4.4
												

● : Line up
▲ : To be discontinued

Chip control range







Reference pages: Internal toolholder → D017 - Cartridge → K194 -
Boring bar tool → K209 -

Insert POSITIVE TYPE

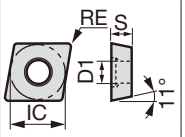
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

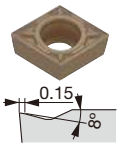
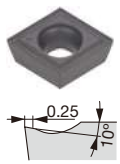
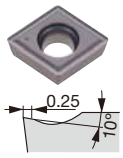
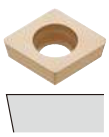
CP



Rhombic, 80° with hole
Positive 11°

		T9225	T9105	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH725	AH8005	AH8015	AH905	NS9530
P	Steel	◐✠	●	◐✠	◐	✠	◐✠	✠			◐				●◐
M	Stainless				●	◐	◐	✠			◐	●	◐		
K	Cast iron		●◐						●◐	◐	◐				●◐
N	Non-ferrous														
S	Superalloy										●	●	◐	◐	
H	Hard material														



Application	Chipbreaker	Designation	Coated T9225	Coated T9105	Coated T9125	Coated T6120	Coated T6130	Coated AH630	Coated AH645	Coated T515	Coated T5115	Coated AH725	Coated AH8005	Coated AH8015	Coated AH905	Cermet NS9530	Dimension (mm) RE	IC	S	D1
Medium cutting	PM	CPMT060204-PM				●	●	●	●			●					0.4	6.35	2.38	2.8
		CPMT060208-PM	●		▲	●	●	●	●			●					0.8	6.35	2.38	2.8
		CPMT090304-PM	●		▲	●	●	●	●			●				●	0.4	9.525	3.18	4.4
		CPMT090308-PM	●		▲	●	●	●	●			●				●	0.8	9.525	3.18	4.4
Finishing to medium cutting	CM	CPMT060204-CM									●						0.4	6.35	2.38	2.8
		CPMT060208-CM									●						0.8	6.35	2.38	2.8
		CPMT080204-CM									●						0.4	7.94	2.38	3.4
		CPMT080208-CM									●						0.8	7.94	2.38	3.4
		CPMT090304-CM								●	●						0.4	9.525	3.18	4.4
		CPMT090308-CM								●	●						0.8	9.525	3.18	4.4
		CPMT09T304-CM								●	●						0.4	9.525	3.97	4.4
		CPMT09T308-CM								●	●						0.8	9.525	3.97	4.4
		CPMT09T312-CM									●						1.2	9.525	3.97	4.4
		CPMT120408-CM									●						0.8	12.7	4.76	5.5
		CPMT120412-CM									●						1.2	12.7	4.76	5.5
Medium cutting	All-round	CPMT120408											●	●	●		0.8	12.7	4.76	5.5
																				
	-	CPMW080204									●						0.4	7.94	2.38	3.4
		CPMW080208									●						0.8	7.94	2.38	3.4
		CPMW090304		▲							●						0.4	9.525	3.18	4.4
		CPMW090308									●						0.8	9.525	3.18	4.4

● : Line up
▲ : To be discontinued

Reference pages: Internal toolholder → D017 - Boring bar tool → K209 -

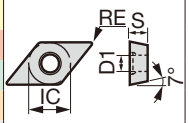
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

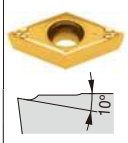
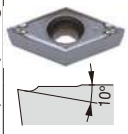
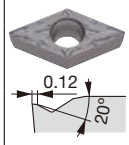
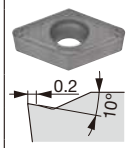
DC

Rhombic, 55° with hole Positive 7°



P	Steel	●ⓒ ⓒ✠ ●ⓒ ⓒ✠ ⓒ ● ⓒ ⓒ ●ⓒ ●ⓒ ●ⓒ ●ⓒ ●ⓒ ●ⓒ ●ⓒ
M	Stainless	●ⓒ ⓒ ● ⓒ ⓒ ⓒ ●ⓒ ●ⓒ ●ⓒ
K	Cast iron	●ⓒ ●ⓒ ⓒ ⓒ ●ⓒ ●ⓒ ●ⓒ
N	Non-ferrous	
S	Superalloy	● ● ⓒ ⓒ
H	Hard material	

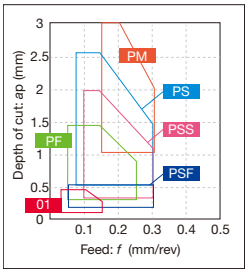


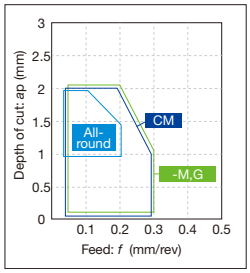
Application	Chipbreaker	Designation	Coated T9215	T9225	T9115	T9125	AH725	AH8005	AH8015	AH905	GH730	SH725	J740	Coated cermet GT9530	J9530	Cermet NS9530	Dimension (mm) RE	IC	S	D1
Precision finishing	01	DCGT070202-01											●		●		0.2	6.35	2.38	2.8
		DCGT**11T302-01**											●				0.2	9.525	3.97	4.4
																				
Precision finishing (sharp edge)	01	DCGT070202F-01										●					<0.2	6.35	2.38	2.8
		DCGT0702**04F-01**										●					<0.4	6.35	2.38	2.8
		DCGT**11T302F-01**										●					<0.2	9.525	3.97	4.4
		DCGT11T3**04F-01**										●					<0.4	9.525	3.97	4.4
Finishing	PSF	DCMT070202-PSF					●							●		●	0.2	6.35	2.38	2.8
		DCMT0702**04-PSF**	●	●	▲	▲	●							●		●	0.4	6.35	2.38	2.8
		**DCMT11T302-PSF**					●							●		●	0.2	9.525	3.97	4.4
		DCMT11T3**04-PSF**	●	●	▲	▲	●	●	●	●				●		●	0.4	9.525	3.97	4.4
		DCMT11T3**08-PSF**	●	●	▲	▲	●	●	●	●							0.8	9.525	3.97	4.4
	PF	DCMT070202-PF									●			●		●	0.2	6.35	2.38	2.8
		DCMT0702**04-PF**									●			●		●	0.4	6.35	2.38	2.8
		DCMT0702**08-PF**												●		●	0.8	6.35	2.38	2.8
		DCMT11T302-PF									●			●		●	0.2	9.525	3.97	4.4
		DCMT11T3**04-PF**									●			●		●	0.4	9.525	3.97	4.4
		DCMT11T3**08-PF**												●			0.8	9.525	3.97	4.4

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up
▲ : To be discontinued

Chip control range





*-M,G: Without chipbreaker

Reference pages: External toolholder → C046 - Internal toolholder → D046 -
J-Series toolholder → G026 - PINZBOHR® → K184 -

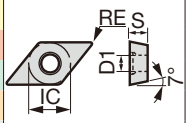
Insert POSITIVE TYPE

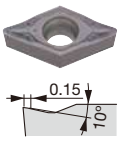
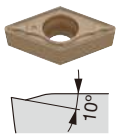
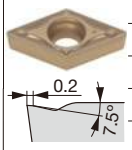
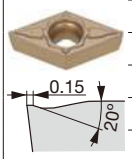
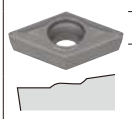
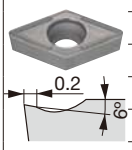
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

DC

Rhombic, 55°
with hole
Positive 7°

P	Steel	●ɔ	ɔ✣	●ɔ	ɔ✣	ɔ	✣	ɔ✣	✣	●ɔ	ɔ				ɔ			●ɔ	●ɔ			●ɔ									
M	Stainless	●ɔ				●	ɔ	ɔ	✣	●ɔ	ɔ	●	ɔ		ɔ																
K	Cast iron	●ɔ		●ɔ						●ɔ	ɔ				ɔ			●ɔ	●ɔ			●ɔ									
N	Non-ferrous																														
S	Superalloy									●ɔ	●	●	ɔ	ɔ																
H	Hard material																														



Application	Chipbreaker	Designation	Coated														Coated cermet		Cermet		Dimension (mm)			
			T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH725	AH8005	AH8015	AH905	GH730	GT9530	AT9530	NS9530		RE	IC	S	D1
Finishing to light cutting	PSS	DCMT070204-PSS	●	●	▲	▲	●	●	●	●		●					●		●		0.4	6.35	2.38	2.8
		DCMT070208-PSS	●	●	▲	▲	●	●	●	●		●					●		●		0.8	6.35	2.38	2.8
		DCMT11T304-PSS	●	●	▲	▲	●	●	●	●		●	●	●	●		●		●		0.4	9.525	3.97	4.4
		DCMT11T308-PSS	●	●	▲	▲	●	●	●	●		●	●	●	●		●		●		0.8	9.525	3.97	4.4
		DCMT11T312-PSS	●	●	▲	▲	●	●	●	●		●	●	●	●						1.2	9.525	3.97	4.4
Finishing to medium cutting	PS	DCMT070202-PS	●	●	▲	▲	●	●	●	●	●	●	●	●		●	●	●	●		0.2	6.35	2.38	2.8
		DCMT070204-PS	●	●	▲	▲	●	●	●	●	●	●	●	●		●	●	●	●		0.4	6.35	2.38	2.8
		DCMT070208-PS	●	●	▲	▲						●	●	●		●	●	●	●		0.8	6.35	2.38	2.8
		DCMT11T302-PS	●	●	▲	▲	●	●	●	●	●	●	●	●		●	●	●	●		0.2	9.525	3.97	4.4
		DCMT11T304-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●		0.4	9.525	3.97	4.4
		DCMT11T308-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●		0.8	9.525	3.97	4.4
		DCMT11T312-PS	●	●	▲	▲	●	●	●	●		●	●	●	●						1.2	9.525	3.97	4.4
	TSF	DCMT070202-TSF	●	●																	0.2	6.35	2.38	2.8
		DCMT070204-TSF	●	●																	0.4	6.35	2.38	2.8
		DCMT070208-TSF	●	●																	0.8	6.35	2.38	2.8
		DCMT11T304-TSF	●	●																	0.4	9.525	3.97	4.4
		DCMT11T308-TSF	●	●																	0.8	9.525	3.97	4.4
	TM	DCMT070202-TM	●	●																	0.2	6.35	2.38	2.8
		DCMT070204-TM	●	●																	0.4	6.35	2.38	2.8
		DCMT070208-TM	●	●																	0.8	6.35	2.38	2.8
		DCMT11T304-TM	●	●																	0.4	9.525	3.97	4.4
		DCMT11T308-TM	●	●																	0.8	9.525	3.97	4.4
	23	DCMT070204-23																	●		0.4	6.35	2.38	2.8
		DCMT11T304-23																	●		0.4	9.525	3.97	4.4
		DCMT11T308-23																	●		0.8	9.525	3.97	4.4
Medium cutting	24	DCMT070202-24		●															●		0.2	6.35	2.38	2.8
		DCMT070204-24	●	●	▲	▲													●		0.4	6.35	2.38	2.8
		DCMT070208-24		●		▲													●		0.8	6.35	2.38	2.8
		DCMT11T302-24		●		▲													●		0.2	9.525	3.97	4.4
		DCMT11T304-24	●	●	▲	▲													●		0.4	9.525	3.97	4.4
		DCMT11T308-24	●	●	▲	▲		●											●		0.8	9.525	3.97	4.4

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C046 - Internal toolholder → D046 -
J-Series toolholder → G026 - PINZBOHR® → K184 -

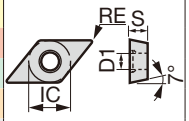
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

DC

Rhombic, 55° with hole Positive 7°

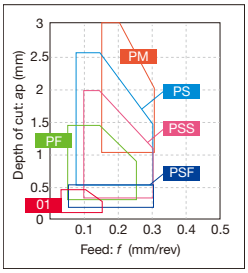


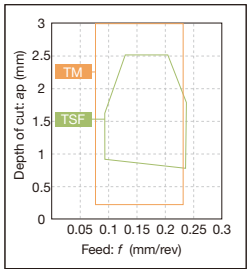
P	Steel	●ɔ ɔ✣ ●ɔ ɔ✣ ɔ ✣ ɔ✣ ✣ ●ɔ ɔ ●ɔ ɔ ●ɔ
M	Stainless	●ɔ ● ɔ ɔ ✣ ●ɔ ɔ ●ɔ ɔ ●ɔ ɔ ●
K	Cast iron	●ɔ ●ɔ ●ɔ ɔ ●ɔ ɔ ●ɔ ɔ ●ɔ ɔ ●ɔ ●ɔ ●ɔ ●
N	Non-ferrous	●
S	Superalloy	●ɔ ●
H	Hard material	

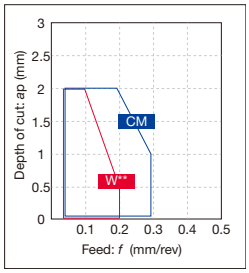


Application	Chipbreaker	Designation	Coated T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH120	AH725	GH330	GH730	Coated cermet GT9530	Cermet NS9530	Uncoated TH10	RE	IC	S	D1
Finishing	**W10**	**DCGT070200R-W10**																	●	0.03	6.35	2.38	2.8
		DCGT070200L-W10																	●	0.03	6.35	2.38	2.8
		DCGT070202R-W10																●	●	0.2	6.35	2.38	2.8
		DCGT070202L-W10															●	●		0.2	6.35	2.38	2.8
		DCGT070204R-W10													●			●	●	0.4	6.35	2.38	2.8
		DCGT070204L-W10													●		●	●	●	0.4	6.35	2.38	2.8
	W15	**DCGT11T302R-W15**																●	●	0.2	9.525	3.97	4.4
		DCGT11T302L-W15															●	●		0.2	9.525	3.97	4.4
		DCGT11T304R-W15																●		0.4	9.525	3.97	4.4
		DCGT11T304L-W15													●		●	●	●	0.4	9.525	3.97	4.4
		DCGT11T308R-W15																●	●	0.8	9.525	3.97	4.4
		DCGT11T308L-W15																●	●	0.8	9.525	3.97	4.4
Medium cutting	**PM**	**DCMT070204-PM**	●	●	▲	▲	●	●	●	●			●	●		●	●	●		0.4	6.35	2.38	2.8
		DCMT070208-PM	●	●	▲	▲	●	●	●	●			●	●		●	●	●		0.8	6.35	2.38	2.8
		DCMT11T304-PM	●	●	▲	▲	●	●	●	●			●	●		●	●	●		0.4	9.525	3.97	4.4
		DCMT11T308-PM	●	●	▲	▲	●	●	●	●			●	●		●	●	●		0.8	9.525	3.97	4.4
		DCMT11T312-PM		●		▲	●	●	●	●				●						1.2	9.525	3.97	4.4
Finishing to medium cutting	**CM**	**DCMT070204-CM**										●								0.4	6.35	2.38	2.8
		DCMT070208-CM										●								0.8	6.35	2.38	2.8
		DCMT11T304-CM									●	●								0.4	9.525	3.97	4.4
		DCMT11T308-CM									●	●								0.8	9.525	3.97	4.4
		DCMT11T312-CM										●								1.2	9.525	3.97	4.4

● : Line up
▲ : To be discontinued







Chip control range

Reference pages: External toolholder → C046 - Internal toolholder → D046 -
J-Series toolholder → G026 - PINZBOHR® → K184 -

Insert POSITIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

DC



Rhombic, 55° with hole Positive 7°

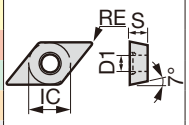
| | | |

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

DC

Rhombic, 55° with hole Positive 7°

P	Steel	◐ ●◐ ●◐
M	Stainless	◐ ●◐ ●◐
K	Cast iron	◐
N	Non-ferrous	
S	Superalloy	● ●◐
H	Hard material	

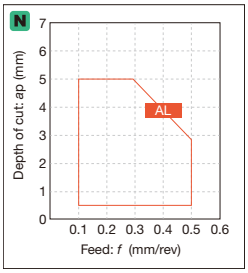


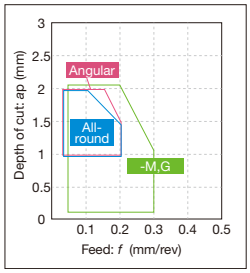
Application	Chipbreaker	Designation	Coated AH725	Coated SH725	Coated SH730	RE	IC	S	D1
For external turning on Swiss lathes (sharp edge)	JS	DCGT070200FN-JS		●	●	0.03	6.35	2.38	2.8
		DCGT070201FN-JS		●	●	<0.1	6.35	2.38	2.8
		DCGT070202FN-JS		●	●	<0.2	6.35	2.38	2.8
		DCGT11T300FN-JS		●	●	0.03	9.525	3.97	4.4
		DCGT11T301FN-JS		●	●	<0.1	9.525	3.97	4.4
		DCGT11T302FN-JS		●	●	<0.2	9.525	3.97	4.4
		DCGT11T304FN-JS		●	●	<0.4	9.525	3.97	4.4
For external turning on Swiss lathes	JS	DCGT070201N-JS	●			0.1	6.35	2.38	2.8
		DCGT070202N-JS	●			0.2	6.35	2.38	2.8
		DCGT11T301N-JS	●			0.1	9.525	3.97	4.4
		DCGT11T302N-JS	●			0.2	9.525	3.97	4.4
		DCGT11T304N-JS	●			0.4	9.525	3.97	4.4
For external turning on Swiss lathes (sharp edge)	JPP	DCET0702008MFR-JPP		●	●	<0.08	6.35	2.38	2.8
		DCET0702008MFL-JPP		●	●	<0.08	6.35	2.38	2.8
		DCET070201MFR-JPP		●	●	<0.1	6.35	2.38	2.8
		DCET070201MFL-JPP		●	●	<0.1	6.35	2.38	2.8
		DCET0702018MFR-JPP		●	●	<0.18	6.35	2.38	2.8
		DCET0702018MFL-JPP		●	●	<0.18	6.35	2.38	2.8
		DCET070202MFR-JPP		●	●	<0.2	6.35	2.38	2.8
		DCET070202MFL-JPP		●	●	<0.2	6.35	2.38	2.8
		DCET11T3008MFR-JPP		●	●	<0.08	9.525	3.97	4.4
		DCET11T3008MFL-JPP		●	●	<0.08	9.525	3.97	4.4
		DCET11T301MFR-JPP		●	●	<0.1	9.525	3.97	4.4
		DCET11T301MFL-JPP		●	●	<0.1	9.525	3.97	4.4
		DCET11T3018MFR-JPP		●	●	<0.18	9.525	3.97	4.4
		DCET11T3018MFL-JPP		●	●	<0.18	9.525	3.97	4.4
		DCET11T302MFR-JPP		●	●	<0.2	9.525	3.97	4.4
		DCET11T302MFL-JPP		●	●	<0.2	9.525	3.97	4.4

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

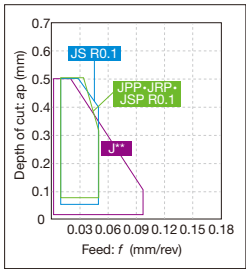
● : Line up

Chip control range





*-M,G: Without chipbreaker



*Chip control range with typical R0.1

Reference pages: External toolholder → C047 - Internal toolholder → D046 - J-Series toolholder → G026 - PINZBOHR® → K184 -

Insert POSITIVE TYPE

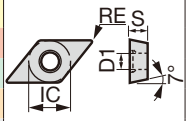
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

DC

Rhombic, 55°
with hole
Positive 7°



		Coated			Coated cermet	Cermet	Uncoated
		SH725	SH730	J740	J9530	NS9530	TH10
P	Steel	◐	◐	◐	◐	◐	●
M	Stainless	◐	◐	◐			●
K	Cast iron				◐	◐	●
N	Non-ferrous						●
S	Superalloy		◐				
H	Hard material						



Application	Chipbreaker	Designation	Coated SH725	Coated SH730	Coated J740	Coated cermet J9530	Cermet NS9530	Uncoated TH10	RE	IC	S	D1
For external turning on Swiss lathes (sharp edge)	JRP	DCET0702008MFR-JRP	●	●					<0.08	6.35	2.38	2.8
		DCET0702008MFL-JRP	●	●					<0.08	6.35	2.38	2.8
		DCET070201MFR-JRP	●	●					<0.1	6.35	2.38	2.8
		DCET070201MFL-JRP	●	●					<0.1	6.35	2.38	2.8
		DCET0702018MFR-JRP	●	●					<0.18	6.35	2.38	2.8
		DCET0702018MFL-JRP	●	●					<0.18	6.35	2.38	2.8
		DCET070202MFR-JRP	●	●					<0.2	6.35	2.38	2.8
		DCET070202MFL-JRP	●	●					<0.2	6.35	2.38	2.8
		DCET11T3008MFR-JRP	●	●					<0.08	9.525	3.97	4.4
		DCET11T3008MFL-JRP	●	●					<0.08	9.525	3.97	4.4
		DCET11T301MFR-JRP	●	●					<0.1	9.525	3.97	4.4
		DCET11T301MFL-JRP	●	●					<0.1	9.525	3.97	4.4
		DCET11T3018MFR-JRP	●	●					<0.18	9.525	3.97	4.4
		DCET11T3018MFL-JRP	●	●					<0.18	9.525	3.97	4.4
		DCET11T302MFR-JRP	●	●					<0.2	9.525	3.97	4.4
		DCET11T302MFL-JRP	●	●					<0.2	9.525	3.97	4.4
	JSP	DCET0702008MFN-JSP	●	●					<0.08	6.35	2.38	2.8
		DCET070201MFN-JSP	●	●					<0.1	6.35	2.38	2.8
		DCET0702018MFN-JSP	●	●					<0.18	6.35	2.38	2.8
		DCET070202MFN-JSP	●	●					<0.2	6.35	2.38	2.8
		DCET11T3008MFN-JSP	●	●					<0.08	9.525	3.97	4.4
		DCET11T301MFN-JSP	●	●					<0.1	9.525	3.97	4.4
		DCET11T3018MFN-JSP	●	●					<0.18	9.525	3.97	4.4
		DCET11T302MFN-JSP	●	●					<0.2	9.525	3.97	4.4
	J10	DCGT070200FR-J10	●		●			●	0.03	6.35	2.38	2.8
		DCGT070200FL-J10	●		●			●	0.03	6.35	2.38	2.8
		DCGT070201FR-J10	●		●		●	●	0.1	6.35	2.38	2.8
		DCGT070201FL-J10	●		●		●	●	0.1	6.35	2.38	2.8
		DCGT070202FR-J10	●		●		●	●	0.2	6.35	2.38	2.8
		DCGT070202FL-J10	●		●		●	●	0.2	6.35	2.38	2.8
		DCGT070204FR-J10	●						0.4	6.35	2.38	2.8
		DCGT070204FL-J10	●						0.4	6.35	2.38	2.8
		DCGT11T300FR-J10	●		●			●	0.03	9.525	3.97	4.4
		DCGT11T300FL-J10	●		●			●	0.03	9.525	3.97	4.4
		DCGT11T301FR-J10	●		●		●	●	0.1	9.525	3.97	4.4
		DCGT11T301FL-J10	●		●		●	●	0.1	9.525	3.97	4.4
		DCGT11T302FR-J10	●		●		●	●	0.2	9.525	3.97	4.4
		DCGT11T302FL-J10	●		●		●	●	0.2	9.525	3.97	4.4
For external turning on Swiss lathes (honed edge)	J10	DCGT070202R-J10				●			0.2	6.35	2.38	2.8
		DCGT11T302R-J10				●			0.2	9.525	3.97	4.4

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Reference pages: External toolholder → C047 - Internal toolholder → D046 -
J-Series toolholder → G026 - PINZBOHR® → K184 -

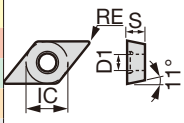
Insert POSITIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

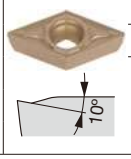
DP

Rhombic, 55° with hole Positive 11°

P	Steel	ɔ✠ ɔ✠ ●ɔ
M	Stainless	ɔ
K	Cast iron	●ɔ
N	Non-ferrous	
S	Superalloy	ɔ
H	Hard material	



Application	Chipbreaker	Designation	Coated T9225	Coated T9125	Coated AH8015	Cermet NS9530	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	PS	DPMT070202-PS	●	▲	●	●	0.2	6.35	2.38	2.8
		DPMT070204-PS	●	▲	●	●	0.4	6.35	2.38	2.8
		DPMT070208-PS	●	▲	●	●	0.8	6.35	2.38	2.8



● : Line up
▲ : To be discontinued

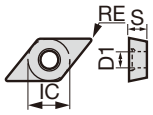
Insert POSITIVE TYPE / DOUBLE SIDE

● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

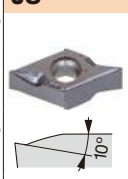
DX

Rhombic, 55° with hole

P	Steel	●ɔ
M	Stainless	●ɔ
K	Cast iron	
N	Non-ferrous	
S	Superalloy	
H	Hard material	



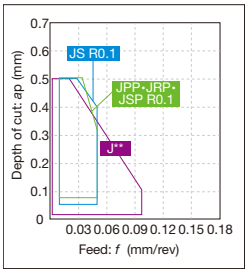
Application	Chipbreaker	Designation	Coated SH725	Dimension (mm) RE	IC	S	D1
Finishing (sharp edge)	JRP	DXGU070301MFRE-JRP	●	<0.1	6.35	3.18	2.7
		DXGU070301MFLE-JRP	●	<0.1	6.35	3.18	2.7
		DXGU070302MFRE-JRP	●	<0.2	6.35	3.18	2.7
		DXGU070302MFLE-JRP	●	<0.2	6.35	3.18	2.7
Finishing to medium cutting (sharp edge)	JS	DXGU070301MFR-JS	●	<0.1	6.35	3.18	2.7
		DXGU070301MFL-JS	●	<0.1	6.35	3.18	2.7
		DXGU070302MFR-JS	●	<0.2	6.35	3.18	2.7
		DXGU070302MFL-JS	●	<0.2	6.35	3.18	2.7
		DXGU070304MFR-JS	●	<0.4	6.35	3.18	2.7
		DXGU070304MFL-JS	●	<0.4	6.35	3.18	2.7

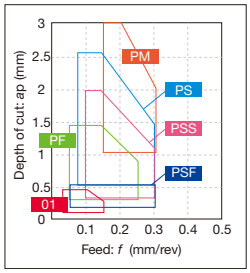


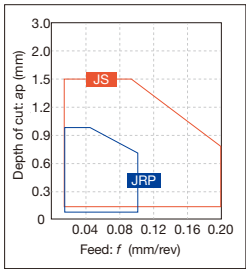
*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Chip control range







*Chip control range with typical R0.1

Reference pages: DPMT...: Internal toolholder → D049 -
DXGU...: External toolholder → C037 -, Internal toolholder → D033 -

Insert POSITIVE TYPE / DOUBLE SIDE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

DX

Rhombic, 55° with hole

| | | |

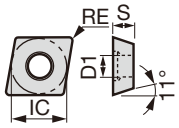
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

EP

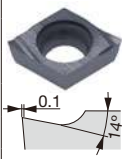


Rhombic, 75° with hole Positive 11°

P	Steel	●		●ⓒ	●ⓒ						●ⓒ						●ⓒ						●	ⓒ													
M	Stainless	●		●ⓒ	●ⓒ																		●	ⓒ													
K	Cast iron	●									●ⓒ						●ⓒ						●														
N	Non-ferrous																						●														
S	Superalloy	●			●ⓒ																																
H	Hard material																																				

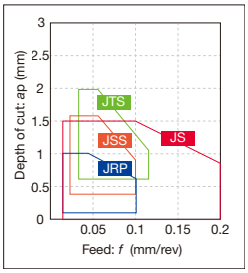


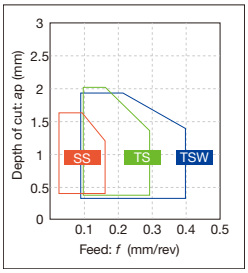
Application	Chipbreaker	Designation	Coated			Coated cermet	Cermet	Uncoated		Dimension (mm)			
			GH110	SH725	SH730	GT9530	NS9530	TH10	UX30	RE	IC	S	D1
Finishing	W08	EPGT03X100R-W08			●			●		0.03	3.57	1.39	1.9
		EPGT03X100L-W08			●			●		0.03	3.57	1.39	1.9
		EPGT03X101R-W08			●			●		0.1	3.57	1.39	1.9
		EPGT03X101L-W08			●			●		0.1	3.57	1.39	1.9
		EPGT03X102R-W08			●			●		0.2	3.57	1.39	1.9
		EPGT03X102L-W08			●			●		0.2	3.57	1.39	1.9
		EPGT03X104R-W08			●			●		0.4	3.57	1.39	1.9
		EPGT03X104L-W08			●			●		0.4	3.57	1.39	1.9
		EPGT040100R-W08			●			●		0.03	3.97	1.59	2.3
		EPGT040100L-W08	●		●		●	●		0.03	3.97	1.59	2.3
		EPGT040101R-W08			●			●		0.1	3.97	1.59	2.3
		EPGT040101L-W08			●			●		0.1	3.97	1.59	2.3
		EPGT040102R-W08	●		●		●	●		0.2	3.97	1.59	2.3
		EPGT040102L-W08	●		●	●	●	●	●	0.2	3.97	1.59	2.3
		EPGT040104R-W08	●		●		●	●		0.4	3.97	1.59	2.3
		EPGT040104L-W08	●		●	●	●	●	●	0.4	3.97	1.59	2.3
Finishing (sharp edge)	W08	EPGT03X100FL-W08		●						0.03	3.57	1.39	1.9
		EPGT03X100FR-W08		●						0.03	3.57	1.39	1.9
		EPGT03X101FL-W08		●						0.1	3.57	1.39	1.9
		EPGT03X101FR-W08		●						0.1	3.57	1.39	1.9
		EPGT03X102FL-W08		●						0.2	3.57	1.39	1.9
		EPGT03X102FR-W08		●						0.2	3.57	1.39	1.9
		EPGT03X104FL-W08		●						0.4	3.57	1.39	1.9
		EPGT03X104FR-W08		●						0.4	3.57	1.39	1.9
		EPGT040100FL-W08		●						0.03	3.97	1.59	2.3
		EPGT040100FR-W08		●						0.03	3.97	1.59	2.3
		EPGT040101FL-W08		●						0.1	3.97	1.59	2.3
		EPGT040101FR-W08		●						0.1	3.97	1.59	2.3
		EPGT040102FL-W08		●						0.2	3.97	1.59	2.3
		EPGT040102FR-W08		●						0.2	3.97	1.59	2.3
		EPGT040104FL-W08		●						0.4	3.97	1.59	2.3
		EPGT040104FR-W08		●						0.4	3.97	1.59	2.3

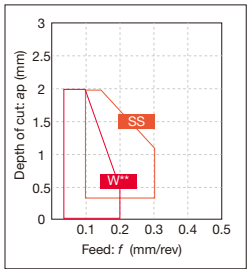


● : Line up

Chip control range







Reference pages: Internal toolholder → D031 - Boring bar tool → K211 -
Top-borer tool → K213

Insert POSITIVE TYPE

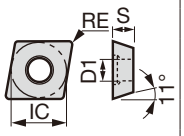
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

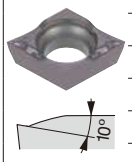
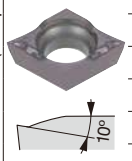
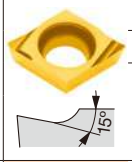
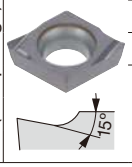
EP



Rhombic, 75° with hole Positive 11°

P	Steel	●◐ ●◐ ●◐
M	Stainless	●◐ ●◐ ●◐
K	Cast iron	
N	Non-ferrous	
S	Superalloy	●◐
H	Hard material	



Application	Chipbreaker	Designation	Coated SH725	Coated SH730	Coated J740	Dimension (mm) RE	IC	S	D1
For internal turning on Swiss lathes	JS	EPGT03X101-JS		●		<0.1	3.57	1.39	1.9
		EPGT03X102-JS		●		<0.2	3.57	1.39	1.9
		EPGT03X104-JS		●		<0.4	3.57	1.39	1.9
		EPGT040101-JS		●		<0.1	3.97	1.59	2.3
		EPGT040102-JS		●		<0.2	3.97	1.59	2.3
		EPGT040104-JS		●		<0.4	3.97	1.59	2.3
For internal turning on Swiss lathes (sharp edge)	JS	EPGT03X101F-JS	●			<0.1	3.57	1.39	1.9
		EPGT03X102F-JS	●			<0.2	3.57	1.39	1.9
		EPGT03X104F-JS	●			<0.4	3.57	1.39	1.9
		EPGT040101F-JS	●			<0.1	3.97	1.59	2.3
		EPGT040102F-JS	●			<0.2	3.97	1.59	2.3
		EPGT040104F-JS	●			<0.4	3.97	1.59	2.3
Finishing	J08	EPGT040100L-J08		●	●	0.03	3.97	1.59	2.3
		EPGT040102L-J08		●	●	0.2	3.97	1.59	2.3
		EPGT040104L-J08		●	●	0.4	3.97	1.59	2.3
Finishing (sharp edge)	J08	EPGT040100FL-J08	●			0.03	3.97	1.59	2.3
		EPGT040102FL-J08	●			0.2	3.97	1.59	2.3
		EPGT040104FL-J08	●			0.4	3.97	1.59	2.3

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

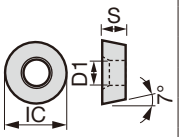
Reference pages: Internal toolholder → D031 - Boring bar tool → K211 - Top-borer tool → K213

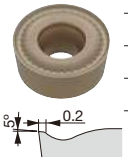
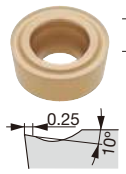
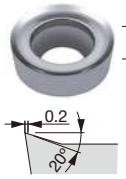
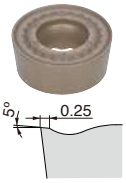
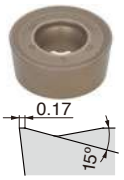
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

RC

Round, with hole Positive 7°

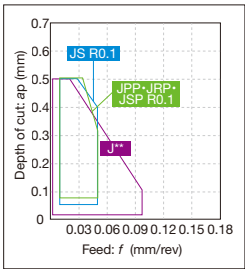
P	Steel	●ⓒ ⓒ✠ ●ⓒ ⓒ✠ ●ⓒ
M	Stainless	●ⓒ ●ⓒ ● ⓒ
K	Cast iron	●ⓒ ●ⓒ ⓒ ●ⓒ ●
N	Non-ferrous	●
S	Superalloy	●ⓒ ● ⓒ ⓒ ●
H	Hard material	

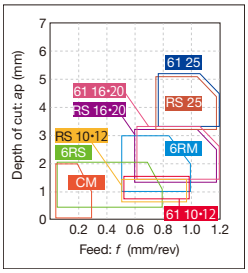


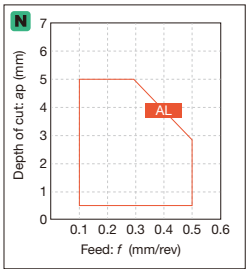
Application	Chipbreaker	Designation	Coated T9215	T9225	T9115	T9125	T5115	AH120	AH8005	AH8015	AH905	Uncoated KS05F	RE	IC	S	D1
Finishing to medium cutting	**RS**	RCMT10T3M0-RS	●	●	▲	▲			●	●	●		-	10	3.97	4.4
		RCMT1204M0-RS	●	●	▲	▲			●	●	●		-	12	4.76	4.4
		RCMT1606M0-RS	●	●	▲	▲		●					-	16	6.35	5.5
		RCMT2006M0-RS		●		▲							-	20	6.35	6.5
		RCMT2507M0-RS		●		▲							-	25	7.94	7.6
	CM	RCMT0502M0-CM					●						-	5	2.38	2.5
		RCMT0602M0-CM					●						-	6	2.38	2.8
		RCMT0803M0-CM					●						-	8	3.18	3.4
	AL	RCGT0602M0-AL										●	-	6	2.38	2.8
		RCGT0803M0-AL										●	-	8	3.18	3.4
		RCGT1003M0-AL										●	-	10	3.18	4
Finishing (low cutting force)	**6RS**	RCMT1204M0-6RS	●	●	▲	▲							-	12	4.76	5.16
																
Medium cutting	**6RM**	RCMT1204M0-6RM	●	●	▲	▲							-	12	4.76	5.16
																

● : Line up
▲ : To be discontinued

Chip control range







*Chip control range with typical R0.1

Reference pages: External toolholder → C072 -,C081 - C083

Insert POSITIVE TYPE

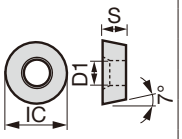
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

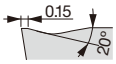
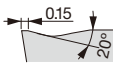
RC



Round, with hole Positive 7°

		T9215	T9225	T9115	T9125	AH8005	AH8015	AH905	NS9530	TH10
P	Steel	●◐	◐✠	●◐	◐✠				●◐	●
M	Stainless	●◐				●	◐			●
K	Cast iron	●◐		●◐					●◐	●
N	Non-ferrous									●
S	Superalloy					●	◐	◐		
H	Hard material									



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	Coated T9115	Coated T9125	Coated AH8005	Coated AH8015	Coated AH905	Cermet NS9530	Uncoated TH10	Dimension (mm) RE	IC	S	D1
Heavy cutting	61	RCMT0502M0-61	●	●	▲	▲				●	●	-	5	2.38	2.5
		RCMT0602M0-61	●	●	▲	▲				●	●	-	6	2.38	2.8
		RCMT0803M0-61	●	●	▲	▲				●	●	-	8	3.18	3.4
															
	61	RCMM1003M0-61	●	●	▲	▲	●	●	●	●	●	-	10	3.18	3.6
		RCMM1204M0-61	●	●	▲	▲	●	●	●	●	●	-	12	4.76	4.2
		RCMM1606M0-61	●	●	▲	▲					●	-	16	6.35	5.2
		RCMM2006M0-61		●		▲					●	-	20	6.35	6.5
		RCMM2507M0-61		●		▲						-	25	7.94	7.2
															

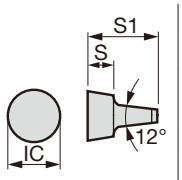
D1 (mm)	Designation	0502M0	0602M0	0803M0	1003M0	1204M0	1606M0	2006M0	2507M0
	RC*T	2.5	2.8	3.4	4.4	4.4	5.5	6.5	7.6
	RCMM	-	-	-	3.6	4.2	5.2	6.5	7.2

RT



Special round insert

		TH10	KS20
P	Steel	●	
M	Stainless	●	
K	Cast iron	●	◐✠
N	Non-ferrous	●	◐✠
S	Superalloy		◐✠
H	Hard material		



Application	Chipbreaker	Designation	Uncoated TH10	Uncoated KS20	Dimension (mm) RE	IC	S	S1
Medium cutting	-	RT05	●		-	5	2.5	6.5
		RT06	●	●	-	6	3	7.7
		RT08	●		-	8	4.2	10.3

● : Line up
▲ : To be discontinued

Reference pages: RC...: External toolholder → C072 -

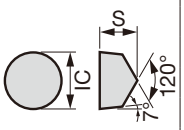
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

RC

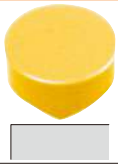
Round, without hole
Positive 7°



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloy	
H	Hard material	●

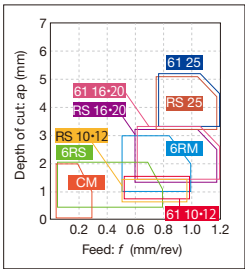


Application	Chipbreaker	Designation	Ceramic LX11	RE	IC	S	D1
Medium cutting	-	RCGX090800	●	-	9.525	8	-
		RCGX120800	●	-	12.7	8	-



● : Line up

Chip control range



MEMO

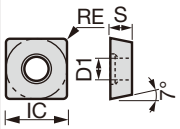
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

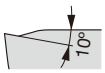
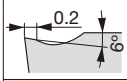
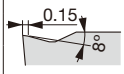
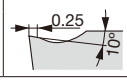
SC



Square, 90° with hole Positive 7°

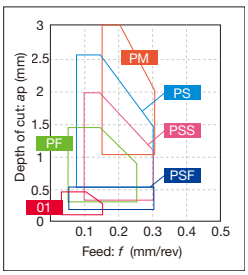
		T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH120	AH725	GT9530	AT9530	NS9530
P	Steel	●ɔ	ɔ✣	●ɔ	ɔ✣	ɔ	✣	ɔ✣	✣			●ɔ	ɔ	●ɔ	●ɔ	●ɔ
M	Stainless	●ɔ				●	ɔ	ɔ	✣			●ɔ	ɔ			
K	Cast iron	●ɔ		●ɔ						●ɔ	ɔ	●ɔ	ɔ	●ɔ	●ɔ	●ɔ
N	Non-ferrous															
S	Superalloy											●ɔ	●			
H	Hard material															

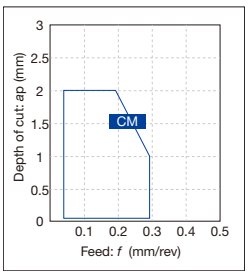


Application	Chipbreaker	Designation	T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH120	AH725	GT9530	AT9530	NS9530	RE	IC	S	D1
			Coated												Coated cermet		Cermet	Dimension (mm)			
Finishing to medium cutting	**PS**	**SCMT09T304-PS**	●	●	▲	▲	●	●	●	●				●	●	●	●	0.4	9.525	3.97	4.4
		SCMT09T308-PS	●	●	▲	▲	●	●	●	●				●	●	●	●	0.8	9.525	3.97	4.4
		SCMT120404-PS	●	●	▲	▲	●	●	●	●				●			●	0.4	12.7	4.76	5.5
		SCMT120408-PS	●	●	▲	▲	●	●	●	●				●			●	0.8	12.7	4.76	5.5
	23	**SCMT09T302-23**															●	0.2	9.525	3.97	4.4
		SCMT09T308-23		●		▲							●					0.8	9.525	3.97	4.4
		SCMT120408-23		●		▲							●	●				0.8	12.7	4.76	5.5
																					
Medium cutting	**24**	**SCMT070204-24**		●		▲											●	0.4	7.94	2.38	3.4
		SCMT09T302-24		●													●	0.2	9.525	3.97	4.4
		SCMT09T304-24		●		▲											●	0.4	9.525	3.97	4.4
		SCMT09T308-24	●	●	▲	▲											●	0.8	9.525	3.97	4.4
		SCMT120404-24		●		▲											●	0.4	12.7	4.76	5.5
		SCMT120408-24		●		▲											●	0.8	12.7	4.76	5.5
	PM	**SCMT09T304-PM**	●	●	▲	▲	●	●	●	●				●			●	0.4	9.525	3.97	4.4
		SCMT09T308-PM	●	●	▲	▲	●	●	●	●				●			●	0.8	9.525	3.97	4.4
		SCMT120408-PM	●	●	▲	▲	●	●	●	●				●			●	0.8	12.7	4.76	5.5
		SCMT12012-PM		●		▲	●	●	●	●				●			●	1.2	12.7	4.76	5.5
Finishing to medium cutting	**CM**	**SCMT09T304-CM**									●	●						0.4	9.525	3.97	4.4
		SCMT09T308-CM									●	●						0.8	9.525	3.97	4.4
		SCMT09T312-CM										●						1.2	9.525	3.97	4.4
		SCMT120404-CM									●	●						0.4	12.7	4.76	5.5
		SCMT120408-CM									●	●						0.8	12.7	4.76	5.5

● : Line up
▲ : To be discontinued

Chip control range





Reference pages: External toolholder → C102 -

Insert POSITIVE TYPE

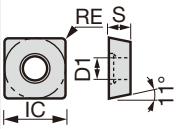
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

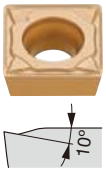
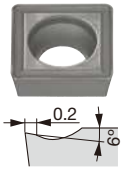
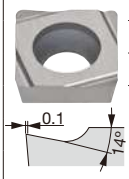
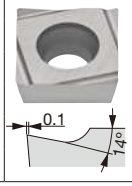
SP



Square, 90° with hole Positive 11°

P	Steel	●ɔ	ɔ✣	●ɔ	ɔ✣	ɔ	✣	ɔ✣	✣	●ɔ	ɔ			●ɔ	●ɔ			●ɔ				●			
M	Stainless	●ɔ				●	ɔ	ɔ	✣	●ɔ	ɔ											●			
K	Cast iron	●ɔ		●ɔ						●ɔ	ɔ			●ɔ	●ɔ			●ɔ				●			
N	Non-ferrous																					●			
S	Superalloy									●ɔ	●														
H	Hard material																								



Application	Chipbreaker	Designation	Coated										Coated cermet		Cermet	Uncoated		Dimension (mm)			
			T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH725	GT9530	AT9530	NS9530	TH10		RE	IC	S	D1
Finishing to medium cutting	**PS**	**SPMT090304-PS**	●	●	▲	▲	●	●	●	●		●	●	●	●			0.4	9.525	3.18	4.4
		SPMT0903**08-PS**	●	●	▲	▲	●	●	●	●		●	●	●	●			0.8	9.525	3.18	4.4
		SPMT120404-PS	●	●	▲	▲	●	●	●	●		●						0.4	12.7	4.76	5.5
		SPMT1204**08-PS**	●	●	▲	▲	●	●	●	●		●						0.8	12.7	4.76	5.5
	23	**SPMT090304-23**		●		▲									●			0.4	9.525	3.18	4.4
		SPMT0903**08-23**		●		▲									●			0.8	9.525	3.18	4.4
Medium cutting	**24**	**SPMT090304-24**		●		▲									●			0.4	9.525	3.18	4.4
		SPMT0903**08-24**		●		▲					●				●			0.8	9.525	3.18	4.4
		SPMT120404-24													●			0.4	12.7	4.76	5.5
		SPMT1204**08-24**													●			0.8	12.7	4.76	5.5
Finishing	**W15**	**SPGT090302L-W15**													●			0.2	9.525	3.18	4.4
		SPGT0903**04L-W15**													●	●		0.4	9.525	3.18	4.4
		SPGT0903**08R-W15**														●		0.8	9.525	3.18	4.4
		SPGT0903**08L-W15**													●	●		0.8	9.525	3.18	4.4
	W20	**SPGT120404L-W20**													●			0.4	12.7	4.76	5.5
																					

● : Line up
▲ : To be discontinued

Reference pages: Internal toolholder → D036 - Cartridge → K197 -

● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

SP



Square, 90° with hole Positive 11°

| | | |

Insert POSITIVE TYPE

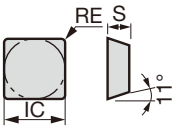
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

SP



Square, 90° without hole Positive 11°

		Coated			Cermet	Uncoated		Ceramic		Dimension (mm)			
		T9225	T9125	T5115	NS9530	TH10	UX30	LX11	WG300	RE	IC	S	D1
P	Steel	ɔ✣	ɔ✣		●ɔ	●	●						
M	Stainless					●	●						
K	Cast iron			ɔ	●ɔ	●							
N	Non-ferrous					●							
S	Superalloy								●ɔ				
H	Hard material							●					



Application	Chipbreaker	Designation	Coated			Cermet	Uncoated		Ceramic		Dimension (mm)			
			T9225	T9125	T5115	NS9530	TH10	UX30	LX11	WG300	RE	IC	S	D1
Finishing to medium cutting	23	SPMR090304-23				●					0.4	9.525	3.18	-
		SPMR090308-23	●	▲		●					0.8	9.525	3.18	-
		SPMR120304-23	●	▲		●					0.4	12.7	3.18	-
		SPMR120308-23	●	▲		●					0.8	12.7	3.18	-
	CM	SPMR090304-CM			●						0.4	9.525	3.18	-
		SPMR090308-CM			●						0.8	9.525	3.18	-
		SPMR120304-CM			●						0.4	12.7	3.18	-
		SPMR120308-CM			●						0.8	12.7	3.18	-
		SPMR120312-CM			●						1.2	12.7	3.18	-
	-	SPGR090304L				●					0.4	9.525	3.18	-
	-	SPGN090304					●		●		0.4	9.525	3.18	-
		SPGN090308					●		●		0.8	9.525	3.18	-
		SPGN120304					●		●		0.4	12.7	3.18	-
		SPGN120308					●		●		0.8	12.7	3.18	-
		SPGN120312				●			●		1.2	12.7	3.18	-
		SPGN120408					●				0.8	12.7	4.76	-
	-	SPMN090304			●						0.4	9.525	3.18	-
		SPMN090308			●						0.8	9.525	3.18	-
		SPMN120304			●						0.4	12.7	3.18	-
		SPMN120308			●	●	●	●			0.8	12.7	3.18	-
		SPMN120312			●		●				1.2	12.7	3.18	-
		SPMN120408			●		●				0.8	12.7	4.76	-
		SPMN120412			●						1.2	12.7	4.76	-
Medium cutting	(WG300)	SPGN120408-T1-W								■	0.8	12.7	4.76	-
		SPGN120412-T1-W								■	1.2	12.7	4.76	-

＊ホーニング記号 B164

● : Line up
▲ : To be discontinued

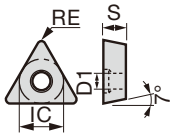
Reference pages: Internal toolholder → D036 - Cartridge → K197 -

● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

TC

Triangular, 60° with hole Positive 7°

P	Steel	●ⓒ ⓒ✠ ●ⓒ ⓒ✠ ⓒ ●ⓒ ●ⓒ ●ⓒ ●ⓒ ●ⓒ ●
M	Stainless	●ⓒ ⓒ ●ⓒ ●ⓒ ●
K	Cast iron	●ⓒ ●ⓒ ⓒ ●ⓒ ●ⓒ ●ⓒ ●
N	Non-ferrous	●
S	Superalloy	●
H	Hard material	

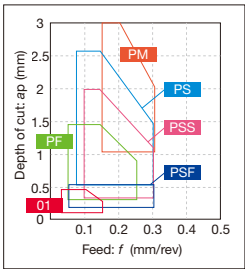


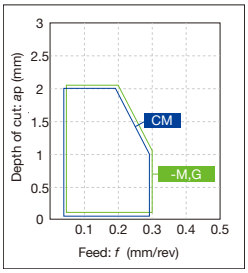
Application	Chipbreaker	Designation	Coated							Coated cermet	Cermet		Uncoated				Dimension (mm)			
			T9215	T9225	T9115	T9125	AH725	SH725	J740	GT9530	NS9530	NS520	TH10				RE	IC	S	D1
Precision finishing	01	TCGT090204-01										●	●				0.4	5.56	2.38	2.5
		TCGT110202-01							●								0.2	6.35	2.38	2.8
		TCGT1102**04-01**								●	●	●	●				0.4	6.35	2.38	2.8
		TCGT1102**08-01**									●						0.8	6.35	2.38	2.8
		TCGT16T304-01											●				0.4	9.525	3.97	4.4
		TCGT16T3**08-01**										●	●				0.8	9.525	3.97	4.4
Precision finishing (sharp edge)	01	TCGT110202F-01						●									<0.2	6.35	2.38	2.8
		TCGT1102**04F-01**						●									<0.4	6.35	2.38	2.8
Finishing	PSF	TCMT090202-PSF					●										0.2	5.56	2.38	2.5
		TCMT0902**04-PSF**	●	●	▲	▲	●										0.4	5.56	2.38	2.5
		TCMT110202-PSF					●										0.2	6.35	2.38	2.8
		TCMT1102**04-PSF**	●	●	▲	▲	●										0.4	6.35	2.38	2.8
		TCMT110302-PSF					●										0.2	6.35	3.18	2.8
		TCMT1103**04-PSF**	●	●	▲	▲	●										0.4	6.35	3.18	2.8
		TCMT16T304-PSF	●	●	▲	▲	●										0.4	9.525	3.97	4.4
Finishing to light cutting	PSS	TCMT090204-PSS	●	●	▲	▲	●										0.4	5.56	2.38	2.5
		TCMT0902**08-PSS**	●	●	▲	▲	●										0.8	5.56	2.38	2.5
		TCMT110204-PSS	●	●	▲	▲	●										0.4	6.35	2.38	2.8
		TCMT1102**08-PSS**	●	●	▲	▲	●										0.8	6.35	2.38	2.8
		TCMT110304-PSS	●	●	▲	▲	●										0.4	6.35	3.18	2.8
		TCMT1103**08-PSS**	●	●	▲	▲	●										0.8	6.35	3.18	2.8
		TCMT16T304-PSS	●	●	▲	▲	●										0.4	9.525	3.97	4.4
		TCMT16T3**08-PSS**	●	●	▲	▲	●										0.8	9.525	3.97	4.4
		TCMT16T3**12-PSS**	●	●	▲	▲	●										1.2	9.525	3.97	4.4

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up
▲ : To be discontinued

Chip control range





*-M,G: Without chipbreaker

Reference pages: External toolholder → C074 - Internal toolholder → D040
J-Series toolholder → G039 - PINZBOHR® → K180 -

Insert POSITIVE TYPE

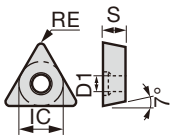
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TC



Triangular, 60° with hole Positive 7°

		T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	AH725	GH730	GT9530	AT9530	NS9530	TH10
P	Steel	●ɔ	ɔ✣	●ɔ	ɔ✣	ɔ	✣	ɔ✣	✣	ɔ	ɔ	●ɔ	●ɔ	●ɔ	●
M	Stainless	●ɔ				●	ɔ	ɔ	✣	ɔ	ɔ				●
K	Cast iron	●ɔ		●ɔ						ɔ	ɔ	●ɔ	●ɔ	●ɔ	●
N	Non-ferrous														●
S	Superalloy									●					
H	Hard material														



Application	Chipbreaker	Designation	Coated										Coated cermet		Cermet	Uncoated	Dimension (mm)			
			T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	AH725	GH730	GT9530	AT9530	NS9530	TH10	RE	IC	S	D1
Finishing to medium cutting	PS	TCMT090204-PS									●						0.4	5.56	2.38	2.5
		TCMT090208-PS									●						0.8	5.56	2.38	2.5
		TCMT110202-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●		0.2	6.35	2.38	2.8
		TCMT110204-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●		0.4	6.35	2.38	2.8
		TCMT110208-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●		0.8	6.35	2.38	2.8
		TCMT110302-PS	●	●	▲	▲	●	●	●	●							0.2	6.35	3.18	2.8
		TCMT110304-PS	●	●	▲	▲	●	●	●	●							0.4	6.35	3.18	2.8
		TCMT110308-PS	●	●	▲	▲	●	●	●	●							0.8	6.35	3.18	2.8
		TCMT16T302-PS	●	●	▲	▲	●	●	●	●	●				●		0.2	9.525	3.97	4.4
		TCMT16T304-PS	●	●	▲	▲	●	●	●	●	●				●		0.4	9.525	3.97	4.4
		TCMT16T308-PS	●	●	▲	▲	●	●	●	●	●						0.8	9.525	3.97	4.4
	TSF	TCMT110204-TSF	●	●													0.4	6.35	2.38	2.8
		TCMT110208-TSF	●	●													0.8	6.35	2.38	2.8
		TCMT16T304-TSF	●	●													0.4	9.525	3.97	4.4
		TCMT16T308-TSF	●	●													0.8	9.525	3.97	4.4
	TM	TCMT110204-TM	●	●													0.4	6.35	2.38	2.8
		TCMT110208-TM	●	●													0.8	6.35	2.38	2.8
		TCMT16T304-TM	●	●													0.4	9.525	3.97	4.4
		TCMT16T308-TM	●	●													0.8	9.525	3.97	4.4
	23	TCMT090204-23		●		▲									●		0.4	5.56	2.38	2.5
		TCMT110204-23													●		0.4	6.35	2.38	2.8
		TCMT16T304-23													●		0.4	9.525	3.97	4.4
		TCMT16T308-23		●		▲											0.8	9.525	3.97	4.4
Medium cutting	24	TCMT090202-24													●		0.2	5.56	2.38	2.5
		TCMT090204-24	●	●	▲	▲									●		0.4	5.56	2.38	2.5
		TCMT110202-24													●		0.2	6.35	2.38	2.8
		TCMT110204-24	●	●	▲	▲									●		0.4	6.35	2.38	2.8
		TCMT110208-24		●		▲											0.8	6.35	2.38	2.8
		TCMT16T304-24	●	●	▲	▲									●		0.4	9.525	3.97	4.4
		TCMT16T308-24	●	●	▲	▲					●						0.8	9.525	3.97	4.4
Finishing	W15	TCGT16T302L-W15														●	0.2	9.525	3.97	4.4
		TCGT16T304L-W15													●	●	0.4	9.525	3.97	4.4
		TCGT16T308L-W15														●	0.8	9.525	3.97	4.4

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C074 - Internal toolholder → D040
J-Series toolholder → G039 - PINZBOHR® → K180 -

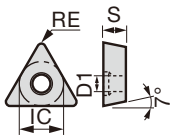
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TC



Triangular, 60° with hole Positive 7°

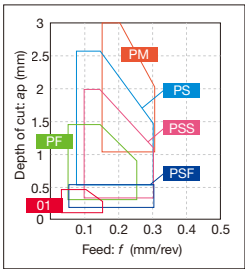
		T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH725	NS9530	KS05F
P	Steel	●ɔ	ɔ✣	●ɔ	ɔ✣	ɔ	✣	ɔ✣	✣		●ɔ	ɔ	●ɔ	
M	Stainless	●ɔ				●	ɔ	ɔ	✣			ɔ		
K	Cast iron	●ɔ		●ɔ						●ɔ	●ɔ	ɔ	●ɔ	●
N	Non-ferrous													●
S	Superalloy											●		●
H	Hard material													

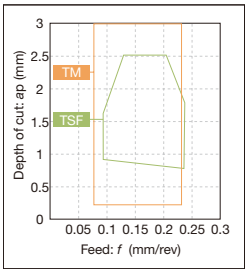


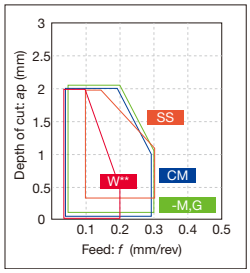
Application	Chipbreaker	Designation	RE	IC	S	D1
Medium cutting	PM	TCMT110202-PM	0.2	6.35	2.38	2.8
		TCMT11020**4**-PM	0.4	6.35	2.38	2.8
		TCMT11020**8**-PM	0.8	6.35	2.38	2.8
		TCMT110302-PM	0.2	6.35	3.18	2.8
		TCMT11030**4**-PM	0.4	6.35	3.18	2.8
		TCMT11030**8**-PM	0.8	6.35	3.18	2.8
		TCMT16T304-PM	0.4	9.525	3.97	4.4
		TCMT16T30**8**-PM	0.8	9.525	3.97	4.4
		TCMT16T3**12**-PM	1.2	9.525	3.97	4.4
Finishing to medium cutting	CM	TCMT090204-CM	0.4	5.56	2.38	2.5
		TCMT0902**08**-CM	0.8	5.56	2.38	2.5
		TCMT110204-CM	0.4	6.35	2.38	2.8
		TCMT11020**8**-CM	0.8	6.35	2.38	2.8
		TCMT110304-CM	0.4	6.35	3.18	2.8
		TCMT11030**8**-CM	0.8	6.35	3.18	2.8
		TCMT16T304-CM	0.4	9.525	3.97	4.4
		TCMT16T30**8**-CM	0.8	9.525	3.97	4.4
		TCMT16T3**12**-CM	1.2	9.525	3.97	4.4
	SS	TCGT110202-SS	0.2	6.35	2.38	2.8
		TCGT11020**4**-SS	0.4	6.35	2.38	2.8
		TCGT11020**8**-SS	0.8	6.35	2.38	2.8
		TCGT16T304-SS	0.4	9.525	3.97	4.4
	AL	TCGT110202-AL	0.2	6.35	2.38	2.8
		TCGT11020**4**-AL	0.4	6.35	2.38	2.8
		TCGT16T302-AL	0.2	9.525	3.97	4.4
		TCGT16T30**4**-AL	0.4	9.525	3.97	4.4
		TCGT16T30**8**-AL	0.8	9.525	3.97	4.4

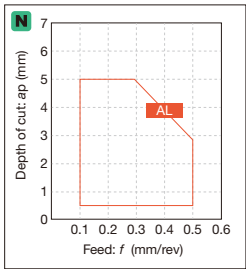
● : Line up
▲ : To be discontinued

Chip control range









*-M,G: Without chipbreaker

Reference pages: External toolholder → C074 - Internal toolholder → D040
J-Series toolholder → G039 - PINZBOHR® → K180 -

Insert POSITIVE TYPE

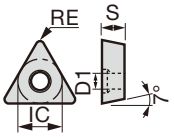
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

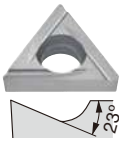
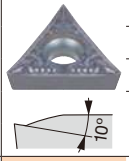
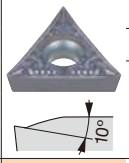
TC



Triangular, 60° with hole Positive 7°

		AH725	SH725	SH730	J740	NS9530	TH10
P	Steel	ɔ	●ɔ	●ɔ	●ɔ	●ɔ	●
M	Stainless	ɔ	●ɔ	●ɔ	●ɔ		●
K	Cast iron	ɔ				●ɔ	●
N	Non-ferrous						●
S	Superalloy	●		●ɔ			
H	Hard material						



Application	Chipbreaker	Designation	Coated AH725	Coated SH725	Coated SH730	Coated J740	Cermet NS9530	Uncoated TH10	Dimension (mm) RE	IC	S	D1
Finishing	-	TCGT080102R					●	●	0.2	4.76	1.59	2.7
												
For external turning on Swiss lathes (sharp edge)	JS	TCGT110200FN-JS		●	●				0.03	6.35	2.38	2.8
		TCGT110201FN-JS		●	●				<0.1	6.35	2.38	2.8
		TCGT110202FN-JS		●	●				<0.2	6.35	2.38	2.8
		TCGT110204FN-JS		●	●				<0.4	6.35	2.38	2.8
												
For external turning on Swiss lathes (honed edge)	JS	TCGT110201N-JS	●						0.1	6.35	2.38	2.8
		TCGT110202N-JS	●						0.2	6.35	2.38	2.8
		TCGT110204N-JS	●						0.4	6.35	2.38	2.8
												
For external turning on Swiss lathes (sharp edge)	J08	TCGT080200FR-J08		●		●		●	0.03	4.76	2.38	2.3
		TCGT080200FL-J08		●		●		●	0.03	4.76	2.38	2.3
		TCGT080201FR-J08		●		●		●	0.1	4.76	2.38	2.3
		TCGT080201FL-J08		●		●		●	0.1	4.76	2.38	2.3
		TCGT080202FR-J08		●		●		●	0.2	4.76	2.38	2.3
		TCGT080202FL-J08		●		●		●	0.2	4.76	2.38	2.3
		TCGT080204FR-J08		●					0.4	4.76	2.38	2.3
												

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Reference pages: J-Series toolholder → G039 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TC

Triangular, 60° with hole Positive 7°

| | | |

Insert POSITIVE TYPE

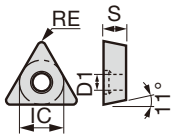
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP

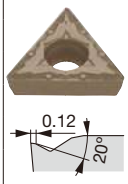


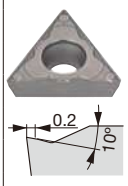
Triangular, 60° with hole Positive 11°

P	Steel	●ɔ	ɔ✣	●ɔ	ɔ✣	ɔ	ɔ			●ɔ	●ɔ			●ɔ	●ɔ			●															
M	Stainless	●ɔ				ɔ	ɔ											●															
K	Cast iron	●ɔ		●ɔ		ɔ	ɔ			●ɔ	●ɔ			●ɔ	●ɔ			●															
N	Non-ferrous																	●															
S	Superalloy					●																											
H	Hard material																																



Application	Chipbreaker	Designation	Coated						Coated cermet		Cermet		Uncoated		Dimension (mm)			
			T9215	T9225	T9115	T9125	AH725	GH730	GT9530	GT720	NS9530	NS520	TH10		RE	IC	S	D1
Precision finishing	01	TPGT090202-01							●		●				0.2	5.56	2.38	2.5
		TPGT090204-01							●		●	●	●		0.4	5.56	2.38	2.5
		TPGT110202-01							●		●				0.2	6.35	2.38	2.8
		TPGT110204-01							●		●	●	●		0.4	6.35	2.38	2.8
		TPGT110208-01									●				0.8	6.35	2.38	2.8
		TPGT130302-01								●	●				0.2	7.94	3.18	3.4
		TPGT130304-01							●		●	●	●		0.4	7.94	3.18	3.4
		TPGT130308-01									●	●			0.8	7.94	3.18	3.4
		TPGT16T304-01							●		●	●	●		0.4	9.525	3.97	4.4
		TPGT16T308-01								●	●	●			0.8	9.525	3.97	4.4
Finishing	PSF	TPMT090202-PSF					●				●				0.2	5.56	2.38	2.5
		TPMT090204-PSF	●	●	▲	▲	●		●		●				0.4	5.56	2.38	2.5
		TPMT110202-PSF					●		●		●				0.2	6.35	2.38	2.8
		TPMT110204-PSF	●	●	▲	▲	●		●		●				0.4	6.35	2.38	2.8
		TPMT110302-PSF					●				●				0.2	6.35	3.18	3.4
		TPMT110304-PSF	●	●	▲	▲	●		●		●				0.4	6.35	3.18	3.4
		TPMT130304-PSF	●	●	▲	▲	●								0.4	7.94	3.18	3.4
		TPMT16T304-PSF	●	●	▲	▲	●								0.4	9.525	3.97	4.4
	PF	TPMT110204-PF						●	●		●				0.4	6.35	2.38	2.8
		TPMT110208-PF							●		●				0.8	6.35	2.38	2.8
		TPMT110302-PF						●			●				0.2	6.35	3.18	3.4
		TPMT110304-PF						●	●		●				0.4	6.35	3.18	3.4
		TPMT130304-PF							●		●				0.4	7.94	3.18	3.4
		TPMT130308-PF									●				0.8	7.94	3.18	3.4
		TPMT16T304-PF							●		●				0.4	9.525	3.97	4.4





● : Line up
▲ : To be discontinued

Reference pages: Mounting hole specification → B147
Internal toolholder → D041 -
Boring bar tool → K209 -
Cartridge → K193 -
Top-borer tool → K213

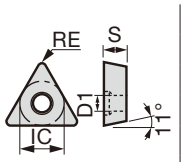
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP

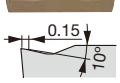


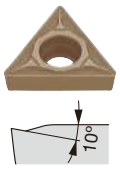
Triangular, 60° with hole Positive 11°

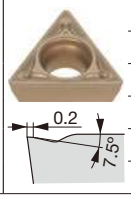
P	Steel	●ɔ ɔ✣ ●ɔ ɔ✣ ɔ ✣ ɔ✣ ✣ ●ɔ ɔ ɔ ●ɔ ●ɔ ●ɔ
M	Stainless	●ɔ ● ɔ ɔ ✣ ●ɔ ɔ ɔ ●ɔ
K	Cast iron	●ɔ ●ɔ ●ɔ ɔ ɔ ●ɔ ●ɔ ●ɔ
N	Non-ferrous	
S	Superalloy	●ɔ ●
H	Hard material	



Application	Chipbreaker	Designation	Coated										Coated cermet		Cermet		Dimension (mm)			
			T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH725	GH730	GT9530	AT9530	NS9530	RE	IC	S	D1
Finishing to light cutting	**PSS**	**TPMT090204-PSS**	●	●	▲	▲	●	●	●	●		●		●		●	0.4	5.56	2.38	2.5
		TPMT090208-PSS	●	●	▲	▲	●	●	●	●		●		●		●	0.8	5.56	2.38	2.5
		TPMT110204-PSS	●	●	▲	▲	●	●	●	●		●		●		●	0.4	6.35	2.38	2.8
		TPMT110208-PSS	●	●	▲	▲	●	●	●	●		●		●		●	0.8	6.35	2.38	2.8
		TPMT110304-PSS	●	●	▲	▲	●	●	●	●		●					0.4	6.35	3.18	3.4
		TPMT110308-PSS	●	●	▲	▲	●	●	●	●		●					0.8	6.35	3.18	3.4
		TPMT130304-PSS	●	●	▲	▲	●	●	●	●		●					0.4	7.94	3.18	3.4
		TPMT130308-PSS	●	●	▲	▲	●	●	●	●		●		●		●	0.8	7.94	3.18	3.4
		TPMT16T304-PSS	●	●	▲	▲	●	●	●	●		●		●		●	0.4	9.525	3.97	4.4
		TPMT16T308-PSS	●	●	▲	▲	●	●	●	●		●		●		●	0.8	9.525	3.97	4.4
Finishing to medium cutting	**PS**	**TPMT090202-PS**	●	●	▲	▲	●	●	●	●		●	●	●	●	●	0.2	5.56	2.38	2.5
		TPMT090204-PS	●	●	▲	▲	●	●	●	●		●	●	●	●	●	0.4	5.56	2.38	2.5
		TPMT090208-PS	●	●	▲	▲	●	●	●	●		●	●	●	●	●	0.8	5.56	2.38	2.5
		TPMT110202-PS	●	●	▲	▲	●	●	●	●		●	●	●	●	●	0.2	6.35	2.38	2.8
		TPMT110204-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	0.4	6.35	2.38	2.8
		TPMT110208-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	0.8	6.35	2.38	2.8
		TPMT110304-PS	●	●	▲	▲	●	●	●	●		●	●	●	●	●	0.4	6.35	3.18	3.4
		TPMT110308-PS	●	●	▲	▲	●	●	●	●		●	●	●	●	●	0.8	6.35	3.18	3.4
		TPMT130302-PS	●	●	▲	▲						●		●	●	●	0.2	7.94	3.18	3.4
		TPMT130304-PS	●	●	▲	▲	●	●	●	●		●		●	●	●	0.4	7.94	3.18	3.4
		TPMT130308-PS	●	●	▲	▲	●	●	●	●		●		●	●	●	0.8	7.94	3.18	3.4
		TPMT16T304-PS	●	●	▲	▲	●	●	●	●		●		●	●	●	0.4	9.525	3.97	4.4
		TPMT16T308-PS	●	●	▲	▲	●	●	●	●		●		●	●	●	0.8	9.525	3.97	4.4
	TSF	**TPMT110204-TSF**	●	●													0.4	6.35	2.38	2.8
		TPMT110208-TSF	●	●													0.8	6.35	2.38	2.8
		TPMT110304-TSF	●	●													0.4	6.35	3.18	2.8
		TPMT110308-TSF	●	●													0.8	6.35	3.18	2.8
		TPMT16T304-TSF	●	●													0.4	9.525	3.97	4.4
		TPMT16T308-TSF	●	●													0.8	9.525	3.97	4.4

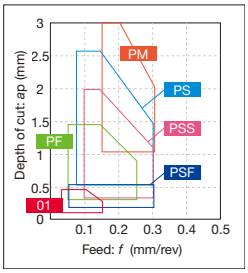


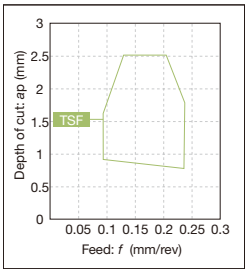




●: Line up
▲: To be discontinued

Chip control range





Reference pages: Mounting hole specification → B147
Internal toolholder → D041 -
Boring bar tool → K209 -
Cartridge → K193 -
Top-borer tool → K213

Insert POSITIVE TYPE

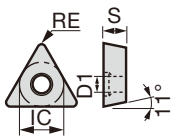
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

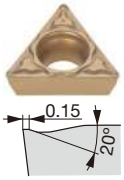
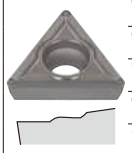
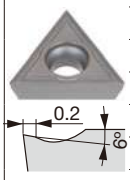
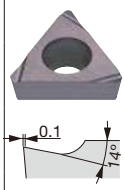
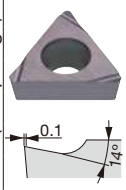
TP



Triangular, 60° with hole Positive 11°

P	Steel	ɔ✣	●ɔ	ɔ✣	●	●ɔ	●ɔ		●ɔ						●ɔ					●	ɔ													
M	Stainless		●ɔ		●	●ɔ	●ɔ													●	ɔ													
K	Cast iron		●ɔ		●				●ɔ						●ɔ					●														
N	Non-ferrous																			●														
S	Superalloy				●		●ɔ																											
H	Hard material																																	



Application	Chipbreaker	Designation	Coated						Coated cermet	Cermet	Uncoated		Dimension (mm)			
			T9215	T9225	T9125	GH110	SH725	SH730	GT9530	NS9530	TH10	UX30	RE	IC	S	D1
Finishing to medium cutting	TM	TPMT110204-TM	●	●									0.4	6.35	2.38	2.8
		TPMT110208-TM	●	●									0.8	6.35	2.38	2.8
		TPMT110304-TM	●	●									0.4	6.35	3.18	3.4
		TPMT110308-TM	●	●									0.8	6.35	3.18	3.4
		TPMT16T304-TM	●	●									0.4	9.525	3.97	4.4
		TPMT16T308-TM	●	●									0.8	9.525	3.97	4.4
	23	TPMT090202-23								●			0.2	5.56	2.38	2.5
		TPMT090204-23		●	▲					●			0.4	5.56	2.38	2.5
		TPMT110204-23		●	▲					●			0.4	6.35	2.38	2.8
		TPMT130304-23		●	▲					●			0.4	7.94	3.18	3.4
		TPMT130308-23		●	▲					●			0.8	7.94	3.18	3.4
		TPMT16T304-23								●			0.4	9.525	3.97	4.4
		TPMT16T308-23		●	▲					●			0.8	9.525	3.97	4.4
Medium cutting	24	TPMT090204-24		●	▲					●			0.4	5.56	2.38	2.5
		TPMT110204-24		●	▲					●			0.4	6.35	2.38	2.8
		TPMT110208-24								●			0.8	6.35	2.38	2.8
		TPMT130304-24		●	▲					●			0.4	7.94	3.18	3.4
		TPMT130308-24		●	▲					●			0.8	7.94	3.18	3.4
		TPMT16T304-24		●	▲					●			0.4	9.525	3.97	4.4
		TPMT16T308-24		●	▲					●			0.8	9.525	3.97	4.4
Finishing	W08	TPGT070100R-W08						●			●		0.03	4.37	1.59	2.58
		TPGT070100L-W08						●			●		0.03	4.37	1.59	2.58
		TPGT070101R-W08						●			●		0.1	4.37	1.59	2.58
		TPGT070101L-W08						●			●		0.1	4.37	1.59	2.58
		TPGT070102R-W08						●			●		0.2	4.37	1.59	2.58
		TPGT070102L-W08						●			●		0.2	4.37	1.59	2.58
		TPGT070104R-W08						●			●		0.4	4.37	1.59	2.58
		TPGT070104L-W08						●			●		0.4	4.37	1.59	2.58
		TPGT080200L-W08							●	●			0.03	4.76	2.38	2.3
		TPGT080202L-W08				●			●	●	●	●	0.2	4.76	2.38	2.3
		TPGT080204L-W08				●			●	●	●	●	0.4	4.76	2.38	2.3
Finishing (sharp edge)	W08	TPGT070100FL-W08					●						0.03	4.37	1.59	2.58
		TPGT070100FR-W08					●						0.03	4.37	1.59	2.58
		TPGT070101FL-W08					●						0.1	4.37	1.59	2.58
		TPGT070101FR-W08					●						0.1	4.37	1.59	2.58
		TPGT070102FL-W08					●						0.2	4.37	1.59	2.58
		TPGT070102FR-W08					●						0.2	4.37	1.59	2.58
		TPGT070104FL-W08					●						0.4	4.37	1.59	2.58
		TPGT070104FR-W08					●						0.4	4.37	1.59	2.58

● : Line up
▲ : To be discontinued

Reference pages: Mounting hole specification → B147
Internal toolholder → D041 -
Top-borer tool → K213
Cartridge → K193 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP

Triangular, 60° with hole Positive 11°

| | | |

Insert POSITIVE TYPE

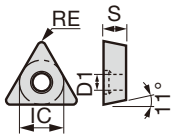
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP



Triangular, 60° with hole Positive 11°

P	Steel	●ɔ	ɔ✣	●ɔ	ɔ✣	ɔ	✣	ɔ✣	✣			●ɔ	ɔ	●ɔ	ɔ		●ɔ					●ɔ								
M	Stainless	●ɔ				●	ɔ	ɔ	✣			●ɔ	ɔ	●ɔ	ɔ														
K	Cast iron	●ɔ		●ɔ						●ɔ	ɔ	●ɔ	ɔ	●ɔ	ɔ		●ɔ					●ɔ								
N	Non-ferrous																												
S	Superalloy											●ɔ	●																
H	Hard material																												



Application	Chipbreaker	Designation	Coated													Coated cermet		Cermet		Dimension (mm)			
			T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH120	AH725	GH330	GH730	GT9530		NS9530		RE	IC	S	D1
Medium cutting	**PM**	**TPMT090204-PM**					●	●	●	●				●							0.4	5.56	2.38	2.5
		TPMT0902**08-PM**					●	●	●	●				●							0.8	5.56	2.38	2.5
		TPMT110204-PM	●	●	▲	▲	●	●	●	●				●		●	●		●		0.4	6.35	2.38	2.8
		TPMT1102**08-PM**	●	●	▲	▲	●	●	●	●			●	●		●					0.8	6.35	2.38	2.8
		TPMT110304-PM	●	●	▲	▲	●	●	●	●				●		●	●		●		0.4	6.35	3.18	3.4
		TPMT1103**08-PM**	●	●	▲	▲	●	●	●	●				●		●					0.8	6.35	3.18	3.4
		TPMT130304-PM		●		▲	●	●	●	●				●					●		0.4	7.94	3.18	3.4
		TPMT1303**08-PM**		●		▲	●	●	●	●				●			●		●		0.8	7.94	3.18	3.4
		TPMT16T304-PM		●		▲	●	●	●	●				●					●		0.4	9.525	3.97	4.4
		TPMT16T3**08-PM**		●		▲	●	●	●	●				●							0.8	9.525	3.97	4.4
		TPMT16T3**12-PM**		●		▲	●	●	●	●				●							1.2	9.525	3.97	4.4
Finishing to medium cutting	**CM**	**TPMT090204-CM**										●									0.4	5.56	2.38	2.5
		TPMT0902**08-CM**										●									0.8	5.56	2.38	2.5
		TPMT110204-CM										●									0.4	6.35	2.38	2.8
		TPMT1102**08-CM**										●									0.8	6.35	2.38	2.8
		TPMT110304-CM										●									0.4	6.35	3.18	3.4
		TPMT1103**08-CM**										●									0.8	6.35	3.18	3.4
		TPMT130304-CM										●									0.4	7.94	3.18	3.4
		TPMT1303**08-CM**										●									0.8	7.94	3.18	3.4
		TPMT16T304-CM									●	●									0.4	9.525	3.97	4.4
		TPMT16T3**08-CM**									●	●									0.8	9.525	3.97	4.4
		TPMT16T3**12-CM**									●	●									1.2	9.525	3.97	4.4
	SS	**TPGT110202-SS**																	●		0.2	6.35	2.38	2.8
		TPGT1102**04-SS**													●				●		0.4	6.35	2.38	2.8
		TPGT130302-SS																	●		0.2	7.94	3.18	3.4
		TPGT1303**04-SS**													●				●		0.4	7.94	3.18	3.4
		TPGT16T304-SS													●				●		0.4	9.525	3.97	4.4
	H11	**TPGH110302L-H11**															●		●		0.2	6.35	3.18	3.4
		TPGH1103**04L-H11**															●		●		0.4	6.35	3.18	3.4

● : Line up
▲ : To be discontinued

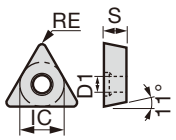
Reference pages: Mounting hole specification → B147
Internal toolholder → D041 -
Boring bar tool → K209 -
Cartridge → K193 -
Top-borer tool → K213

● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP

Triangular, 60° with hole Positive 11°

P	Steel	●ᑕ ● ᑕ
M	Stainless	● ᑕ
K	Cast iron	ᑕ ●ᑕ ●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	

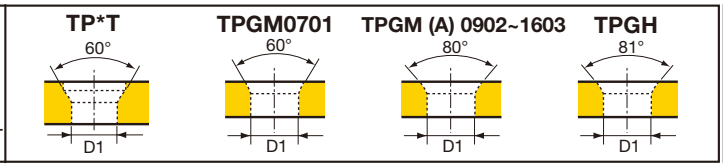


Application	Chipbreaker	Designation	Coated T5115	Cermet NS9530	Uncoated TH10	Uncoated UX30	RE	IC	S	D1
Finishing to medium cutting	-	TPGM070102R		●			0.2	4.37	1.59	2.7
		TPGM070102L		●	●		0.2	4.37	1.59	2.7
		TPGM070104R		●			0.4	4.37	1.59	2.7
		TPGM070104L		●	●		0.4	4.37	1.59	2.7
		TPGM090202R		●			0.2	5.56	2.38	3.2
		TPGM090202L		●			0.2	5.56	2.38	3.2
		TPGM090204L		●			0.4	5.56	2.38	3.2
	(Tungaloy standard hole specification) ISO non-compliant	TPGM110202R		●			0.2	6.35	2.38	3
		TPGM110202L		●		●	0.2	6.35	2.38	3
		TPGM110204R		●			0.4	6.35	2.38	3
		TPGM110204L		●		●	0.4	6.35	2.38	3
		TPGM110302R		●			0.2	6.35	3.18	3
		TPGM110302L		●			0.2	6.35	3.18	3
		TPGM110302L-2			●		0.2	6.35	3.18	3
		TPGM110304R		●			0.4	6.35	3.18	3
		TPGM110304L		●		●	0.4	6.35	3.18	3
		TPGM110304L-2			●		0.4	6.35	3.18	3
		TPGM160302L		●			0.2	9.525	3.18	4
		TPGM160304R		●			0.4	9.525	3.18	4
		TPGM160304L		●		●	0.4	9.525	3.18	4
		TPGM160304L-2			●		0.4	9.525	3.18	4
	-	TPMW110204	●				0.4	6.35	2.38	2.8
		TPMW110208	●				0.8	6.35	2.38	2.8
		TPMW130304	●				0.4	7.94	3.18	3.4
		TPMW130308	●				0.8	7.94	3.18	3.4
		TPMW16T304	●				0.4	9.525	3.97	4.4
		TPMW16T308	●				0.8	9.525	3.97	4.4

TPGM...R/L

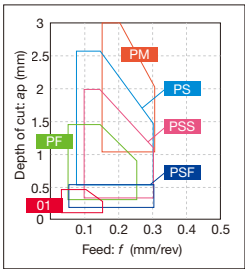
● : Line up

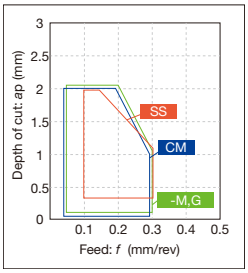
Mounting hole specification



D1 (mm)	0701**	0802**	0902**	1102**	1103**	1303**	1603**	16T3**
TP*T(W)	-	2.3	2.5	2.8	3.4	3.4	-	4.4
TPGM(A)	2.7	-	3.2	3.0	3.0	-	4.0	-
TPGH	-	2.3	3.0	3.4	3.4	-	4.5	-

Chip control range





*-M,G: Without chipbreaker

Reference pages: Internal toolholder → D041 - Cartridge → K193 -
Boring bar tool → K209 -

Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP



Triangular, 60° with hole Positive 11°

| | | |

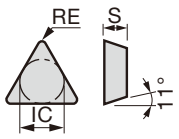
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP



Triangular, 60° without hole Positive 11°

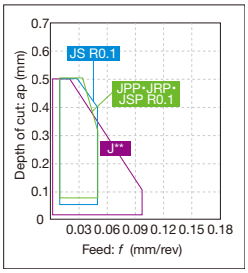
P	Steel	●ⓒ ⓒ✠ ●ⓒ ⓒ✠ ⓒ ● ●ⓒ
M	Stainless	●ⓒ ⓒ ●
K	Cast iron	●ⓒ ●ⓒ ⓒ ⓒ ●ⓒ ●
N	Non-ferrous	●
S	Superalloy	●
H	Hard material	



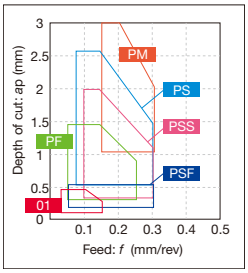
Application	Chipbreaker	Designation	Coated T9215	Coated T9225	Coated T9115	Coated T9125	Coated T5115	Coated AH725	Cermet NS9530	Uncoated TH10	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	**PS**	**TPMR110304-PS**		●		▲					0.4	6.35	3.18	-
		TPMR1103**08-PS**		●		▲					0.8	6.35	3.18	-
		TPMR160304-PS		●		▲					0.4	9.525	3.18	-
		TPMR1603**08-PS**		●		▲					0.8	9.525	3.18	-
	23	**TPMR110304-23**	●	●	▲	▲			●		0.4	6.35	3.18	-
		TPMR1103**08-23**		●		▲			●	●	0.8	6.35	3.18	-
		TPMR160304-23	●	●	▲	▲			●	●	0.4	9.525	3.18	-
		TPMR1603**08-23**		●		▲			●		0.8	9.525	3.18	-
Medium cutting	**24**	**TPMR110304-24**		●		▲			●		0.4	6.35	3.18	-
		TPMR1103**08-24**		●		▲			●		0.8	6.35	3.18	-
		TPMR160304-24	●	●	▲	▲		●	●		0.4	9.525	3.18	-
		TPMR1603**08-24**	●	●	▲	▲			●		0.8	9.525	3.18	-
Finishing to medium cutting	**CM**	**TPMR110304-CM**					●				0.4	6.35	3.18	-
		TPMR1103**08-CM**					●				0.8	6.35	3.18	-
		TPMR160304-CM					●				0.4	9.525	3.18	-
		TPMR1603**08-CM**					●				0.8	9.525	3.18	-
		TPMR1603**12-CM**					●				1.2	9.525	3.18	-

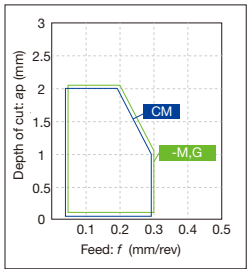
● : Line up
▲ : To be discontinued

Chip control range



*Chip control range with typical R0.1





*-M,G: Without chipbreaker

Reference pages: Internal toolholder → D042 - Cartridge → K193 -

Insert POSITIVE TYPE

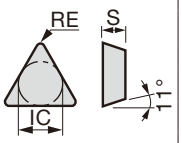
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP



Triangular, 60° without hole Positive 11°

P	Steel	● ●ɔ ●ɔ ●ɔ ● ɔ
M	Stainless	● ●ɔ ●ɔ ● ɔ
K	Cast iron	ɔ ● ●ɔ ●ɔ ● ●
N	Non-ferrous	●
S	Superalloy	● ●ɔ ●ɔ
H	Hard material	●



Application	Chipbreaker	Designation	Coated T5115	Coated GH110	Coated AH120	Cermet NS9530	Uncoated TH10	Uncoated UX30	Ceramic LX21	Ceramic LX11	Ceramic WG300	RE	IC	S	D1
Finishing to medium cutting	-	**TPGR110302L**				●						0.2	6.35	3.18	-
		TPGR1103**04L**				●						0.4	6.35	3.18	-
		TPGR160304R				●						0.4	9.525	3.18	-
		TPGR1603**04L**				●						0.4	9.525	3.18	-
		TPGR1603**08L**				●						0.8	9.525	3.18	-
	-	**TPMN110304**	●				●					0.4	6.35	3.18	-
		TPMN1103**08**	●									0.8	6.35	3.18	-
		TPMN160304	●		●		●	●				0.4	9.525	3.18	-
		TPMN1603**08**	●		●		●	●				0.8	9.525	3.18	-
		TPMN1603**12**	●									1.2	9.525	3.18	-
		TPMN220408						●				0.8	12.7	4.76	-
		TPMN2204**12**						●				1.2	12.7	4.76	-
	-	**TPGN110302**					●					0.2	6.35	3.18	-
		TPGN1103**04**		●			●		●	●		0.4	6.35	3.18	-
		TPGN1103**08**					●			●		0.8	6.35	3.18	-
		TPGN160302					●					0.2	9.525	3.18	-
		TPGN1603**04**		●		●	●			●		0.4	9.525	3.18	-
		TPGN1603**08**		●		●	●			●		0.8	9.525	3.18	-
		TPGN1603**12**								●		1.2	9.525	3.18	-
		TPGN220404					●					0.4	12.7	4.76	-

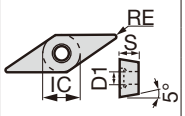
● : Line up

VB



Rhombic, 35° with hole Positive 5°

P	Steel	●ɔ ɔ✠ ●ɔ ●ɔ✠ ɔ ●ɔ ●ɔ
M	Stainless	●ɔ ɔ
K	Cast iron	●ɔ ●ɔ ɔ ●ɔ ●ɔ
N	Non-ferrous	
S	Superalloy	●
H	Hard material	



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	Coated T9115	Coated T9125	Coated AH725	Coated cermet GT9530	Cermet NS9530	RE	IC	S	D1
Finishing	PSF	**VBMT110302-PSF**					●	●	●	0.2	6.35	3.18	2.8
		VBMT1103**04-PSF**	●	●	▲	▲	●	●	●	0.4	6.35	3.18	2.8
		VBMT160402-PSF					●	●	●	0.2	9.525	4.76	4.4
		VBMT1604**04-PSF**	●	●	▲	▲	●	●	●	0.4	9.525	4.76	4.4

● : Line up
▲ : To be discontinued

Reference pages: VBMT...: External toolholder → C060
Internal toolholder → D042 - Cartridge → K193 -

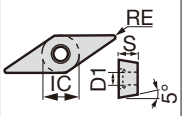
● : Continuous cutting
c : Light interrupted cutting
✣ : Heavy interrupted cutting

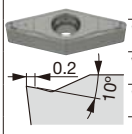
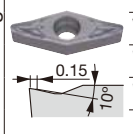
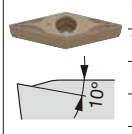
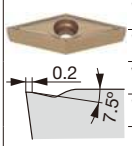
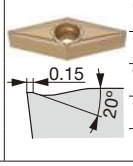
VB

Rhombic, 35° with hole Positive 5°



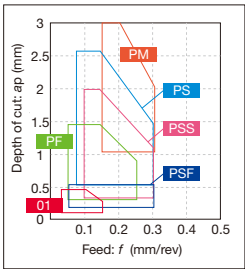
P	Steel	●c c✣ ●c c✣ c ✣ c✣ ✣ ●c c ● c
M	Stainless	●c c ● c c ✣ ●c c ● c
K	Cast iron	●c c ●c c ●c c ●c c ●c ●c c
N	Non-ferrous	
S	Superalloy	●c ● ● c
H	Hard material	

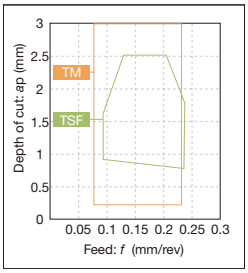


Application	Chipbreaker	Designation	Coated													Coated cermet		Cermet		Dimension (mm)			
			T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH120	AH725	AH8005	AH8015	GT9530	AT9530	NS9530	RE	IC	S	D1
Finishing	PF	VBMT110302-PF															●		●	0.2	6.35	3.18	2.8
		VBMT110304-PF															●		●	0.4	6.35	3.18	2.8
		VBMT110308-PF															●		●	0.8	6.35	3.18	2.8
		VBMT160404-PF															●		●	0.4	9.525	4.76	4.4
		VBMT160408-PF		●		▲											●		●	0.8	9.525	4.76	4.4
Finishing to light cutting	PSS	VBMT110304-PSS	●	●	▲	▲	●	●	●	●				●			●		●	0.4	6.35	3.18	2.8
		VBMT110308-PSS	●	●	▲	▲	●	●	●	●				●			●		●	0.8	6.35	3.18	2.8
		VBMT160404-PSS	●	●	▲	▲	●	●	●	●				●			●		●	0.4	9.525	4.76	4.4
		VBMT160408-PSS	●	●	▲	▲	●	●	●	●				●			●		●	0.8	9.525	4.76	4.4
		VBMT160412-PSS	●	●	▲	▲								●						1.2	9.525	4.76	4.4
Finishing to medium cutting	PS	VBMT110302-PS	●	●	▲	▲	●	●	●	●				●	●	●	●	●	●	0.2	6.35	3.18	2.8
		VBMT110304-PS	●	●	▲	▲	●	●	●	●			●	●	●	●	●	●	●	0.4	6.35	3.18	2.8
		VBMT110308-PS	●	●	▲	▲	●	●	●	●			●	●	●	●	●	●	●	0.8	6.35	3.18	2.8
		VBMT160402-PS	●	●	▲	▲	●	●	●	●				●	●	●	●	●	●	0.2	9.525	4.76	4.4
		VBMT160404-PS	●	●	▲	▲	●	●	●	●			●	●	●	●	●	●	●	0.4	9.525	4.76	4.4
		VBMT160408-PS	●	●	▲	▲	●	●	●	●			●	●	●	●	●	●	●	0.8	9.525	4.76	4.4
	TSF	VBMT110302-TSF	●	●																0.2	6.35	3.18	2.8
		VBMT110304-TSF	●	●																0.4	6.35	3.18	2.8
		VBMT110308-TSF	●	●																0.8	6.35	3.18	2.8
		VBMT160404-TSF	●	●																0.4	9.525	4.76	4.4
		VBMT160408-TSF	●	●																0.8	9.525	4.76	4.4
	TM	VBMT110302-TM	●	●																0.2	6.35	3.18	2.8
		VBMT110304-TM	●	●																0.4	6.35	3.18	2.8
		VBMT110308-TM	●	●																0.8	6.35	3.18	2.8
		VBMT160404-TM	●	●																0.4	9.525	4.76	4.4
		VBMT160408-TM	●	●																0.8	9.525	4.76	4.4

● : Line up
▲ : To be discontinued

Chip control range





Reference pages: External toolholder → C060 Internal toolholder → D034 -
J-Series toolholder → G033 -

Insert POSITIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

VB

Rhombic, 35°
with hole
Positive 5°

		T9215	T9225	T9115	T9125	T515	T5115	AH725	SH725	SH730	J740	J9530	NS9530	TH10
P	Steel	●ɔ	ɔ✣	●ɔ	ɔ✣			ɔ	●ɔ	●ɔ	●ɔ			●
M	Stainless	●ɔ						ɔ	●ɔ	●ɔ	●ɔ			●
K	Cast iron	●ɔ		●ɔ		●ɔ	ɔ	ɔ				●ɔ	●ɔ	●
N	Non-ferrous													●
S	Superalloy							●		●ɔ				
H	Hard material													

Application	Chipbreaker	Designation	RE	IC	S	D1
Medium cutting	24	VBMT160404-24	0.4	9.525	4.76	4.4
		VBMT160408-24	0.8	9.525	4.76	4.4
Finishing to medium cutting	CM	VBMT110304-CM	0.4	6.35	3.18	2.8
		VBMT110308-CM	0.8	6.35	3.18	2.8
		VBMT160404-CM	0.4	9.525	4.76	4.4
		VBMT160408-CM	0.8	9.525	4.76	4.4
		VBMT160412-CM	1.2	9.525	4.76	4.4
For external turning on Swiss lathes (sharp edge)	JS	VBGT110300FN-JS	0.03	6.35	3.18	2.8
		VBGT110301FN-JS	<0.1	6.35	3.18	2.8
		VBGT110302FN-JS	<0.2	6.35	3.18	2.8
		VBGT110304FN-JS	<0.4	6.35	3.18	2.8
For external turning on Swiss lathes	JS	VBGT110301N-JS	0.1	6.35	3.18	2.8
		VBGT110302N-JS	0.2	6.35	3.18	2.8
		VBGT110304N-JS	0.4	6.35	3.18	2.8
For external turning on Swiss lathes (sharp edge)	J10	VBGT110300FR-J10	0.03	6.35	3.18	2.8
		VBGT110300FL-J10	0.03	6.35	3.18	2.8
		VBGT110301FR-J10	0.1	6.35	3.18	2.8
		VBGT110301FL-J10	0.1	6.35	3.18	2.8
		VBGT110302FR-J10	0.2	6.35	3.18	2.8
		VBGT110302FL-J10	0.2	6.35	3.18	2.8
		VBGT110304FR-J10	0.4	6.35	3.18	2.8
		VBGT110304FL-J10	0.4	6.35	3.18	2.8
For external turning on Swiss lathes (honed edge)	J10	VBGT110302R-J10	0.2	6.35	3.18	2.8
		VBGT110302L-J10	0.2	6.35	3.18	2.8
		VBGT110304R-J10	0.4	6.35	3.18	2.8
		VBGT110304L-J10	0.4	6.35	3.18	2.8

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C060 Internal toolholder → D034 -
J-Series toolholder → G033 -

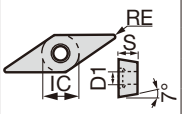
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

VC

Rhombic, 35° with hole Positive 7°



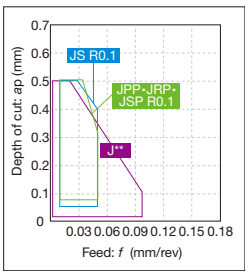
P	Steel	●◐ ◐✣ ●◐ ◐✣ ◐ ✣ ◐✣ ✣ ●◐ ◐
M	Stainless	●◐ ● ◐ ◐ ✣ ●◐ ◐ ● ◐
K	Cast iron	●◐ ●◐ ●◐ ◐
N	Non-ferrous	
S	Superalloy	●◐ ● ● ◐ ◐
H	Hard material	

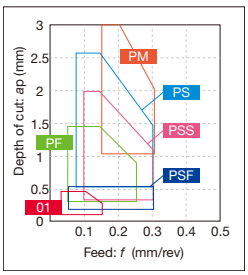


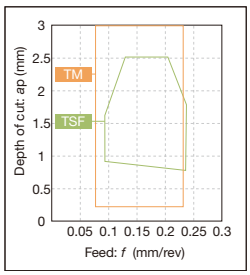
Application	Chipbreaker	Designation	Coated T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH725	AH8005	AH8015	AH905	Coated cermet GT9530	AT9530	Cermet NS9530	RE	IC	S	D1
Finishing	PSF	VCMT080202-PSF										●				●		●	0.2	4.76	2.38	2.3
		VCMT080204-PSF	●	●	▲	▲						●				●		●	0.4	4.76	2.38	2.3
		VCMT110302-PSF										●							0.2	6.35	3.18	2.8
		VCMT110304-PSF	●	●	▲	▲						●							0.4	6.35	3.18	2.8
		VCMT160404-PSF	●	●	▲	▲						●	●	●	●	●		●	0.4	9.525	4.76	4.4
		VCMT160408-PSF	●	●	▲	▲						●	●	●	●	●		●	0.8	9.525	4.76	4.4
	PF	VCMT080202-PF														●		●	0.2	4.76	2.38	2.3
		VCMT080204-PF														●		●	0.4	4.76	2.38	2.3
		VCMT160404-PF														●		●	0.4	9.525	4.76	4.4
		VCMT160408-PF														●		●	0.8	9.525	4.76	4.4
Finishing to light cutting	PSS	VCMT110304-PSS	●	●	▲	▲	●	●	●	●		●				●		●	0.4	6.35	3.18	2.8
		VCMT110308-PSS	●	●	▲	▲	●	●	●	●		●				●		●	0.8	6.35	3.18	2.8
		VCMT160404-PSS	●	●	▲	▲	●	●	●	●		●	●	●	●	●		●	0.4	9.525	4.76	4.4
		VCMT160408-PSS	●	●	▲	▲	●	●	●	●		●	●	●	●	●		●	0.8	9.525	4.76	4.4
Finishing to medium cutting	PS	VCMT110302-PS	●	●	▲	▲	●	●	●	●		●	●	●		●	●	●	0.2	6.35	3.18	2.8
		VCMT110304-PS	●	●	▲	▲	●	●	●	●		●	●	●		●	●	●	0.4	6.35	3.18	2.8
		VCMT110308-PS	●	●	▲	▲	●	●	●	●		●	●	●		●	●	●	0.8	6.35	3.18	2.8
		VCMT160404-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	0.4	9.525	4.76	4.4
		VCMT160408-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	0.8	9.525	4.76	4.4
	TSF	VCMT160404-TSF	●	●															0.4	9.525	4.76	4.4
		VCMT160408-TSF	●	●															0.8	9.525	4.76	4.4
	TM	VCMT160404-TM	●	●															0.4	9.525	4.76	4.4
		VCMT160408-TM	●	●															0.8	9.525	4.76	4.4

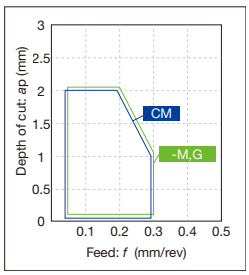
● : Line up
▲ : To be discontinued

Chip control range









*Chip control range with typical R0.1

*-M,G: Without chipbreaker

Reference pages: External toolholder → C061 - Internal toolholder → D035 -
TungCap → K016 -

Insert POSITIVE TYPE

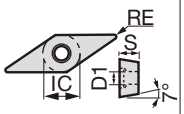
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

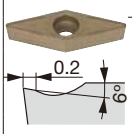
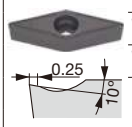
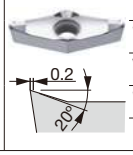
VC



Rhombic, 35° with hole Positive 7°

		T9215	T9225	T9115	T9125	T515	T5115	AH8005	AH8015	AH905	NS9530	KS05F
P	Steel	●◐	◐✠	●◐	◐✠						●◐	
M	Stainless	●◐						●	◐			
K	Cast iron	●◐		●◐		●◐	◐				●◐	●
N	Non-ferrous											●
S	Superalloy							●	◐	◐		●
H	Hard material											



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	Coated T9115	Coated T9125	Coated T515	Coated T5115	Coated AH8005	Coated AH8015	Coated AH905	Cermet NS9530	Uncoated KS05F	Dimension (mm) RE	IC	S	D1
Finishing to medium cutting	24	VCMT160404-24	●	●	▲	▲						●		0.4	9.525	4.76	4.4
		VCMT160408-24	●	●	▲	▲						●		0.8	9.525	4.76	4.4
	CM	VCMT080204-CM						●						0.4	4.76	2.38	2.3
		VCMT160404-CM					●	●						0.4	9.525	4.76	4.4
		VCMT160408-CM					●	●						0.8	9.525	4.76	4.4
		VCMT160412-CM						●						1.2	9.525	4.76	4.4
Medium cutting	All-round	VCMT160404							●	●	●			0.4	9.525	4.76	4.4
		VCMT160408							●	●	●			0.8	9.525	4.76	4.4
		VCMT160412							●	●	●			1.2	9.525	4.76	4.4
Finishing to medium cutting	AL	VCGT160404-AL											●	0.4	9.525	4.76	4.4
		VCGT160408-AL											●	0.8	9.525	4.76	4.4
		VCGT160412-AL											●	1.2	9.525	4.76	4.4
		VCGT220520-AL											●	2	12.7	5.56	5.5
		VCGT220530-AL											●	3	12.7	5.56	5.5

● : Line up
▲ : To be discontinued

Reference pages: VC*T...: External toolholder → C061 - Internal toolholder → D035 -

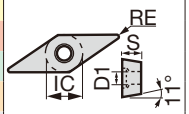
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

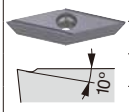
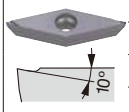
VP

Rhombic, 35° with hole Positive 11°



P	Steel	●◐ ●◐
M	Stainless	●◐ ●◐
K	Cast iron	
N	Non-ferrous	
S	Superalloy	●◐
H	Hard material	

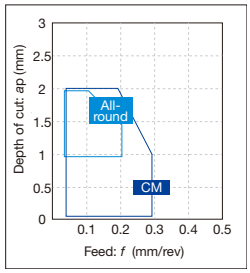


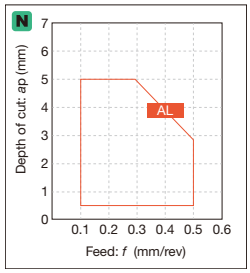
Application	Chipbreaker	Designation	Coated SH725	Coated SH730	RE	IC	S	D1
For external turning on Swiss lathes (sharp edge)	JPP	VPET0802008MFR-JPP	●	●	<0.08	4.76	2.38	2.3
		VPET0802008MFL-JPP	●	●	<0.08	4.76	2.38	2.3
		VPET080201MFR-JPP	●	●	<0.1	4.76	2.38	2.3
		VPET080201MFL-JPP	●	●	<0.1	4.76	2.38	2.3
		VPET0802018MFR-JPP	●	●	<0.18	4.76	2.38	2.3
		VPET0802018MFL-JPP	●	●	<0.18	4.76	2.38	2.3
		VPET080202MFR-JPP	●	●	<0.2	4.76	2.38	2.3
		VPET080202MFL-JPP	●	●	<0.2	4.76	2.38	2.3
		VPET1103008MFR-JPP	●	●	<0.08	6.35	3.18	2.8
		VPET1103008MFL-JPP	●	●	<0.08	6.35	3.18	2.8
		VPET110301MFR-JPP	●	●	<0.1	6.35	3.18	2.8
		VPET110301MFL-JPP	●	●	<0.1	6.35	3.18	2.8
		VPET1103018MFR-JPP	●	●	<0.18	6.35	3.18	2.8
		VPET1103018MFL-JPP	●	●	<0.18	6.35	3.18	2.8
		VPET110302MFR-JPP	●	●	<0.2	6.35	3.18	2.8
		VPET110302MFL-JPP	●	●	<0.2	6.35	3.18	2.8
	JRP	VPET0802008MFR-JRP	●	●	<0.08	4.76	2.38	2.3
		VPET0802008MFL-JRP	●	●	<0.08	4.76	2.38	2.3
		VPET080201MFR-JRP	●	●	<0.1	4.76	2.38	2.3
		VPET080201MFL-JRP	●	●	<0.1	4.76	2.38	2.3
		VPET0802018MFR-JRP	●	●	<0.18	4.76	2.38	2.3
		VPET0802018MFL-JRP	●	●	<0.18	4.76	2.38	2.3
		VPET080202MFR-JRP	●	●	<0.2	4.76	2.38	2.3
		VPET080202MFL-JRP	●	●	<0.2	4.76	2.38	2.3
		VPET1103008MFR-JRP	●	●	<0.08	6.35	3.18	2.8
		VPET1103008MFL-JRP	●	●	<0.08	6.35	3.18	2.8
		VPET110301MFR-JRP	●	●	<0.1	6.35	3.18	2.8
		VPET110301MFL-JRP	●	●	<0.1	6.35	3.18	2.8
		VPET1103018MFR-JRP	●	●	<0.18	6.35	3.18	2.8
		VPET1103018MFL-JRP	●	●	<0.18	6.35	3.18	2.8
		VPET110302MFR-JRP	●	●	<0.2	6.35	3.18	2.8
		VPET110302MFL-JRP	●	●	<0.2	6.35	3.18	2.8

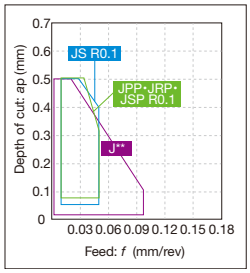
*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Chip control range







*Chip control range with typical R0.1

Reference pages: VPET...: J-Series toolholder → G022 -

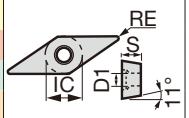
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

Insert POSITIVE TYPE

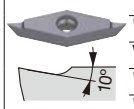
VP

Rhombic, 35° with hole Positive 11°

P	Steel	●◐ ●◐
M	Stainless	●◐ ●◐
K	Cast iron	
N	Non-ferrous	
S	Superalloy	●◐
H	Hard material	



Application	Chipbreaker	Designation	Coated SH725	Coated SH730	RE	IC	S	D1
For external turning on Swiss lathes (sharp edge)	JSP	VPET0802008MFN-JSP	●	●	<0.08	4.76	2.38	2.3
		VPET080201MFN-JSP	●	●	<0.1	4.76	2.38	2.3
		VPET080201 8MFN-JSP	●	●	<0.18	4.76	2.38	2.3
		VPET080202MFN-JSP	●	●	<0.2	4.76	2.38	2.3
		VPET1103008MFN-JSP	●	●	<0.08	6.35	3.18	2.8
		VPET110301MFN-JSP	●	●	<0.1	6.35	3.18	2.8
		VPET110301 8MFN-JSP	●	●	<0.18	6.35	3.18	2.8
		VPET110302MFN-JSP	●	●	<0.2	6.35	3.18	2.8



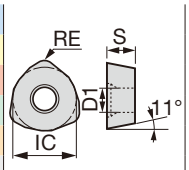
*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

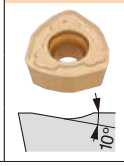
WP

Trigon, 80° with hole Positive 11°

P	Steel	●◐ ◐✣ ●◐ ◐✣ ●◐
M	Stainless	●◐ ●◐
K	Cast iron	●◐ ●◐ ●◐
N	Non-ferrous	
S	Superalloy	●◐
H	Hard material	



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	Coated T9115	Coated T9125	Coated AH120	RE	IC	S	D1
Heavy cutting	ML	WPMT090725ZPR-ML	●	●	▲	▲	●	2.5	15	7	5.5
		WPMT090725ZPL-ML	●	●	▲	▲	●	2.5	15	7	5.5



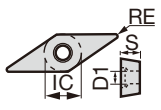
● : Line up
▲ : To be discontinued

Insert POSITIVE TYPE / DOUBLE SIDE

VX

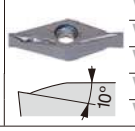
Rhombic, 35° with hole

P	Steel	●◐
M	Stainless	●◐
K	Cast iron	
N	Non-ferrous	
S	Superalloy	
H	Hard material	



Application	Chipbreaker	Designation	Coated SH725	RE	IC	S	D1
Finishing (sharp edge)	JRP	VXGU09T201MFRE-JRP	●	<0.1	5.56	2.47	2.5
		VXGU09T201MFLE-JRP	●	<0.1	5.56	2.47	2.5
		VXGU09T202MFRE-JRP	●	<0.2	5.56	2.47	2.5
		VXGU09T202MFLE-JRP	●	<0.2	5.56	2.47	2.5
Finishing to medium cutting (sharp edge)	JS	VXGU09T201MFR-JS	●	<0.1	5.56	2.47	2.5
		VXGU09T201MFL-JS	●	<0.1	5.56	2.47	2.5
		VXGU09T202MFR-JS	●	<0.2	5.56	2.47	2.5
		VXGU09T202MFL-JS	●	<0.2	5.56	2.47	2.5
		VXGU09T204MFR-JS	●	<0.4	5.56	2.47	2.5
		VXGU09T204MFL-JS	●	<0.4	5.56	2.47	2.5





*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Reference pages: WPMT...: External toolholder → C096 VXGU...: External toolholder → C054 -
VPET... : J-Series toolholder → G022 -

Insert POSITIVE TYPE

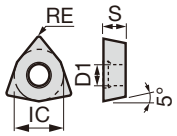
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

WB

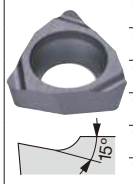


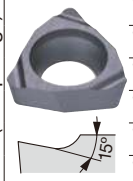
Trigon, 80° with hole Positive 5°

		GH110	SH725	SH730	NS9530	TH10	UX30
P	Steel	●	●ⓒ	●ⓒ	●ⓒ	●	ⓒ
M	Stainless	●	●ⓒ	●ⓒ		●	ⓒ
K	Cast iron	●			●ⓒ	●	
N	Non-ferrous					●	
S	Superalloy	●		●ⓒ			
H	Hard material						



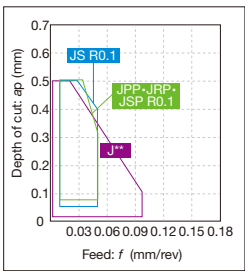
Application	Chipbreaker	Designation	Coated GH110	Coated SH725	Coated SH730	Cermet NS9530	Uncoated TH10	Uncoated UX30	Dimension (mm) RE	IC	S	D1
Finishing	W08	WBGT030100R-W08			●				0.03	3.97	1.59	2.3
		WBGT030100L-W08			●	●	●	●	0.03	3.97	1.59	2.3
		WBGT030101R-W08			●				0.1	3.97	1.59	2.3
		WBGT030101L-W08			●		●		0.1	3.97	1.59	2.3
		WBGT030102R-W08			●				0.2	3.97	1.59	2.3
		WBGT030102L-W08	●		●	●	●	●	0.2	3.97	1.59	2.3
		WBGT030104R-W08			●				0.4	3.97	1.59	2.3
		WBGT030104L-W08	●		●	●	●	●	0.4	3.97	1.59	2.3
Finishing (sharp edge)	W08	WBGT030100FL-W08		●					0.03	3.97	1.59	2.3
		WBGT030100FR-W08		●					0.03	3.97	1.59	2.3
		WBGT030101FL-W08		●					0.1	3.97	1.59	2.3
		WBGT030101FR-W08		●					0.1	3.97	1.59	2.3
		WBGT030102FL-W08		●					0.2	3.97	1.59	2.3
		WBGT030102FR-W08		●					0.2	3.97	1.59	2.3
		WBGT030104FL-W08		●					0.4	3.97	1.59	2.3
		WBGT030104FR-W08		●					0.4	3.97	1.59	2.3

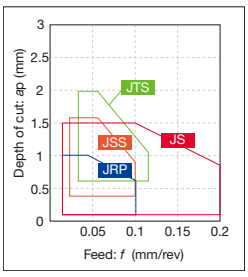


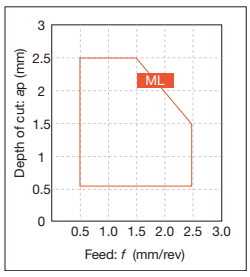


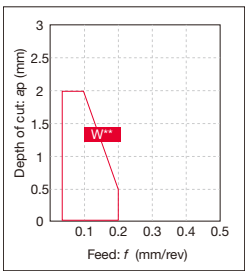
● : Line up

Chip control range









*Chip control range with typical R0.1

Reference pages: Internal toolholder → D073 Top-borer tool → K213

Insert POSITIVE TYPE

● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

WB



Trigon, 80° with hole Positive 5°

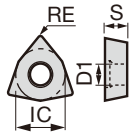
| | | |

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

WX

Trigon, 80° with hole

P	Steel	ɔ		●ɔ	●ɔ				●ɔ				●ɔ																					
M	Stainless	ɔ		●ɔ	●ɔ																													
K	Cast iron	ɔ							●ɔ				●ɔ				●																	
N	Non-ferrous																●																	
S	Superalloy	●															●																	
H	Hard material																																	

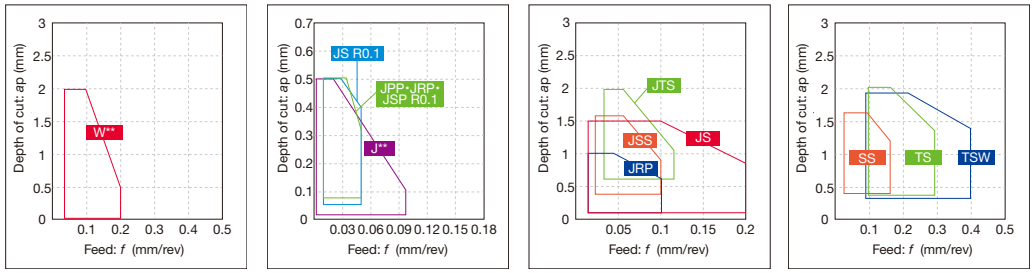


Application	Chipbreaker	Designation	Coated AH725	Coated AH8015	Coated SH725	Coated cermet GT9530	Cermet NS9530	Uncoated KS05F	RE	IC	S	D1
Finishing (low cutting force) (sharp edge)	JSS	WXGU040301MFR-JSS			●				<0.1	6.35	3.18	2.7
		WXGU040301MFL-JSS			●				<0.1	6.35	3.18	2.7
		WXGU040302MFR-JSS			●				<0.2	6.35	3.18	2.7
		WXGU040302MFL-JSS			●				<0.2	6.35	3.18	2.7
Finishing (low cutting force)	JSS	WXGU040301MR-JSS	●						0.1	6.35	3.18	2.7
		WXGU040301ML-JSS	●						0.1	6.35	3.18	2.7
		WXGU040302MR-JSS	●						0.2	6.35	3.18	2.7
		WXGU040302ML-JSS	●						0.2	6.35	3.18	2.7
Finishing to medium cutting	TS	WXGU040302R-TS	●	●		●	●	●	0.2	6.35	3.18	2.7
		WXGU040302L-TS	●	●		●	●	●	0.2	6.35	3.18	2.7
		WXGU040304R-TS	●	●		●	●	●	0.4	6.35	3.18	2.7
		WXGU040304L-TS	●	●		●	●	●	0.4	6.35	3.18	2.7
		WXGU040308R-TS	●	●		●	●	●	0.8	6.35	3.18	2.7
		WXGU040308L-TS	●	●		●	●	●	0.8	6.35	3.18	2.7
Finishing (wiper)	TSW	WXGU040304R-TSW	●	●		●	●		0.4	6.35	3.18	2.7
		WXGU040304L-TSW	●	●		●	●		0.4	6.35	3.18	2.7
		WXGU040308R-TSW	●	●		●	●		0.8	6.35	3.18	2.7
		WXGU040308L-TSW	●	●		●	●		0.8	6.35	3.18	2.7
Finishing (low cutting force)	SS	WXGU040302R-SS	●	●		●	●	●	0.2	6.35	3.18	2.7
		WXGU040302L-SS	●	●		●	●	●	0.2	6.35	3.18	2.7
		WXGU040304R-SS	●	●		●	●	●	0.4	6.35	3.18	2.7
		WXGU040304L-SS	●	●		●	●	●	0.4	6.35	3.18	2.7

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Chip control range



*Chip control range with typical R0.1

Reference pages: External toolholder → C029 - Internal toolholder → D026

Insert POSITIVE TYPE

● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

YW



Rhombic, 25° with hole Positive 7°

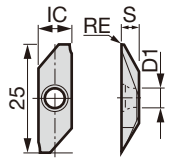
| | | |

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

JXR

Reverse turning

P	Steel	●◐
M	Stainless	●◐
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	



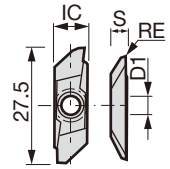
Application	Chipbreaker	Designation	Coated J740	Uncoated TH10	RE	IC	S	D1
Reverse turning	-	JXRR8000F	●	●	0.03	8	3.97	4.4
		JXRR8010F	●	●	0.1	8	3.97	4.4



JXB

Back turning

P	Steel	●◐
M	Stainless	●◐
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	

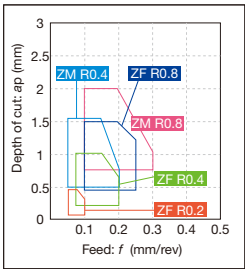


Application	Chipbreaker	Designation	Coated J740	Uncoated TH10	RE	IC	S	D1
Back turning	-	JXBR8000F	●	●	0.03	8	3.97	4.4
		JXBL8000F	●	●	0.03	8	3.97	4.4
		JXBR8005F	●	●	0.05	8	3.97	4.4
		JXBL8005F	●	●	0.05	8	3.97	4.4
		JXBR8005	●		0.05	8	3.97	4.4
		JXBL8005	●		0.05	8	3.97	4.4
		JXBR8010F	●	●	0.10	8	3.97	4.4
		JXBL8010F	●	●	0.10	8	3.97	4.4
		JXBR8010	●		0.10	8	3.97	4.4
		JXBL8010	●		0.10	8	3.97	4.4
		JXBR8015F	●	●	0.15	8	3.97	4.4
		JXBL8015F	●	●	0.15	8	3.97	4.4
		JXBR8015	●		0.15	8	3.97	4.4
		JXBL8015	●		0.15	8	3.97	4.4



● : Line up

Chip control range



Reference pages: JXF..., JXR..., JXB...: J-Series toolholder → G076 -

Insert POSITIVE TYPE

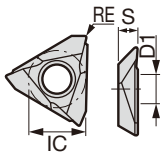
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

JTB*



Back turning

P	Steel	◐ ◐ ● ●
M	Stainless	◐ ◐ ●
K	Cast iron	● ●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	



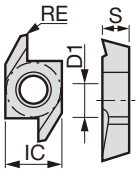
Application	Chipbreaker	Designation	Coated SH725	Coated J740	Coated cermet J9530	Cermet NS9530	Uncoated TH10	RE	IC	S	D1
Back turning	-	JTBR3000F	●	●			●	0.03	9.5	3.18	4.4
		JTBL3000F	●	●			●	0.03	9.5	3.18	4.4
		JTBR3005F	●	●			●	0.05	9.5	3.18	4.4
		JTBL3005F	●	●			●	0.05	9.5	3.18	4.4
		JTBR3005		●	●			0.05	9.5	3.18	4.4
		JTBL3005		●				0.05	9.5	3.18	4.4
		JTBR3010F	●	●		●	●	0.10	9.5	3.18	4.4
		JTBL3010F	●	●		●	●	0.10	9.5	3.18	4.4
		JTBR3010		●	●			0.10	9.5	3.18	4.4
		JTBL3010		●				0.10	9.5	3.18	4.4
		JTBR3015F	●	●				0.15	9.5	3.18	4.4
		JTBL3015F	●					0.15	9.5	3.18	4.4

J10E*



Back turning

P	Steel	◐ ◐ ● ●
M	Stainless	◐ ◐ ●
K	Cast iron	● ●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	



Application	Chipbreaker	Designation	Coated SH725	Coated J740	Coated cermet J9530	Cermet NS9530	Uncoated TH10	RE	IC	S	D1
Back turning	-	J10ER005BF	●	●		●	●	0.05	6.35	3.18	3.0
		J10EL005BF	●	●			●	0.05	6.35	3.18	3.0
		J10ER005B		●	●			0.05	6.35	3.18	3.0
		J10EL005B		●				0.05	6.35	3.18	3.0
		J10ER010BF	●	●		●	●	0.10	6.35	3.18	3.0
		J10EL010BF	●	●			●	0.10	6.35	3.18	3.0
		J10ER010B		●	●			0.10	6.35	3.18	3.0
		J10EL010B		●				0.10	6.35	3.18	3.0
		J10EL015BF	●					0.15	6.35	3.18	3.0
		J10ER015BF	●					0.15	6.35	3.18	3.0

● : Line up

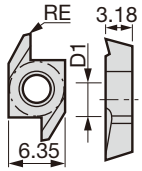
Reference pages: JTB...: J-Series toolholder → G048 J10E...: J-Series toolholder → G050

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

10E*

Back turning

P	Steel	●
M	Stainless	●
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	



Application	Chipbreaker	Designation	Uncoated TH10	Dimension (mm) RE	IC	S	D1
Back turning	-	10ER100B	●	0.03	6.35	3.18	3.0
		10EL100B	●	0.03	6.35	3.18	3.0
		10ER150B	●	0.03	6.35	3.18	3.0
		10EL150B	●	0.03	6.35	3.18	3.0
		10ER300	●	-	6.35	3.18	3.0
		10EL300	●	-	6.35	3.18	3.0

● : Line up

MEMO

BXA20

- Coated CBN grade for hardened steel



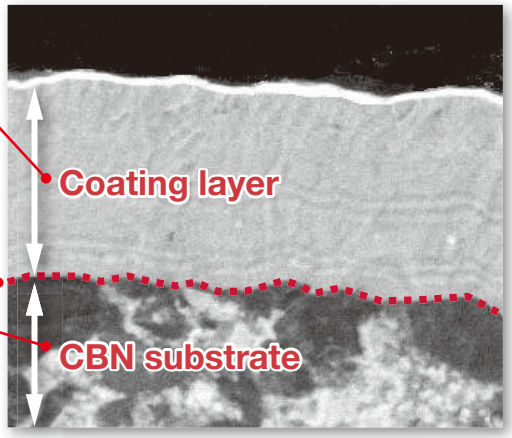
Incredible reliability in hardened steel turning

- Suitable for operations at low to medium cutting speed
- Covers a wide range of application areas from continuous to heavy interrupted cutting

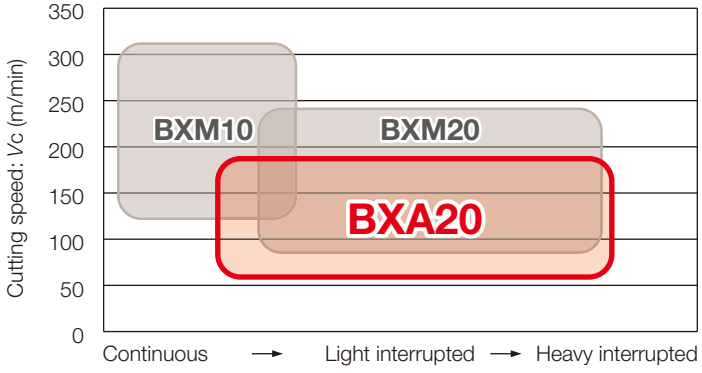
Multi-layered coating 2 times thicker than the conventional grade
- Provides excellent wear resistance

Improved adhesion strength
- Prevents peeling-off, providing excellent surface finish

Newly developed CBN substrate with unique binder
- Optimum CBN content for high wear resistance and toughness



APPLICATION AREA



BXM10
Suitable for continuous to light interrupted cutting at high speed

BXM20
Suitable for a wide range of applications at medium to high speed

BXA20
Exceptional stability in machining at low to medium speed

T-CBN SERIES

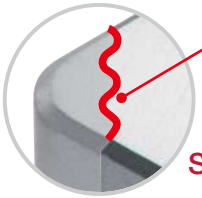
- WavyJoint



For **high efficiency** hardened steel machining

New brazing technology for increased machining efficiency - “WavyJoint”

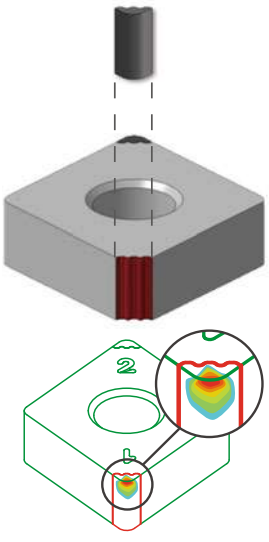
- A maximum depth of cut up to 0.8 mm
  → Reduces the number of passes to increase productivity

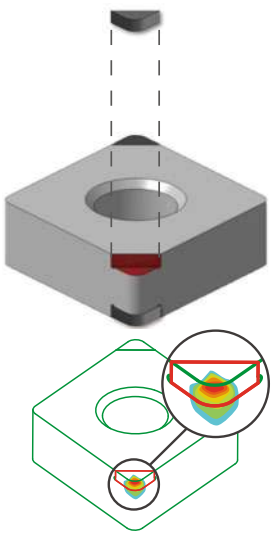


The "wavy" contact surface enhances the brazing strength.

Strong joint

WavyJoint BXA20 **Vs.** Standard





CBN tip size:

Using the cBN tip in a mass as large as **200%** provides increased thermal conductivity and helps reduce the temperature at the cutting edge

Brazing area:

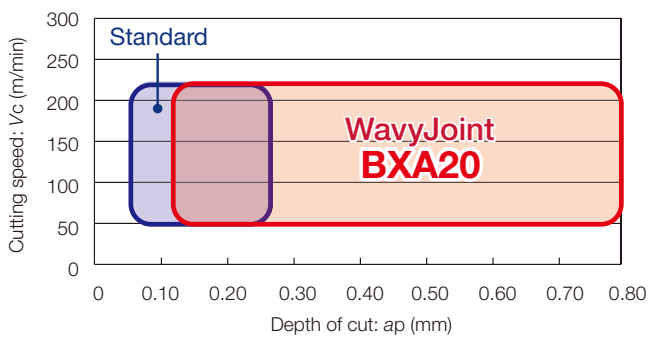
Increased **160%** for enhanced brazing strength

Temperature during machining is concentrated on the CBN tip, reducing temperature issues in the brazing zone.

Workpiece material	: SCM420 / 20CrMo4 (60HRC)
Cutting speed	: *Vc* = 150 m/min
Feed	: *fz* = 0.20 mm/rev
Depth of cut	: *ap* = 0.75 mm
Coolant	: Dry

APPLI-CATION AREA

Hard Turning



H

WavyJoint BXA20

Great performance for continuous to heavy interrupted cutting at low and medium speeds.

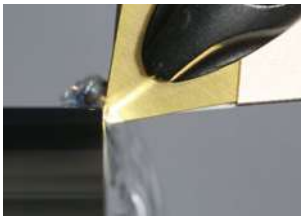
T-CBN SERIES - GNGA type CBN



For **high efficiency in finishing** hardened steel, cast iron and sintered metals

Chip control in face turning

Continuous cutting



GNGA type
Corner angle: 70°



CNGA type
Corner angle: 80°

Since GNGA type inserts have enough space for chip flow, chip packing doesn't occur, improving surface finish and preventing sudden chipping on cutting edge. Existing standard toolholders for CNGA1204 can be used.

Interrupted cutting



GNGA type
Corner angle: 70°



CNGA type
Corner angle: 80°

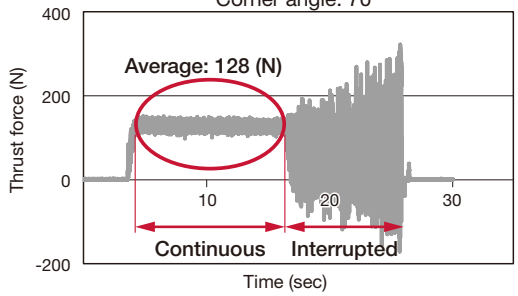
H

Toolholder : ACLNL2525M12-A
Insert : 2QP-GNGA120408 BXM20
2QP-CNGA120408 BXM20
Workpiece material : SCM420 / 18CrMo4 (60HRC)
Cutting speed : *Vc* = 150 m/min
Feed : *f* = 0.10 mm/rev
Depth of cut : *ap* = 0.125 mm
Machining : Face turning
Coolant : Dry

CUTTING PERFORMANCE

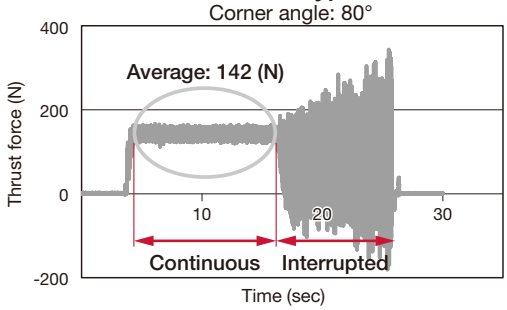
Cutting force (Thrust force)

GNGA type
Corner angle: 70°



GNGA type has large clearance and reduces cutting force compared to the regular CNGA type.

CNGA type
Corner angle: 80°



H

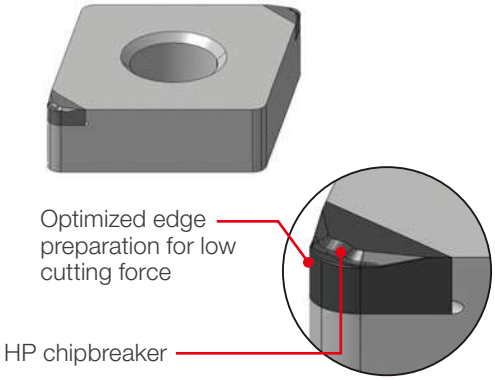
Toolholder : ACLNL2525M12-A
Insert : 2QP-GNGA120408 BXM20
2QP-CNGA120408 BXM20
Workpiece material : SCM420 / 18CrMo4 (59HRC)
Cutting speed : *Vc* = 150 m/min
Feed : *f* = 0.15 mm/rev
Depth of cut : *ap* = 0.125 mm
Machining : Face turning
Coolant : Dry

HARDBREAKER HP



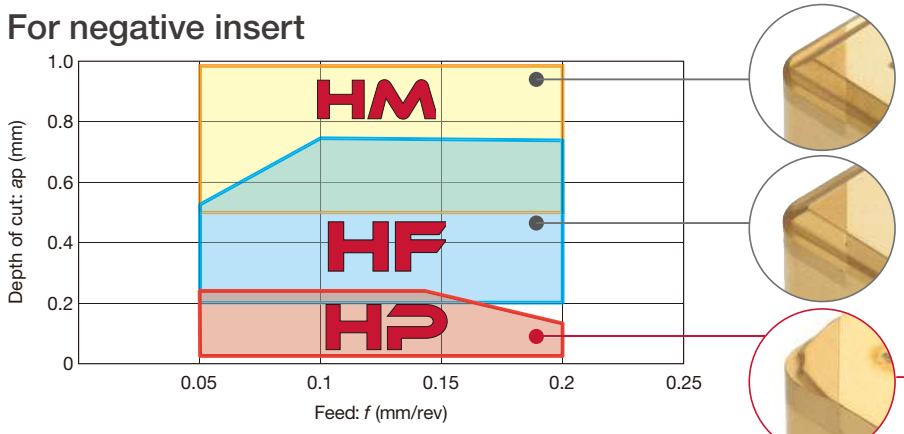
New HP Chipbreaker for Finishing Hardened Steel

1. By separating the chipbreaker from the cutting edge, the cutting force imposed on the cutting edge during machining is significantly reduced, thus providing long tool life.
2. The cutting edge preparation is designed to ensure easy cutting at low cutting forces, while maintaining close tolerances with no deviations.
3. The HP style chipbreaker, combined with built-in wipers, yields excellent surface quality and good chip control.



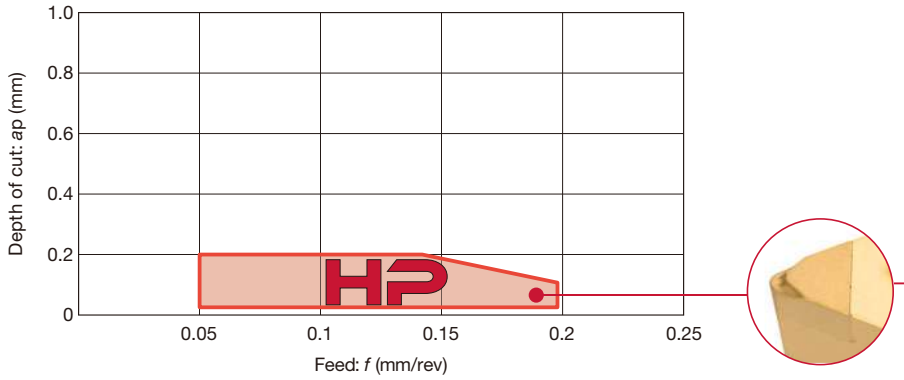
APPLICATION AREA

For negative insert





For positive insert





Designation System for T-CBN (PCBN) Inserts

Multi-Corner type

2 QP - CNGA120404 -L

① Number of corners	② Type		③ ISO symbol	④ Special feature & chipbreaker			
	QP	CBN Inserts		Without	Standard honing	W□	With wiper
				-L	Wear resistance priority	F	Sharp edge
				-H	Fracture resistance priority	-HF	With chipbreaker
				W	With wiper	-HM	With chipbreaker

Multi-Corner type (10 pieces per package)

T 2 QP - CNGA120408

① "T" means 10 pieces per package.

For general turning

TNGA160402 - QBN

① ISO symbol	② CBN inserts

T-CBN (PCBN tipped) grooving inserts

XG R 63 10 S - QBN

① For grooving tool GX-type	② Hand of Insert		③ Groove width (mm)		④ Corner radius: RE (mm)		⑤ CBN inserts
	L	Left	10	1.0	S	0.2	
	R	Right	15	1.5			

For TUNGCUT

S G N 200 - 020

① Number of edge		② Application		③ For use		④ Groove width (mm)		⑤ Corner radius: RE (mm)	
S	Single corner	G	Grooving	N	Non breaker	200	2.0	020	0.2

Designation System for T-DIA (PCD) Inserts

Inserts for turning

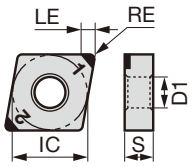
TPGW110204 - DIA

① ISO symbol	② PCD inserts

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

		BXM10	BXM20	BXA20	BX310	BX330	BX360	BX380	BX470	BX480	BX930
P	Steel										
M	Stainless										
K	Cast iron								◐	✣	◐
N	Non-ferrous										
S	Superalloy										
H	Hard material	●	◐	◐	●	◐	◐	✣			
	Sintered metal								◐	◐✣	



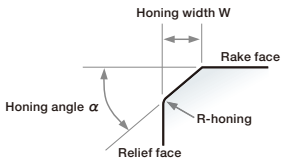
Shape	Designation	BXM10	BXM20	BXA20	BX310	BX330	BX360	BX380	BX470	BX480	BX930	No. of corners	LE	RE	IC	S	D1	Honing: Standard	Honing: Sharp edge	Honing: L	Honing: H	Wiper
2QP-CNGA	**2QP-CNGA120404**	●	●	●	●	●	●	●	●	●	●	2	2.3	0.4	12.7	4.76	5.16	○				
	2QP-CNGA120408	●	●	●	●	●	●	●	●	●	●	2	2.2	0.8	12.7	4.76	5.16	○				
	2QP-CNGA120412		●	●	●	●	●	●	●	●	●	2	2.4	1.2	12.7	4.76	5.16	○				
T2QP-CNGA	**T2QP-CNGA120404**						●					2	2.3	0.4	12.7	4.76	5.16	○				
	T2QP-CNGA120408						●					2	2.2	0.8	12.7	4.76	5.16	○				
2QP-CNGAF**	**2QP-CNGA120404F**								●			2	2.3	0.4	12.7	4.76	5.16		○			
	2QP-CNGA120408F								●			2	2.2	0.8	12.7	4.76	5.16		○			
2QP-CNGA-L**	**2QP-CNGA120404-L**	●	●			●						2	2.3	0.4	12.7	4.76	5.16			○		
	2QP-CNGA120408-L	●	●			●						2	2.2	0.8	12.7	4.76	5.16			○		
	2QP-CNGA120412-L	●	●			●						2	2.4	1.2	12.7	4.76	5.16			○		
2QP-CNGA-H**	**2QP-CNGA120404-H**		●				●	●				2	2.3	0.4	12.7	4.76	5.16				○	
	2QP-CNGA120408-H		●	●			●	●				2	2.2	0.8	12.7	4.76	5.16				○	
	2QP-CNGA120412-H		●				●	●				2	2.4	1.2	12.7	4.76	5.16				○	
2QP-CNGAWL**	**2QP-CNGA120404WL**	●	●	●								2	2.3	0.4	12.7	4.76	5.16					○
	2QP-CNGA120408WL	●	●	●								2	2.2	0.8	12.7	4.76	5.16					○
	2QP-CNGA120412WL	●	●	●								2	2.4	1.2	12.7	4.76	5.16					○
2QP-CNMAW**	**2QP-CNMA120404W**					●						2	2.3	0.4	12.7	4.76	5.16					○
	2QP-CNMA120408W					●						2	2.2	0.8	12.7	4.76	5.16					○
	2QP-CNMA120412W					●						2	2.4	1.2	12.7	4.76	5.16					○

● : Line up

*T at the beginning of the designation means 10 pieces per package.
Please see the page **B195** about the toolholders recommended for wiper inserts of the designation with W, WL, and WJ at the end.

Honing specification

	BXM10	BXA20	BXM20	BXC50	BX310 BX330 BX480	BX360 BX380	BX470	BX910 BX930	BXC90
Standard	S01325	S01325	S01325	S01325	S01325	S01325	T01315	S01315	T02020
Sharp edge	-	-	-	-	-	-	F	-	-
-L	S01315	S01315	S01315	-	S01315	-	-	-	-
-H	-	S01835	S01835	-	-	S01335	-	-	-
Wiper	S01325	S01315	S01315	-	S01325	-	-	-	-



S	0	1	3	2	5
Shape	Honing width (W) (mm)			Honing angle : α	

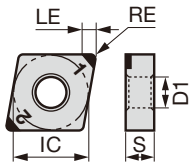
T ··· Chamfered honing
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

Reference pages: External toolholder → C016 - Internal toolholder → D021 -
J-Series toolholder → G044 TungCap → K008 -
PINZBOHR® → K180 - Cartridge → K199 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA20	BXC50	BX360	BXC90
P	Steel						
M	Stainless						
K	Cast iron						◐
N	Non-ferrous						
S	Superalloy						
H	Hard material	●	◐	◐	✠	◐	
	Sintered metal						



Shape	Designation	No. of corners	LE	RE	IC	S	D1	Standard	Sharp edge	Honing L	Honing H	Wiper	WavyJoint	Chipbreaker	Solid
			Dimension (mm)					Honing							
2QP-CNGM**-H*	2QP-CNGM120408-HF	2	2.2	0.8	12.7	4.76	5.16							○	
	2QP-CNGM12012-HF	2	2.4	1.2	12.7	4.76	5.16							○	
	2QP-CNGM120408-HM	2	2.2	0.8	12.7	4.76	5.16							○	
	2QP-CNGM12012-HM	2	2.4	1.2	12.7	4.76	5.16							○	
	2QP-CNGM120404-HP	2	2.3	0.4	12.7	4.76	5.16							○	
	2QP-CNGM12008-HP	2	2.2	0.8	12.7	4.76	5.16							○	
2QP-CNGM**WL-HP	2QP-CNGM120408WL-HP	2	2.2	0.8	12.7	4.76	5.16					○		○	
4QP-CNGA	4QP-CNGA120404	4	2.3	0.4	12.7	4.76	5.16	○							
	4QP-CNGA12008	4	2.2	0.8	12.7	4.76	5.16	○							
	4QP-CNGA12012	4	2.4	1.2	12.7	4.76	5.16	○							
4QP-CNMA**W	4QP-CNMA120404W	4	2.3	0.4	12.7	4.76	5.16					○			
	4QP-CNMA12008W	4	2.2	0.8	12.7	4.76	5.16					○			
	4QP-CNMA12012W	4	2.4	1.2	12.7	4.76	5.16					○			
4QS-CNGA	4QS-CNGA120408	4	2.2	0.8	12.7	4.76	5.16	○					○		
	4QS-CNGA12012	4	2.4	1.2	12.7	4.76	5.16	○					○		
4QS-CNGA**-H	4QS-CNGA120408-H	4	1.5	0.8	12.7	4.76	5.16				○		○		
	4QS-CNGA12012-H	4	1.7	1.2	12.7	4.76	5.16				○		○		
4QS-CNGG**-HM	4QS-CNGG120408-HM	4	1.5	0.8	12.7	4.76	5.16						○	○	
	4QS-CNGG12012-HM	4	1.7	1.2	12.7	4.76	5.16						○	○	
CNGA**-QBN	CNGA120402-QBN	1	4.1	0.2	12.7	4.76	5.16	○							
	CNGA12004-QBN	1	4.0	0.4	12.7	4.76	5.16	○							
	CNGA12008-QBN	1	3.9	0.8	12.7	4.76	5.16	○							
	CNGA12012-QBN	1	3.9	1.2	12.7	4.76	5.16	○							
S-CNGN	S-CNGN090308	4		0.8	9.525	3.18		○							○
	S-CNGN090312	4		1.2	9.525	3.18		○							○
	S-CNGN120408	4		0.8	12.7	4.76		○							○
	S-CNGN120412	4		1.2	12.7	4.76		○							○

*Please see the page B195 about the toolholders recommended for wiper inserts of the designation with W, WL, and WJ at the end.

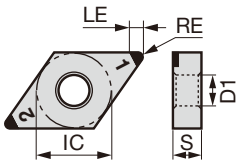
● : Line up

Reference pages:
External toolholder → C016 -
J-Series toolholder → G044
PINZBOHR® → K180 -
Internal toolholder → D021 -
TungCap → K008 -
Cartridge → K199 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA20	BXA10	BX330	BX360	BX380	BX470	BX480	BX930
P	Steel										
M	Stainless										
K	Cast iron								●ɔ	✠	●ɔ
N	Non-ferrous										
S	Superalloy										
H	Hard material	●	●ɔ	●ɔ	●	●ɔ	●ɔ	✠			
	Sintered metal								●ɔ	ɔ✠	



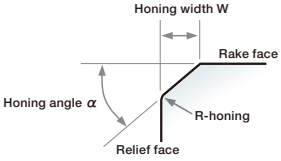
Shape	Designation	BXM10	BXM20	BXA20	BX310	BX330	BX360	BX380	BX470	BX480	BX930	No. of corners	LE	RE	IC	S	D1	Honing: Standard	Honing: Sharp edge	Honing: L	Honing: H	Wiper	Chipbreaker
2QP-DNGA	2QP-DNGA150404	●	●	●	●	●	●	●	●	●	●	2	2.5	0.4	12.7	4.76	5.16	○					
	2QP-DNGA150408	●	●	●	●	●	●	●	●	●	●	2	2.1	0.8	12.7	4.76	5.16	○					
	2QP-DNGA150412	●	●	●	●	●	●	●		●	●	2	2.0	1.2	12.7	4.76	5.16	○					
	2QP-DNGA150604	●	●									2	2.5	0.4	12.7	6.35	5.16	○					
	2QP-DNGA150608	●	●	●								2	2.1	0.8	12.7	6.35	5.16	○					
	2QP-DNGA150612	●	●									2	2.0	1.2	12.7	6.35	5.16	○					
2QP-DNGA**-L	2QP-DNGA150404-L	●	●			●						2	2.5	0.4	12.7	4.76	5.16			○			
	2QP-DNGA150408-L	●	●			●						2	2.1	0.8	12.7	4.76	5.16			○			
	2QP-DNGA150412-L		●			●						2	2.0	1.2	12.7	4.76	5.16			○			
2QP-DNGA**-H	2QP-DNGA150404-H		●				●	●				2	2.5	0.4	12.7	4.76	5.16					○	
	2QP-DNGA150408-H		●	●			●	●				2	2.1	0.8	12.7	4.76	5.16					○	
	2QP-DNGA150412-H		●				●	●				2	2.0	1.2	12.7	4.76	5.16					○	
2QP-DNGA**WJ	2QP-DNGA150404WJ	●	●	●								2	2.5	0.4	12.7	4.76	5.16					○	
	2QP-DNGA150408WJ	●	●	●								2	2.1	0.8	12.7	4.76	5.16					○	
2QP-DNGM**-H*	2QP-DNGM150408-HF		●									2	2.1	0.8	12.7	4.76	5.16						○
	2QP-DNGM150412-HF		●									2	2.0	1.2	12.7	4.76	5.16						○
	2QP-DNGM150408-HM		●									2	2.1	0.8	12.7	4.76	5.16						○
	2QP-DNGM150412-HM		●									2	2.0	1.2	12.7	4.76	5.16						○
	2QP-DNGM150404-HP	●		●								2	2.5	0.4	12.7	4.76	5.16						○
	2QP-DNGM150408-HP	●		●								2	2.1	0.8	12.7	4.76	5.16						○

*Please see the page B195 about the toolholders recommended for wiper inserts of the designation with W, WL, and WJ at the end.

● : Line up

Honing specification

	BXM10	BXA20	BXM20	BXC50	BX310 BX330 BX480	BX360 BX380	BX470	BX910 BX930	BXC90
Standard	S01325	S01325	S01325	S01325	S01325	S01325	T01315	S01315	T02020
Sharp edge	-	-	-	-	-	-	F	-	-
-L	S01315	-	S01315	-	S01315	-	-	-	-
-H	-	S01835	S01835	-	-	S01335	-	-	-
Wiper	S01325	S01315	S01315	-	-	-	-	-	-



S	0	1	3	2	5
Shape	Honing width (W) (mm)			Honing angle : α	

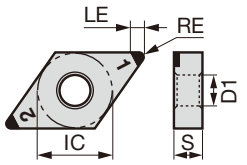
T ··· Chamfered honing
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

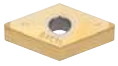
Reference pages: External toolholder → C040 - Internal toolholder → D050 -
J-Series toolholder → G046 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

P	Steel			
M	Stainless			
K	Cast iron			
N	Non-ferrous			
S	Superalloy			
H	Hard material	●◐	✠	◐
	Sintered metal			



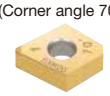
Shape	Designation	BXA20	BXC50	BX360	No. of corners	LE	RE	IC	S	D1	Honing: Standard	Honing: Sharp edge	Honing: L	Honing: H	WavyJoint	Chipbreaker
4QP-DNGA	**4QP-DNGA150404**		●		4	2.5	0.4	12.7	4.76	5.16	○					
	4QP-DNGA150408		●		4	2.1	0.8	12.7	4.76	5.16	○					
	4QP-DNGA150412		●		4	2.0	1.2	12.7	4.76	5.16	○					
4QS-DNGA	**4QS-DNGA150408**	●			4	2.1	0.8	12.7	4.76	5.16	○				○	
	4QS-DNGA150412	●			4	2.0	1.2	12.7	4.76	5.16	○				○	
4QS-DNGA-H**	**4QS-DNGA150408-H**	●			4	1.6	0.8	12.7	4.76	5.16				○	○	
	4QS-DNGA150412-H	●			4	1.6	1.2	12.7	4.76	5.16				○	○	
4QS-DNGG-HM**	**4QS-DNGG150408-HM**	●			4	1.6	0.8	12.7	4.76	5.16					○	○
																
DNGA-QBN**	**DNGA150402-QBN**			●	1	4.3	0.2	12.7	4.76	5.16	○					
	DNGA150404-QBN			●	1	4.1	0.4	12.7	4.76	5.16	○					
	DNGA150408-QBN			●	1	3.8	0.8	12.7	4.76	5.16	○					
	DNGA150412-QBN			●	1	3.4	1.2	12.7	4.76	5.16	○					

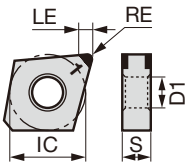
● : Line up

Reference pages: Internal toolholder → D050 -

CBN Insert NEGATIVE TYPE

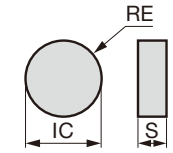
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA20	BXA360	BX470	BX930	Dimension (mm)						Honing				Chipbreaker
Shape	Designation							No. of corners	LE	RE	IC	S	D1	Standard	Sharp edge	L	H	
2QP-GNGA	*2QP-GNGA120404		●	●	●			2	2.3	0.4	12.7	4.76	5.16	○				
(Corner angle 70°)	*2QP-GNGA120408		●	●	●	●	●	2	2.2	0.8	12.7	4.76	5.16	○				
	*2QP-GNGA120412		●	●	●	●	●	2	2.4	1.2	12.7	4.76	5.16	○				
2QP-GNGG-HP**	*2QP-GNGG120404-HP	●		●				2	2.3	0.4	12.7	4.76	5.16					○
(Corner angle 70°)	*2QP-GNGG120408-HP	●		●				2	2.2	0.8	12.7	4.76	5.16					○
																		



* Tungaloy's standard

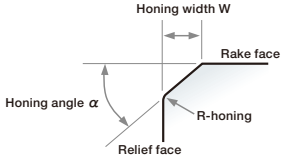
		BXC90	Dimension (mm)						Honing				Chipbreaker
Shape	Designation		No. of corners	LE	RE	IC	S	D1	Standard	Sharp edge	L	H	
S-RNGN	S-RNGN090300	●	-		-	9.525	3.18		○				○
	S-RNGN120400	●	-		-	12.7	4.76		○				○



● : Line up

Honing specification

	BXM10	BXA20	BXM20	BXC50	BX310 BX330 BX480	BX360 BX380	BX470	BX910 BX930	BXC90
Standard	S01325	S01325	S01325	S01325	S01325	S01325	T01315	S01315	T02020
Sharp edge	-	-	-	-	-	-	F	-	-
-L	S01315	-	S01315	-	S01315	-	-	-	-
-H	-	-	S01835	-	-	S01335	-	-	-



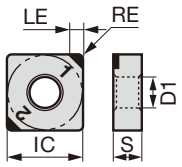
S	0	1	3	2	5
Shape	Honing width (W) (mm)			Honing angle : α	

T ··· Chamfered honing
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

CBN Insert NEGATIVE TYPE

● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM20	BXC50	BX310	BX330	BX360	BX380	BX480	BX910	BX930	BXC90
P	Steel										
M	Stainless										
K	Cast iron							✠	●	●ᑕ	●ᑕ
N	Non-ferrous										
S	Superalloy										
H	Hard material	ᑕ	✠	●	ᑕ	ᑕ	✠				
	Sintered metal							ᑕ✠			



Shape	Designation	BXM20	BXC50	BX310	BX330	BX360	BX380	BX480	BX910	BX930	BXC90	No. of corners	LE	RE	IC	S	D1	Honing: Standard	Honing: Sharp edge	Honing: L	Honing: H	Solid
2QP-SNGA	**2QP-SNGA120404**	●		●	●	●	●	●		●		2	2.4	0.4	12.7	4.76	5.16	○				
	2QP-SNGA120408	●		●	●	●	●	●		●		2	2.4	0.8	12.7	4.76	5.16	○				
	2QP-SNGA120412	●		●	●	●	●	●		●		2	2.4	1.2	12.7	4.76	5.16	○				
2QP-SNGA-L**	**2QP-SNGA120404-L**				●							2	2.4	0.4	12.7	4.76	5.16			○		
	2QP-SNGA120408-L	●			●							2	2.4	0.8	12.7	4.76	5.16			○		
	2QP-SNGA120412-L	●			●							2	2.4	1.2	12.7	4.76	5.16			○		
2QP-SNGA-H**	**2QP-SNGA120404-H**					●	●					2	2.4	0.4	12.7	4.76	5.16				○	
	2QP-SNGA120408-H	●				●	●					2	2.4	0.8	12.7	4.76	5.16				○	
	2QP-SNGA120412-H	●				●	●					2	2.4	1.2	12.7	4.76	5.16				○	
4QP-SNGA	**4QP-SNGA120404**		●									4	2.4	0.4	12.7	4.76	5.16	○				
	4QP-SNGA120408		●									4	2.4	0.8	12.7	4.76	5.16	○				
	4QP-SNGA120412		●									4	2.4	1.2	12.7	4.76	5.16	○				
SNGA-QBN**	**SNGA120402-QBN**					●						1	4.1	0.2	12.7	4.76	5.16	○				
	SNGA120404-QBN					●						1	4.1	0.4	12.7	4.76	5.16	○				
	SNGA120408-QBN					●						1	4.1	0.8	12.7	4.76	5.16	○				
	SNGA120412-QBN					●						1	4.1	1.2	12.7	4.76	5.16	○				
2QP-SNGN	**2QP-SNGN090308**								●			2	2.4	0.8	9.525	3.18		○				
	2QP-SNGN090312								●			2	2.4	1.2	9.525	3.18		○				
S-SNGN	**S-SNGN090308**										●	8		0.8	9.525	3.18		○				○
	S-SNGN090312										●	8		1.2	9.525	3.18		○				○
	S-SNGN120308										●	8		0.8	12.7	3.18		○				○
	S-SNGN120312										●	8		1.2	12.7	3.18		○				○
	S-SNGN120408										●	8		0.8	12.7	4.76		○				○
	S-SNGN120412										●	8		1.2	12.7	4.76		○				○

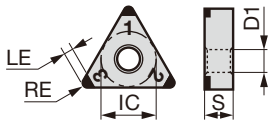
● : Line up

Reference pages: External toolholder → C091 - Internal toolholder → D038 -
Cartridge → K197 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

		BXM10	BXM20	BXA20	BX310	BX330	BX360	BX380	BX470	BX480	BX930
P	Steel										
M	Stainless										
K	Cast iron								●ᑕ	✣	●ᑕ
N	Non-ferrous										
S	Superalloy										
H	Hard material	●	ᑕ	ᑕ	●	ᑕ	ᑕ	✣			
	Sintered metal								●ᑕ	ᑕ✣	



Shape	Designation	No. of corners	Dimension (mm) LE	RE	IC	S	D1	Honing Standard	Sharp edge	L	H	Wiper	Chipbreaker
3QP-TNGA	**3QP-TNGA160404**	3	2.2	0.4	9.525	4.76	3.81	○					
	3QP-TNGA160408	3	1.9	0.8	9.525	4.76	3.81	○					
	3QP-TNGA160412	3	2.4	1.2	9.525	4.76	3.81	○					
T3QP-TNGA	**T3QP-TNGA160404**	3	2.2	0.4	9.525	4.76	3.81	○					
	T3QP-TNGA160408	3	1.9	0.8	9.525	4.76	3.81	○					
3QP-TNGAF**	**3QP-TNGA160404F**	3	2.2	0.4	9.525	4.76	3.81		○				
	3QP-TNGA160408F	3	1.9	0.8	9.525	4.76	3.81		○				
3QP-TNGA-L**	**3QP-TNGA160404-L**	3	2.2	0.4	9.525	4.76	3.81			○			
	3QP-TNGA160408-L	3	1.9	0.8	9.525	4.76	3.81			○			
	3QP-TNGA160412-L	3	2.4	1.2	9.525	4.76	3.81			○			
3QP-TNGA-H**	**3QP-TNGA160404-H**	3	2.2	0.4	9.525	4.76	3.81				○		
	3QP-TNGA160408-H	3	1.9	0.8	9.525	4.76	3.81				○		
	3QP-TNGA160412-H	3	2.4	1.2	9.525	4.76	3.81				○		
3QP-TNGAWG**	**3QP-TNGA160404WG**	3	2.2	0.4	9.525	4.76	3.81					○	
	3QP-TNGA160408WG	3	1.9	0.8	9.525	4.76	3.81					○	
3QP-TNGM-H***	**3QP-TNGM160408-HF**	3	1.9	0.8	9.525	4.76	3.81						○
	3QP-TNGM160412-HF	3	2.4	1.2	9.525	4.76	3.81						○
	3QP-TNGM160408-HM	3	1.9	0.8	9.525	4.76	3.81						○
	3QP-TNGM160412-HM	3	2.2	1.2	9.525	4.76	3.81						○
	3QP-TNGM160404-HP	3	2.2	0.4	9.525	4.76	3.81						○
	3QP-TNGM160408-HP	3	1.9	0.8	9.525	4.76	3.81						○

*T at the beginning of the designation means 10 pieces per package.
Please see the page B195 about the toolholders recommended for wiper inserts of the designation with WG at the end.

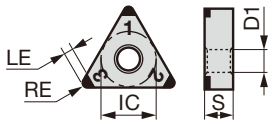
● : Line up

Reference pages: External toolholder → C113 -
J-Series toolholder → G047 -
Cartridge → K193 -
Internal toolholder → D044 -
TungCap → K014 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

P	Steel											
M	Stainless											
K	Cast iron				●◐							
N	Non-ferrous											
S	Superalloy											
H	Hard material	●◐	✠	●◐								
	Sintered metal											

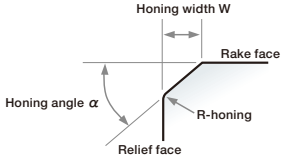


Shape	Designation	BXA20	BXC50	BX360	BXC90	No. of corners	LE	RE	IC	S	D1	Standard	Sharp edge	L	H	WavyJoint	Chipbreaker	Solid
							Dimension (mm)					Honing						
6QP-TNGA	**6QP-TNGA160404**		●			6	2.2	0.4	9.525	4.76	3.81	○						
	6QP-TNGA160408		●			6	1.9	0.8	9.525	4.76	3.81	○						
	6QP-TNGA160412		●			6	2.4	1.2	9.525	4.76	3.81	○						
6QS-TNGA	**6QS-TNGA160408**	●				6	1.9	0.8	9.525	4.76	3.81	○						
	6QS-TNGA160412	●				6	2.4	1.2	9.525	4.76	3.81	○						
6QS-TNGA-H**	**6QS-TNGA160408-H**	●				6	1.6	0.8	9.525	4.76	3.81				○	○		
	6QS-TNGA160412-H	●				6	1.8	1.2	9.525	4.76	3.81				○	○		
6QS-TNGG-HM**	**6QS-TNGG160408-HM**	●				6	1.6	0.8	9.525	4.76	3.81					○	○	
	6QS-TNGG160412-HM	●				6	1.8	1.2	9.525	4.76	3.81					○	○	
TNGA-QBN**	**TNGA160402-QBN**			●		1	4.4	0.2	9.525	4.76	3.81	○						
	TNGA160404-QBN			●		1	4.2	0.4	9.525	4.76	3.81	○						
	TNGA160408-QBN			●		1	4.0	0.8	9.525	4.76	3.81	○						
	TNGA160412-QBN			●		1	3.7	1.2	9.525	4.76	3.81	○						
S-TNGN	**S-TNGN110308**				●	6		0.8	6.35	3.18		○						○
	S-TNGN110312				●	6		1.2	6.35	3.18		○						○
	S-TNGN160408				●	6		0.8	9.525	4.76		○						○
	S-TNGN160412				●	6		1.2	9.525	4.76		○						○

● : Line up

Honing specification

	BXM10	BXA20	BXM20	BXC50	BX310 BX330 BX480	BX360 BX380	BX470	BX910 BX930	BXC90
Standard	S01325	S01325	S01325	S01325	S01325	S01325	T01315	S01315	T02020
Sharp edge	-	-	-	-	-	-	F	-	-
-L	S01315	S01315	-	-	S01315	-	-	-	-
-H	-	S01835	S01835	-	-	S01335	-	-	-
Wiper	S01325	S01315	S01315	-	-	-	-	-	-



S	0	1	3	2	5
Shape	Honing width (W) (mm)			Honing angle : α	

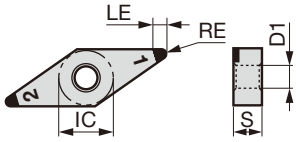
T ··· Chamfered honing
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

Reference pages: External toolholder → C113 - Internal toolholder → D044 -
J-Series toolholder → G047 - TungCap → K014 -
Cartridge → K193 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA20	BXC50	BX310	BX330	BX360	BX380	BX470	BX480	BX930
P	Steel											
M	Stainless											
K	Cast iron									◐	✠	◐
N	Non-ferrous											
S	Superalloy											
H	Hard material	●	◐	◐	✠	●	◐	◐	✠			
	Sintered metal									◐	◐	✠



Shape	Designation	No. of corners	LE	RE	IC	S	D1	Honing: Standard	Honing: Sharp edge	Honing: L	Honing: H	WavyJoint	Chipbreaker
2QP-VNGA	2QP-VNGA160404	2	3.1	0.4	9.525	4.76	3.81	○					
	2QP-VNGA160408	2	2.2	0.8	9.525	4.76	3.81	○					
2QP-VNGA**-L	2QP-VNGA160404-L	2	3.1	0.4	9.525	4.76	3.81			○			
	2QP-VNGA160408-L	2	2.2	0.8	9.525	4.76	3.81			○			
2QP-VNGA**-H	2QP-VNGA160404-H	2	3.1	0.4	9.525	4.76	3.81				○		
	2QP-VNGA160408-H	2	2.2	0.8	9.525	4.76	3.81				○		
2QP-VNGM**-H*	2QP-VNGM160408-HF	2	2.2	0.8	9.525	4.76	3.81						○
	2QP-VNGM160408-HM	2	2.4	0.8	9.525	4.76	3.81						○
	2QP-VNGM160408-HP	2	2.2	0.8	9.525	4.76	3.81						○
4QP-VNGA	4QP-VNGA160404	4	3.1	0.4	9.525	4.76	3.81	○					
	4QP-VNGA160408	4	2.2	0.8	9.525	4.76	3.81	○					
4QS-VNGA	4QS-VNGA160408	4	1.7	0.8	9.525	4.76	3.81	○				○	
4QS-VNGA**-H	4QS-VNGA160408-H	4	1.7	0.8	9.525	4.76	3.81				○	○	
4QS-VNGG**-HM	4QS-VNGG160408-HM	4	1.7	0.8	9.525	4.76	3.81					○	○

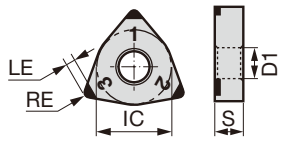
● : Line up

Reference pages: External toolholder → C057 - Internal toolholder → D068 -
TungCap → K015 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA20	BXC50	BX310	BX330	BX360	BX380	BX480	BX930
P	Steel										
M	Stainless										
K	Cast iron									✠	◐✠
N	Non-ferrous										
S	Superalloy										
H	Hard material	●	◐	◐	✠	●	◐	◐	✠		
	Sintered metal									◐✠	



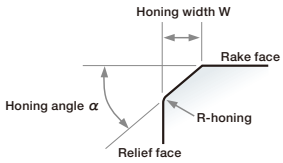
Shape	Designation	No. of corners	LE	RE	IC	S	D1	Honing: Standard	Honing: Sharp edge	Honing: L	Honing: H	Wiper	WavyJoint
3QP-WNGA	3QP-WNGA080408	3	2.2	0.8	12.7	4.76	5.16	○					
3QP-WNGA**WL	3QP-WNGA080408WL	3	2.2	0.8	12.7	4.76	5.16	○				○	
6QP-WNGA	6QP-WNGA080404	6	2.3	0.4	12.7	4.76	5.16	○					
	6QP-WNGA080408	6	2.2	0.8	12.7	4.76	5.16	○					
6QS-WNGA	6QS-WNGA080408	6	1.5	0.8	12.7	4.76	5.16	○					○
6QS-WNGA**-H	6QS-WNGA080408-H	6	1.5	0.8	12.7	4.76	5.16				○		○

*Please see the page **B195** about the toolholders recommended for wiper inserts of the designation with WL at the end.

● : Line up

Honing specification

	BXM10	BXA20	BXM20	BXC50	BX310 BX330 BX480	BX360 BX380	BX470	BX910 BX930	BXC90
Standard	S01325	S01325	S01325	S01325	S01325	S01325	T01315	S01315	T02020
Sharp edge	-	-	-	-	-	-	F	-	-
-L	S01315	S01315	-	-	S01315	-	-	-	-
-H	-	S01835	S01835	-	-	S01335	-	-	-
Wiper	S01325	S01315	S01315	-	-	-	-	-	-



S	0	1	3	2	5
Shape	Honing width (W) (mm)			Honing angle : α	

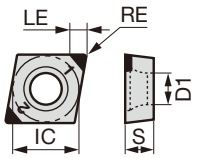
T ··· Chamfered honing
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

Reference pages: External toolholder → C032 - Internal toolholder → D029 -
TungCap → C033 -, K011 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA20	BX310	BX330	BX360	BX470	BX480	BX930
P	Steel									
M	Stainless									
K	Cast iron							●◐	✠	●◐
N	Non-ferrous									
S	Superalloy							●◐		
H	Hard material	●	●◐	●◐	●	●◐	●◐			
	Sintered metal							●◐	◐✠	



Shape	Designation	No. of corners	Dimension (mm) LE	RE	IC	S	D1	Honing Standard	Sharp edge	L	H	Wiper	Chipbreaker
2QP-CCGW	**2QP-CCGW060202**	2	2.3	0.2	6.35	2.38	2.8	○					
	2QP-CCGW060204	2	2.3	0.4	6.35	2.38	2.8	○					
	2QP-CCGW09T304	2	2.3	0.4	9.525	3.97	4.4	○					
	2QP-CCGW09T308	2	2.2	0.8	9.525	3.97	4.4	○					
2QP-CCMW	**2QP-CCMW060202**	2	2.3	0.2	6.35	2.38	2.8	○					
	2QP-CCMW060204	2	2.3	0.4	6.35	2.38	2.8	○					
	2QP-CCMW09T304	2	2.3	0.4	9.525	3.97	4.4	○					
	2QP-CCMW09T308	2	2.2	0.8	9.525	3.97	4.4	○					
2QP-CCGT-HP**	**2QP-CCGT060204-HP**	2	2.3	0.4	6.35	2.38	2.8						○
	2QP-CCGT09T304-HP	2	2.3	0.4	9.525	3.97	4.4						○
	2QP-CCGT09T308-HP	2	2.2	0.8	9.525	3.97	4.4						○
2QP-CCGTWL-HP**	**2QP-CCGT09T304WL-HP**	2	2.3	0.4	9.525	3.97	4.4					○	○
	2QP-CCGT09T308WL-HP	2	2.2	0.8	9.525	3.97	4.4					○	○
Q-CCMW	**Q-CCMW060204**	1	2.5	0.4	6.35	2.38	2.8	○					
	Q-CCMW09T304	1	2.5	0.4	9.525	3.97	4.4	○					
1QP-CCGW	**1QP-CCGW03X102**	1	1.4	0.2	3.57	1.39	1.9	○					
	1QP-CCGW03X104	1	1.3	0.4	3.57	1.39	1.9	○					
	1QP-CCGW04T102	1	1.9	0.2	4.37	1.79	2.3	○					
	1QP-CCGW04T104	1	1.8	0.4	4.37	1.79	2.3	○					
CPGA-QBN**	**CPGA090204-QBN**	1	4.0	0.4	9.525	2.38	4.0	○					
	CPGA090208-QBN	1	3.8	0.8	9.525	2.38	4.0	○					

Q-CCMW: 2 pieces per package

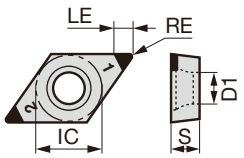
● : Line up

Reference pages: External toolholder → C022 - Internal toolholder → D012 -
J-Series toolholder → G019 - PINZBOHR® → K180 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA20	BX310	BX330	BX360	BX470	BX480	BX930
P	Steel									
M	Stainless									
K	Cast iron							◐	✠	◐
N	Non-ferrous									
S	Superalloy									
H	Hard material	●	◐	◐	●	◐	◐			
	Sintered metal							◐	◐✠	



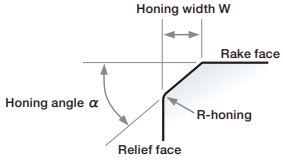
Shape	Designation	BXM10	BXM20	BXA20	BX310	BX330	BX360	BX470	BX480	BX930	No. of corners	LE	RE	IC	S	D1	Honing: Standard	Honing: Sharp edge	Honing: L	Honing: H	Chipbreaker			
											Dimension (mm)						Honing							
2QP-DCGW	**2QP-DCGW070202**	●	●	●							2	2.7	0.2	6.35	2.38	2.8	○							
	2QP-DCGW070204	●	●	●				●	●		2	2.5	0.4	6.35	2.38	2.8	○							
	2QP-DCGW070208							●			2	2.1	0.8	6.35	2.38	2.8	○							
	**2QP-DCGW11T302**	●	●	●							2	2.7	0.2	9.525	3.97	4.4	○							
	2QP-DCGW11T304	●	●	●				●	●		2	2.5	0.4	9.525	3.97	4.4	○							
	2QP-DCGW11T308	●	●	●				●			2	2.1	0.8	9.525	3.97	4.4	○							
2QP-DCMW	**2QP-DCMW070202**				●	●	●				2	2.7	0.2	6.35	2.38	2.8	○							
	2QP-DCMW070204				●	●	●			●	2	2.5	0.4	6.35	2.38	2.8	○							
	**2QP-DCMW11T302**				●	●	●				2	2.7	0.2	9.525	3.97	4.4	○							
	2QP-DCMW11T304				●	●	●			●	2	2.5	0.4	9.525	3.97	4.4	○							
	2QP-DCMW11T308				●	●	●				2	2.1	0.8	9.525	3.97	4.4	○							
2QP-DCGWF**	**2QP-DCGW11T302F**							●			2	2.7	0.2	9.525	3.97	4.4		○						
	2QP-DCGW11T304F							●			2	2.5	0.4	9.525	3.97	4.4		○						
																								
2QP-DCGT-HP**	**2QP-DCGT070204-HP**	●									2	2.5	0.4	6.35	2.38	2.8					○			
	2QP-DCGT11T304-HP	●									2	2.5	0.4	9.525	3.97	4.4					○			
	2QP-DCGT11T308-HP	●									2	2.1	0.8	9.525	3.97	4.4					○			
Q-DCMW	**Q-DCMW070204**					●					1	2.1	0.4	6.35	2.38	2.8	○							
	Q-DCMW11T304					●					1	2.1	0.4	9.525	3.97	4.4	○							
																								

Q-DCMW: 2 pieces per package

● : Line up

Honing specification

	BXM10	BXA20	BXM20	BX310 BX330 BX480	BX360	BX470	BX480 BX930	BX910
Standard	S01325	S01325	S01325	S00515	S00515	T01315	S00515	S01315
Sharp edge	-	-	-	-	-	F	-	-
Wiper	S01325	-	-	-	-	-	-	-



S	0	1	3	2	5
Shape	Honing width (W) (mm)			Honing angle : α	

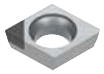
T ··· Chamfered honing
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

Reference pages: External toolholder → C046 - Internal toolholder → D046 -
J-Series toolholder → G026 - PINZBOHR® → K184 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BX310	BX470	No. of corners	LE	RE	IC	S	D1	Standard	Sharp edge	L	H
P	Steel												
M	Stainless												
K	Cast iron		●◐										
N	Non-ferrous												
S	Superalloy		●◐										
H	Hard material	●											
	Sintered metal		●◐										
Shape	**Designation**												
1QP-EPGW	**1QP-EPGW03X102**	●	●	1	1.4	0.2	3.57	1.39	1.9	○			
	1QP-EPGW03X104	●	●	1	1.3	0.4	3.57	1.39	1.9	○			
	1QP-EPGW040102	●	●	1	1.7	0.2	3.97	1.59	2.3	○			
	1QP-EPGW040104	●	●	1	1.6	0.4	3.97	1.59	2.3	○			



		BXM10	BXM20	BXA20	BX310	BX330	BX360	BX470	BX480	BX910	BX930	No. of corners	LE	RE	IC	S	D1	Standard	Sharp edge	L	H
P	Steel																				
M	Stainless																				
K	Cast iron							●◐	✠	●	●◐										
N	Non-ferrous																				
S	Superalloy																				
H	Hard material	●	●◐	●◐	●	●◐	●◐														
	Sintered metal							●◐	◐✠												
Shape	**Designation**																				
2QP-SPGN	**2QP-SPGN090308**									●		2	2.4	0.8	9.525	3.18	-	○			
	2QP-SPGN090312									●		2	2.4	1.2	9.525	3.18	-	○			
2QP-SPMN	**2QP-SPMN090304**					●	●				●	2	2.4	0.4	9.525	3.18	-	○			
	2QP-SPMN090308					●	●				●	2	2.4	0.8	9.525	3.18	-	○			
Q-SPGN	**Q-SPGN090304**					●						1	2.8	0.4	9.525	3.18	-	○			
	Q-SPGN090308					●						1	2.8	0.8	9.525	3.18	-	○			
SPGN-QBN**	**SPGN090304-QBN**						●					1	4.1	0.4	9.525	3.18	-	○			
	SPGN090308-QBN						●					1	4.1	0.8	9.525	3.18	-	○			
	SPGN090312-QBN						●					1	4.1	1.2	9.525	3.18	-	○			
	SPGN120308-QBN						●					1	4.1	0.8	12.7	3.18	-	○			
	SPGN120312-QBN						●					1	4.1	1.2	12.7	3.18	-	○			
2QP-SPGW	**2QP-SPGW09T308**									●		2	2.4	0.8	9.525	3.97	4.4	○			
	2QP-SPGW09T312									●		2	2.4	1.2	9.525	3.97	4.4	○			
	2QP-SPGW120408									●		2	2.4	0.8	12.7	4.76	5.5	○			
	2QP-SPGW120412									●		2	2.4	1.2	12.7	4.76	5.5	○			
	2QP-SPGW120416									●		2	2.4	1.6	12.7	4.76	5.5	○			











Q-SPGN: 2 pieces per package

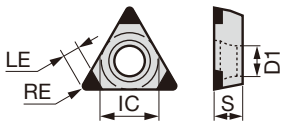
● : Line up

Reference pages: Internal toolholder → D031 - PINZBOHR® → K197 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA20	BX310	BX330	BX360	BX470	BX480	BX910	BX930
P	Steel										
M	Stainless										
K	Cast iron							●◐	✠	●	●◐
N	Non-ferrous										
S	Superalloy										
H	Hard material	●	●◐	●◐	●	●◐	●◐				
	Sintered metal							●◐	◐✠		



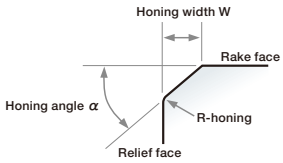
Shape	Designation	No. of corners	Dimension (mm) LE	RE	IC	S	D1	Honing Standard	Sharp edge	L	H	Full-face type
3QP-TPGN	**3QP-TPGN110302**	3	2.3	0.2	6.35	3.18	3.4	○				
	3QP-TPGN1103**04**	3	2.2	0.4	6.35	3.18	3.4	○				
	3QP-TPGN110308	3	2.2	0.8	6.35	3.18	-	○				
	3QP-TPGN1103**12**	3	2.4	1.2	6.35	3.18	-	○				
	3QP-TPGN160304	3	2.2	0.4	9.525	4.76	-	○				
	3QP-TPGN1603**08**	3	1.9	0.8	9.525	4.76	-	○				
3QP-TPMN	**3QP-TPMN110302**	3	2.3	0.2	6.35	3.18	-	○				
	3QP-TPMN1103**04**	3	2.2	0.4	6.35	3.18	-	○				
	3QP-TPMN1103**08**	3	1.9	0.8	6.35	3.18	-	○				
	3QP-TPMN160304	3	2.2	0.4	9.525	3.18	-	○				
	3QP-TPMN1603**08**	3	1.9	0.8	9.525	3.18	-	○				
Q-TPGN	**Q-TPGN110304**	1	2.2	0.4	6.35	3.18	-	○				
	Q-TPGN1103**08**	1	2.2	0.8	6.35	3.18	-	○				
	Q-TPGN160304	1	2.3	0.4	9.525	3.18	-	○				
	Q-TPGN1603**08**	1	1.9	0.8	9.525	3.18	-	○				
TPGN-QBN**	**TPGN110304-QBN**	1	3.7	0.4	6.35	3.18	-	○				
	TPGN1103**08-QBN**	1	3.5	0.8	6.35	3.18	-	○				
	TPGN160304-QBN	1	4.2	0.4	9.525	3.18	-	○				
	TPGN1603**08-QBN**	1	4.0	0.8	9.525	3.18	-	○				
TBGN-QBN**	**TBGN060104-15-QBN**	3	-	0.4	3.97	1.59	-	○				○
	TBGN0601**08-15-QBN**	3	-	0.8	3.97	1.59	-	○				○

Q-TPGN: 2 pieces per package

● : Line up

Honing specification

	BXM10	BXA20	BXM20	BX310 BX330 BX480	BX360	BX470	BX480 BX930	BX910
Standard	S01325	S01325	S01325	S00515	S00515	T01315	S00515	S01315
Sharp edge	-	-	-	-	-	F	-	-



S	0	1	3	2	5
Shape	Honing width (W) (mm)			Honing angle : α	

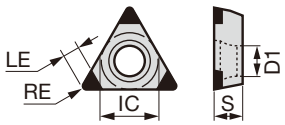
T ··· Chamfered honing
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

Reference pages: Internal toolholder → D042 - Cartridge → K193 -
Boring bar tool → K209 - Top-borer tool → K213

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA20	BXA310	BX330	BX360	BX470	BX480	BX910	BX930
P	Steel										
M	Stainless										
K	Cast iron							◐	✠	●	◐
N	Non-ferrous										
S	Superalloy										
H	Hard material	●	◐	◐	●	◐	◐				
	Sintered metal							◐	◐✠		



Shape	Designation	No. of corners	LE	RE	IC	S	D1	Honing: Standard	Honing: Sharp edge	Honing: L	Honing: H	Chipbreaker
3QP-TPGW	3QP-TPGW080204	3	2.2	0.4	4.76	2.38	2.3	○				
	3QP-TPGW090202	3	2.3	0.2	5.56	2.38	2.5	○				
	3QP-TPGW090204	3	2.2	0.4	5.56	2.38	2.5	○				
	3QP-TPGW110202	3	2.3	0.2	6.35	2.38	2.8	○				
	3QP-TPGW110204	3	2.2	0.4	6.35	2.38	2.8	○				
	3QP-TPGW110208	3	2.2	0.8	6.35	2.38	2.8	○				
	3QP-TPGW110302	3	2.3	0.2	6.35	3.18	3.4	○				
	3QP-TPGW110304	3	2.2	0.4	6.35	3.18	3.4	○				
	3QP-TPGW110308	3	2.2	0.8	6.35	3.18	3.4	○				
	3QP-TPGW130302	3	2.3	0.2	7.94	3.18	3.4	○				
	3QP-TPGW130304	3	2.2	0.4	7.94	3.18	3.4	○				
	3QP-TPGW130308	3	2.2	0.8	7.94	3.18	3.4	○				
	3QP-TPGW16T304	3	2.2	0.4	9.525	3.97	4.4	○				
	3QP-TPGW16T308	3	1.9	0.8	9.525	3.97	4.4	○				
	3QP-TPGW160404	3	2.2	0.4	9.525	4.76	4.4	○				
	3QP-TPGW160408	3	1.9	0.8	9.525	4.76	4.4	○				
3QP-TPGW**F	3QP-TPGW110304F	3	2.2	0.4	6.35	3.18	3.4		○			
	3QP-TPGW110308F	3	2.2	0.8	6.35	3.18	3.4		○			
3QP-TPGT	3QP-TPGT110304-HP	3	2.2	0.4	6.35	3.18	3.4					○
	3QP-TPGT110308-HP	3	1.9	0.8	6.35	3.18	3.4					○
3QP-TPMW	3QP-TPMW080204	3	2.2	0.4	4.76	2.38	2.3	○				
	3QP-TPMW090202	3	2.3	0.2	5.56	2.38	2.5	○				
	3QP-TPMW090204	3	2.2	0.4	5.56	2.38	2.5	○				
	3QP-TPMW110202	3	2.3	0.2	6.35	2.38	2.8	○				
	3QP-TPMW110204	3	2.2	0.4	6.35	2.38	2.8	○				
	3QP-TPMW110302	3	2.3	0.2	6.35	3.18	3.4	○				
	3QP-TPMW110304	3	2.2	0.4	6.35	3.18	3.4	○				
	3QP-TPMW110308	3	1.9	0.8	6.35	3.18	3.4	○				
	3QP-TPMW130302	3	2.4	0.2	7.94	3.18	3.4	○				
	3QP-TPMW130304	3	2.2	0.4	7.94	3.18	3.4	○				
	3QP-TPMW16T304	3	2.2	0.4	9.525	3.97	4.4	○				
	3QP-TPMW16T308	3	1.9	0.8	9.525	3.97	4.4	○				
	3QP-TPMW160404	3	2.2	0.4	9.525	4.76	4.4	○				
	3QP-TPMW160408	3	1.9	0.8	9.525	4.76	4.4	○				

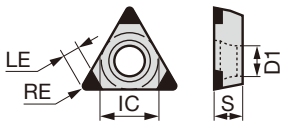
● : Line up

Reference pages: Internal toolholder → D041 - Cartridge → K193 -
Boring bar tool → K209 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloy
H	Hard material



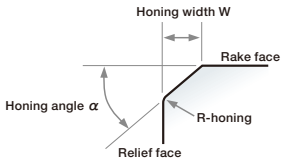
Shape	Designation	BX330	BX360	Dimension (mm) No. of corners	LE	RE	IC	S	D1	Honing Standard	Sharp edge	L	H
Q-TPMW	**Q-TPMW080204**	●		1	2.2	0.4	4.76	2.38	2.3	○			
	Q-TPMW090202	●		1	2.4	0.2	5.56	2.38	2.5	○			
	Q-TPMW0902**04**	●		1	2.3	0.4	5.56	2.38	2.5	○			
	Q-TPMW110202	●		1	2.4	0.2	6.35	2.38	2.8	○			
	Q-TPMW1102**04**	●		1	2.2	0.4	6.35	2.38	2.8	○			
	Q-TPMW110304	●		1	2.3	0.4	6.35	3.18	3.4	○			
	Q-TPMW1103**08**	●		1	2.2	0.8	6.35	3.18	3.4	○			
	Q-TPMW130302	●		1	2.4	0.2	7.94	3.18	3.4	○			
	Q-TPMW1303**04**	●		1	2.3	0.4	7.94	3.18	3.4	○			
	Q-TPMW16T304	●		1	2.3	0.4	9.525	3.97	4.4	○			
	Q-TPMW160404	●		1	2.3	0.4	9.525	4.76	4.4	○			
	Q-TPMW1604**08**	●		1	1.9	0.8	9.525	4.76	4.4	○			
TPGW-QBN**	**TPGW090202-QBN**		●	1	3.3	0.2	5.56	2.38	2.5	○			
	TPGW0902**04-QBN**		●	1	3.2	0.4	5.56	2.38	2.5	○			
	TPGW110202-QBN		●	1	3.9	0.2	6.35	2.38	2.8	○			
	TPGW1102**04-QBN**		●	1	3.7	0.4	6.35	2.38	2.8	○			
	TPGW130302-QBN		●	1	3.9	0.2	7.94	3.18	3.4	○			
	TPGW1303**04-QBN**		●	1	3.7	0.4	7.94	3.18	3.4	○			
	TPGW16T302-QBN		●	1	4.4	0.2	9.525	3.97	4.4	○			
	TPGW16T3**04-QBN**		●	1	4.2	0.4	9.525	3.97	4.4	○			
	TPGW16T3**08-QBN**		●	1	4.0	0.8	9.525	3.97	4.4	○			
TPGA-QBN**	**TPGA090202-QBN**		●	1	3.1	0.2	5.56	2.38	3.2	○			
	TPGA0902**04-QBN**		●	1	2.9	0.4	5.56	2.38	3.2	○			
	TPGA110202-QBN		●	1	3.9	0.2	6.35	2.38	3.0	○			
	TPGA1102**04-QBN**		●	1	3.7	0.4	6.35	2.38	3.0	○			
	TPGA110302-QBN		●	1	3.9	0.2	6.35	3.18	3.0	○			
	TPGA1103**04-QBN**		●	1	3.7	0.4	6.35	3.18	3.0	○			
	TPGA160302-QBN		●	1	4.4	0.2	9.525	3.18	4.0	○			
	TPGA1603**04-QBN**		●	1	4.2	0.4	9.525	3.18	4.0	○			
	TPGA1603**08-QBN**		●	1	4.0	0.8	9.525	3.18	4.0	○			

Q-TPMW: 2 pieces per package

● : Line up

Honing specification

	BXM10	BXA20	BXM20	BX310 BX330 BX480	BX360 BX930	BX470	BX910
Standard	S01325	S01325	S01325	S00515	S00515	T01315	S01315
Sharp edge	-	-	-	-	-	F	-



S	0	1	3	2	5
Shape	Honing width (W) (mm)			Honing angle : α	

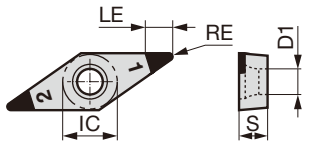
T ··· Chamfered honing
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

Reference pages: Internal toolholder → D041 - Cartridge → K193 -
Boring bar tool → K209 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA20	BX310	BX330	BX360	BX930
P	Steel							
M	Stainless							
K	Cast iron						◐	◐
N	Non-ferrous							
S	Superalloy							
H	Hard material	●	◐	◐	●	◐	◐	
	Sintered metal							

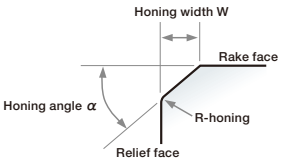


Shape	Designation	BXM10	BXM20	BXA20	BX310	BX330	BX360	BX930	No. of corners	LE	RE	IC	S	D1	Honing: Standard	Honing: Sharp edge	Honing: L	Honing: H
2QP-VBGW	**2QP-VBGW110304**	●	●	●					2	3.1	0.4	6.35	3.18	2.8	○			
	2QP-VBGW110308	●	●	●					2	2.2	0.8	6.35	3.18	2.8	○			
	2QP-VBGW160404	●	●	●					2	3.1	0.4	9.525	4.76	4.4	○			
	2QP-VBGW160408	●	●	●					2	2.2	0.8	9.525	4.76	4.4	○			
2QP-VBMW	**2QP-VBMW110304**				●	●	●	●	2	3.1	0.4	6.35	3.18	2.8	○			
	2QP-VBMW110308				●	●	●	●	2	2.2	0.8	6.35	3.18	2.8	○			
	2QP-VBMW160404				●	●	●		2	3.1	0.4	9.525	4.76	4.4	○			
	2QP-VBMW160408				●	●	●		2	2.2	0.8	9.525	4.76	4.4	○			
2QP-VCGW	**2QP-VCGW160404**	●	●	●					2	3.1	0.4	9.525	4.76	4.4	○			
																		
2QP-VCMW	**2QP-VCMW160404**					●	●	●	2	3.1	0.4	9.525	4.76	4.4	○			
																		

● : Line up

Honing specification

	BXM10	BXA20	BXM20	BX310 BX330 BX480	BX360 BX930	BX470	BX910
Standard	S01325	S01325	S01325	S00515	S00515	T01315	S01315
Sharp edge	-	-	-	-	-	F	-



S	0	1	3	2	5
Shape	Honing width (W) (mm)			Honing angle : α	

T ··· Chamfered honing
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

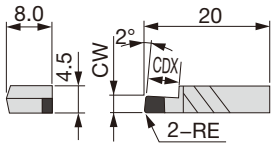
Reference pages: External toolholder → C060 - Internal toolholder → D034 -
J-Series toolholder → G033 - TungCap → K016 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

For GX-RE

P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloy	
H	Hard material	●◐

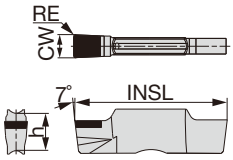


Shape	Designation	BX360	Dimension (mm) CW±0.05	RE	CDX
XGR**-QBN	XGR6310S-QBN		-	-	-
	XGR6315S-QBN	●	1.5	0.2	2.3
	XGR6320S-QBN	●	2	0.2	3
	XGR6325S-QBN	●	2.5	0.2	3.8
	XGR6330S-QBN	●	3	0.2	4.5
	XGR6335S-QBN	●	3.5	0.2	5.3
	XGR6340S-QBN	●	4	0.2	6
	XGR6345S-QBN	●	4.5	0.2	6



For TungCut

P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloy	
H	Hard material	●◐



Shape	Designation	BX360	Dimension (mm) Seat size	CW±0.025	RE	INSL	h
SGN	SGN200-020	●	2	2	0.2	20	5
	SGN300-020	●	3	3	0.2	20	5
	SGN400-020	●	4	4	0.2	20	5



● : Line up

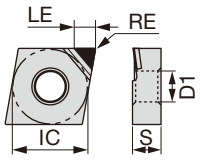
Reference pages: XGR...: Toolholder → F075 - SGN...: Toolholder → F028 -

PCD Insert

● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

Negative type with rake

P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloy
H	Hard material



Shape	Designation	DX110	DX120	No. of corners	LE	RE	IC	S	D1	Sharp edge	Rake angle
CNMN-DIA**	**CNMM120402-DIA**		●	1	3.5	0.2	12.7	4.76	5.16	○	○
	CNMM12040**4-DIA**		●	1	3.5	0.4	12.7	4.76	5.16	○	○
	1QP-CNMM120402	●		1	3.5	0.2	12.7	4.76	5.16	○	○
	1QP-CNMM12040**4**	●		1	3.5	0.4	12.7	4.76	5.16	○	○
DNMM-DIA**	**DNMM150402-DIA**		●	1	3.3	0.2	12.7	4.76	5.16	○	○
	DNMM1504**04-DIA**		●	1	3.1	0.4	12.7	4.76	5.16	○	○
TNMM-DIA**	**TNMM160402-DIA**		●	1	3.3	0.2	9.528	4.76	3.81	○	○
	TNMM1604**04-DIA**		●	1	3.2	0.4	9.528	4.76	3.81	○	○
	1QP-TNMM160402	●		1	3.3	0.2	9.528	4.76	3.81	○	○
	1QP-TNMM1604**04**	●		1	3.2	0.4	9.528	4.76	3.81	○	○
VNMM-DIA**	**VNMM160402-DIA**		●	1	4.8	0.2	9.528	4.76	3.81	○	○
	VNMM1604**04-DIA**		●	1	4.4	0.4	9.528	4.76	3.81	○	○
	VNMM1604**08-DIA**		●	1	3.6	0.8	9.528	4.76	3.81	○	○

● : Line up

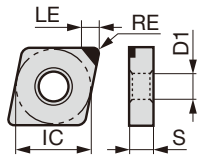
Reference pages: External toolholder → C016 - | Internal toolholder → D021 -
J-Series toolholder → G044 | TungCap → K008 -
PINZBOHR® → K180 - | Cartridge → K199 -

PCD Insert

● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

Negative type

		DX140	DX160
P	Steel	●ⓒ	●ⓒ
M	Stainless		
K	Cast iron		
N	Non-ferrous		
S	Superalloy		
H	Hard material		



Shape	Designation	DX140	DX160	Dimension (mm) No. of corners	LE	RE	IC	S	D1	Honing Sharp edge
CNGA-DIA**	**CNGA120404-DIA**	●		1	3.5	0.4	12.7	4.76	5.16	○
	CNGA120408-DIA	●		1	2.8	0.8	12.7	4.76	5.16	○
DNGA-DIA**	**DNGA150404-DIA**	●	●	1	3.1	0.4	12.7	4.76	5.16	○
	DNGA150408-DIA	●		1	2.8	0.8	12.7	4.76	5.16	○
SNGA-DIA**	**SNGA120404-DIA**	●		1	3.6	0.4	12.7	4.76	5.16	○
	SNGA120408-DIA	●		1	3.6	0.8	12.7	4.76	5.16	○
SNGN-DIA**	**SNGN120408-DIA**	●		1	3.6	0.8	12.7	4.76		○
TNGA-DIA**	**TNGA160404-DIA**	●	●	1	3.2	0.4	9.525	4.76	3.81	○
	TNGA160408-DIA	●	●	1	2.9	0.8	9.525	4.76	3.81	○

● : Line up

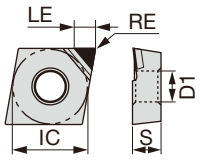
Reference pages:
External toolholder → C016 -
J-Series toolholder → G044 -
Cartridge → K193 -
Internal toolholder → D021 -
TungCap → K008 -

PCD Insert

● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

Positive type with rake

P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloy
H	Hard material



Shape	Designation	DX110	DX120	Dimension (mm) No. of corners	LE	RE	IC	S	D1	Honing Sharp edge	Rake angle
CCMT-DIA**	**CCMT060202-DIA**		●	1	2.4	0.2	6.35	2.38	2.8	○	○
	CCMT060204-DIA		●	1	2.4	0.4	6.35	2.38	2.8	○	○
	CCMT09T302-DIA		●	1	2.4	0.2	9.525	3.97	4.4	○	○
	CCMT09T304-DIA		●	1	2.4	0.4	9.525	3.97	4.4	○	○
	1QP-CCMT060204	●		1	2.4	0.4	6.35	2.38	2.8	○	○
	1QP-CCMT09T304	●		1	2.4	0.4	6.35	3.97	4.4	○	○
DCMT-DIA**	**DCMT070202-DIA**		●	1	2.3	0.2	6.35	2.38	2.8	○	○
	DCMT070204-DIA		●	1	2.1	0.4	6.35	2.38	2.8	○	○
	DCMT11T302-DIA		●	1	3.2	0.2	9.525	3.97	4.4	○	○
	DCMT11T304-DIA		●	1	3.0	0.4	9.525	3.97	4.4	○	○
TCMT-DIA**	**TCMT080202-DIA**		●	1	2.2	0.2	4.76	2.38	2.7	○	○
	TCMT080204-DIA		●	1	2.0	0.4	4.76	2.38	2.7	○	○
	TCMT110202-DIA		●	1	2.4	0.2	6.35	2.38	2.8	○	○
	TCMT110204-DIA		●	1	2.2	0.4	6.35	2.38	2.8	○	○
	TCMT110302-DIA		●	1	2.4	0.2	6.35	3.18	2.8	○	○
	TCMT110304-DIA		●	1	2.2	0.4	6.35	3.18	2.8	○	○
	1QP-TCMT110304	●		1	2.2	0.4	6.35	3.18	2.8	○	○
VCMT-DIA**	**VCMT160402-DIA**		●	1	4.8	0.2	9.525	4.76	4.4	○	○
	VCMT160404-DIA		●	1	4.4	0.4	9.525	4.76	4.4	○	○

● : Line up

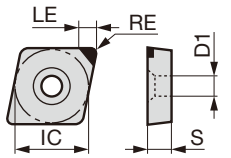
Reference pages: External toolholder → C022 - Internal toolholder → D012 -
J-Series toolholder → G019 - TungCap → K017 -
PINZBOHR® → K180 -

PCD Insert

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

Positive type

		DX120	DX140	DX160
P	Steel			
M	Stainless			
K	Cast iron			
N	Non-ferrous	◐	◐	◐
S	Superalloy			
H	Hard material			



Shape	Designation	No. of corners	LE	RE	IC	S	D1	Honing: Sharp edge	DX120	DX140	DX160
CCGW-DIA**	**CCGW060200-DIA**	1	2.4	0.05	6.35	2.38	2.8	○		●	
	CCGW060202-DIA	1	2.4	0.2	6.35	2.38	2.8	○		●	
	CCGW060204-DIA	1	2.4	0.4	6.35	2.38	2.8	○		●	
	CCGW09T302-DIA	1	3.5	0.2	9.525	3.97	4.4	○		●	
	CCGW09T304-DIA	1	3.5	0.4	9.525	3.97	4.4	○		●	●
	CCGW09T308-DIA	1	3.4	0.8	9.525	3.97	4.4	○		●	
CPGA-DIA**	**CPGA080202-DIA**	1	2.4	0.2	9.525	2.38	4.0	○		●	
	CPGA090204-DIA	1	3.5	0.4	9.525	2.38	4.0	○		●	
DCGW-DIA**	**DCGW070200-DIA**	1	2.4	0.05	6.35	2.38	2.8	○		●	
	DCGW070202-DIA	1	2.3	0.2	6.35	2.38	2.8	○	●	●	
	DCGW070204-DIA	1	2.1	0.4	6.35	2.38	2.8	○		●	
	DCGW11T302-DIA	1	3.2	0.2	9.525	3.97	4.4	○		●	
	DCGW11T304-DIA	1	3.0	0.4	9.525	3.97	4.4	○		●	
	DCGW11T308-DIA	1	2.7	0.8	9.525	3.97	4.4	○		●	
EPGW-DIA**	**EPGW040102-DIA**	1	2.0	0.2	3.97	1.59	2.3	○		●	
	EPGW040104-DIA	1	1.9	0.4	3.97	1.59	2.3	○		●	
SPGN-DIA**	**SPGN090308-DIA**	1	3.6	0.8	9.525	3.18	-	○		●	
	SPGN120302-DIA	1	3.6	0.2	12.7	3.18	-	○		●	
	SPGN120304-DIA	1	3.6	0.4	12.7	3.18	-	○		●	
	SPGN120308-DIA	1	3.6	0.8	12.7	3.18	-	○		●	●

● : Line up

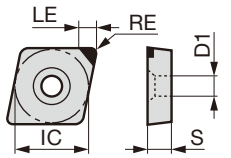
Reference pages:
External toolholder → C022 -
Internal toolholder → D012 -
Cartridge → K197 -
Boring bar tool → K211 -
Top-borer tool → K213

PCD Insert

● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

Positive type

P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloy
H	Hard material



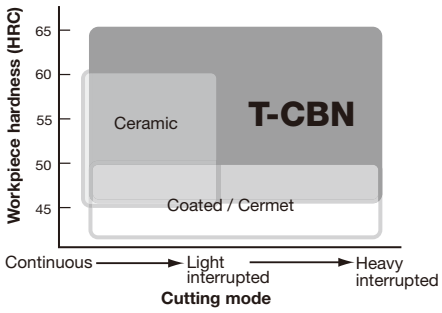
Shape	Designation	DX120	DX140	No. of corners	Dimension (mm) LE	RE	IC	S	D1	Honing Sharp edge
TPGA-DIA**	**TPGA090202-DIA**		●	1	2.4	0.2	5.56	2.38	2.5	○
	TPGA0902**04-DIA**		●	1	2.2	0.4	5.56	2.38	2.5	○
	TPGA110202-DIA		●	1	2.4	0.2	6.35	2.38	2.8	○
	TPGA1102**04-DIA**		●	1	2.2	0.4	6.35	2.38	2.8	○
	TPGA110302-DIA		●	1	2.4	0.2	6.35	3.18	3.0	○
	TPGA1103**04-DIA**		●	1	2.2	0.4	6.35	3.18	3.0	○
	TPGA110308-DIA		●	1	2.9	0.8	6.35	3.18	3.0	○
	TPGA1603**02-DIA**		●	1	3.3	0.2	9.525	3.18	4.0	○
	TPGA160304-DIA		●	1	3.2	0.4	9.525	3.18	4.0	○
	TPGA1603**08-DIA**		●	1	2.9	0.8	9.525	3.18	4.0	○
TPGN-DIA**	**TPGN090204-DIA**		●	1	2.2	0.4	5.56	2.38	-	○
	TPGN110304-DIA	●	●	1	3.2	0.4	6.35	3.18	-	○
	TPGN1103**08-DIA**		●	1	2.9	0.8	6.35	3.18	-	○
	TPGN160302-DIA		●	1	3.3	0.2	9.525	3.18	-	○
	TPGN1603**04-DIA**	●	●	1	3.2	0.4	9.525	3.18	-	○
	TPGN1603**08-DIA**		●	1	2.9	0.8	9.525	3.18	-	○
TPGW-DIA**	**TPGW080202-DIA**		●	1	2.4	0.2	4.76	2.38	2.3	○
	TPGW0802**04-DIA**		●	1	2.3	0.4	4.76	2.38	2.3	○
	TPGW090202-DIA	●	●	1	2.4	0.2	5.56	2.38	2.5	○
	TPGW0902**04-DIA**		●	1	2.2	0.4	5.56	2.38	2.5	○
	TPGW110202-DIA	●	●	1	2.4	0.2	6.35	2.38	2.8	○
	TPGW1102**04-DIA**		●	1	2.2	0.4	6.35	2.38	2.8	○
	TPGW130302-DIA	●	●	1	3.3	0.2	7.94	3.18	3.4	○
	TPGW1303**04-DIA**		●	1	3.2	0.4	7.94	3.18	3.4	○
	TPGW16T302-DIA		●	1	3.3	0.2	9.525	3.97	4.4	○
	TPGW16T3**04-DIA**		●	1	3.2	0.4	9.525	3.97	4.4	○
	TPGW16T3**08-DIA**		●	1	2.9	0.8	9.525	3.97	4.4	○
VCGW-DIA**	**VCGW160402-DIA**		●	1	4.8	0.2	9.525	4.76	4.4	○
	VCGW1604**04-DIA**		●	1	4.4	0.4	9.525	4.76	4.4	○

● : Line up

Reference pages: External toolholder → C061 - Internal toolholder → D041 -
Cartridge → K193 - Boring bar tool → K209 -

H T-CBN series for hardened steel and hard material

Application area



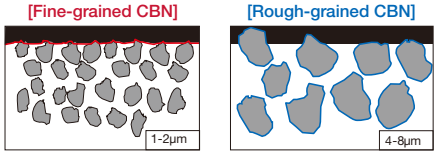
Necessity of PCBN grades

The condition necessary to cut the work

Material is:
Hardness of tool ≥ Hardness of tool X 3

● Hardened steel (60HRC) → 700 Hv ● Cemented carbide → 1600 Hv
● PCBN (BX360) → 3300 Hv

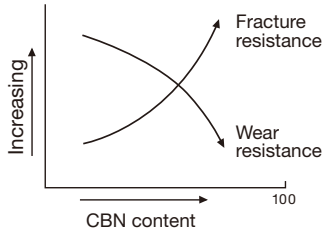
Relation of CBN grain size, surface roughness, and cutting speed



Fine grained PCBN provided with sharp cutting edge.
Good surface roughness

Rough grained PCBN. CBN particles are hold firmly.
Allows high speed machining

● Features of CBN grades for machining hardened steel and other hard materials



Fewer CBN content ⇨ Increasing wear resistance
Much CBN content ⇨ Increasing impact resistance

Basic selection of T-CBN grades in machining of hardened steel and hard material

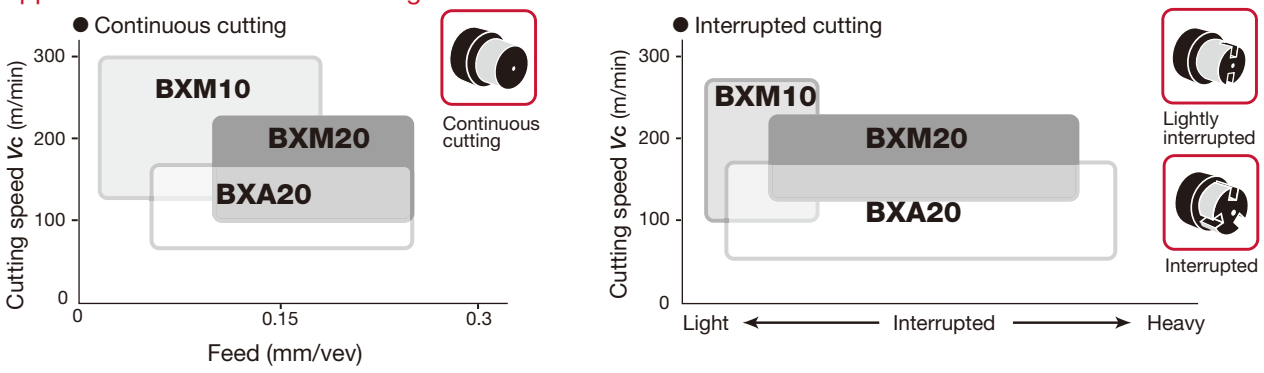
● Coated T-CBN grades

BXM10 For high speeds cutting
BXM20 For general purpose, more than *Vc* = 180 m/min
BXA20 For general purpose, less than *Vc* = 180 m/min

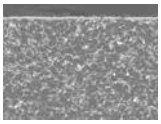
● Uncoated T-CBN grades

BX310 For high speeds / Priority on wear resistance in continuous cutting
BX330 For medium speeds / Priority on surface quality
BX360 For low to medium speeds / General purpose grade with excellent fracture resistance
BX380 For low to medium speeds / Priority on fracture resistance in heavy interrupted cutting

Application area of coated T-CBN grades



Effects of Coated T-CBN grades



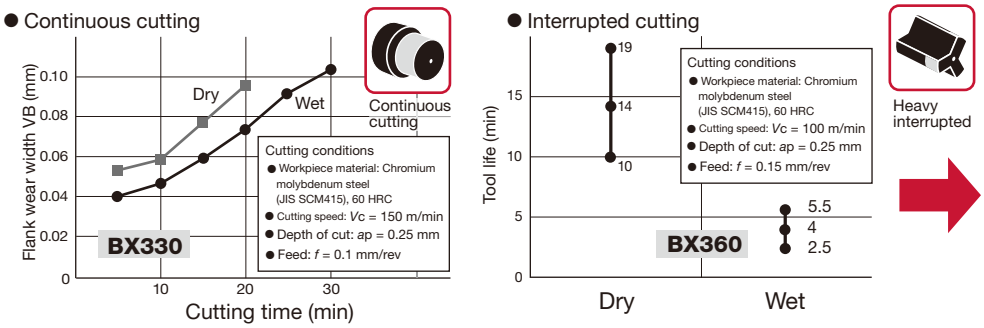
Coated on hard CBN
Hardness:
CBN > Coating layer

● Protect CBN from oxidation wear
Since the coating layer intercepts air, oxidation wear of CBN can be prevented.

● Peeling of coating layer can be prevented
Hard and deformation resistant CBN is excellent substrate material.

➡ **Improved resistance to flank wear**

Effects of coolant in machining of hardened steel



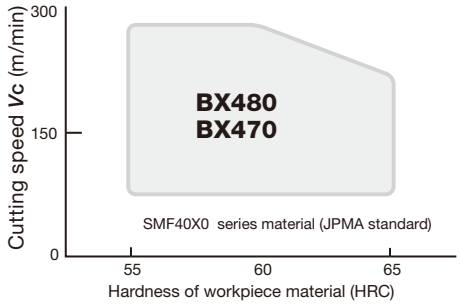
● In continuous cutting, wet cutting is superior to dry cutting in tool life for wear.
● In interrupted cutting, dry cutting is superior to wet cutting in tool life for fracture.

Technical Guide

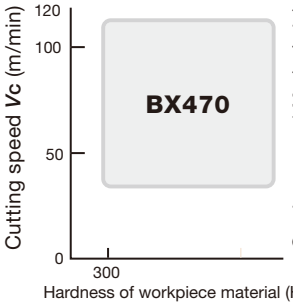
T-CBN series for sintered metal

Application area

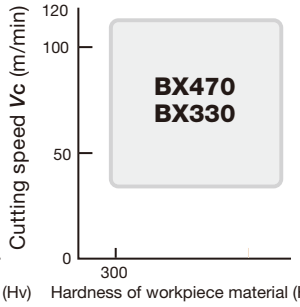
● Ferrous Sintered metal



● Valve seat (Plunge cutting)



● Valve seat (Traverse cutting)

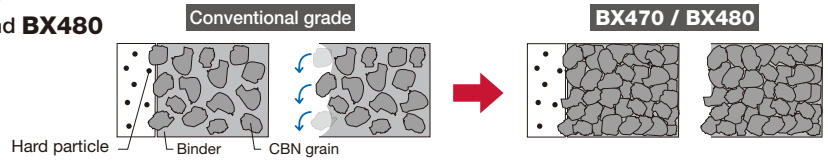


BX470
Priority on burr prevention and surface finish

BX480
Priority on wear resistance and versatility

Features of BX470 and BX480

● Machining of sintered metal with hard particles



Binder phase are selectively worn away by hard particles.
⇨ Wear proceeds with falling-out of CBN grains,

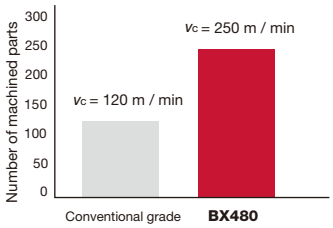
By increasing CBN content, wear of binder layer is suppressed.
⇨ Improved wear resistance

● Features of **BX470** and **BX480**

CBN content: 95 vol%
Hv = 4100 ~ 4300

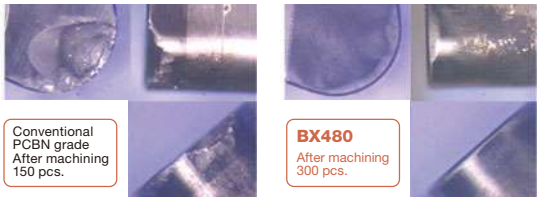
The world highest CBN content as a commercially available material.

■ **BX480** (Facing of gears)



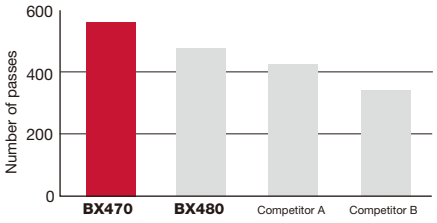
Cutting conditions
- Workpiece material: Sintered metal (> HRA60)
- Insert: DCMW11T308
- Depth of cut: ap = 0.2 ~ 0.5 mm
- Feed : f = 0.07 mm/rev
- Coolant : Water soluble type
- Interrupted cutting

■ **BX470/BX480** Tool failure after machining sintered metal



Cutting conditions
- Workpiece material: Sintered metal (> HRA60), Nitriding, Hard particles included
- Cutting speed: Vc = 110 m/min
- Depth of cut: ap = 0.15 mm
- Feed: f = 0.1 mm/rev
- Coolant : Water soluble type
- Interrupted cutting

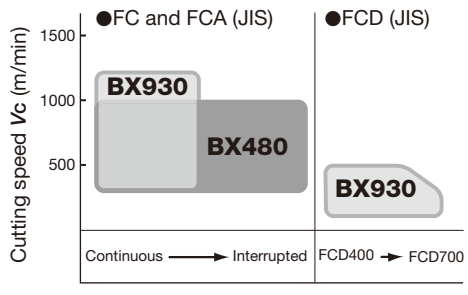
■ **BX470** (Tool life criterion: Burr occurrence)



Cutting conditions
- Workpiece material: Ferrous Sintered metal
- Cutting speed: Vc = 100 m/min
- Depth of cut: ap = 0.15 ~ 0.3 mm
- Feed: f = 0.07 ~ 0.25 mm/rev
- Dry and interrupted cutting

K T-CBN series for grey cast iron and ductile cast iron

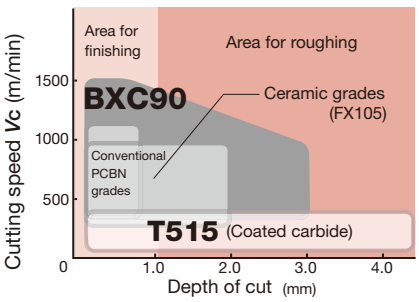
Application area



BX930
- General purpose, first choice grade.
- Dedicated grade for machining ductile Cast iron

BX480
- Suitable for interrupted machining
- Excellent fracture resistance

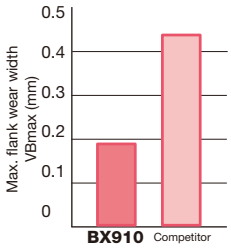
● FC Solid coated T-CBN grades



BXC90
- One-piece solid structure
- Applicable for small to large depths of cut

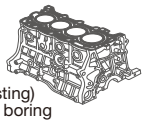
Machining of cylinder liners (Machining example of **BX910**)

●Wear width after machining 120 pcs.



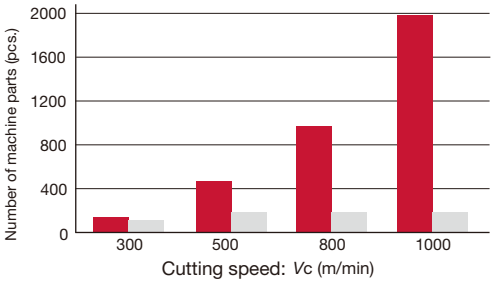
●Tool failure after machining 120 pcs.





Cutting conditions
- Workpiece material: Cylinder liner (Spin casting) Machining type: Finish boring
- Cutting speed: Vc = 1,000 m/min
- Machine: Special purpose machine
- Coolant: Wet

Tool life comparison in machining of disc brakes



Cutting conditions
- Workpiece material: Disc rotor (JIS FC250)
- Insert: SNGN 120412 BXC90
- Depth of cut: ap = 0.7 mm
- Feed: f = 0.35 mm/rev
- Coolant: Dry
- Tool life criterion: Conditions of finished surface

BX910 For machining cylinder liners

T-CBN Series

Honing specifications

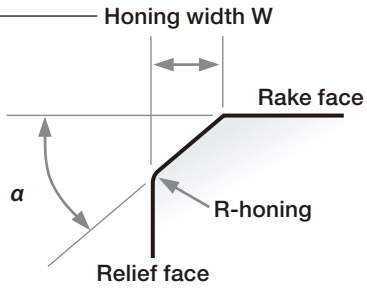
● T-CBN inserts with special honing specifications are made to order. Refer to the following description.

Designation system for honing

Example:
Honing width: 0.15 mm
Honing angle: -30°
With R-honing

S	0	1	3	2	5

Shape | Honing width (W) | Honing angle (α)



T ··· Chamfered honing
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

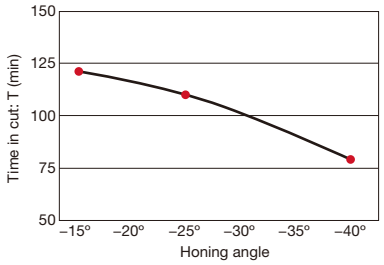
● Symbol

W	Amount of honing (mm)
005	0.05
010	0.10
013	0.13
015	0.15
018	0.18

α	Honing angle
10°	-10°
15°	-15°
20°	-20°
25°	-25°
30°	-30°
35°	-35°
40°	-40°

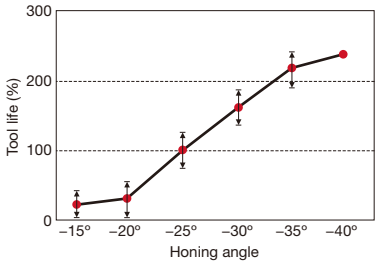
● Honing specification can be selected in combination of items described here.
● Inserts with "R" honing alone are available.

● Relationship between honing angle and tool life in continuous turning



Cutting conditions
Workpiece material: Chromium molybdenum steel (JIS SCM415), 60 HRC
Insert: TNGN160404 BX360
Cutting speed: *Vc* = 100 m/min
Feed: *f* = 0.15 mm/rev
Depth of cut: *ap* = 0.25 mm
Coolant: Dry
Tool life criterion: VBmax = 0.15 mm
Honing: -□□°+ R-honing

● Relationship between honing angle and tool life in interrupted turning



Cutting conditions
Workpiece material: Chromium molybdenum steel (JIS SCM415), 60 HRC
Insert: TNGN160404 BX360
Cutting speed: *Vc* = 100 m/min
Feed: *f* = 0.15 mm/rev
Depth of cut: *ap* = 0.25 mm
Coolant: Dry
Tool life criterion: Fracture
Honing: -□□°+ R-honing

•For continuous cutting, small honing angle is favorable to minimize wear.
•For interrupted cutting, large honing angle is favorable to minimize fracture.

● Standard honing specifications

Grade	BXM10	BXM20	BXA20	BXC50	BX310	BX330	BX360	BX380	BX470	BX480	BX910	BX930
Negative insert	S01325	S01325	S01325	S01325	S01325	S01325	S01325	S01325	T01315	S01325	S01315	S01315
Positive insert	S01325	S01325	S01325	–	S00515	S00515	S00515	–	T01315	S00515	S01315	S00515

Wiper insert

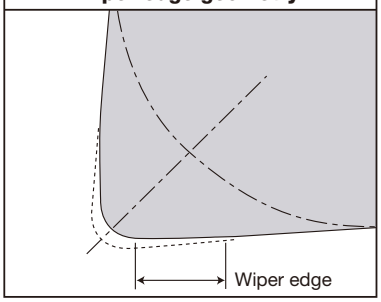
● A finishing edge (wiper edge) is formed at the point of intersection between corner radius and straight cutting edge.

■ Effect of wiper edge

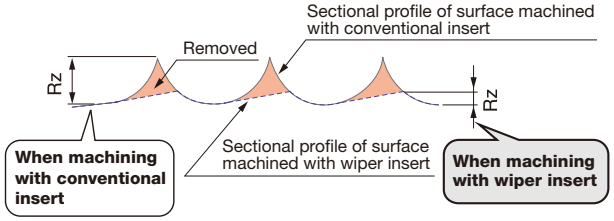
● Doubles the productivity → Reduced machining time
The wiper edge can double the feed rate and moreover does not deteriorate the surface roughness. (Note: Feed rate: *f* < 0.3 mm/rev)

● Superior surface roughness → By integrating roughing and finishing into one process, productivity can be increased.
Compared with conventional inserts only with corner radius, surface roughness can be improved with the wiper edge.

Wiper edge geometry



■ Profiles of surface roughness



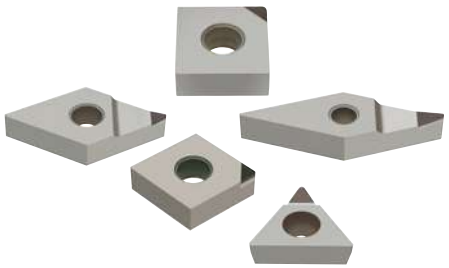
■ Recommended toolholders for wiper inserts

	2QP-CNGA1204**WL	3QP-WNGA080408WL	2QP-DNGA1504**WJ	3QP-TNGA1604**WG
End cutting angle	95°		93°	91°
External toolholder	ACLNR/L**12-A	AWLNR/L**08-A	ADJNR/L**15-A	ATGNR/L**16-A ATFNR/L**16-A
	DCLNR/L**12	DWLNR/L**08	DDJNR/L**15	DTGNR/L**16 DTFNR/L**16
Internal toolholder	A**-ACLNR/L12-D...	A**-AWLNR/L08-D...	A**-ADUNR/L15-D...	A**-ATFNR/L16-D...

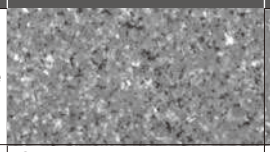
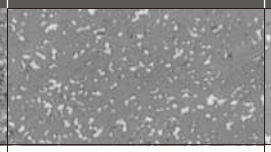
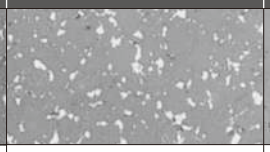
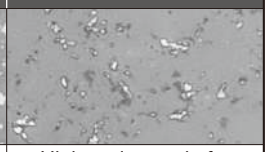
Technical Guide

PCD grade, T-DIA series

Expanded product line allows T-DIA tools to be applied to wider workpiece materials and cutting conditions.

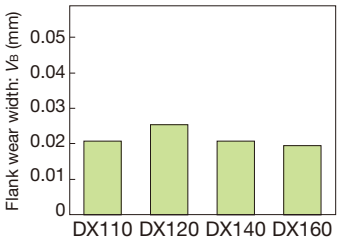


Features and applications (Physical and mechanical properties)

	DX110	DX120	DX140	DX160
Grade				
Property	Super fine grained grade. Excels in surface finish.	Fine grained grade. Excels in surface finish.	General purpose grade	High purity grade for hard materials
Approx. grain size of diamond (μm)	< 1	5	13	28
Hardness (Hv)	8500 →			10000 (Harder)
Wear resistance	→			Higher
Grindability (Cutting edge sharpness)	Better ←			

Cutting performance (Wear resistance)

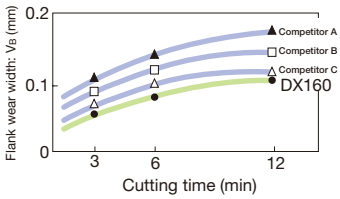
When machining aluminium alloy:



Continuous external turning

- Workpiece material: 10 % Si, aluminium alloy
- Insert: SPGN120308-DIA
- Toolholder: CSBPR2525M4
- Cutting speed: v_c = 500 m/min
- Feed: f = 0.1 mm/rev
- Depth of cut: a_p = 0.5 mm
- Coolant: Dry cutting
- Cutting time: 30 min

When machining FRP:



Face milling

- Workpiece material: Fiber reinforced plastics (FRP)
- Insert: SFCN42ZFN-DIA
- Milling cutter: THF4408RIA
- Cutting speed: v_c = 942 m/min
- Feed: f = 0.1 mm/rev
- Depth of cut: a_p = 1.5 mm
- Coolant: Dry cutting

Grade selection guide

First choice
Excellent finish
DX110

Suitable for finishing aluminum alloys and copper alloy

Good electrical discharge machinability

Complex shape tools
DX120

High diamond content compared to DX110. Suitable for high-speed machining

High speed machining
DX140

Ideal for machining hard materials
Suited for machining bi-metal (ex.aluminum+cast iron) components

High wear resistance
DX160

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade DX110	DX120	DX140	DX160	Cutting speed v_c (m/min)	Depth of cut a_p (mm)	Feed f (mm/rev)
N	Aluminium alloys (Si < 12 %)	◎	○	○		1500 (1000 - 2500)	0.5 (0.05 - 2.0)	0.1 (0.05 - 0.2)
	Aluminium alloys (Si ≥ 12 %)	◎	○	○	○	600 (400 - 800)	0.5 (0.05 - 2.0)	0.1 (0.05 - 0.2)
	Copper, brass	◎	○			800 (500 - 1500)	0.5 (0.05 - 2.0)	0.1 (0.05 - 0.2)
	Phosphor bronze	◎	○	○		400 (300 - 500)	0.5 (0.05 - 2.0)	0.1 (0.05 - 0.2)
	Carbon, graphite		○	○	◎	400 (300 - 500)	0.5 (0.05 - 2.0)	0.1 (0.05 - 0.2)
	FRP		○	○	◎	700 (500 - 1000)	0.2 (0.05 - 0.5)	0.05 (0.03 - 0.1)
	Plastics	◎	○	○		700 (500 - 1000)	0.2 (0.05 - 0.5)	0.03 (0.01 - 0.05)
	Cemented carbides			○	◎	15 (10 - 20)	0.1 (0.05 - 0.2)	0.03 (0.01 - 0.05)
	Green ceramics			○	◎	130 (100 - 150)	0.5 (0.05 - 2.0)	0.05 (0.03 - 0.1)

(Note) ◎ : First choice ○ : Second choice

External Toolholder



External Toolholder - Content structure

- Indexable toolholders are listed by cutting edge shape.
- In the same cutting edge shape, the inserts are sorted alphabetically.

The order of the list: CN** insert → DN** insert → RN** insert → SN** insert → TN** insert → VN** insert → WN** insert

- Toolholders in the catalog are our standard stock items.

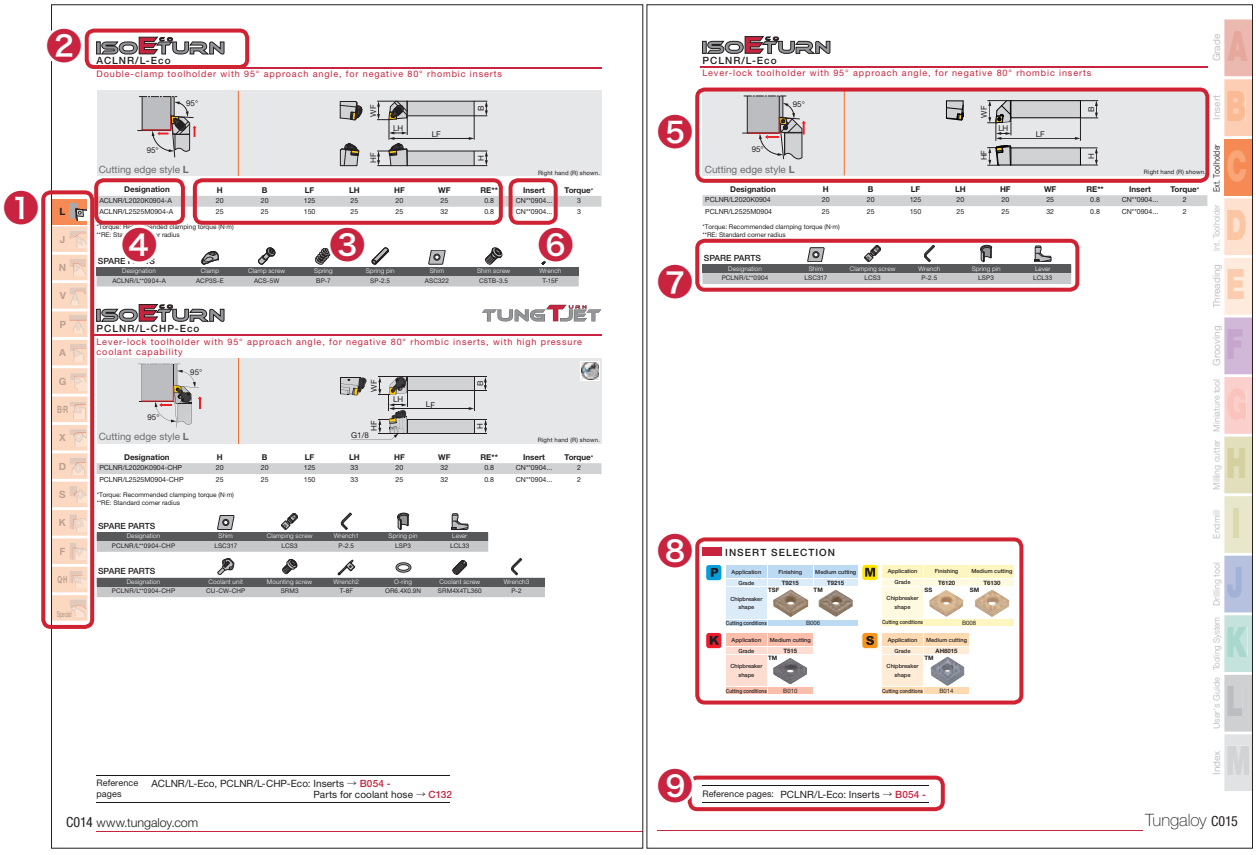
How to use the page

Method① Select the cutting edge shape described at the left end of each page, jump to the page on the left index, and choose a designation you need (❹) in the dimension table (❸). Applicable inserts are shown in (❻) and (❽).

Method②. Select the cutting edge on **C003** and check the details on the product page.

Method③. Select the series name of a toolholder on **C003** and check the details on each page.

Method④. Select an item from Quick Guide on **C004-C011**.



❶: Cutting edge shape
❷: Series name of indexable external toolholders
❸: Dimension table
❹: Toolholder designation
e.g. right-hand, 25x25 square shank

→ **ACLN R 2525 M0904-A**

❺: Dimension drawing (conforming to ISO13399)
❻: Applicable insert
❼: Spare parts
❽: Basic selection
❾: Reference pages

When ordering
- Please specify the designation and quantity.
e.g. **ACLNR2525M12-**A ... 1 (one external toolholder per package)

* Inserts are not included. Please order those separately.

External Toolholder

L 95° C014
J 93° C035
N 63° C063
V 72.5° C065
P 62.5° C070
A 91° C072
G 91° C078
B·R 75° C089
X 20° C094
D 45° C097
S 45° C103
K 75° C107
F 91° C110
Q·H 45° C116
Special C127



TURNTENFEED TurnTenFeed
Innovative tool realizing both high productivity and economy
C012



ISOECOTURN IsoEcoTurn
Small-sized “Eco” insert series for maximized profits
C013



MINIFORCETURN MiniForceTurn
Economical double-sided inserts with excellent sharpness
C029 -, C037 - C054 -, C127 - C128



TURNINGA TurningA
Highly rigid clamping system with excellent repeatability
C004



TUNGTJET TungTurnJet
Toolholders for high pressure coolant supply
C014 -, C027 -, C041 - C058 -, C086, C123, C130 -



DIMPLEFX DimpleFX
Ceramic insert with dimple for highly efficient cast iron machining
C004



TURNTEC TurnTec
Inserts and toolholders for roughing large depths of cut with high productivity
C076, C090, C111



Y-PRO SERIES Y-Pro series
Inserts with 25° corner angle for profiling
C062, C126, C129



TURNFEED TurnFeed
Tool series for super high-feed cutting
C096

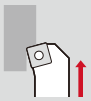
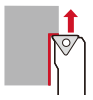
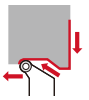


FIXRTURN FixRTurn
Highly productive round insert with 6 indexes
C083, C099

External Toolholder - Quick Guide (Negative type)

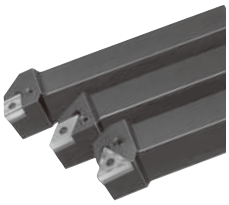
Name	Appearance/Feature	Turning / Facing	External profiling				Turning
		L 95°	J 93°	N 63°	V 72.5°	P 62.5°	G 91°
TURNING A Double clamp	 • Improved clamping rigidity realizes excellent repeatability and long tool life. • The enlarged surface of insert pressing provides excellent repeatability. Great performance even with VNMG type (corner angle 35°), which is particularly prone to the displacement of the cutting edge position. *Corner angle 25° and YNMG type also can be used. • The simple structure contributes to cost reduction. Easy operation with one wrench.	80° CN□□ ACLNR/L □0904-A □12-A □16-A □19-A **C014, C016** 70° GN□□ ACLNR/L □12-A **C016** 80° WN□□ AWLNR/L □06-A □08-A **C027, C032**	55° DN□□ ADJNR/L □1104-A □15-A □1506-A **C035, C040** 60° TN□□ ATJNR/L □16-A **C051** 35° VN□□ AVJNR/L □1204-A □16-A **C052, C057** 25° YNMG AVJNR/L □16-A **C057**		35° VN□□ AVVNN □1204-A □16-A **C065, C067** 25° YNMG AVVNN □16-A **C067**	55° DN□□ ADPNN □15-A **C070**	60° TN□□ ATGNR/L □16-A □22-A **C085**
D One-Double	 • Excellent usability that the clamp and the lever simultaneously hold the insert in tightening. • The tool can be handled from the back side and provides excellent usability even when the tool is placed in the reverse.	80° CN□□ DCLNR/L □12 □16 □19 **C021** 70° GN□□ DCLNR/L □12 **C021** 80° WN□□ DWLNR/L □06 □08 **C034**	55° DN□□ DDJNR/L □15 □1506 **C045**				60° TN□□ DTGNR/L □16 □22 **C088**
DIMPLEFX C Double clamp for dimple ceramic insert	 • Firmly clamp the insert at two locations: drawing by dimple and holding from the top. • Two locations can be clamped simultaneously with one screw. Excellent operability. • The tool can be handled from the back side. Easy to change inserts when mounting those on the back.	80° CN□□ CCLNR/L □1207-RD **C020**	55° DN□□ CDJNR/L □1507-RD **C044**	55° DNGD CDNNN □1507-RD **C063**	35° VNGD CVVNN □1607-RD **C068**		

Please see the page C*** for the product details.

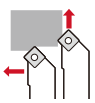
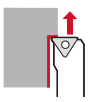
	Turning	Turning / Chamfering	Turning / Facing Chamfering	Facing		profiling	External profiling
	B·R 75° 	**D 45°** 	**S 45°** 	**K 75°** 	**F 91°** 	**Q*1 · H*1 45°** 	**Special** 
	90° SN□□ ASBNR/L □12-A □15-A □19-A **C091**	**90°** SN□□ ASDNN □12-A **C100**	**90°** SN□□ ASSNR/L □12-A □15-A □19-A **C104**	**90°** SN□□ ASKNR/L □12-A **C107**	**60°** TN□□ ATFNR/L □16-A □22-A **C113**	**55°** DN□□ ADQNR/L □1104-A □15-A □1506-A **C116, C117** **60°** TN□□ ATQNR/L □16-A **C120** **35°** VN□□ AVQNR/L □16-A **C121, C122** **25°** YNMG AVQNR/L □16-A **C122**	- RN□□ ARGNR/L □12-A **C078**
	90° SN□□ DSBNR/L □12 □15 □19 **C093**	**90°** SN□□ DSDNN □12 **C101**	**90°** SN□□ DSSNR/L □12 **C107**	**90°** SN□□ DSKNR/L □12 **C109**	**60°** TN□□ DTFNR/L □16 □22 **C115**	**55°** DN□□ DDQNR/L □15 □1506 **C118**	- RN□□ DRGNR/L □12 **C080**
			90° SNGD CSSNR/L □1207-RD **C106** **90°** HNGD CHSNR/L □0507-RD **C103**				

*1: Symbol used exclusively by Tungaloy

External Toolholder - Quick Guide (Negative type)

Name	Appearance/Feature	Turning / Facing		External profiling			Turning
		L 95°		J 93°	V 72.5°	P 62.5°	A 91°
P Lever lock	 • Great repeatability of the cutting edge position with the two-face holding system. Excellent performance on NC lathes and special-purpose machines. • There are many types of inserts, such as square, triangle, round, and rhombus. So are the cutting edges. • Economical downsized type is also available.	80° CN□□ PCLNR/L □0904 □09 □12 □16 □19 **C014, C015, C017, C018, C019, G044**	80° CN□□ PCMNN □12 **C130**	55° DN□□ PDJNR/L □11 □1104 □15 □1506 **C035, C036, C041, C042, C043**	35° VN□□ PVVNN □1204 **C066**	55° DN□□ PDPNN □15 □1506 **C071**	
		80° CN□□ PCL2NR □12 **G044**	80° WN□□ PWLNR/L □0604 □08 **C027, C028, C032, C033**	60° TN□□ PTJNR/L □1104 **C050**		55° DN□□ PDMNL □1104 **C131**	
		70° GN□□ PCLNR/L □12 **C017, C018, C019, G044**	70° GN□□ PCMNN □12 **C130**	35° VN□□ PVJNR/L □1204 □16 **C052, C053, C058, C059**			
		70° GN□□ PCL2NR □12 **G044**	60° TN□□ PTL2NR/L □16 **C025**	25° YNMG PVJNR/L □16 **C058, C059**			
H Retract pin	 • Toolholder for super heavy cutting						
JT Back clamp	 • Toolholder that pursues usability on the machines with a narrow space for changing inserts, such as a gang tooling lathes. • Inserts can be clamped with screws from the back side of the tool, providing good usability. • Shank sizes are available in 8, 10, 12, 16 mm.	60° TN□□ JTTLNR/L □16 **C026**					60° TN□□ JTTANR/L □16 **C073**

Please see the page C*** for the product details.

Turning		Turning / Chamfering	Turning / Facing Chamfering	Facing		profiling	External profiling
G 91°	**B·R 75°**	**D 45°**	**S 45°**	**K 75°**	**F 91°**	**Q*1 · H*1 45°**	**Special**
							
60° TN□□ PTGNR/L □1104 □16 □22 **C084, C086, C087**	**90°** SN□□ PSBNR/L □09 □12 □15 □25 **C092** **100°** CN□□ PCBNR/L □12 □16 □19 **C089**	**90°** SN□□ PSDNN □09 □12 □15 **C100**	**90°** SN□□ PSSNR/L □09 □12 □15 □19 **C105**	**90°** SN□□ PSKNR/L □09 □12 □19 □25 **C108**	**60°** TN□□ PTFNR/L □1104 □16 □22 □27 **C112, C114** **80°** CN□□ PCFNR/L □12 **C110**	**55°** DN□□ PDQNR/L □15 □1506 **C118** **35°** VN□□ PVQNR/L □1204 □16 **C121, C123** **25°** YNMG PVQNR/L □16 **C123**	- RNMG PRGNR/L □09 □12 **C079** **48.5°** POMG PPXOR/L-HD □11-HD □13-HD **C094** **22.5°** POMG PPXOR/L-HF □11-HF □13-HF **C094**
	90° SNMM HSRNR/L □31 **C093**						

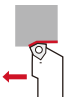
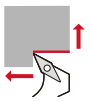
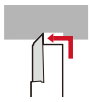
*1: Symbol used exclusively by Tungaloy

External Toolholder - Quick Guide (Positive type)

Name	Appearance/Feature	Turning / Facing	External profiling			Turning
		L 95º	J 93º	N 72.5º	N 62.5º	A 91º
X Double clamp (screw-on)	 • Super high feed machining increases productivity by 8 times. • The insert is secured by double clamping system with clamp + clamp screw. Both the insert and the tool body achieve high rigidity.					
P Lever lock	 • Clamping positive round insert with lever lock leads to good indexing accuracy. • Can be used for external turning, facing, and profiling. High-feed machining is possible. • Insert diameters: ø10, ø12, ø16, ø20, ø25 mm.	80º WXGU JPWL2XR/L □04 **C030**	55º DXGU JPDJ2XR/L □07 **C038** 35º VXGU JPVJ2XR/L □09 **C055**			
J Screw-on	 • Suitable for machining complex small parts on small NC lathes. A great variety of cutting edge geometries. • The screw-on method firmly holds the small positive inserts. The clamp screw is a reliable and durable Torx® screw. • J type is high-precision shank with 4 faces ground.	80º CC□□ JSCLCR/L □06 □09 **C022, G021** 80º CC□□ JSCL2CR/L*2 □06 □09 **G019, G020** 80º WXGU JSWLXR/L □04 **C029, C031, G018** JSWL2XR/L □04 **C029, C030, G017** 35º VP□□ JSVL2PR/L □08 **G022**	55º DC□□ JSDJCR/L □07 □11 **C048 G028** 55º DC□□ JSDJ2CR/L*2 □07 **C046, G026, G027** 55º DXGU JSDJXR-F □07 **C039, G025** 55º DXGU JSDJXR/L □07 **C037, G025** JSDJ2XR/L □07 **C037, C038, G023, G024** 35º VXGU JSVJXR/L □09 **C054, C056, G032** JSVJ2XR/L □09 **C054, C055, G030, G031** 35º VB□□ JSVJBR/L □11 **G035** 35º VB□□ JSVJ2BR/L □11 **C060, G034**	35º VB□□ JSVNBN □11 **G037**	55º DC□□ JSDNCN □07 □11 **G036** 55º DC□□ JSDN3CR/L*3 □07 □11 **G036**	60º TC□□ JSTACR/L □08 □11 **C074, G039** 35º VB□□ JSVABR/L □08 □11 **G040**

*2: L2 and J2: without offset *3 

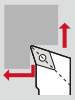
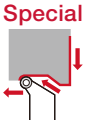
Please see the page C*** for the product details.

	Turning	Turning / Facing	Facing	profiling	External profiling	Back turning	Front turning Reverse turning
	G 91° 	**X 20°** 	**F 91°** 	**P 117.5°** 	**Special** 		
		80° WPMT XWXPR/L □09 C096					
					- RCM□ PRGCR/L □10 □12 □16 □20 □25 C081 - RCM□ PRDCN □10 □12 □16 □20 □25 C097		
	80° CC□□ JSCGCR/L □06 □09 G041		55° DC□□ JSDFCR/L □07 □11 G043	25° VP□□ JSVP2PR/L □08 □11 G038		JXB JSXBR/L □08 G052 JTB JSTBR/L □03 G048 JTB JS□□K-TBL □3 G048 J10E JSEGR/L □10 G050	JX□□ JSXGR/L □08 G043 55° DC□□ JS□□K-SDUCL □07 □11 G029 55° DXGU JS□□□-SDUXL □07 C127, G025 35° VXGU JS□□□-SVUXL □09 C128, G032

External Toolholder - Quick Guide (Positive type)

Name	Appearance/Feature	Turning / Facing	External profiling			Turning	Turning / Chamfering
		L 95°	J 93°	V 72.5°	N 62.5°	A 91°	D 45°
S Screw-on	 • Suitable for machining complex small parts on small NC lathes. A great variety of cutting edge geometries. • The screw-on method firmly holds the small positive inserts. The clamp screw is a reliable and durable Torx® screw.	80° CC□□ SCLCR/L □09 □12 C024	55° DC□□ SDJCR/L □11 C049 35° VC□□ SVJCR/L □16 C061 25° YWMT SYJBR/L □16 C062	35° VC□□ SVVCN □16 C069	55° DC□□ SDNCN □07 □11 C064	60° TC□□ STACR/L □08 □09 □07 □16 C075	90° SC□□ SSDCN □07 □09 C102 90° SP□□ SSDPN Tungaloy standard □07 □09 C102
JT Back clamp	 • Toolholder that pursues usability on the machines with a narrow space for changing inserts, such as a gang tooling lathes. • Inserts can be clamped with screws from the back side of the tool, providing good usability. • Shank sizes are available in 8, 10, 12, 16 mm.	80° CC□□ JTCL2CR/L □06 □09 C023, G020	55° DC□□ JTDJ2CR/L □07 □11 C047, G026			60° TC□□ JTTACR/L □08 □11 C074, G039	

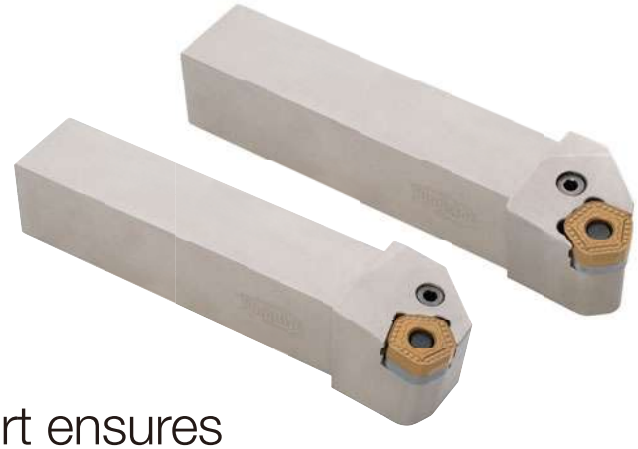
Please see the page C*** for the product details.

	profiling			External profiling	Back turning	Front turning Reverse turning
	Q*145° · H*117.5° 	H 100° 	I 76.5° 	Special 		
	35° VC□□ SVQCR/L □16 **C124** 35° VCG□ SVHCR/L □08 □22 **C125**	55° DC□□ SDQCR/L □11 **C119** 25° YWMT SYQBR/L □16 **C126**	25° YWMT SYHBR/L □16 **C126**	25° YWMT SYIBN □16 **C129**	- RCMT SRACR/L □05 □06 □08 **C072** - RCMT SRGCR/L □05 □06 □08 □10 □12 **C082, C083** - RCMT SRDCN □06 □08 □10 □12 **C098, C099**	Note: JSXBR/L can be used with JXT threading insert.	Note: JSXGR/L can be used with JXG grooving insert.

*1: Symbol used exclusively by Tungaloy

TurnTenFeed



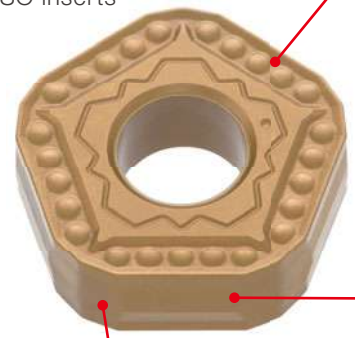


Economical, 10-cornered insert ensures high machining efficiency

- Available in 2 types of holders: HD type for large depths of cut and HF type for high feed turnin
- Maximum 7 mm depth of cut, or maximum 2.0 mm feed per rev is attainable!

Economical 10-cornered, double-sided, M-class insert

Achieves outstanding cost efficiency over standard ISO inserts

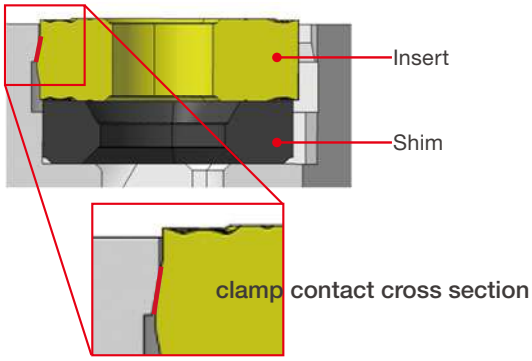


New – MNW style chipbreaker

Features protrusions on the rake face to facilitate smooth chip control, while achieving high crater wear resistance

Dovetail clamping

Ensures secure insert retention while promoting smooth chip flow thanks to the integration of lever lock and dovetail clamping methods.



Flat Wiper

Built in the cutting edge to achieve superior machining surface at higher feed rates!

Holder selections

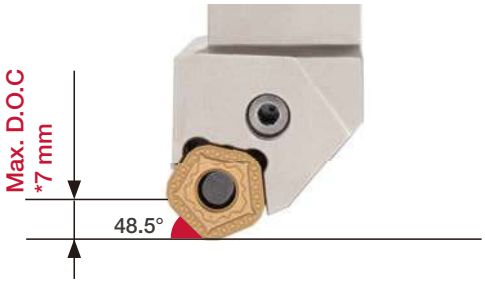
Available in 2 types:
- HD holder for large depths of cut
- HF holder for high feed turning

Inserts are interchangeable between these two holders.

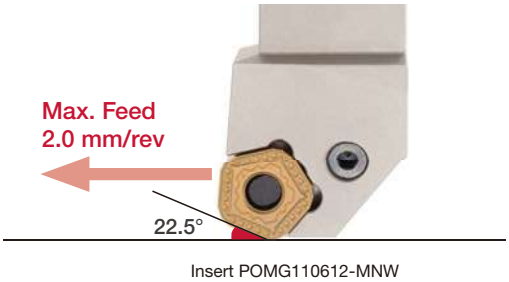


Features of Holders

HD holder
For High Depth of Cut



HF holder
For High Feed



Insert POMG110612-MNW

Reference pages: C094

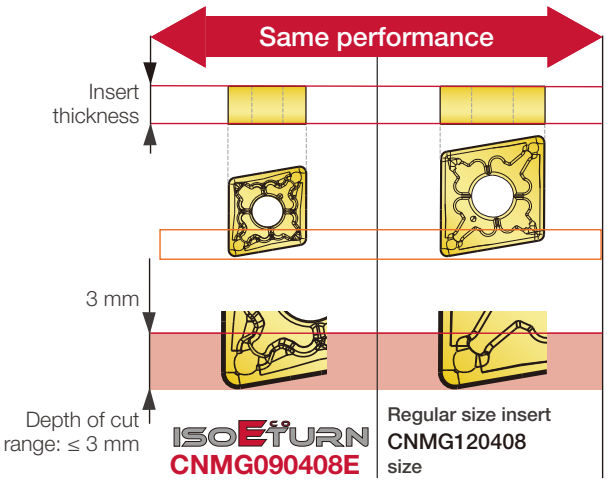
IsoEcoTurn



ISO-EcoTurn Small size inserts, for an economical advantage

Uncompromising insert performance

Comparison of ISO-EcoTurn and regular size inserts

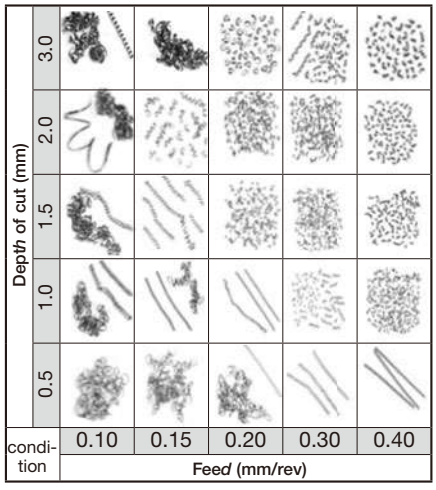


ISO-EcoTurn inserts feature the identical thickness and chipbreaker geometry as Tungaloy's regular size inserts.
These properties provide cutting performance equal to that of the regular size inserts, including chip control at a depth of cut up to 3 mm.

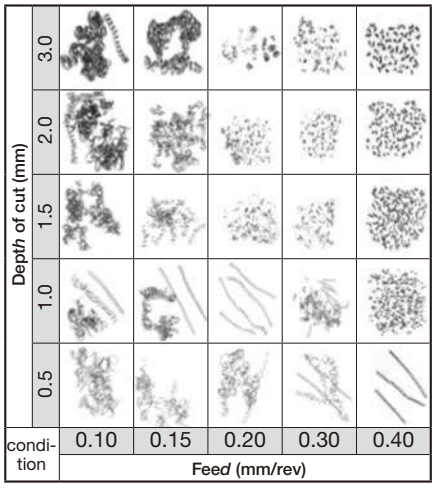
Chip control

ISO-EcoTurn inserts incorporate an identical chipbreaker geometry as regular size inserts providing the same chip removal at a depth of cut up to 3 mm.

ISO-EcoTurn
CNMG090408E-TM



Regular size
CNMG120408-TM

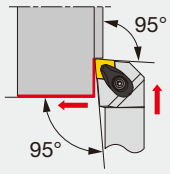


Workpiece	: S45C
Cutting speed	: *Vc* = 200 m/min
Coolant	Wet

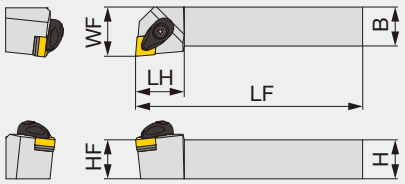
Reference pages: C014 -, C027 -, C035 -, C050, C052 -, C065 -, C084, C112, C116, C121

ACLNR/L-Eco

Double-clamp toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ACLNR/L2020K0904-A	20	20	125	25	20	25	0.8	CN**0904...	3
ACLNR/L2525M0904-A	25	25	150	25	25	32	0.8	CN**0904...	3

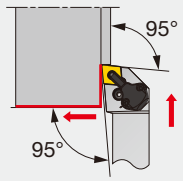
*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

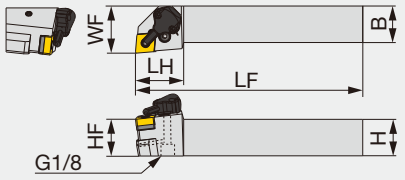
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ACLNR/L**0904-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASC322	CSTB-3.5	T-15F

PCLNR/L-CHP-Eco

Lever-lock toolholder with 95° approach angle, for negative 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PCLNR/L2020K0904-CHP	20	20	125	33	20	32	0.8	CN**0904...	2
PCLNR/L2525M0904-CHP	25	25	150	33	25	32	0.8	CN**0904...	2

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PCLNR/L**0904-CHP	LSC317	LCS3	P-2.5	LSP3	LCL33

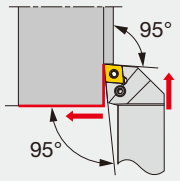
SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PCLNR/L**0904-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

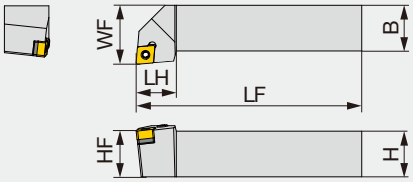
Reference pages ACLNR/L-Eco, PCLNR/L-CHP-Eco: Inserts → B054 -
Parts for coolant hose → C132

PCLNR/L-Eco

Lever-lock toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PCLNR/L2020K0904	20	20	125	20	20	25	0.8	CN**0904...	2
PCLNR/L2525M0904	25	25	150	25	25	32	0.8	CN**0904...	2

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCLNR/L**0904	LSC317	LCS3	P-2.5	LSP3	LCL33

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF	TM
Cutting conditions	B006	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS	SM
Cutting conditions	B008	

K

Application	Medium cutting
Grade	T515
Chipbreaker shape	TM
Cutting conditions	B010

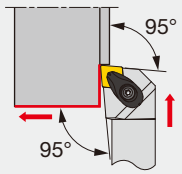
S

Application	Medium cutting
Grade	AH8015
Chipbreaker shape	TM
Cutting conditions	B014

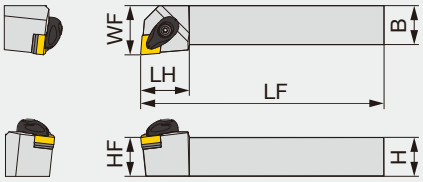
Reference pages: PCLNR/L-Eco: Inserts → B054 -

ACLNR/L

Double-clamp toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ACLNR/L2020H12-A	20	20	120	26	20	25	0.8	CN**1204...	3
ACLNR/L2020K12-A	20	20	125	26	20	25	0.8	CN**1204...	3
ACLNR/L2525K12-A	25	25	150	30	25	32	0.8	CN**1204...	3
ACLNR/L2525M12-A	25	25	150	30	25	32	0.8	CN**1204...	3
ACLNR/L3225P12-A	32	25	170	30	32	32	0.8	CN**1204...	3
ACLNR/L2525M16-A	25	25	150	31	25	32	1.2	CN**1606...	6.4
ACLNR/L3225P16-A	32	25	170	31	32	32	1.2	CN**1606...	6.4
ACLNR/L3232P16-A	32	32	170	31	32	40	1.2	CN**1606...	6.4
ACLNR/L3232P19-A	32	32	170	40	32	40	1.2	CN**1906...	6.4
ACLNR/L4040S19-A	40	40	250	40	40	50	1.2	CN**1906...	6.4

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench1	Wrench2
ACLNR/L**12-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASC422	CSTB-3.5	T-15F	-
ACLNR/L**16-A	ACP5S	ACS-6W	BP-8.8	SP-2.5	ASC533	CSTB-5	-	KEYV-T20
ACLNR/L**19-A	ACP6S	ACS-6W	BP-8.8	SP-2.5	ASC634	CSTB-5	-	KEYV-T20

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

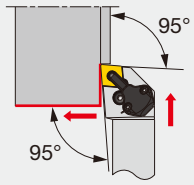
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

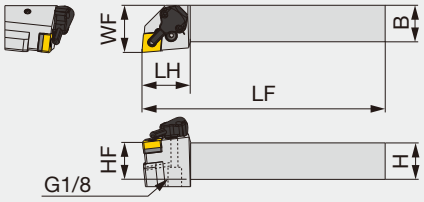
Reference pages: ACLNR/L: Inserts → B054 -, CBN → B170 -, PCD → B188 -

PCLNR/L-CHP

Lever-lock toolholder, for negative 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PCLNR/L2020K12-CHP	20	20	125	33	20	32	0.8	CN**1204...	3
PCLNR/L2525M12-CHP	25	25	150	33	25	32	0.8	CN**1204...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PCLNR/L**12-CHP	LSC42	LCS4	P-3	LSP4	LCL4

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PCLNR/L**12-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

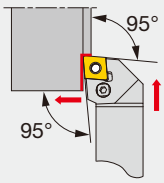
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

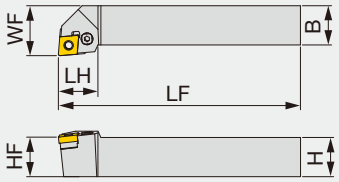
Reference pages PCLNR/L-CHP: Inserts → B054 -, CBN → B170 -, PCD → B188 -
Parts for coolant hose → C132

PCLNR/L

Lever-lock toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	
PCLNR/L1616H09	16	16	100	20	16	20	0.8	CN**0903...
PCLNR/L2020K09	20	20	125	20	20	25	0.8	CN**0903...
PCLNR/L2525M09	25	25	150	20	25	32	0.8	CN**0903...
PCLNR/L1616	16	16	100	26	16	20	0.8	CN**1204...
PCLNR/L2020	20	20	125	28	20	25	0.8	CN**1204...
PCLNR/L2525M4	25	25	150	28	25	32	0.8	CN**1204...
PCLNR/L3225P4	32	25	170	28	32	32	0.8	CN**1204...
PCLNR/L3232	32	32	170	40	32	40	1.2	CN**1906...
PCLNR/L1616H12E	16	16	100	26	16	20	0.8	CN**1204...
PCLNR/L2020K12E	20	20	125	28	20	25	0.8	CN**1204...
PCLNR/L2525M12E	25	25	150	28	25	32	0.8	CN**1204...
PCLNR/L3225P12E	32	25	170	28	32	32	0.8	CN**1204...
PCLNR/L2525M16E	25	25	150	31	25	25	1.2	CN**1606...
PCLNR/L3225P16E	32	25	150	31	32	32	1.2	CN**1606...
PCLNR3232P16E	32	32	170	31	32	40	1.2	CN**1606...
PCLNR/L3232P19E	32	32	170	40	32	40	1.2	CN**1906...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCLNR/L1616H09	ELSC32	LCS3	P-2.5	LSP3L	LCL33
PCLNR/L2020K09	ELSC32	LCS3	P-2.5	LSP3L	LCL33
PCLNR/L2525M09	ELSC32	LCS3	P-2.5	LSP3L	LCL33
PCLNR/L1616	LSC42	LCS4CA	P-3	LSP4	LCL4
PCLNR/L2020	LSC42	LCS4	P-3	LSP4	LCL4
PCLNR/L2525M4	LSC42	LCS4	P-3	LSP4	LCL4
PCLNR/L3225P4	LSC42	LCS4	P-3	LSP4	LCL4
PCLNR/L3232	LSC63	LCS6	P-4	LSP6	LCL6
PCLNR/L1616H12E	ELSC42	LCS4CA	P-3	LSP4S	LCL43S
PCLNR/L2020K12E	ELSC42	LCS4	P-3	LSP4S	LCL43M
PCLNR/L2525M12E	ELSC42	LCS4	P-3	LSP4S	LCL43M
PCLNR/L3225P12E	ELSC42	LCS4	P-3	LSP4S	LCL43M
PCLNR/L2525M16E	ELSC53	LCS5	P-3	LSP6C	LCL54
PCLNR/L3225P16E	ELSC53	LCS5	P-3	LSP6C	LCL54
PCLNR/L3232P16E	ELSC53	LCS5	P-3	LSP6C	LCL54
PCLNR/L3232P19E	ELSC63	LCS6	P-4	LSP6	LCL6

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

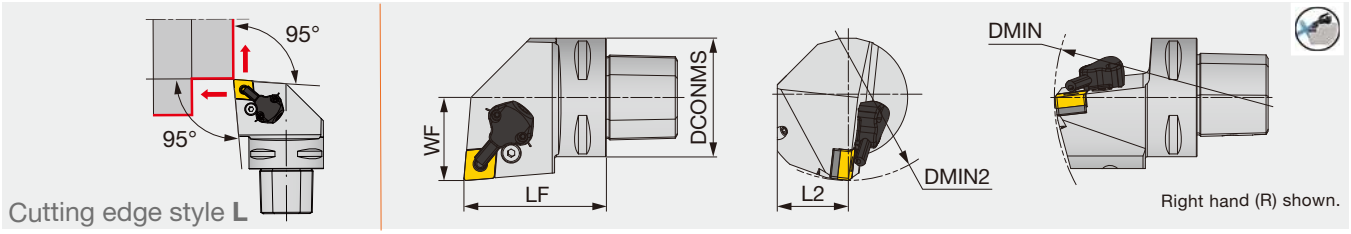
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: PCLNR/L: Inserts → B054 -, CBN → B170 -, PCD → B188 -

C-PCLNR/L-CHP

Lever-lock toolholder with TungCap connection, for negative 80° rhombic inserts, with high pressure coolant capability



Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PCLNR/L27050-0904-CHP	40	50	25	27	140	110	0.8	CN**0904...
C4PCLNR/L27050-12-CHP	40	50	25	27	140	110	0.8	CN**1204...
C5PCLNR/L35060-12-CHP	50	60	32	35	165	110	0.8	CN**1204...
C6PCLNR/L45065-0904-CHP	63	65	41	45	190	125	0.8	CN**0904...
C6PCLNR/L45065-12-CHP	63	65	41	45	190	125	0.8	CN**1204...

**RE: Standard corner radius

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

H

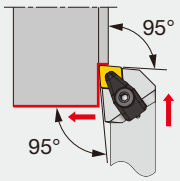
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages C-PCLNR/L-CHP: Inserts → B054 -, CBN → B170 -, PCD → B188 -
Parts for coolant hose → C132

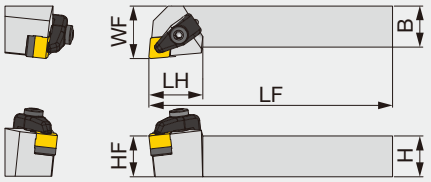
DIMPLEFX

CCLNR/L-RD

Double-clamp toolholder with 95° approach angle, for negative 80° rhombic ceramic inserts with dimple



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
CCLNR/L2525M1207-RD	25	25	150	33	25	32	1.2	CN*D1207...	4
CCLNR3225P1207-RD	32	25	170	33	32	32	1.2	CN*D1207...	4

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench1	Wrench2
CCLNR/L**-RD	CCP4-A	CCS4-A	CC44-A	BH5-10-A	BP-5-A	P-3	P-4

INSERT SELECTION

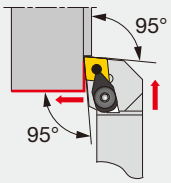
K

Application	Finishing to medium cutting
Grade	FX105
Chipbreaker shape	- 
Cutting conditions	C134

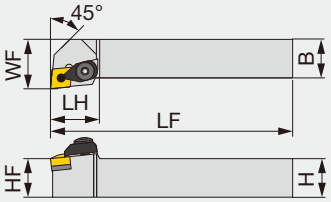
Reference pages CCLNR/L-RD: Inserts → B064, Standard cutting conditions → C134

DCLNR/L

"One-Double" toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
DCLNR/L2020K12	20	20	125	30	20	25	0.8	CN**1204...
DCLNR/L2525M12	25	25	150	30	25	32	0.8	CN**1204...
DCLNR/L3225P12	32	25	170	30	32	32	0.8	CN**1204...

Note: Except for 57-type chipbreaker inserts
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench1	Wrench2
DCLNR/L...	DCPM-43	DLCL43	DPIS43	DLCS43	LSC42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

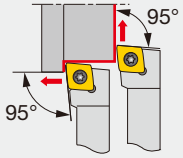
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

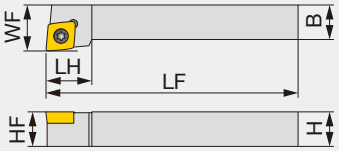
Reference pages: DCLNR/L: Inserts → B054 -, CBN → B170 -, PCD → B188 -

JSCLCR/L

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSCLCR/L0808H06	8	8	100	12	8	10	0.4	CC**0602...	1.2
JSCLCR/L1010H06	10	10	100	12	10	12	0.4	CC**0602...	1.2
JSCLCR/L1212H09	12	12	100	16	12	16	0.8	CC**09T3...	1.2
JSCLCR/L1616H09	16	16	100	16	16	20	0.8	CC**09T3...	1.2

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS




Designation	Clamping screw	Wrench
JSCLCR/L**H06	CSTB-2.5	T-8F
JSCLCR/L**H09	CSTB-4SD	T-8F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B018			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	TH10	KS05F
Chipbreaker shape	T-DIA (with rake)	W20	AL
Cutting conditions	B024		

S

Application	Precision finishing	Finishing to medium cutting
Grade	BX470	AH8005
Chipbreaker shape	T-CBN	PS
Cutting conditions	B026	

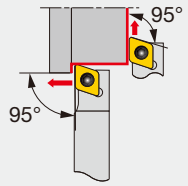
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B028	

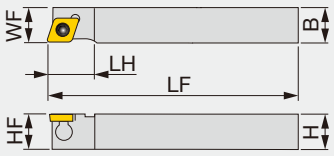
Reference pages: JSCLCR/L: Inserts → B109 -, CBN → B180 -, PCD → B190 -

JTCL2CR/L

Back-clamp toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JTCL2CL0810K06	8	10	125	12	8	10	0.4	CC**0602...	0.9
JTCL2CR/L1010X06	10	10	120	12	10	10	0.2	CC**0602...	0.9
JTCL2CR/L1212F09	12	12	85	16	12	12	0.2	CC**09T3...	1.2
JTCL2CR/L1212X09	12	12	120	16	12	12	0.2	CC**09T3...	1.2
JTCL2CR/L1616X09	16	16	120	16	16	16	0.2	CC**09T3...	1.2
JTCL2CR1616M09	16	16	150	16	16	16	0.8	CC**09T3...	1.2

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
JTCL2CR/L**06	JCP-2	JDS-3525	P-2F
JTCL2CR/L**09	JCP-3	JDS-5040	P-2.5F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B018			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	TH10	KS05F
Chipbreaker shape	T-DIA	W20 (with rake)	AL
Cutting conditions	B024		

S

Application	Precision finishing	Finishing to medium cutting
Grade	BX470	AH8005
Chipbreaker shape	T-CBN	PS
Cutting conditions	B026	

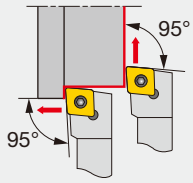
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B028	

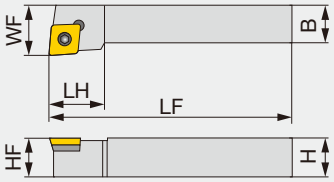
Reference pages: JTCL2CR/L: Inserts → B109 -, CBN → B180 -, PCD → B190 -

SCLCR/L

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
SCLCR/L1616H09	16	16	100	16	16	20	0.8	CC**09T3...
SCLCR/L2020K12	20	20	125	20	20	25	0.8	CC**1204...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
SCLCR/L1616H09	CSTB-3.5L	DTS5-3.5	SSC32	P-3.5	T-15F
SCLCR/L2020K12	CSTB-4F	DTS6-4	SSC4T3	P-4	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	NS9530	T9215	T9215
Chipbreaker shape	01	PSS	PS	PM
Cutting conditions	B018			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Chipbreaker shape	W**	PSF	PSS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA	with rake T-DIA	AL
Cutting conditions	B024		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B026	

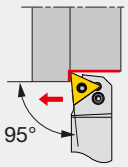
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B028	

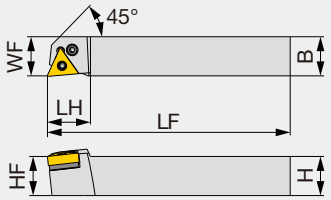
Reference pages: SCLCR/L: Inserts → B109 -, CBN → B180 -, PCD → B190 -

PTL2NR/L

Lever-lock toolholder with 95° approach angle, for negative 60° triangular inserts



Cutting edge style **L2**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PTL2NR/L2020H16	20	20	100	22	20	20	0.4	TN**1604...	2

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PTL2NR/L...	LST317 D30	LCS3	P-2.5	LSP3	LCL3

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

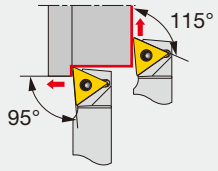
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

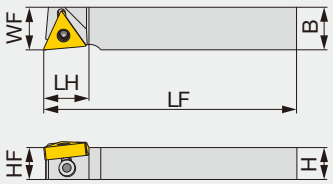
Reference pages: PTL2NR/L: Inserts → B084 -, CBN → B176 -, PCD → B188

JTTLNR/L

Back-clamp toolholder with 95° approach angle, for negative 60° triangular inserts



Cutting edge style **L**



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JTTLNR/L1216F16	12	16	85	17	12	16	0.4	TN**1604...	1
JTTLNR/L1216X16	12	16	120	17	12	16	0.4	TN**1604...	1
JTTLNR/L1616X16	16	16	120	17	16	16	0.4	TN**1604...	1

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
JTTLNR/L...	JCP-3N	JDS-5040	P-2.5F

INSERT SELECTION

P

Application	Precision finishing
Grade	SH725
Chipbreaker shape	01
Cutting conditions	B006

M

Application	Precision finishing
Grade	SH725
Chipbreaker shape	01
Cutting conditions	B008

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B010

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	T-DIA (with rake)
Cutting conditions	B012

S

Application	Precision finishing
Grade	BX470
Chipbreaker shape	T-CBN
Cutting conditions	B014

H

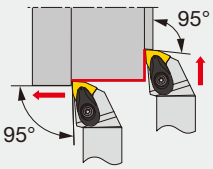
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: JTTLNR/L: Inserts → B084 -, CBN → B176 -, PCD → B188 -

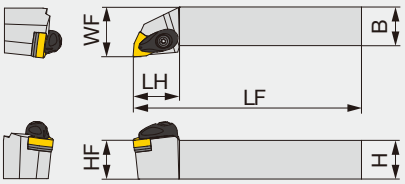
ISOEcoTURN

AWLNR/L-Eco

Double-clamp toolholder with 95° approach angle, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AWLNR/L2020K0604-A	20	20	125	27	20	25	0.8	WN**0604...	3
AWLNR/L2525M0604-A	25	25	150	27	25	32	0.8	WN**0604...	3

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

SPARE PARTS

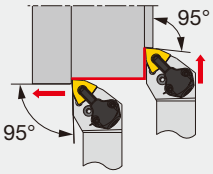
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AWLNR/L**0604-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F

TUNGTJET

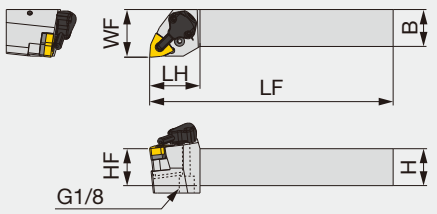
ISOEcoTURN

PWLNR/L-CHP

Lever-lock toolholder with 95° approach angle, for negative 80° trigon inserts, with high pressure coolant capability



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PWLNR/L2020K0604-CHP	20	20	125	34	20	32	0.8	WN**0604...	2
PWLNR/L2525M0604-CHP	25	25	150	34	25	32	0.8	WN**0604...	2

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PWLNR/L**0604-CHP	LSW312	LCS3	P-2.5	LSP3	LCL3

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PWLNR/L**0604-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF	TM
Cutting conditions	B006	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS	SM
Cutting conditions	B008	

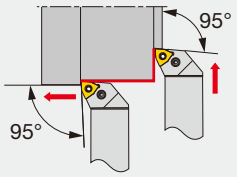
K

Application	Medium cutting
Grade	T515
Chipbreaker shape	TM
Cutting conditions	B010

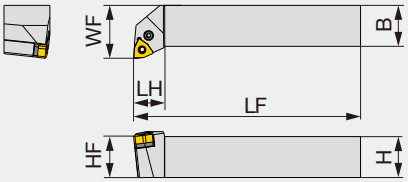
Reference pages AWLNR/L-Eco, PWLNR/L-CHP: Inserts → B100 -
Parts for coolant hose → C132

PWLNR/L-Eco

Lever-lock toolholder with 95° approach angle, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PWLNR/L2020K0604	20	20	125	15	20	25	0.8	WN**0604...	2
PWLNR/L2525M0604	25	25	150	19	25	32	0.8	WN**0604...	2

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PWLNR/L**0604	LSW312	LCS3	P-2.5	LSP3	LCL3

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF 	TM 
Cutting conditions	B006	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS 	SM 
Cutting conditions	B008	

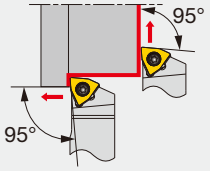
K

Application	Medium cutting
Grade	T515
Chipbreaker shape	TM 
Cutting conditions	B010

Reference pages: PWLNR/L-Eco: Inserts → B100 -

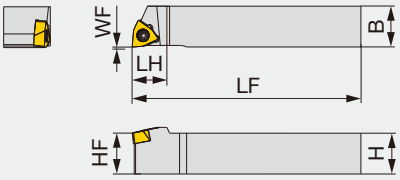
MINIFORCE TURN
JSWL2XR/L

Screw-on toolholder with 95° approach angle, for WXGU inserts



Cutting edge style **L2**

Without offset



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSWL2XR/L1010X04	10	10	120	11	10	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1212F04	12	12	85	11	12	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1212X04	12	12	120	11	12	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1616X04	16	16	120	13	16	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L2020H04	20	20	100	13	20	0	0.2	WXGU0403**L/R...	0.9

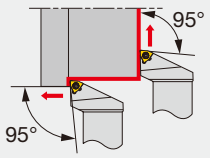
*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

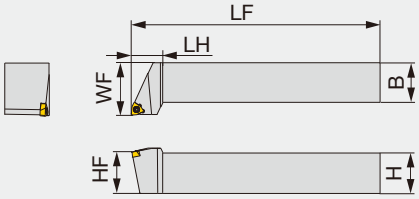
Designation	Clamping screw	Wrench
JSWL2XR/L...	SR34-514	T-7F

MINIFORCE TURN
JSWLXR/L

Lever-lock toolholder with 95° approach angle, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSWLXR/L2020K04	20	20	125	15	20	25	0.4	WXGU0403**L/R...	0.9
JSWLXR/L2525M04	25	25	150	19	25	32	0.4	WXGU0403**L/R...	0.9

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
JSWLXR/L...	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS	JTS
	Cutting conditions	C133	

M	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS	JTS
	Cutting conditions	C133	

Small CNC lathes

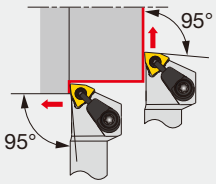
P	Application	Finishing	Medium cutting
	Grade	AH725	AH725
	Chipbreaker shape	SS	TS
	Cutting conditions	C133	

M	Application	Finishing	Medium cutting
	Grade	AH8015	AH8015
	Chipbreaker shape	SS	TS
	Cutting conditions	C133	

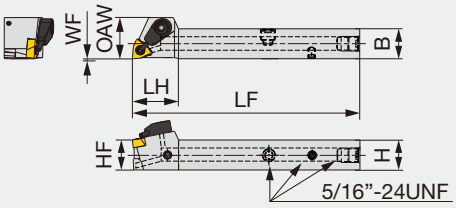
Reference pages JSWL2XR/L, JSWLXR/L: Inserts → B158 -
Standard cutting conditions → C133

JSWL2XR/L-CHP

Screw-on toolholder with 95° approach angle, for WXGU inserts, with high pressure coolant capability



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSWL2XR/L1212F04-CHP	12	12	85	18	12	0	16.5	0.2	WXGU0403**L/R...	0.9
JSWL2XR1212X04-CHP(1)	12	12	120	18.5	12	0	16.5	0.2	WXGU0403**L	0.9
JSWL2XR1616X04-CHP(1)	16	16	120	18.5	16	0	16.5	0.2	WXGU0403**L	0.9

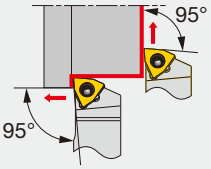
*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).
Can be used with DirectTungJet system.

SPARE PARTS

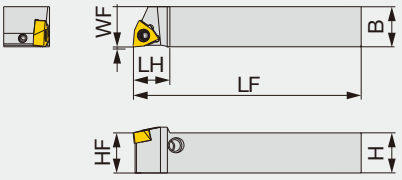
Designation	Clamping screw	Coolant unit	Wrench
JSWL2XR**04-CHP	SR34-514	S-CU-CHP	T-7F

JPWL2XR/L

Back-clamp toolholder with 95° approach angle, for WXGU inserts



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JPWL2XR/L1010X04	10	10	120	11	10	0	0.2	WXGU0403**L/R...	0.9
JPWL2XR/L1212F04	12	12	85	11	12	0	0.2	WXGU0403**L/R...	0.9
JPWL2XR/L1212X04	12	12	120	11	12	0	0.2	WXGU0403**L/R...	0.9
JPWL2XR/L1616X04	16	16	120	13	16	0	0.2	WXGU0403**L/R...	0.9

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Lever	Pin	Clamping screw	Wrench
JPWL2XR/L...	SLLV-2	SL-PI-2	SR10400611	HW2.0/5RED

INSERT SELECTION

Swiss lathes

P	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS 	JTS 
	Cutting conditions	C133	

M	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS 	JTS 
	Cutting conditions	C133	

Small CNC lathes

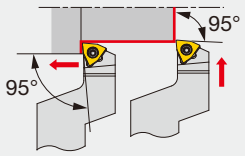
P	Application	Finishing	Medium cutting
	Grade	AH725	AH725
	Chipbreaker shape	SS 	TS 
	Cutting conditions	C133	

M	Application	Finishing	Medium cutting
	Grade	AH8015	AH8015
	Chipbreaker shape	SS 	TS 
	Cutting conditions	C133	

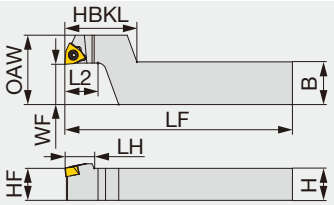
Reference pages JSWL2XR/L-CHP, JPWL2XR/L: Inserts → B158 -
Standard cutting conditions → C133

JSWLXR-F

Screw-on stepped-head toolholder with 95° approach angle, for WXGU inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSWLXR1016X04-F15	10	16	120	12	27	11	10	15	26	0.2	WXGU0403**L...	0.9
JSWLXR1216F04-F15	12	16	85	12	27	11	12	15	26	0.2	WXGU0403**L...	0.9
JSWLXR1216X04-F15	12	16	120	12	27	11	12	15	26	0.2	WXGU0403**L...	0.9
JSWLXR1620X04-F15	16	20	120	12	27	11	16	15	26	0.2	WXGU0403**L...	0.9

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
JSWLXR**-F15	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS	JTS
	Cutting conditions	C133	

M	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS	JTS
	Cutting conditions	C133	

Small CNC lathes

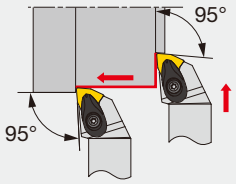
P	Application	Finishing	Medium cutting
	Grade	AH725	AH725
	Chipbreaker shape	SS	TS
	Cutting conditions	C133	

M	Application	Finishing	Medium cutting
	Grade	AH8015	AH8015
	Chipbreaker shape	SS	TS
	Cutting conditions	C133	

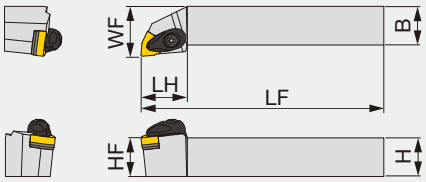
Reference pages JSWLXR-F: Inserts → B158 - Standard cutting conditions → C133

AWLNR/L

Double-clamp toolholder with 95° approach angle, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AWLNR/L2020H08-A	20	20	125	30	20	25	0.8	WN**0804...	3
AWLNR/L2020K08-A	20	20	125	30	20	25	0.8	WN**0804...	3
AWLNR/L2525K08-A	25	25	150	30	25	32	0.8	WN**0804...	3
AWLNR/L2525M08-A	25	25	150	30	25	32	0.8	WN**0804...	3
AWLNR/L3225P08-A	32	25	170	30	32	32	0.8	WN**0804...	3

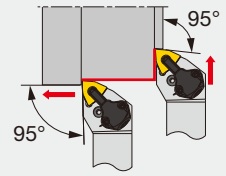
*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

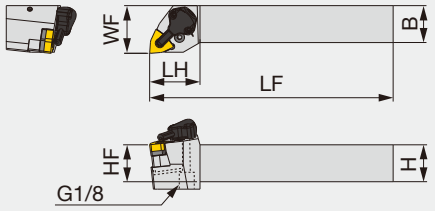
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AWLNR/L**08-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASW422	CSTB-3.5	T-15F

PWLNR/L-CHP

Lever-lock toolholder with 95° approach angle, for negative 80° trigon inserts, with high pressure coolant capability



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PWLNR/L2020K08-CHP	20	20	125	34	20	32	0.8	WN**0804...	3
PWLNR/L2525M08-CHP	25	25	150	34	25	32	0.8	WN**0804...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PWLNR/L**08-CHP	LSW42	LCS4	P-2.5	LSP4	LCL4

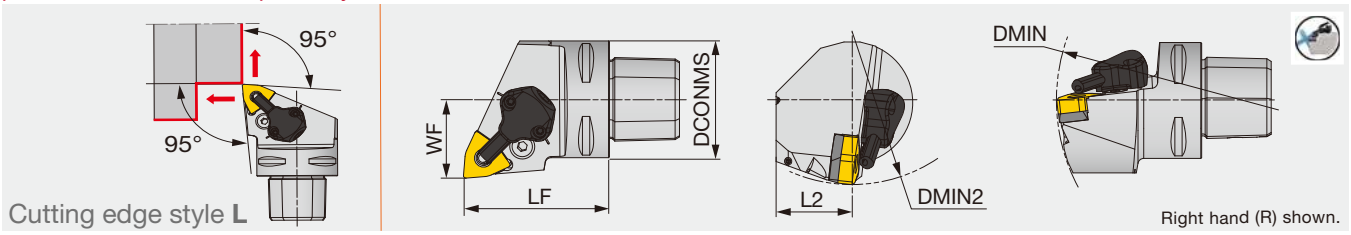
SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PWLNR/L**08-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

Reference pages AWLNR/L, PWLNR/L-CHP: Inserts → B099 -, CBN → B179
Parts for coolant hose → C132

C-PWLNR/L-CHP

Lever-lock toolholder with TungCap connection, for negative 80° trigon inserts, with high pressure coolant capability



Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PWLNR/L27050-0604-CHP	40	50	25	27	140	110	0.8	WN**0604...
C4PWLNR/L27050-08-CHP	40	50	25	27	140	110	0.8	WN**0804...
C6PWLNR/L45065-08-CHP	63	65	41	45	190	110	0.8	WN**0804...

**RE: Standard corner radius

SPARE PARTS FOR P-TYPE

Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
C*PCLNR/L**-12-CHP	LSC42	LCS4	P-3	LSP4	LCL4
C*PWLNR/L**-08-CHP	LSW42BL	LCS4	P-3	LSP4	LCL4
C*PDJNR/L**-15-CHP	LSD43A	LCS4	P-3	LSP4	LCL4
C*PCLNR/L**0904-CHP	LSC317	LCS3	P-2.5	LSP3	LCL33
C*PWLNR/L**0604-CHP	LSW312	LCS3	P-2.5	LSP3	LCL3
C*PDJNR/L**1104-CHP	ELSD32	LCS3	P-2.5	LSP3	LCL33L

COOLANT SET

Designation	Coolant unit	Mounting screw	Wrench2	O-ring
C*PCLNR/L**-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N
C*PWLNR/L**-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N
C*PDJLNR/L**-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

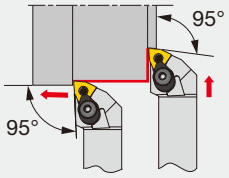
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

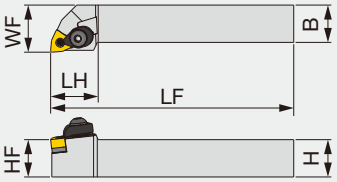
Reference pages C-PWLNR/L-CHP: Inserts → B099 -, CBN → B179
Parts for coolant hose → C132

DWLNR/L

One-Double toolholder with 95° approach angle, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
DWLNR/L2020K06	20	20	125	25.5	20	25	0.8	WN**0604...
DWLNR/L2020K08	20	20	125	31	20	25	0.8	WN**0804...
DWLNR/L2525M06	25	25	150	26	25	32	0.8	WN**0604...
DWLNR/L2525M08	25	25	150	31	25	32	0.8	WN**0804...
DWLNR/L3225P08	32	25	170	30	32	32	0.8	WN**0804...

Note: Except for 57-type chipbreaker inserts
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench1	Wrench2
DWLNR/L**06	DCPM-33	LCL33	DPIS33	DLCS33	LSW312	BP-9	LSP3	P-2.5	P-3
DWLNR/L**08	DCPM-43	DLCL43	DPIS43	DLCS43	LSW42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

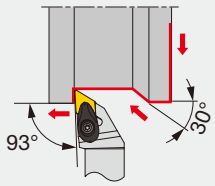
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

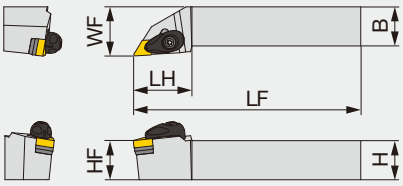
Reference pages: DWLNR/L: Inserts → B099 -, CBN → B179

ISOTURN Eco
ADJNR/L-Eco

Double-clamp toolholder with 93° approach angle, for negative 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ADJNR/L2020K1104-A	20	20	125	30	20	25	0.8	DN**1104...	3
ADJNR/L2525M1104-A	25	25	150	30	25	32	0.8	DN**1104...	3

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

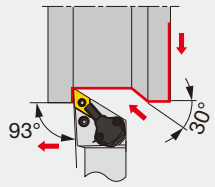
SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ADJNR/L**1104-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASD322	CSTB-3.5	T-15F

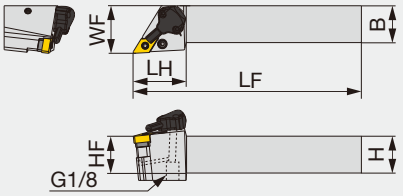
ISOTURN Eco
PDJNR/L-CHP-Eco

TUNGTURN JET

Lever-lock toolholder with 93° approach angle, for negative 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PDJNR/L2020K1104-CHP	20	20	125	36	20	32	0.8	DN**1104...	2
PDJNR/L2525M1104-CHP	25	25	150	36	25	32	0.8	DN**1104...	2

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PDJNR/L**1104-CHP	ELSD32	LCS3	P-2.5	LSP3	LCL33L

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PDJNR/L**1104-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF	TM
Cutting conditions	B006	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS	SM
Cutting conditions	B008	

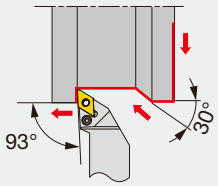
K

Application	Medium cutting
Grade	T515
Chipbreaker shape	TM
Cutting conditions	B010

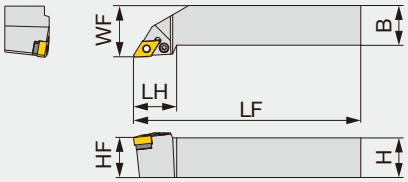
Reference pages ADJNR/L-Eco, PDJNR/L-CHP-Eco: Inserts → B065 -
Parts for coolant hose→ C132

PDJNR/L-Eco

Lever-lock toolholder with 93° approach angle, for negative 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PDJNR/L1616H1104	16	16	100	27	16	20	0.8	DN**1104...	2
PDJNR/L2020K1104	20	20	125	27	20	25	0.8	DN**1104...	2
PDJNR/L2525M1104	25	25	150	27	25	32	0.8	DN**1104...	2

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PDJNR/L**1104	ELSD32	LCS3	P-2.5	LSP3	LCL33L

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF	TM
Cutting conditions	B006	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS	SM
Cutting conditions	B008	

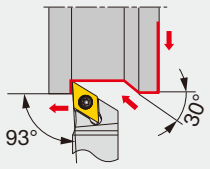
K

Application	Medium cutting
Grade	T515
Chipbreaker shape	TM
Cutting conditions	B010

Reference pages: PDJNR/L-Eco: Inserts → B065 -

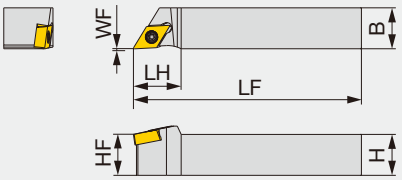
MINIFORCE TURN
JSDJ2XR/L

Screw-on toolholder with 93° approach angle, for DXGU inserts



Cutting edge style **J2**

Without offset



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSDJ2XR/L1010X07	10	10	120	14	10	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L1212F07	12	12	85	14	12	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L1212X07	12	12	120	14	12	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L1616X07	16	16	120	18	16	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L2020H07	20	20	100	18	20	0	0.2	DXGU0703**L/R...	0.9

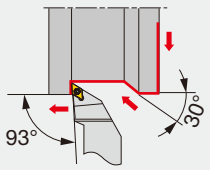
*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

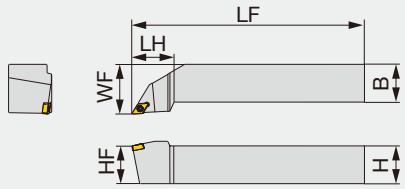
Designation	Clamping screw	Wrench
JSDJ2XR/L...	SR34-514	T-7F

MINIFORCE TURN
JSDJXR/L

Screw-on toolholder with 93° approach angle, for DXGU inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSDJXR/L2020K07	20	20	125	27	20	25	0.4	DXGU0703**L/R...	0.9
JSDJXR/L2525M07	25	25	150	27	25	32	0.4	DXGU0703**L/R...	0.9

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
JSDJXR/L...	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS 	JTS 
	Cutting conditions	C133	

M	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS 	JTS 
	Cutting conditions	C133	

Small CNC lathes

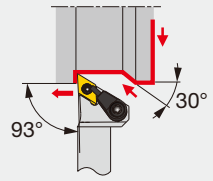
P	Application	Finishing	Medium cutting
	Grade	AH725	AH725
	Chipbreaker shape	SS 	TS 
	Cutting conditions	C133	

M	Application	Finishing	Medium cutting
	Grade	AH8015	AH8015
	Chipbreaker shape	SS 	TS 
	Cutting conditions	C133	

Reference pages JSDJ2XR/L, JSDJXR/L: Inserts → B125 -
Standard cutting conditions → C133

JSDJ2XR/L-CHP

Screw-on toolholder with 93° approach angle, for DXGU inserts, with high pressure coolant capability



Cutting edge style **J2**

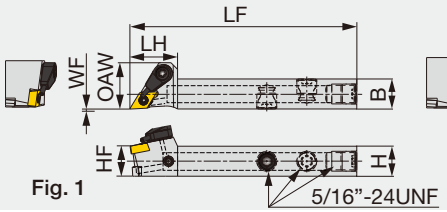


Fig. 1

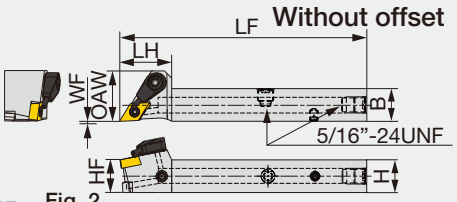


Fig. 2

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*	Fig.
JSDJ2XR/L1212F07-CHP	12	12	85	19	12	0	18.5	0.2	DXGU0703**L/R...	0.9	1
JSDJ2XR1212X07-CHP(1)	12	12	120	19	12	0	18.5	0.2	DXGU0703**L...	0.9	2
JSDJ2XR1616X07-CHP(1)	16	16	120	19	16	0	18.5	0.2	DXGU0703**L...	0.9	2

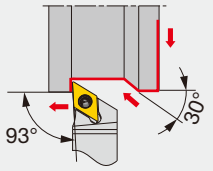
*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).
Can be used with DirectTungJet system.

SPARE PARTS

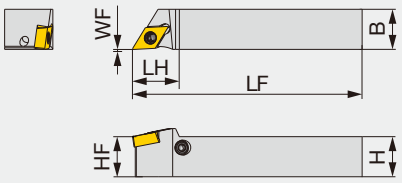
Designation	Clamping screw	Coolant unit	Wrench
JSDJ2XR**07-CHP	SR34-514	S-CU-CHP	T-7F

JPDJ2XR/L

Back-clamp toolholder with 93° approach angle, for DXGU inserts



Cutting edge style **J2**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JPDJ2XR/L1010X07	10	10	120	14	10	0	0.2	DXGU0703**L/R...	0.9
JPDJ2XR/L1212F07	12	12	85	14	12	0	0.2	DXGU0703**L/R...	0.9
JPDJ2XR/L1212X07	12	12	120	14	12	0	0.2	DXGU0703**L/R...	0.9
JPDJ2XR/L1616X07	16	16	120	18	16	0	0.2	DXGU0703**L/R...	0.9

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Lever	Pin	Clamping screw	Wrench
JPDJ2XR/L...	SLLV-2	SL-PI-2	SR10400611	HW2.0/5RED

INSERT SELECTION

Swiss lathes

P	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS	JTS
	Cutting conditions	C133	

M	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS	JTS
	Cutting conditions	C133	

Small CNC lathes

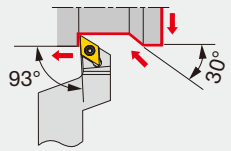
P	Application	Finishing	Medium cutting
	Grade	AH725	AH725
	Chipbreaker shape	SS	TS
	Cutting conditions	C133	

M	Application	Finishing	Medium cutting
	Grade	AH8015	AH8015
	Chipbreaker shape	SS	TS
	Cutting conditions	C133	

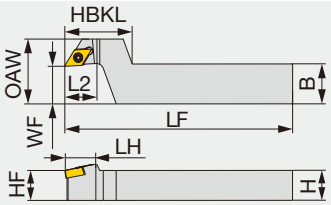
Reference pages JSDJ2XR/L-CHP, JPDJ2XR/L: Inserts → B125 -
Standard cutting conditions → C133

JSDJXR-F

Screw-on stepped-head toolholder with 93° approach angle, for DXGU inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJXR1016X07-F15	10	16	120	12	27	14	10	15	26	0.2	DXGU0703**L...	0.9
JSDJXR1216F07-F15	12	16	85	12	27	14	12	15	26	0.2	DXGU0703**L...	0.9
JSDJXR1216X07-F15	12	16	120	12	27	14	12	15	26	0.2	DXGU0703**L...	0.9
JSDJXR1620X07-F15	16	20	120	12	27	14	16	15	26	0.2	DXGU0703**L...	0.9

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
JSDJXR**-F15	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS	JTS
	Cutting conditions	C133	

M	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS	JTS
	Cutting conditions	C133	

Small CNC lathes

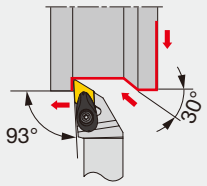
P	Application	Finishing	Medium cutting
	Grade	AH725	AH725
	Chipbreaker shape	SS	TS
	Cutting conditions	C133	

M	Application	Finishing	Medium cutting
	Grade	AH8015	AH8015
	Chipbreaker shape	SS	TS
	Cutting conditions	C133	

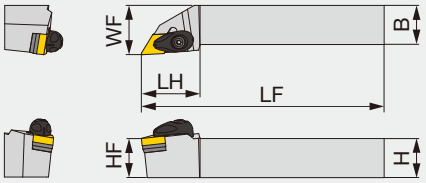
Reference pages JSDJXR-F: Inserts → B125 -
Standard cutting conditions → C133

ADJNR/L

Double-clamp toolholder with 93° approach angle, for negative 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ADJNR/L2020K15-A	20	20	125	36	20	25	0.8	DN**1504...	3
ADJNR/L2020K1506-A	20	20	125	36	20	25	0.8	DN**1506...	3
ADJNR/L2525M15-A	25	25	150	36	25	32	0.8	DN**1504...	3
ADJNR/L2525M1506-A	25	25	150	36	25	32	0.8	DN**1506...	3
ADJNR/L3225P15-A	32	25	170	36	32	32	0.8	DN**1504...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ADJNR/L**15-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASD432	CSTB-3.5	T-15F
ADJNR/L**1506-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASD423	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA	T-DIA with rake	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

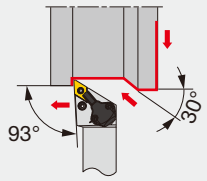
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

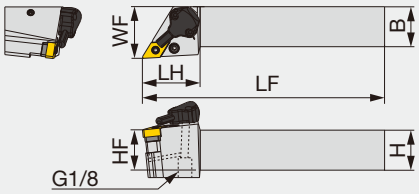
Reference pages: ADJNR/L: Inserts → B065 -, CBN → B172 -, PCD → B188

PDJNR/L-CHP

Lever-lock toolholder, for negative 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PDJNR/L2020K15-CHP	20	20	125	36	20	32	0.8	DN**1504...	3
PDJNR/L2525M15-CHP	25	25	150	36	25	32	0.8	DN**1504...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PDJNR/L**15-CHP	LSD43A	LCS4	P-3	LSP4	LCL4

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PDJNR/L**15-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA	with rake T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

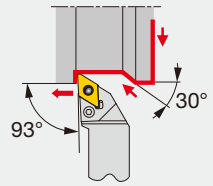
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

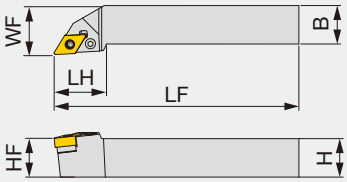
Reference pages PDJNR/L-CHP: Inserts → B065 -, CBN → B172 -, PCD → B188
Parts for coolant hose → C132

PDJNR/L

Lever-lock toolholder with 93° approach angle, for negative 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
PDJNR/L1616H11	16	16	100	27	16	20	0.8	DN**1104...
PDJNR/L2020K11	20	20	125	27	20	25	0.8	DN**1104...
PDJNR/L2020	20	20	125	34	20	25	0.8	DN**1504...
PDJNR2020K15E	20	20	125	36	20	25	0.8	DN**1506...
PDJNR/L2520	25	20	150	34	25	25	0.8	DN**1504...
PDJNR/L2525M11	25	25	150	27	25	32	0.8	DN**1104...
PDJNR/L2525	25	25	150	34	25	32	0.8	DN**1504...
PDJNR/L2525M15E	25	25	150	36	25	32	0.8	DN**1506...
PDJNR/L3225	32	25	170	32	32	32	0.8	DN**1504...
PDJNR3225P15E	32	25	170	36	32	34	0.8	DN**1506...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PDJNR/L1616H11, 2020K11	ELSD32	LCS3	P-2.5	LSP3	LCL33L
PDJNR/L2020	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR2020K15E	ELSD42	ELCS4	P-3	LSP4S	LCL44
PDJNR/L2520	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR/L2525	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR/L2525M15E	ELSD42	ELCS4	P-3	LSP4S	LCL44
PDJNR/L3225	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR3225P15E	ELSD42	ELCS4	P-3	LSP4S	LCL44

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

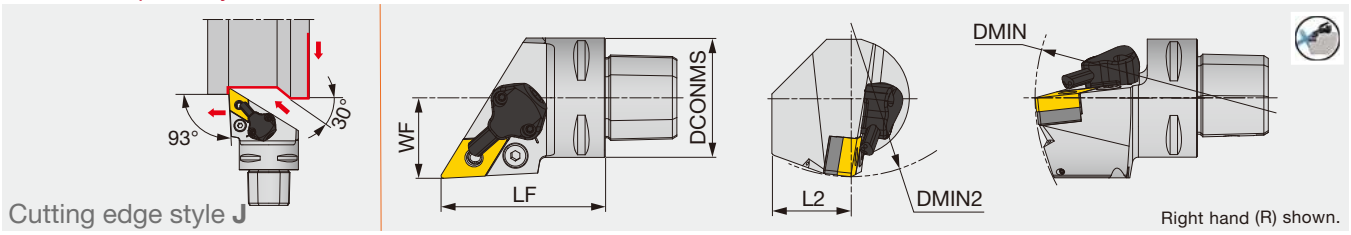
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: PDJNR/L: Inserts → B065 -, CBN → B172 -, PCD → B188

C-PDJNR/L-CHP

Lever-lock toolholder with TungCap connection, for negative 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **J**

Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PDJNR/L27050-1104-CHP	40	50	25	27	140	110	0.8	DN**1104...
C4PDJNR/L27050-15-CHP	40	50	25	27	140	110	0.8	DN**1504(06)...
C5PDJNR/L35060-15-CHP	50	60	32	35	165	110	0.8	DN**1504(06)...
C6PDJNR/L45065-1104-CHP	63	65	41	45	190	110	0.8	DN**1104...
C6PDJNR/L45065-15-CHP	63	65	41	45	190	110	0.8	DN**1504(06)...

**RE: Standard corner radius

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA	T-DIA with rake	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

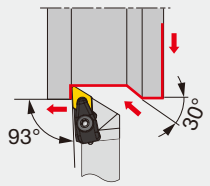
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

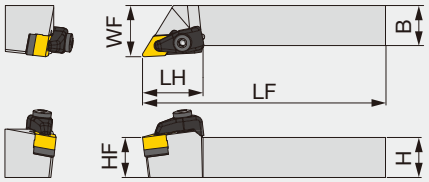
Reference pages: C-PDJNR/L-CHP: Inserts → B065 -, CBN → B172 -, PCD → B188

CDJNR/L-RD

Double-clamp toolholder with 93° approach angle, for negative 55° rhombic ceramic inserts with dimple



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
CDJNR/L2525M1507-RD	25	25	150	38	25	32	1.2	DN*D1507...	4
CDJNR3225P1507-RD	32	25	170	38	32	32	1.2	DN*D1507...	4

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench1	Wrench2
CDJNR/L**-RD	CCP4-A	CCS4-A	CD44-A	BH5-10-A	BP-5-A	P-3	P-4

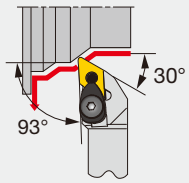
INSERT SELECTION

Application	Finishing to medium cutting
Grade	FX105
Chipbreaker shape	- 
Cutting conditions	C134

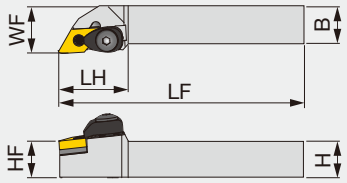
Reference pages CDJNR/L-RD: Inserts → B073
Standard cutting conditions → C134

DDJNR/L

One-Double toolholder with 93° approach angle, for negative 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
DDJNR/L2020K15	20	20	125	38	20	25	0.8	DN**1504...
DDJNR/L2020K1506	20	20	125	38	20	25	0.8	DN**1506...
DDJNR/L2525M15	25	25	150	38	25	32	0.8	DN**1504...
DDJNR/L2525M1506	25	25	150	38	25	32	0.8	DN**1506...
DDJNR/L3225P15	32	25	170	38	32	32	0.8	DN**1504...
DDJNR/L3225P1506	32	25	170	38	32	32	0.8	DN**1506...

Note: Except for 57-type chipbreaker inserts
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench1	Wrench2
DDJNR/L**15	DCPM-43	DLCL43	DPIS43	DLCS43	LSD42	BP-10	LSP4	P-3	P-4
DDJNR/L**1506	DCPM-43	DLCL43	DPIS44	DLCS43	LSD42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

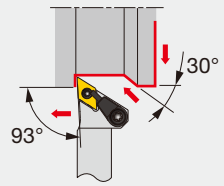
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

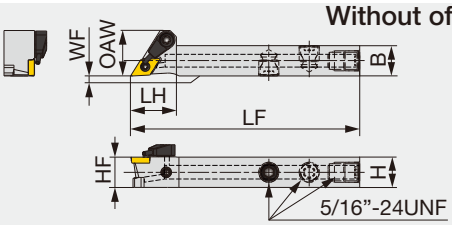
Reference pages: DDJNR/L: Inserts → B065 -, CBN → B172 -, PCD → B188

JSDJ2CR/L-CHP

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **J2**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJ2CR/L1212F07-CHP	12	12	85	18	12	0	18	0.2	DC**0702...	1.2
JSDJ2CR/L1212F11-CHP	12	12	85	19	12	0	20.5	0.2	DC**11T3...	1.2
JSDJ2CR1212X11-CHP	12	12	120	19	12	0	20.5	0.2	DC**11T3...	1.2
JSDJ2CR1616X11-CHP	16	16	120	19	16	0	20.5	0.2	DC**11T3...	1.2

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench1	Coolant plug	Wrench2	DirectJet plug	Wrench3
JSDJ2CR/L1212F07-CHP	CSTB-2.5	S-CU-CHP	T-8F	-	-	-	-
JSDJ2CR/L1212F11-CHP	CSTB-4SD	S-CU-CHP	T-8F	-	-	-	-
JSDJ2CR**11-CHP	CSTB-4SD	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Chipbreaker shape	PSS	PS	PM
Cutting conditions	B018		

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Chipbreaker shape	W**	PSF	PSS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B024		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B026	

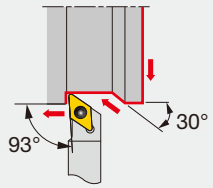
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B028	

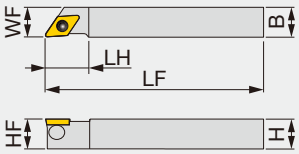
Reference pages JSDJ2CR/L-CHP: Inserts → B119 -, CBN → B181, PCD → B190
Parts for coolant hose → C132

JTDJ2CR/L

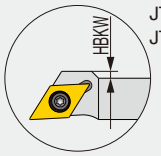
Back-clamp toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J2**



Without offset



JTDJ2CR/L1212F11
JTDJ2CR/L1212X11

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	HBKW	RE**	Insert	Torque*
JTDJ2CR/L1010X07	10	10	120	14	10	10	-	0.2	DC**0702...	0.9
JTDJ2CR/L1212F07	12	12	85	14	12	12	-	0.2	DC**0702...	0.9
JTDJ2CR/L1212X07	12	12	120	14	12	12	-	0.2	DC**0702...	0.9
JTDJ2CR/L1212F11	12	12	85	20	12	12	2	0.2	DC**11T3...	1.2
JTDJ2CR/L1212X11	12	12	120	20	12	12	2	0.2	DC**11T3...	1.2
JTDJ2CL1212M11	12	12	150	20	12	12	-	0.8	DC**11T3...	1.2
JTDJ2CR/L1616X11	16	16	120	20	16	16	-	0.2	DC**11T3...	1.2

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
JTDJ2CR/L**07	JCP-2	JDS-3525	P-2F
JTDJ2CR/L**11	JCP-3	JDS-5040	P-2.5F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B018			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Chipbreaker shape	T-DIA with rake	AL
Cutting conditions	B024	

S

Application	Precision finishing	Finishing to medium cutting
Grade	BX470	AH8005
Chipbreaker shape	T-CBN	PS
Cutting conditions	B026	

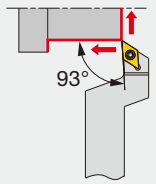
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B028	

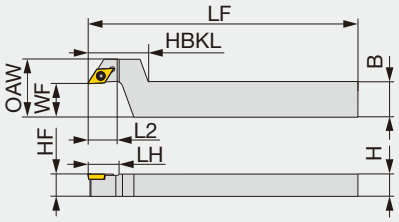
Reference pages: JTDJ2CR/L: Inserts → B119 -, CBN → B181, PCD → B190

JSDJCR-F

Screw-on stepped-head toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJCR1016X07-F15	10	16	120	12.5	27	14	10	15	26	0.2	DC**0702...	1.2
JSDJCR1216F07-F15	12	16	85	12.5	27	14	12	15	26	0.2	DC**0702...	1.2
JSDJCR1216X07-F15	12	16	120	12.5	27	14	12	15	26	0.2	DC**0702...	1.2
JSDJCR1216F11-F15	12	16	85	12.5	27	20	12	15	28	0.2	DC**11T3...	1.2
JSDJCR1216X11-F15	12	16	120	12.5	27	20	12	15	28	0.2	DC**11T3...	1.2
JSDJCR1620X11-F15	16	20	120	12.5	27	20	16	15	28	0.2	DC**11T3...	1.2

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSDJCR**07-F15	CSTB-2.5	T-8F
JSDJCR**11-F15	CSTB-4SD	T-8F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B018			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Chipbreaker shape	T-DIA with rake	AL
Cutting conditions	B024	

S

Application	Precision finishing	Finishing to medium cutting
Grade	BX470	AH8005
Chipbreaker shape	T-CBN	PS
Cutting conditions	B026	

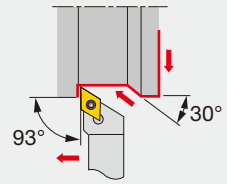
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B028	

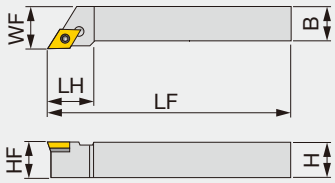
Reference pages: JSDJCR-F: Inserts → B119 -, CBN → B181, PCD → B190

SDJCR/L

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
SDJCR1616H11	16	16	100	20	16	20	0.8	DC**11T3...
SDJCR/L2020K11	20	20	125	20.5	20	25	0.8	DC**11T3...
SDJCR/L2525M11	25	25	150	21.5	25	32	0.8	DC**11T3...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
SDJCR/L...	CSTB-3.5L	DTS5-3.5	SSD32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Chipbreaker shape	PSS	PS	PM
Cutting conditions	B018		

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Chipbreaker shape	W**	PSF	PSS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B024		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B026	

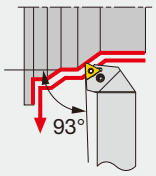
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B028	

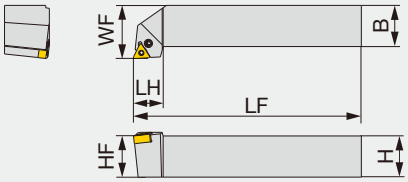
Reference pages: SDJCR/L: Inserts→ B119 -, CBN → B181, PCD → B190

PTJNR/L-Eco

Lever-lock toolholder with 93° approach angle, for negative triangular inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PTJNR/L2525M1104	25	25	150	18	25	32	0.8	TN**1104...	2

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench	Lever
PTJNR/L2525M1104	LCS23A	P-2.5	LCL23

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF 	TM 
Cutting conditions	B006	

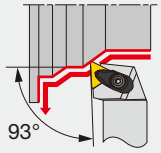
M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS 	SM 
Cutting conditions	B008	

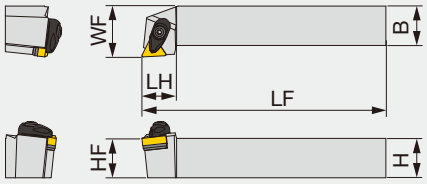
Reference pages: PTJNR/L-Eco: Inserts → B084 -

ATJNR/L

Double-clamp toolholder with 93° approach angle, for negative 60° triangular inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ATJNR/L2020K16-A	20	20	125	22	20	25	0.8	TN**1604...	3
ATJNR/L2525M16-A	25	25	150	22	25	32	0.8	TN**1604...	3

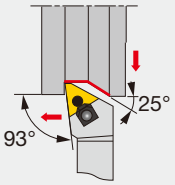
*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

SPARE PARTS

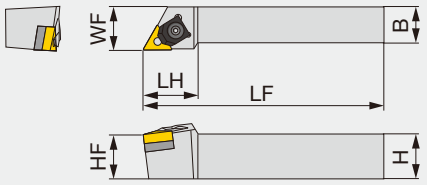
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ATJNR/L**16-A	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F

WTJNR/L

Wedge-on toolholder with 93° approach angle, for negative 60° triangular inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
WTJNR2020	20	20	125	31	20	25	0.8	TN**1604...
WTJNR/L2525M3	25	25	150	31	25	32	0.8	TN**1604...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	E-ring	Nut	Pin	Clamping screw	Shim	Wrench
WTJNR2020	WCW3	5103-25	WCN3S	WCP3S	WCS3	WST33	P-3
WTJNR/L2525M3	WCW3	5103-25	WCN3	WCP3S	WCS3	WST33	P-3

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

H

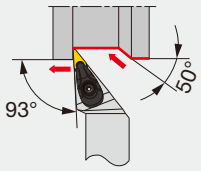
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: ATJNR/L, WTJNR/L: Inserts→ B084 -, CBN → B176 -, PCD → B188

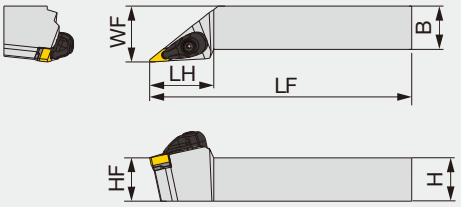
ISOEcoTURN

AVJNR/L-Eco

Double-clamp toolholder with 93° approach angle, for negative 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVJNR/L2020K1204-A	20	20	125	37	20	25	0.8	VN**1204...	3
AVJNR/L2525M1204-A	25	25	150	37	25	32	0.8	VN**1204...	3

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

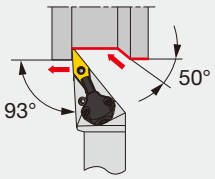
SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVJNR/L**-A	ACP3L-E	ACS-5W	BP-7	SP-2.5	ASV222	CSTB-3.0	T-15F

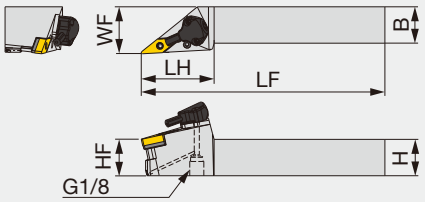
TUNGTJET TURN — ISOEcoTURN

PVJNR/L-CHP

Lever-lock toolholder with 93° approach angle, for negative 35° rhombic inserts, with high pressure coolant capability



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PVJNR/L2020K1204-CHP	20	20	125	50	25	32	0.8	VN**1204...	2
PVJNR/L2525M1204-CHP	25	25	150	50	25	32	0.8	VN**1204...	2

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PVJNR/L**1204-CHP	LSV212	LCS3V	P-2.5	LSP3	LCL3V

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PVJNR/L**1204-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF	TM
Cutting conditions	B006	

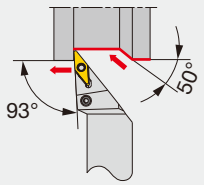
M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS	SM
Cutting conditions	B008	

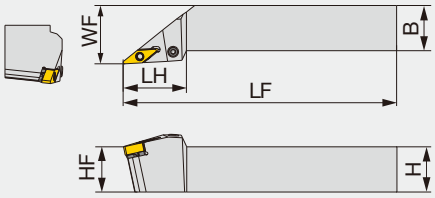
Reference pages AVJNR/L-Eco, PVJNR/L-CHP: Inserts → B095 - Parts for coolant hose → C132

PVJNR/L-Eco

Lever-lock toolholder with 93° approach angle, for negative 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PVJNR/L2020K1204	20	20	125	35	20	25	0.8	VN**1204...	2
PVJNR/L2525M1204	25	25	150	35	25	32	0.8	VN**1204...	2

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PVJNR/L**1204	LSV212	LCS3V	P-2.5	LSP3	LCL3V

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF	TM
Cutting conditions	B006	

M

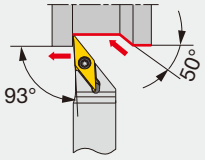
Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS	SM
Cutting conditions	B008	

Reference pages: PVJNR/L-Eco: Inserts → B095 -

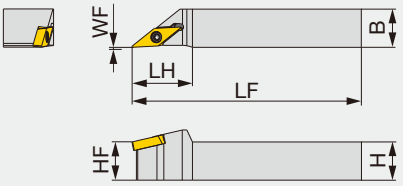
MINIFORCE TURN

JSVJ2XR/L

Screw-on toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVJ2XR/L1010X09	10	10	120	17	10	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1212F09	12	12	85	19	12	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1212X09	12	12	120	19	12	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1616X09	16	16	120	19	16	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L2020H09	20	20	100	19	20	0	0.2	VXGU09T2**L/R...	0.9

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

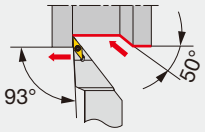
SPARE PARTS

Designation	Clamping screw	Wrench
JSVJ2XR/L...	SR34-508	T-7F

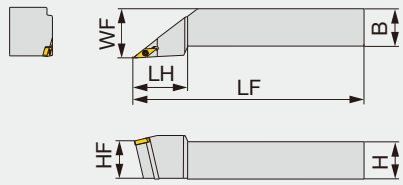
MINIFORCE TURN

JSVJXR/L

Screw-on toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVJXR/L2020K09	20	20	125	35	20	25	0.4	VXGU09T2**L/R...	0.9
JSVJXR/L2525M09	25	25	150	35	25	32	0.4	VXGU09T2**L/R...	0.9

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
JSVJXR/L...	SR34-508	T-7F

INSERT SELECTION

P

Application	Finishing
Grade	**SH725**
Chipbreaker shape	JRP 
Cutting conditions	C133

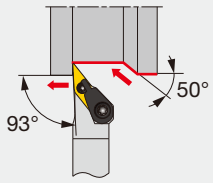
M

Application	Finishing
Grade	**SH725**
Chipbreaker shape	JRP 
Cutting conditions	C133

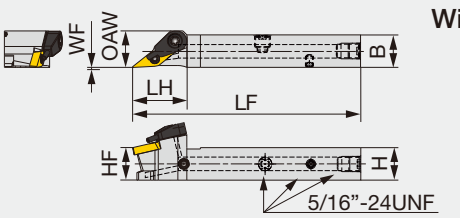
Reference pages JSVJ2XR/L, JSVJXR/L: Inserts→ B156
Standard cutting conditions → C133

JSVJ2XR/L-CHP

Screw-on toolholder with 93° approach angle, for VXGU inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJ2XR/L1212F09-CHP	12	12	85	20	12	0	13.5	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR1212X09-CHP(1)	12	12	120	19.5	12	0	13.4	0.2	VXGU09T2**L...	0.9
JSVJ2XR1616X09-CHP(1)	16	16	120	19.5	16	0	16	0.2	VXGU09T2**L...	0.9

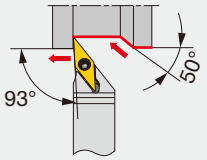
*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).
Can be used with DirectTungJet system.

SPARE PARTS

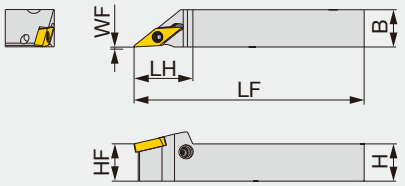
Designation	Clamping screw	Coolant unit	Wrench
JSVJ2XR/L1212F09-CHP	SR34-508	S-CU-CHP	T-7F

JPVJ2XR/L

Back-clamp toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JPVJ2XR/L1010X09	10	10	120	19	10	0	0.2	VXGU09T2**L/R...	0.9
JPVJ2XR/L1212F09	12	12	85	19	12	0	0.2	VXGU09T2**L/R...	0.9
JPVJ2XR/L1212X09	12	12	120	19	12	0	0.2	VXGU09T2**L/R...	0.9
JPVJ2XR/L1616X09	16	16	120	19	16	0	0.2	VXGU09T2**L/R...	0.9

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Lever	Pin	Clamping screw	Wrench
JPVJ2XR/L...	SLLV-1	SL-PI-2	SR10400611	HW2.0/5RED

INSERT SELECTION

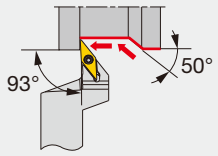
P	Application	Finishing
	Grade	SH725
	Chipbreaker shape	JRP 
	Cutting conditions	C133

M	Application	Finishing
	Grade	SH725
	Chipbreaker shape	JRP 
	Cutting conditions	C133

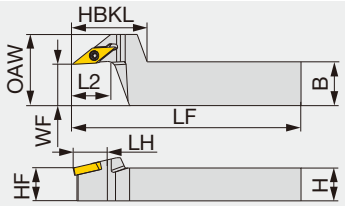
Reference pages JSVJ2XR/L-CHP, JPVJ2XR/L: Insert → B156
Standard cutting conditions → C133

JSVJXR-F

Screw-on stepped-head toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJXR1016X09-F15	10	16	120	12	27	19	10	15	26	0.2	VXGU09T2**L...	0.9
JSVJXR1216F09-F15	12	16	85	12	27	19	12	15	26	0.2	VXGU09T2**L...	0.9
JSVJXR1216X09-F15	12	16	120	12	27	19	12	15	26	0.2	VXGU09T2**L...	0.9
JSVJXR1620X09-F15	16	20	120	12	27	19	16	15	26	0.2	VXGU09T2**L...	0.9

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS




Designation	Clamping screw	Wrench
JSVJXR**-F15	SR34-508	T-7F

INSERT SELECTION

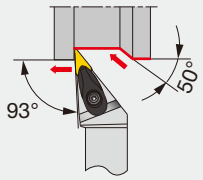
P	Application	Finishing
	Grade	SH725
	Chipbreaker shape	JRP 
	Cutting conditions	C133

M	Application	Finishing
	Grade	SH725
	Chipbreaker shape	JRP 
	Cutting conditions	C133

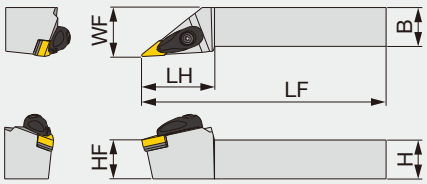
Reference pages JSVJXR-F: Inserts→ B156
Standard cutting conditions → C133

AVJNR/L

Double-clamp toolholder with 93° approach angle, for negative 35° and 25° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVJNR/L2020K16-A	20	20	125	43	20	25	0.8	V/YN**1604...	3
AVJNR/L2525M16-A	25	25	150	46	25	32	0.8	V/YN**1604...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVJNR/L**16-A	ACP3L	ACS-5W	BP-7	SP-2.5	ASV322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker shape	TF	TSF	TM
Cutting conditions	B006		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	T-DIA with rake
Cutting conditions	B012

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

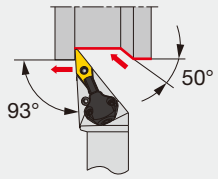
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

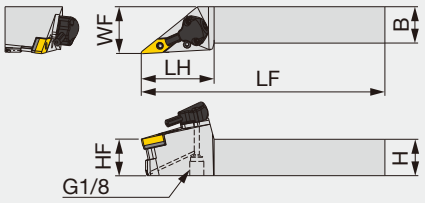
Reference pages: AVJNR/L: Inserts → B094 -, B107, CBN → B178, PCD → B188

PVJNR/L-CHP

Lever-lock toolholder with 93° approach angle, for negative 35° and 25° rhombic inserts, with high pressure coolant capability



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PVJNR/L2020K16-CHP	20	20	125	50	20	32	0.8	V/YN**1604...	2
PVJNR/L2525M16-CHP	25	25	150	50	25	32	0.8	V/YN**1604...	2

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PVJNR/L**16-CHP	LSV317	LCS3V	P-2.5	LSP3	LCL3V

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PVJNR/L**16-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker shape	TF	TSF	TM
Cutting conditions	B006		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	T-DIA with rake
Cutting conditions	B012

S

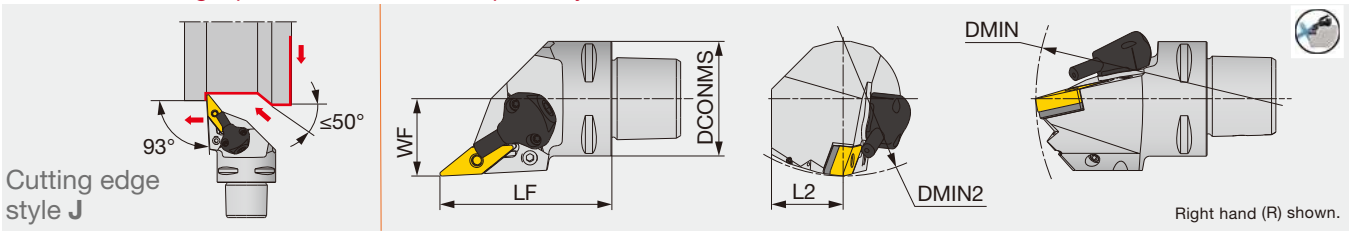
Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages PVJNR/L-CHP: Inserts→ B094 -, B107, CBN → B178, PCD → B188
Parts for coolant hose → C132

Lever-lock toolholder with TungCap connection, with 93° approach angle, for negative 35° and 25° inserts, with high pressure coolant capability



Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PVJNR/L27060-1204-CHP	40	60	20	27	140	90	0.8	VN**1204...
C4PVJNR/L27060-16-CHP	40	60	-	27	140	110	0.8	V/YN**1604...
C6PVJNR/L45065-1204-CHP	63	65	31.5	45	190	81	0.8	VN**1204...
C6PVJNR/L45065-16-CHP	63	65	-	45	190	81	0.8	V/YN**1604...

Applicable for 14 MPa coolant
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench1	Wrench2	Spring pin	Lever
C*PVJNR/L**-1204-CHP	LSV212	LCS3V	P-2.5	P-3	LSP3	LCL3V
C*PVJNR/L**-16-CHP	LSV317	LCS3V	P-2.5	-	LSP3	LCL3V

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench3	O-ring
C*PVJNR/L**-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker shape	TF	TSF	TM
Cutting conditions	B006		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	T-DIA with rake
Cutting conditions	B012

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

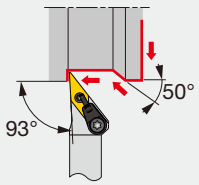
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

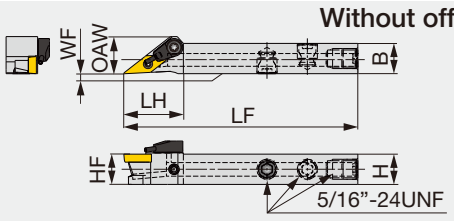
Reference pages C-PVJNR/L-CHP: Insert→ B094 -, B107, CBN → B178, PCD → B188
Parts for coolant hose → C132

JSVJ2BR/L-CHP

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts, with high pressure coolant capability



Cutting edge style **J2**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJ2BR/L1212F11-CHP	12	12	85	23.6	12	0	14.7	0.2	VB**1103...	1.2
JSVJ2BR1212X11-CHP	12	12	120	23.6	12	0	14.7	0.2	VB**1103...	1.2
JSVJ2BR1616X11-CHP	16	16	120	23.6	16	0	16	0.2	VB**1103...	1.2

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
JSVJ2BR/L1212F11-CHP	CSTB-2.5	S-CU-CHP	T-8F	-	-	-	-
JSVJ2B**11-CHP	CSTB-2.5	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Chipbreaker shape	PSS	PS
Cutting conditions	B018	

M

Application	Finishing	Finishing to medium cutting
Grade	AH725	AH630
Chipbreaker shape	PSF	PSS
Cutting conditions	B020	

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B022

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B026	

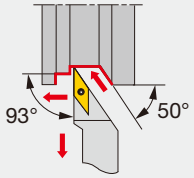
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B028	

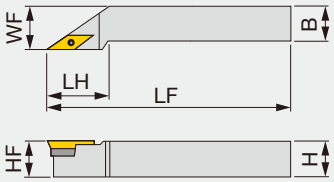
Reference pages JSVJ2BR/L-CHP: Inserts → B150 -, CBN → B186
Parts for coolant hose → C132

SVJCR/L

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
SVJCR/L1616H16	16	16	100	32	16	20	0.8	VC**1604...
SVJCR/L2020K16	20	20	125	32	20	25	0.8	VC**1604...
SVJCR/L2525M16	25	25	150	40	25	32	0.8	VC**1604...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
SVJCR/L...	CSTB-3.5L	DTS5-3.5	SSV32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Chipbreaker shape	PSS	PS
Cutting conditions	B018	

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Chipbreaker shape	PSF	PSS	PM
Cutting conditions	B020		

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA (with rake)	T-DIA	AL
Cutting conditions	B024		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B026	

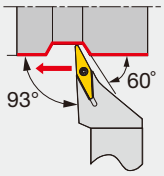
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B028	

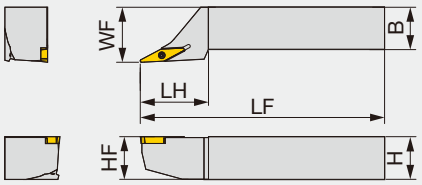
Reference pages: SVJCR/L:Inserts→ B153 -, CBN → B186, PCD → B190

SYJBR/L

Screw-on toolholder with 93° approach angle, for positive 25° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
SYJBR/L2020K16	20	20	125	35	20	25	0.8	YWMT16T3...
SYJBR/L2525M16	25	25	150	40	25	32	0.8	YWMT16T3...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
SYJBR/L...	CSTB-2.5L080	T-8F

INSERT SELECTION

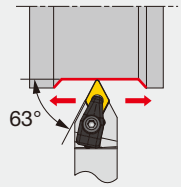
P	Application	Finishing to medium cutting
	Grade	T9225
	Chipbreaker shape	ZM 
	Cutting conditions	B006

K	Application	Finishing to medium cutting
	Grade	GT9530
	Chipbreaker shape	ZM 
	Cutting conditions	B010

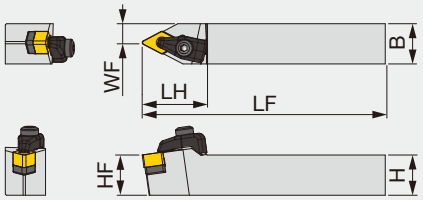
Reference pages: SYJBR/L: Inserts → B160

CDNNN-RD

Double-clamp toolholder with 63° approach angle, for negative 55° rhombic ceramic inserts with dimple



Cutting edge style **N**



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
CDNNN2525M1507-RD	25	25	150	40	25	12.5	1.2	DN*D1507...	4

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench1	Wrench2
CDNNN2525M1507-RD	CCP4-A	CCS4-A	CD44-A	BH5-10-A	BP-5-A	P-3	P-4

INSERT SELECTION

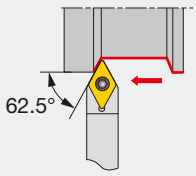
K

Application	Finishing to medium cutting
Grade	FX105
Chipbreaker shape	- 
Cutting conditions	C134

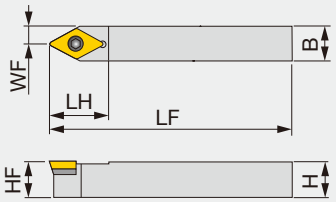
Reference pages CDNNN-RD: Inserts→ B073
Standard cutting conditions → C134

SDNCN

Screw-on toolholder with 62.5° approach angle, for positive 55° rhombic inserts



Cutting edge style **N**



Designation	H	B	LF	LH	HF	WF	RE**	Insert
SDNCN1616H11	16	16	100	21	16	8	0.8	DC**11T3...
SDNCN2020K11	20	20	125	21	20	10	0.8	DC**11T3...
SDNCN2525M11	25	25	150	21	25	12.5	0.8	DC**11T3...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
SDNCN...	CSTB-3.5L	DTS5-3.5	SSD32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Chipbreaker shape	PSS	PS	PM
Cutting conditions	B018		

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Chipbreaker shape	W**	PSF	PSS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA (with rake)	T-DIA	AL
Cutting conditions	B024		

S

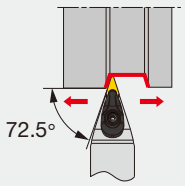
Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B026	

H

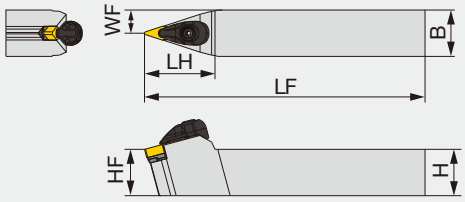
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: SDNCN:Inserts → B119 -, CBN → B181, PCD → B190

Double-clamp toolholder with 72.5° approach angle, for negative 35° rhombic inserts



Cutting edge style **V**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVVNN2020K1204-A	20	20	125	38	20	10	0.8	VN**1204...	3
AVVNN2525K1204-A	25	25	150	38	25	13	0.8	VN**1204...	3

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVVNN**-A	ACP3L-E	ACS-5W	BP-7	SP-2.5	ASV222	CSTB-3.0	T-15F

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF	TM
Cutting conditions	B006	

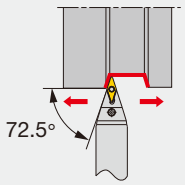
M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS	SM
Cutting conditions	B008	

Reference pages: AVVNN-Eco: Inserts → B095 -

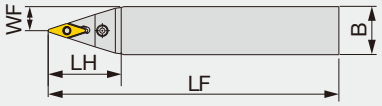
PVVNN-Eco

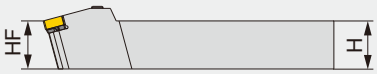
Lever-lock toolholder with 72.5° approach angle, for negative 35° rhombic inserts



Cutting edge style **V**







Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PVVNN2020K1204	20	20	125	38	20	10	0.8	VN**1204...	2
PVVNN2525M1204	25	25	150	38	25	12.5	0.8	VN**1204...	2

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PVVNN**1204	LSV212	LCS3V	P-2.5	LSP3	LCL3V

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF	TM
Cutting conditions	B006	

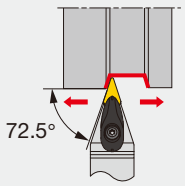
M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS	SM
Cutting conditions	B008	

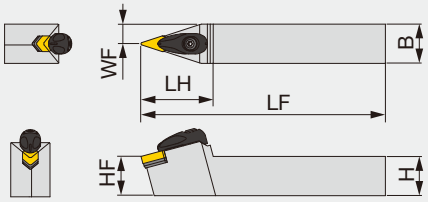
Reference pages: PVVNN-Eco: Inserts → B095 -

AVVNN

Double-clamp toolholder with 72.5° approach angle, for negative 35° and 25° rhombic inserts



Cutting edge style **V**



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVVNN2020K16-A	20	20	125	46	20	10	0.8	V/YN**1604...	3
AVVNN2525M16-A	25	25	150	46	25	12.5	0.8	V/YN**1604...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVVNN**16-A	ACP3L	ACS-5W	BP-7	SP-2.5	ASV322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker shape	TF	TSF	TM
Cutting conditions	B006		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	T-DIA with rake
Cutting conditions	B012

S

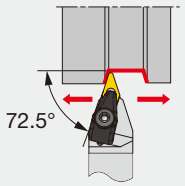
Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

H

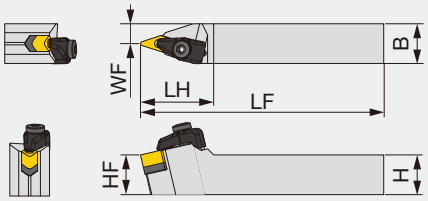
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: AVVNN: Inserts → B094 -, B107, CBN → B178, PCD → B188

Double-clamp toolholder with 72.5° approach angle, for negative 35° rhombic ceramic inserts with dimple



Cutting edge style **V**



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
CVVNN2525M1607-RD	25	25	150	46	25	12.5	1.2	VN*D160712	4

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench1	Wrench2
CVVNN2525M1607-RD	CCP4-A	CCS4-A	CV34-A	BH-4-10-A	BP-5-A	P-3	P-4

INSERT SELECTION

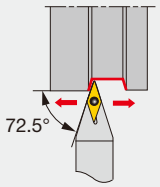
K

Application	Finishing to medium cutting
Grade	FX105
Chipbreaker shape	- 
Cutting conditions	C134

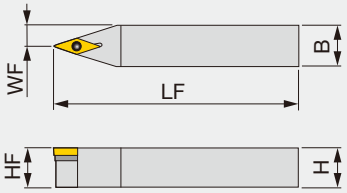
Reference pages CVVNN-RD: Inserts → B099, Standard cutting conditions → C134

SVVCN

Screw-on toolholder with 72.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **V**



Designation	H	B	LF	HF	WF	RE**	Insert
SVVCN2020K16	20	20	125	20	10	0.8	VC**1604...
SVVCN2525M16	25	25	150	25	12.5	0.8	VC**1604...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
SVVCN...	CSTB-3.5L	DTS5-3.5	SSV32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Chipbreaker shape	PSS	PS
Cutting conditions	B018	

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Chipbreaker shape	PSF	PSS	PM
Cutting conditions	B020		

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA	T-DIA (with rake)	AL
Cutting conditions	B024		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B026	

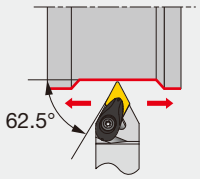
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B028	

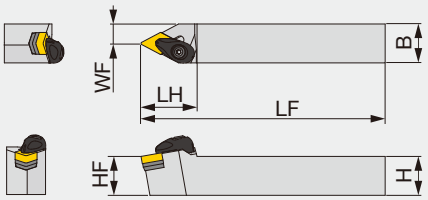
Reference pages: SVVCN: Inserts → B153 -, CBN → B186, PCD → B190

ADPNN

Double-clamp toolholder with 62.5° approach angle, for negative 55° rhombic inserts



Cutting edge style **P**



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ADPNN2020K15-A	20	20	125	36	20	7.5	0.8	DN**1504...	3
ADPNN2525M15-A	25	25	150	36	25	12.5	0.8	DN**1504...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ADPNN**15-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASD432	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

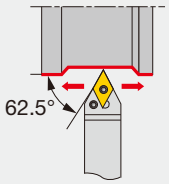
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

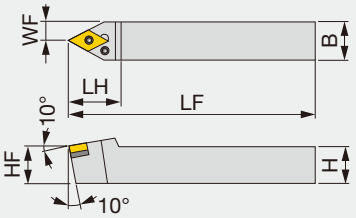
Reference pages: ADPNN: Inserts→ B065 -, CBN → B172 -, PCD → B188

PDPNN

Lever-lock toolholder with 62.5° approach angle, for negative 55° rhombic inserts



Cutting edge style **P**



Designation	H	B	LF	LH	HF	WF	RE**	Insert
PDPNN2525	25	25	150	36	25	12.5	0.8	DN**1504...
PDPNN2525M15E	25	25	150	36	25	12.5	0.8	DN**1506...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PDPNN2525	LSD42	LCS4	P-3	LSP4	LCL4
PDPNN2525M15E	ELSD42	ELCS4	P-3	LSP4S	LCL44

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA	with rake T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B014		

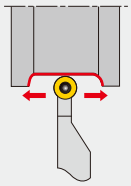
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B016	

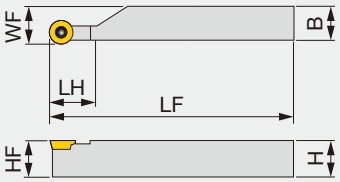
Reference pages: PDPNN: Inserts → B065 -, CBN → B172 -, PCD → B188

SRACR/L

Screw-on toolholder with 91° approach angle, for positive round inserts



Cutting edge style **A**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	Insert
SRACR1010H05	10	10	100	10	10	10.3	RCMT0502...
SRACR/L1212H05	12	12	100	10	12	12.3	RCMT0502...
SRACR/L1212H06	12	12	100	12	12	12.4	RC*T0602...
SRACR1616H05	16	16	100	10	16	16.3	RCMT0502...
SRACR/L1616H06	16	16	100	12	16	16.4	RC*T0602...
SRACR/L1616H08	16	16	100	16	16	16.5	RC*T0803...
SRACR/L2020K05	20	20	125	10	20	20.3	RCMT0502...
SRACR/L2020K06	20	20	125	12	20	20.4	RC*T0602...
SRACR/L2020K08	20	20	125	16	20	20.5	RC*T0803...
SRACR/L2525M05	25	25	150	10	25	25.3	RCMT0502...
SRACR/L2525M06	25	25	150	12	25	25.4	RC*T0602...
SRACR/L2525M08	25	25	150	16	25	25.5	RC*T0803...

SPARE PARTS




Designation	Clamping screw	Wrench
SRACR/L1*1*H05	CSTB-2.2R	T-7F
SRACR/L1212H06	CSTB-2.5	T-8F
SRACR1616H05	CSTB-2.2R	T-7F
SRACR/L1616H06	CSTB-2.5	T-8F
SRACR/L1616H08	CSTB-3	T-9F
SRACR/L2020K05	CSTB-2.2R	T-7F
SRACR/L2020K06	CSTB-2.5	T-8F
SRACR/L2020K08	CSTB-3	T-9F
SRACR/L2525M05	CSTB-2.2R	T-7F
SRACR/L2525M06	CSTB-2.5	T-8F
SRACR/L2525M08	CSTB-3	T-9F

INSERT SELECTION

P

Application	Finishing to medium cutting	heavy cutting
Grade	T9215	T9215
Chipbreaker shape	RS 	61 
Cutting conditions	B018	

M

Application	heavy cutting
Grade	T9215
Chipbreaker shape	61 
Cutting conditions	B020

K

Application	heavy cutting
Grade	T9215
Chipbreaker shape	61 
Cutting conditions	B022

N

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker shape	AL 
Cutting conditions	B024

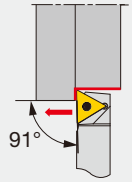
S

Application	Finishing to medium cutting	heavy cutting
Grade	AH8015	AH8015
Chipbreaker shape	RS 	61 
Cutting conditions	B026	

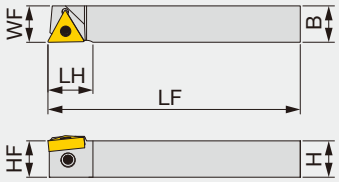
Reference pages: SRACR/L: Inserts → B129 -

JTTANR/L

Back-clamp toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **A**



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JTTANR/L1216K16	12	16	125	19.8	12	16	0.4	TN**1604...	1.2
JTTANR/L1616K16	16	16	125	19.8	16	16	0.4	TN**1604...	1.2

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
JTTANR/L...	JCP-3N	JDS-5040	P-2.5F

INSERT SELECTION

P

Application	Precision finishing
Grade	SH725
Chipbreaker shape	01 
Cutting conditions	B006

M

Application	Precision finishing
Grade	SH725
Chipbreaker shape	01 
Cutting conditions	B008

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM 
Cutting conditions	B010

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	T-DIA with rake 
Cutting conditions	B012

S

Application	Precision finishing
Grade	BX470
Chipbreaker shape	T-CBN 
Cutting conditions	B014

H

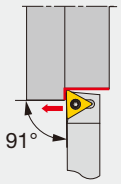
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN 	T-CBN 
Cutting conditions	B016	

Reference pages: JTTANR/L: Inserts → B084 -, CBN → B176 -, PCD → B188 -

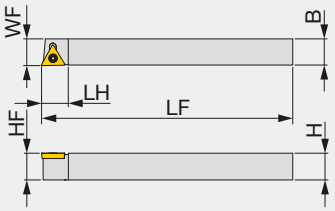
J-SERIES

JSTACR/L

Screw-on toolholder with 91° approach angle, for positive 60° triangular inserts



Cutting edge style **A**



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSTACR/L0808K08	8	8	125	10	8	8	0.2	TC**0802...	0.6
JSTACR/L1010K08	10	10	125	10	10	10	0.2	TC**0802...	0.6
JSTACR/L1212K11	12	12	125	12	12	12	0.4	TC**1102...	1.2
JSTACR/L1616H11	16	16	100	12	16	16	0.4	TC**1102...	1.2

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

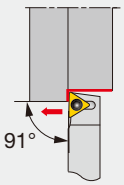
SPARE PARTS

Designation	Clamping screw	Wrench
JSTACR/L**K08	CSTB-2L	T-6F
JSTACR/L**11	CSTB-2.5	T-8F

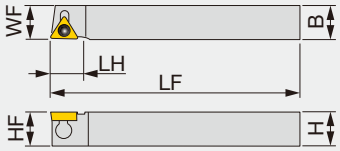
J-SERIES

JTTACR/L

Back-clamp toolholder with 91° approach angle, for positive 60° triangular inserts



Cutting edge style **A**



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JTTACL0810K08	8	10	125	10	8	10	0.2	TC**0802...	0.9
JTTACR/L1212M11	12	12	150	12	12	12	0.4	TC**1102...	0.9
JTTACR/L1616M11	16	16	150	12	16	16	0.4	TC**1102...	0.9

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
JTTACL0810K08	JCP-1	JDS-3525	P-2F
JTTACR/L**M11	JCP-2	JDS-3525	P-2F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B018			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B022

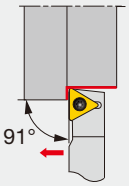
N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Chipbreaker shape	T-DIA	with rake AL
Cutting conditions	B024	

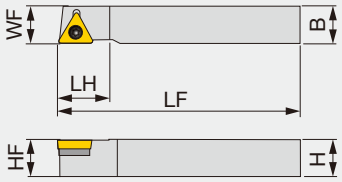
Reference pages: JSTACR/L, JTTACR/L: Inserts→ B137 -, PCD → B190

STACR/L

Screw-on toolholder with 91° approach angle, for positive 60° triangular inserts



Cutting edge style **A**



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
STACR/L1616H16	16	16	100	22.5	16	16	0.8	TC**16T3...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
STACR/L...	CSTB-3.5L	DTS5-3.5	SST32	P-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	NS9530	T9215	T9215
Chipbreaker shape	01	PSS	PS	PM
Cutting conditions	B018			

M

Application	Finishing	Medium cutting
Grade	AH725	T6130
Chipbreaker shape	PSF	PM
Cutting conditions	B020	

K

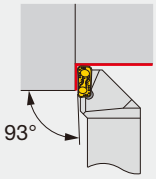
Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B022

N

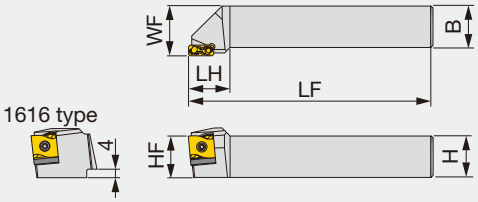
Application	Precision finishing
Grade	DX120
Chipbreaker shape	T-DIA (with rake)
Cutting conditions	B024

Reference pages: STACR/L: Inserts → B137 -

Screw-on toolholder for roughing with 93° approach angle, for negative tangential inserts



Cutting edge style **A**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	Insert
TLANR/L1616H12	16	16	100	20	16	20	LNMX1204**R/L...
TLANR/L1616M12S	16	16	150	20	16	20	LNMX1204**R/L...
TLANR/L2020K12	20	20	125	20	20	25	LNMX1204**R/L...
TLANR/L2020K16	20	20	125	25	20	25	LNMX1606**R/L...
TLANR/L2525M12	25	25	150	20	25	30	LNMX1204**R/L...
TLANR/L2525M16	25	25	150	25	25	30	LNMX1606**R/L...
TLANR/L3232P16	32	32	170	35	32	37	LNMX1606**R/L...
TLANR/L3232P24	32	32	170	35	32	38	LNMX2410**R/L...
TLANR/L4040R16	40	40	200	35	40	47	LNMX1606**R/L...
TLANR/L4040R24	40	40	200	40	40	47	LNMX2410**R/L...
TLANR/L5050S24	50	50	250	40	50	57	LNMX2410**R/L...

SPARE PARTS

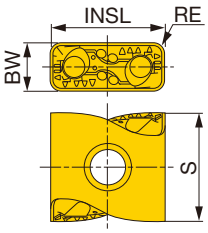
Designation	Clamping screw	Shim screw	Shim	Spring	Wrench 1	Wrench 2
TLANR1616H12	CSTB-3.5L115-S	CSTF-2L055-S	TSL12R	-	KEYV-T10	T-6F-S
TLANL1616H12	CSTB-3.5L115-S	CSTF-2L055-S	TSL12L	-	KEYV-T10	T-6F-S
TLANR1616M12S	CSTB-3.5L115-S	CSTF-2L055-S	TSL12R	-	KEYV-T10	T-6F-S
TLANL1616M12S	CSTB-3.5L115-S	CSTF-2L055-S	TSL12L	-	KEYV-T10	T-6F-S
TLANR2020K12	CSTB-3.5L115-S	CSTF-2L055-S	TSL12R	-	KEYV-T10	T-6F-S
TLANL2020K12	CSTB-3.5L115-S	CSTF-2L055-S	TSL12L	-	KEYV-T10	T-6F-S
TLANR2020K16	CSTB-4L115-S	-	TSL16R	PSP-16	KEYV-T15	-
TLANL2020K16	CSTB-4L115-S	-	TSL16L	PSP-16	KEYV-T15	-
TLANR2525M12	CSTB-3.5L115-S	CSTF-2L055-S	TSL12R	-	KEYV-T10	T-6F-S
TLANL2525M12	CSTB-3.5L115-S	CSTF-2L055-S	TSL12L	-	KEYV-T10	T-6F-S
TLANR2525M16	CSTB-4L115-S	-	TSL16R	PSP-16	KEYV-T15	-
TLANL2525M16	CSTB-4L115-S	-	TSL16L	PSP-16	KEYV-T15	-
TLANR3232P16	CSTB-4L115-S	-	TSL16R	PSP-16	KEYV-T15	-
TLANL3232P16	CSTB-4L115-S	-	TSL16L	PSP-16	KEYV-T15	-
TLANR3232P24	CSTB-5L163-S	-	TSL24R	SP 16-L14	KEYV-T20	-
TLANL3232P24	CSTB-5L163-S	-	TSL24L	SP 16-L14	KEYV-T20	-
TLANR4040R16	CSTB-4L115-S	-	TSL16R	PSP-16	KEYV-T15	-
TLANL4040R16	CSTB-4L115-S	-	TSL16L	PSP-16	KEYV-T15	-
TLANR4040R24	CSTB-5L163-S	-	TSL24R	SP 16-L14	KEYV-T20	-
TLANL4040R24	CSTB-5L163-S	-	TSL24L	SP 16-L14	KEYV-T20	-
TLANR5050S24	CSTB-5L163-S	-	TSL24R	SP 16-L14	KEYV-T20	-
TLANL5050S24	CSTB-5L163-S	-	TSL24L	SP 16-L14	KEYV-T20	-

Reference pages
TLANR/L: Inserts → C077
Standard cutting conditions → C134

INSERT

LNMX12/16/24





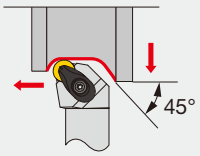
Designation	RE	Coated						BW	INSL	S
		T9115		T9125		AH725				
		R	L	R	L	R	L			
LNMX120408R/L-TDR	0.8	●	●	●	●			4.8	12	11.6
LNMX120412R/L-TDR	1.2	●	●	●	●			4.8	12	11.6
LNMX160608R/L-TDR	0.8	●	●	●	●			6.4	16.2	13.5
LNMX160612R/L-TDR	1.2	●	●	●	●			6.4	16.2	13.5
LNMX160616R/L-TDR	1.6	●	●	●	●			6.4	16.2	13.5
LNMX241016R/L-TDR	1.6	●	●	●	●			9.4	24	20.5
LNMX241024R/L-TDR	2.4	●	●	●	●			9.4	24	20.5
LNMX160608R/L-MDR	0.8	●	●			●	●	6.4	16.2	13.5
LNMX160612R/L-MDR	1.2	●	●			●	●	6.4	16.2	13.5
LNMX160608R/L-TWR	0.8	●	●	●	●			6.4	16.2	13.5
LNMX160612R/L-TWR	1.2	●	●	●	●			6.4	16.2	13.5

● : Line up

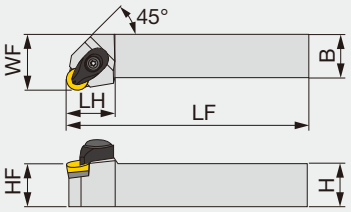
Reference pages: Standard cutting conditions → C134

ARGNR/L

Double-clamp toolholder with 91° approach angle, for negative round inserts



Cutting edge style **G**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ARGNR/L2525M12-A	25	25	150	28	25	32	6.35	RN**120400	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ARGNR/L...	ACP4S	ACS-5W	BP-7	SP-2.5	ASR420	CSTB-3.5	T-15F

INSERT SELECTION

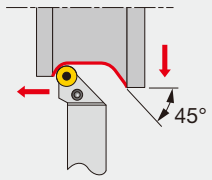
P

Application	Semi-finishing to medium cutting
Grade	T9225
Chipbreaker Shape	61 
Cutting conditions	B006

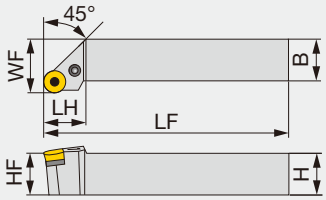
Reference pages: ARGNR/L: Inserts → B074

PRGNR/L

Lever-lock toolholder with 91° approach angle, for negative round inserts



Cutting edge style **G**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
PRGNR/L2020	20	20	125	19	20	25	4.76	RNMG090300-61
PRGNR/L2525M4	25	25	150	25	25	32	6.35	RN**120400

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PRGNR/L2020	LSR32	LCS3	P-2.5	LSP3	LCL3
PRGNR/L2525M4	LSR42	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Applicadtion	Heavy cutting
Grade	T9215
Chipbreaker Shape	61
Cutting conditions	B006

M

Applicadtion	Heavy cutting
Grade	T9215
Chipbreaker Shape	61
Cutting conditions	B008

K

Applicadtion	Heavy cutting
Grade	T9215
Chipbreaker Shape	61
Cutting conditions	B010

N

Applicadtion	Heavy cutting
Grade	TH10
Chipbreaker Shape	61
Cutting conditions	B012

S

Applicadtion	Heavy cutting
Grade	TH10
Chipbreaker Shape	61
Cutting conditions	B014

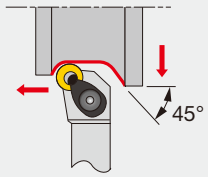
H

Applicadtion	Finishing to medium cutting
Grade	LX11
Chipbreaker Shape	-
Cutting conditions	B016

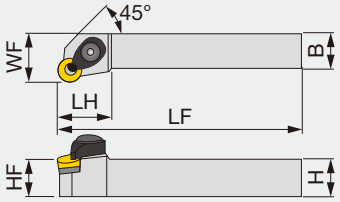
Reference pages: PRGNR/L: Inserts → B074

DRGNR/L

"One-Double" toolholder with 91° approach angle, for negative round inserts



Cutting edge style **G**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
DRGNR/L2525M12	25	25	150	28	25	32	6.35	RN**120400

**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DRGNR/L...	DCPM-43	DLCL43	DPIS43	DLCS43	LSR42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

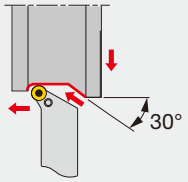
P

Application	Semi-finishing to medium cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B006

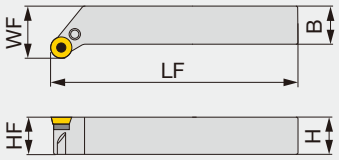
Reference pages: DRGNR/L: Inserts → B074

PRGCR/L

Lever-lock toolholder with 91° approach angle, for positive round inserts



Cutting edge style **G**



Right hand (R) shown.

Designation	H	B	LF	HF	WF	Insert
PRGCR/L2020K10	20	20	125	20	25	RCMM1003...
PRGCR/L2525M12	25	25	150	25	32	RCM*1204...
PRGCR/L3225P16	32	25	170	32	32	RCM*1606...
PRGCR/L3232P20	32	32	170	32	40	RCM*2006...

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PRGCR/L2020K10	LSR32C	LCS2	P-2	LSP3	LCL3C
PRGCR/L2525M12	LSR42C	LCS3	P-2.5	LSP3	LCL4C
PRGCR/L3225P16	LSR53C	LCS5	P-3	LSP4	LCL5C
PRGCR/L3232P20	LSR63C	LCS5	P-3	LSP6C	LCL6C

INSERT SELECTION

P

Application	Finishing to medium cutting	Heavy cutting
Grade	T9215	T9215
Chipbreaker Shape	RS 	61 
Cutting conditions	B018	

M

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B020

K

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B022

N

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B024

S

Application	Finishing to medium cutting	Heavy cutting
Grade	AH8015	AH8015
Chipbreaker Shape	RS 	61 
Cutting conditions	B026	

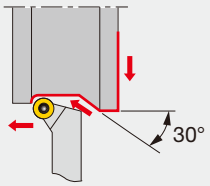
H

Application	Medium cutting
Grade	LX11
Chipbreaker Shape	- 
Cutting conditions	B028

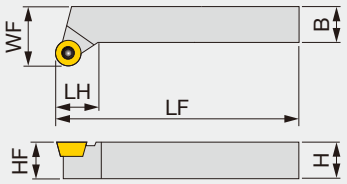
Reference pages: PRGCR/L: Inserts → B129 -

SRGCR/L

Screw-on toolholder with 91° approach angle, for positive round inserts



Cutting edge style **G**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	Insert
SRGCR1212H05	12	12	100	9.5	12	16	RCMT0502...
SRGCR/L1212H06	12	12	100	10	12	16	RC*T0602...
SRGCR/L1616H05	16	16	100	9.5	16	20	RCMT0502...
SRGCR/L1616H06	16	16	100	10	16	20	RC*T0602...
SRGCR/L1616H08	16	16	100	11	16	20	RC*T0803...
SRGCR/L2020K05	20	20	125	11.2	20	25	RCMT0502...
SRGCR/L2020K06	20	20	125	12	20	25	RC*T0602...
SRGCR/L2020K08	20	20	125	12.7	20	25	RC*T0803...
SRGCR/L2020K10	20	20	125	14	25	25	RC*T1003...
SRGCR/L2525M05	25	25	150	14.7	25	32	RCMT0502...
SRGCR/L2525M06	25	25	150	15	25	32	RC*T0602...
SRGCR/L2525M08	25	25	150	16.2	25	32	RC*T0803...
SRGCR/L2525M10	25	25	150	17.5	25	32	RC*T1003...

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SRGCR1212H05	CSTB-2.2R	-	-	-	T-7F
SRGCR/L1212H06	CSTB-2.5	-	-	-	T-8F
SRGCR/L1616H05	CSTB-2.2R	-	-	-	T-7F
SRGCR/L1616H06	CSTB-2.5	-	-	-	T-8F
SRGCR/L1616H08	CSTB-3	-	-	-	T-9F
SRGCR/L2020K05	CSTB-2.2R	-	-	-	T-7F
SRGCR/L2020K06	CSTB-2.5	-	-	-	T-8F
SRGCR/L2020K08	CSTB-3	-	-	-	T-9F
SRGCR/L2020K10	CSTB-3.5L	DTS5-3.5	SSR32	P-3.5	T-15F
SRGCR/L2525M05	CSTB-2.2R	-	-	-	T-7F
SRGCR/L2525M06	CSTB-2.5	-	-	-	T-8F
SRGCR/L2525M08	CSTB-3	-	-	-	T-9F
SRGCR/L2525M10	CSTB-3.5L	DTS5-3.5	SSR32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing to medium cutting	Heavy cutting
Grade	T9215	T9215
Chipbreaker Shape	RS 	61 
Cutting conditions	B018	

M

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B020

K

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B022

N

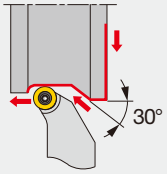
Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B024

S

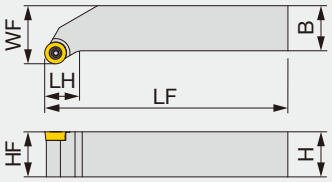
Application	Finishing to medium cutting	Heavy cutting
Grade	AH8015	AH8015
Chipbreaker Shape	RS 	61 
Cutting conditions	B026	

Reference pages: SRGCR/L: Inserts → B129 -

Screw-on toolholder with 91° approach angle, for positive round inserts



Cutting edge style **G**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	Insert	Torque*
SRGCR/L2525M12-6F	25	25	150	18.6	25	32	RCMT1204M0-6RS/-6RM	3

*Torque: Recommended clamping torque (N·m)

SPARE PARTS

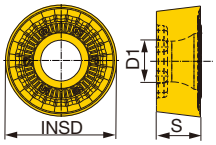
Designation	Clamping screw	Lubricant	Wrench
SRGCR/L2525M12-6F	CSTB-4	M-1000	T-15F

INSERT

RCMT

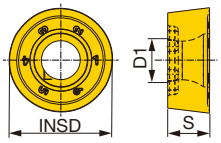


6RS





6RM



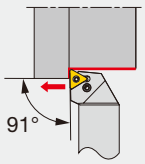
Designation	Coated				Cermet	INSD	S	D1
	T9225	T9215	T9115	T9125	NS9530			
RCMT1204M0-6RS	●	●	●	●	●	12	4.76	5.16
RCMT1204M0-6RM	●	●	●	●	●	12	4.76	5.16

●: Line up

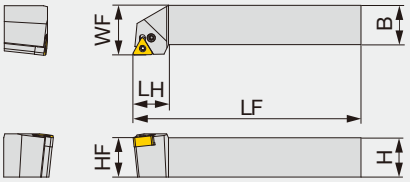
Reference pages: SRGCR/L: Standard cutting conditions → C132

PTGNR/L-Eco

Lever-lock toolholder with 91° approach angle, for negative triangular inserts



Cutting edge style **G**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PTGNR/L2020K1104	20	20	125	20	20	25	0.8	TN**1104...	2
PTGNR/L2525M1104	25	25	150	20	25	32	0.8	TN**1104...	2

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench	Lever
PTGNR/L**1104	LCS23A	P-2.5	LCL23

INSERT SELECTION

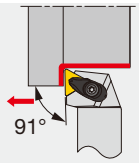
P	Application	Finishing	Medium cutting
	Grade	T9215	T9215
	Chipbreaker Shape	TSF	TM
	Cutting conditions	B006	

M	Application	Finishing	Medium cutting
	Grade	T6120	T6130
	Chipbreaker Shape	SS	SM
	Cutting conditions	B008	

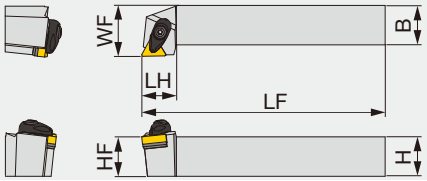
Reference pages: PTGNR/L-Eco: Inserts → B084 -

ATGNR/L

Double-clamp toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **G**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ATGNR/L2020K16-A	20	20	125	22	20	25	0.8	TN**1604...	3
ATGNR/L2525M16-A	25	25	150	22	25	32	0.8	TN**1604...	3
ATGNR/L2525M22-A	25	25	150	26	25	32	0.8	TN**2204...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ATGNR/L**16-A	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F
ATGNR/L**22-A	ACP4S	ACS-5W	BP-7	SP-2.5	AST422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

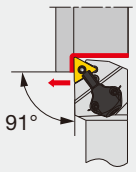
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

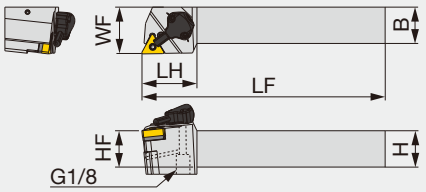
Reference pages: ATGNR/L: Inserts → B084 -, CBN → B176 -, PCD → B188

PTGNR/L-CHP

Lever-lock toolholders with 91° approach angle, for negative 60° triangular inserts, with high pressure coolant capability



Cutting edge style **G**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PTGNR/L2020K1104-CHP	20	20	125	38	20	32	0.8	TN**1104...	2
PTGNR/L2020K16-CHP	20	20	125	38	20	32	0.8	TN**1604...	2
PTGNR/L2525M1104-CHP	25	25	150	38	25	32	0.8	TN**1104...	2
PTGNR/L2525M16-CHP	25	25	150	38	25	32	0.8	TN**1604...	2

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PTGNR/L**1104-CHP	-	LCS23A	P-2.5	LSP3	LCL23
PTGNR/L**16-CHP	LST317	LCS3	P-2.5	LSP3	LCL3

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PTGNR/L**1104-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2
PTGNR/L**16-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

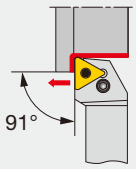
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

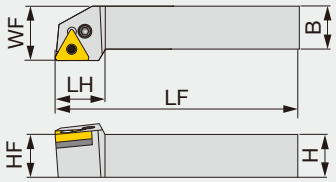
Reference pages PTGNR/L-CHP: Inserts → B084 -, CBN → B176 -, PCD → B188
Parts for coolant hose → C132

PTGNR/L

Lever-lock toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **G**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
PTGNR/L1616	16	16	100	22	16	20	0.8	TN**1604...
PTGNR/L2020	20	20	125	22	20	25	0.8	TN**1604...
PTGNR/L2525M3	25	25	150	22	25	32	0.8	TN**1604...
PTGNR/L2525M4	25	25	150	28	25	32	0.8	TN**2204...
PTGNR3225P4	32	25	170	28	32	32	0.8	TN**2204...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PTGNR/L1616, 2020	LST317	LCS3	P-2.5	LSP3	LCL3
PTGNR/L2525M3	LST317	LCS3	P-2.5	LSP3	LCL3
PTGNR/L2525M4	LST42	LCS4	P-3	LSP4	LCL4
PTGNR3225P4	LST42	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

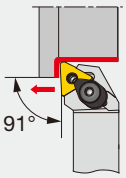
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

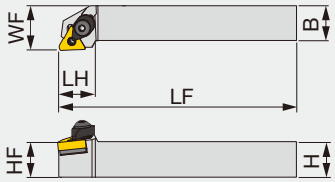
Reference pages: PTGNR/L: Inserts → B084 -, CBN → B176 -, PCD → B188

DTGNR/L

"One-Double" toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **G**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
DTGNR/L2020K16	20	20	125	21	20	25	0.8	TN**1604...
DTGNR/L2525M16	25	25	150	21	25	32	0.8	TN**1604...
DTGNR/L2525M22	25	25	150	28	25	32	0.8	TN**2204...

Note: Except for 57-type chipbreaker inserts
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DTGNR/L**16	DCPM-33	LCL33	DPIS33	DLCS33	LST317	BP-9	LSP3	P-2.5	P-3
DTGNR/L**22	DCPM-43	DLCL43	DPIS43	DLCS43	LST42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

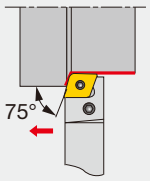
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

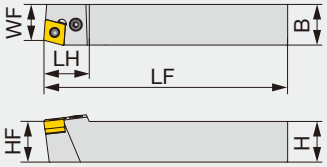
Reference pages: DTGNR/L: Inserts → B084 -, CBN → B176 -, PCD → B188

PCBNR/L

Lever-lock toolholder with 75° approach angle, for negative 80° rhombic inserts



Cutting edge style **B**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
PCBNR/L2525	25	25	150	28	25	22	0.8	CN**1204...

Note: 100° corner is used.
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCBNR/L2525	LSC42	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

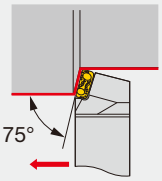
Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B012	

S

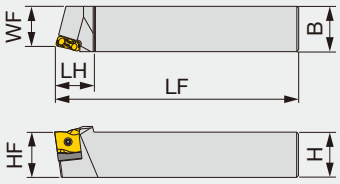
Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

Reference pages: PCBNR/L: Inserts → B054 -, CBN → B170 -, PCD → B188 -

Screw-on toolholder for roughing with 75° approach angle, for negative tangential inserts



Cutting edge style **B**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	Insert
TLBNR/L4040R24	40	40	200	35	40	35	LNMX2410**R/L...

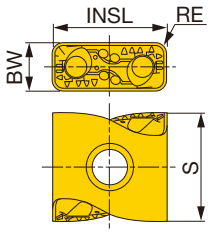
SPARE PARTS

Designation	Clamping screw	Shim	Spring pin	Wrench
TLBNR4040R24	CSTB-5L163-S	TSL24R	PSP-16	KEYV-T20
TLBNL4040R24	CSTB-5L163-S	TSL24L	PSP-16	KEYV-T20

INSERT

LNMX12/16/24





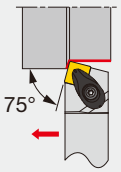
Designation	RE	Coated						BW	INSL	S
		T9115		T9125		AH725				
		R	L	R	L	R	L			
LNMX120408R/L-TDR	0.8	●	●	●	●			4.8	12	11.6
LNMX120412R/L-TDR	1.2	●	●	●	●			4.8	12	11.6
LNMX160608R/L-TDR	0.8	●	●	●	●			6.4	16.2	13.5
LNMX160612R/L-TDR	1.2	●	●	●	●			6.4	16.2	13.5
LNMX160616R/L-TDR	1.6	●	●	●	●			6.4	16.2	13.5
LNMX241016R/L-TDR	1.6	●	●	●	●			9.4	24	20.5
LNMX241024R/L-TDR	2.4	●	●	●	●			9.4	24	20.5
LNMX160608R/L-MDR	0.8	●	●			●	●	6.4	16.2	13.5
LNMX160612R/L-MDR	1.2	●	●			●	●	6.4	16.2	13.5
LNMX160608R/L-TWR	0.8	●	●	●	●			6.4	16.2	13.5
LNMX160612R/L-TWR	1.2	●	●	●	●			6.4	16.2	13.5

● : Line up

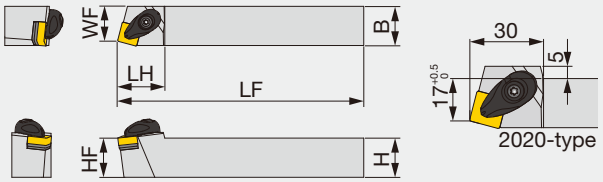
Reference pages: Standard cutting conditions → C134

ASBNR/L

Double-clamp toolholder with 75° approach angle, for negative square inserts



Cutting edge style **B**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ASBNR/L2020K12-A	20	20	125	30	20	17	0.8	SN**1204...	3
ASBNR/L2525M12-A	25	25	150	30	25	22	0.8	SN**1204...	3
ASBNR/L2525M15-A	25	25	150	42.5	25	22	1.2	SN**1506...	6.4
ASBNR/L3232P15-A	32	32	170	42.5	32	27	1.2	SN**1506...	6.4
ASBNR/L3232P19-A	32	32	170	47.5	32	27	1.2	SN**1906...	6.4
ASBNR/L4040S19-A	40	40	250	47.5	40	35	1.2	SN**1906...	6.4

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench 1	Wrench 2
ASBNR/L**12-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASS422	CSTB-3.5	T-15F	-
ASBNR/L**15-A	ACP5S	ACS-6W	BP-8.8	SP-2.5	ASS533	CSTB-5	-	KEYV-T20
ASBNR/L**19-A	ACP6S	ACS-6W	BP-8.8	SP-2.5	ASS634	CSTB-5	-	KEYV-T20

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B012	

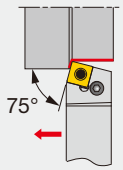
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

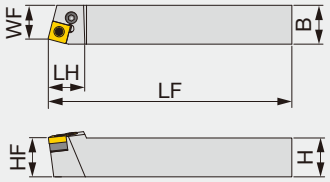
Reference pages: ASBNR/L: Inserts → B075 -, CBN → B175, PCD → B189

PSBNR/L

Lever-lock toolholder with 75° approach angle, for negative square inserts



Cutting edge style **B**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
PSBNR/L1616	16	16	100	22	16	13	0.8	SN**0903...
PSBNR/L2020	20	20	125	28	20	17	0.8	SN**1204...
PSBNR/L2525	25	25	150	24	25	22	0.8	SN**1204...
PSBNR/L3232	32	32	170	40	32	27	1.2	SN**1906...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PSBNR/L1616	LSS33	LCS3	P-2.5	LSP3L	LCL3
PSBNR/L2*2*	LSS42	LCS4	P-3	LSP4	LCL4
PSBNR/L3232	LSS63	LCS6	P-4	LSP6	LCL6

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B012	

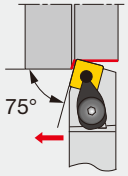
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

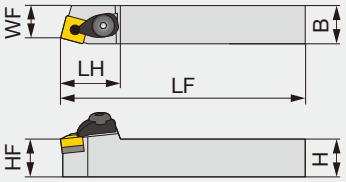
Reference pages: PSBNR/L: Inserts → B075 -, CBN → B175, PCD → B189

DSBNR/L

"One-Double" toolholder with 75° approach angle, for negative square inserts



Cutting edge style **B**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
DSBNR/L2020K12	20	20	125	35	20	17	0.8	SN**1204...
DSBNR/L2525M12	25	25	150	35	25	22	0.8	SN**1204...

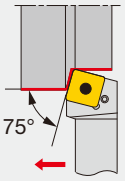
Note: Except for 57-type chipbreaker inserts
**RE: Standard corner radius

SPARE PARTS

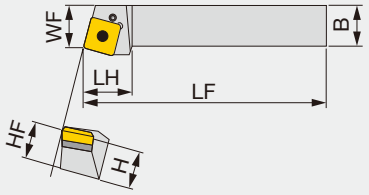
Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DSBNR/L...	DCPM-43	DLCL43	DPIS43	DLCS43	LSS42	BP-10	LSP4	P-3	P-4

HSRNR/L

Retract-pin toolholder with 75° approach angle, for negative square inserts



Cutting edge style **R**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
HSRNR/L4040R	40	40	200	50	40	43	1.6	SNMM3109...
HSRNR/L5050S	50	50	250	60	50	53	1.6	SNMM3109...

**RE: Standard corner radius

SPARE PARTS

Designation	Pin	Clamping screw	Shim	Wrench
HSRNR/L...	SW99	LS-8	NAS-04	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B012	

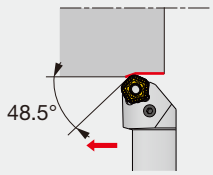
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

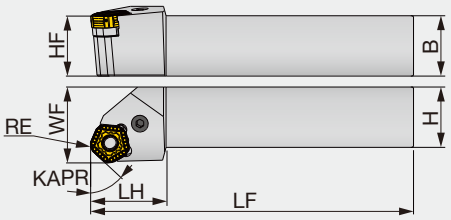
Reference pages
DSBNR/L: Inserts → B075 -, CBN → B175, PCD → B189
HSRNR/L: Inserts → B081

PPXOR/L-HD

Lever-lock toolholder with 48.5° approach angle, for negative 108° pentagonal inserts



Cutting edge style **X**



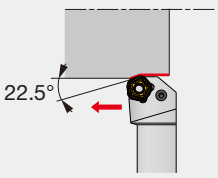
Designation	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L2525M11-HD	25	25	150	35	25	32	48.5	1.2	POMG110612
PPXOR/L3232P13-HD	32	32	170	40	32	40	48.5	1.2	POMG130612

SPARE PARTS

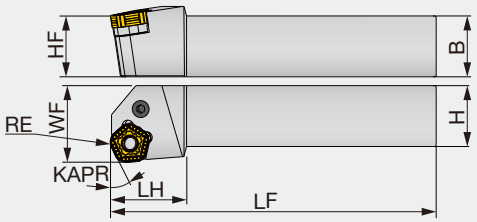
Designation	Shim	Spring pin	Lever	Clamping screw	Wrench
PPXOR/L2525M11-HD	LSPO53	LSP5	LCL5	LCS5	P-3
PPXOR/L3232P13-HD	LSPO63	LSP6	LCL6	LCS6	P-4

PPXOR/L-HF

Lever-lock toolholder with 22.5° approach angle, for negative 108° pentagonal inserts



Cutting edge style **X**



Designation	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L2525M11-HF	25	25	150	35	25	32	22.5	1.2	POMG110612
PPXOR/L3232P13-HF	32	32	170	40	32	40	22.5	1.2	POMG130612

SPARE PARTS

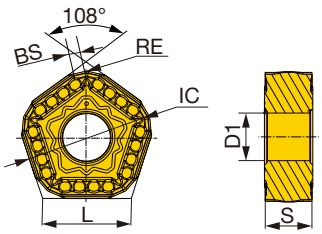
Designation	Shim	Spring pin	Lever	Clamping screw	Wrench
PPXOR/L2525M11-HF	LSPO53	LSP5	LCL5	LCS5	P-3
PPXOR/L3232P13-HF	LSPO63	LSP6	LCL6	LCS6	P-4

Note : Since the corner angle of TurnTenFeed insert is 108°, the workpiece corner may require additional post-process to remove stock to achieve a right angle.

Reference pages: Standard cutting conditions → C133

INSERT

POMG-MNW

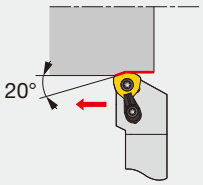


Designation	RE	Grade			IC	L	BS	S	D1
		T9215	T9125	T9225					
POMG110612-MNW	1.2	●	●	★	15.875	11.53	1.5	6.35	1.2
POMG130612-MNW	1.2	●	●	★	19.05	13.84	2	6.35	1.2

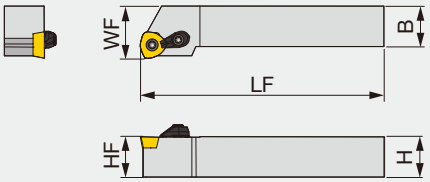
● : Line up
★ : To be released in summer 2019

XWXPR/L

Double-clamp toolholder for roughing with 20° approach angle, for positive 80° trigon inserts



Cutting edge style **X**



Right hand (R) shown.

Designation	H	B	LF	HF	WF	Insert
XWXPR/L2525M09	25	25	150	25	32	WPMT090725ZPR/L-ML
XWXPR/L3232P09	32	32	170	32	40	WPMT090725ZPR/L-ML
XWXPR/L4040S09	40	40	250	40	50	WPMT090725ZPR/L-ML

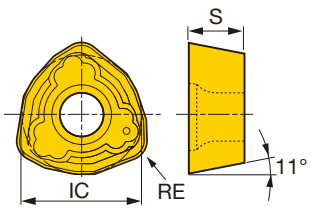
SPARE PARTS

Designation	Clamp set	Clamping screw	Wrench
XWXPR/L...	CSY-20	CSPB-5	IP-20T

Note: Each insert is either right- or left-handed. Please be sure not to use a wrong insert.

INSERT

WPMT09-ML



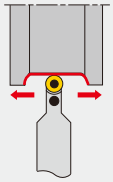
Designation	Coated					RE	IC	S
	T9215	T9225	T9115	T9125	AH120			
WPMT090725ZPR-ML	●	●	●	●	●	2.5	1.5	7
WPMT090725ZPL-ML	●	●	●	●	●	2.5	1.5	7

●: Line up

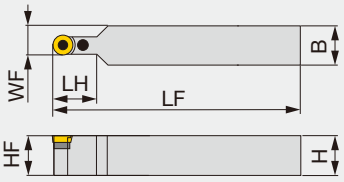
Reference pages: Standard cutting conditions → C133

PRDCN

Lever-lock toolholder with 45° approach angle, for positive round inserts



Cutting edge style **D**



Designation	H	B	LF	LH	HF	WF	Insert
PRDCN2020K10	20	20	125	22	20	15	RCMM1003...
PRDCN2525M12	25	25	150	24	25	18.5	RCM*1204...
PRDCN3225P12	32	25	170	24	32	18.5	RCM*1204...
PRDCN3225P16	32	25	170	28	32	20.5	RCM*1606...
PRDCN3232P20	32	32	170	32	32	26	RCM*2006...
PRDCN4040R25	40	40	200	42	40	32.5	RCM*2507...

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PRDCN2020K10	LSR32C	LCS2	P-2	LSP3	LCL3C
PRDCN**25*12	LSR42C	LCS3	P-2.5	LSP3	LCL4C
PRDCN3225P16	LSR53C	LCS5	P-3	LSP4	LCL5C
PRDCN3232P20	LSR63C	LCS5	P-3	LSP6C	LCL6C
PRDCN4040R25	LSR84C	LCS8C	P-4	LSP6	LCL8C

INSERT SELECTION

P

Application	Finishing to medium cutting	Heavy cutting
Grade	T9215	T9215
Chipbreaker Shape	RS 	61 
Cutting conditions	B018	

M

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B020

K

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B022

N

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B024

S

Application	Finishing to medium cutting	Heavy cutting
Grade	AH8015	AH8015
Chipbreaker Shape	RS 	61 
Cutting conditions	B026	

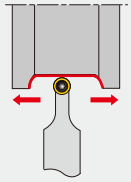
H

Application	Medium cutting
Grade	LX11
Chipbreaker Shape	- 
Cutting conditions	B028

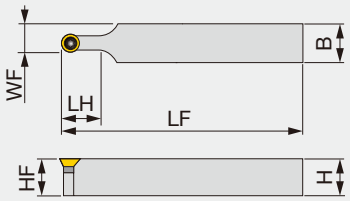
Reference pages: PRDCN: Inserts → B129 -

SRDCN

Screw-on toolholder with 45° approach angle, for positive round inserts



Cutting edge style **D**



Designation	H	B	LF	LH	HF	WF	Insert
SRDCN2020K06	20	20	125	12	20	13	RC*T0602...
SRDCN2020K08	20	20	125	16	20	14	RC*T0803...
SRDCN2020K10	20	20	125	20.3	25	15	RC*T1003...
SRDCN2525M06	25	25	150	12	25	15.5	RC*T0602...
SRDCN2525M08	25	25	150	16	25	16.5	RC*T0803...
SRDCN2525M10	25	25	150	20.3	25	17.5	RC*T1003...

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SRDCN2020K06	CSTB-2.5	-	-	-	T-8F
SRDCN2020K08	CSTB-3	-	-	-	T-9F
SRDCN2020K10	CSTB-3.5L	DTS5-3.5	SSR32	P-3.5	T-15F
SRDCN2525M06	CSTB-2.5	-	-	-	T-8F
SRDCN2525M08	CSTB-3	-	-	-	T-9F
SRDCN2525M10	CSTB-3.5L	DTS5-3.5	SSR32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing to medium cutting	Heavy cutting
Grade	T9215	T9215
Chipbreaker Shape	RS 	61 
Cutting conditions	B018	

M

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B020

K

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B022

N

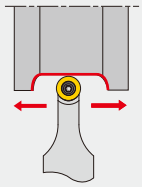
Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B024

S

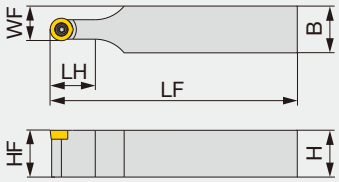
Application	Finishing to medium cutting	Heavy cutting
Grade	AH8015	AH8015
Chipbreaker Shape	RS 	61 
Cutting conditions	B026	

Reference pages: SRDCN: Inserts → B129 -

Screw-on toolholder with 45° approach angle, for positive round inserts



Cutting edge style **D**



Designation	H	B	LF	LH	HF	WF	Insert	Torque*
SRDCN2525M12-6F	25	25	150	24.1	25	18.5	RCMT1204M0-6RS/-6RM	3

*Torque: Recommended clamping torque (N·m)

SPARE PARTS

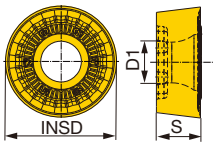




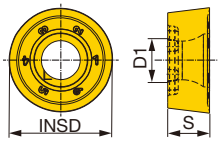
Designation	Clamping screw	Lubricant	Wrench
SRDCN2525M12-6F	CSTB-4	M-1000	T-15F

INSERT

RCMT

6RS

6RM

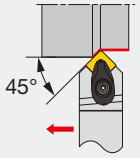
Designation	Coated				Cermet	IC	S	D1
	T9225	T9215	T9115	T9125	NS9530			
RCMT1204M0-6RS	●	●	●	●	●	12	4.76	5.16
RCMT1204M0-6RM	●	●	●	●	●	12	4.76	5.16

● : Line up

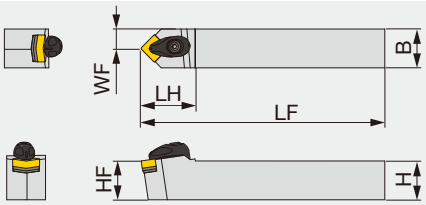
Reference pages: SRDCN: Standard cutting conditions → C132

ASDNN

Double-clamp toolholder with 45° approach angle, for negative square inserts



Cutting edge style **D**



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ASDNN2020K12-A	20	20	125	35	20	10	0.8	SN**1204...	3
ASDNN2525M12-A	25	25	150	35	25	12.5	0.8	SN**1204...	3

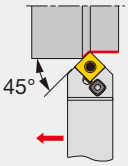
*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

SPARE PARTS

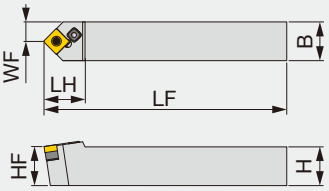
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ASDNN**12-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASS422	CSTB-3.5	T-15F

PSDNN

Lever-lock toolholder with 45° approach angle, for positive round inserts



Cutting edge style **D**



Designation	H	B	LF	LH	HF	WF	RE**	Insert
PSDNN1616	16	16	100	22	16	8	0.8	SN**0903...
PSDNN2020	20	20	125	30	20	10.3	0.8	SN**1204...
PSDNN2525	25	25	150	30	25	12.8	0.8	SN**1204...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PSDNN1616	LSS33	LCS3	P-2.5	LSP3L	LCL3
PSDNN2020	LSS42	LCS4	P-3	LSP4	LCL4
PSDNN2525	LSS42	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B012	

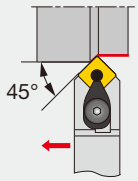
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

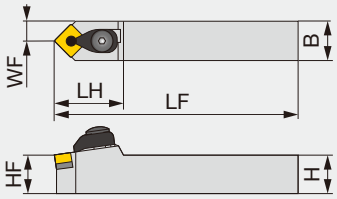
Reference pages: ASDNN, PSDNN: Inserts → B075 -, CBN → B175, PCD → B189

DSDNN

One-Double toolholder with 45° approach angle, for negative square inserts



Cutting edge style **D**



Designation	H	B	LF	LH	HF	WF	RE**	Insert
DSDNN2020K12	20	20	125	36	20	10	0.8	SN**1204...
DSDNN2525M12	25	25	150	36	25	12.5	0.8	SN**1204...

Note: Except for 57-type chipbreaker inserts
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DSDNN...	DCPM-43	DLCL43	DPIS43	DLCS43	LSS42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B012	

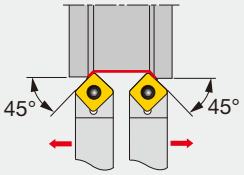
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

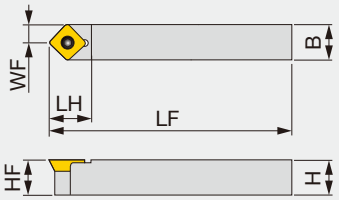
Reference pages: DSDNN: Inserts → B075 -, CBN → B175, PCD → B189

SSDC/PN

Screw-on toolholder with 45° approach angle, for positive square inserts



Cutting edge style **D**



Designation	H	B	LF	LH	HF	WF	RE**	Insert
SSDCN1010K07	10	10	125	12	10	5	0.4	SC**0702...
SSDPN1010H	10	10	100	12	10	5	0.4	SP*P042...
SSDCN1212K09	12	12	125	15	12	6	0.8	SC**09T3...
SSDPN1212H	12	12	100	12	12	6	0.4	SP*P042...
SSDCN1616H09	16	16	100	15	16	8	0.8	SC**09T3...
SSDPN1616H	16	16	100	14	16	8	0.8	SP*M322...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SSDCN1010K07	CSTB-3	-	-	-	T-9F
SSDPN1010H	CSTA-NO3	-	-	-	T-9F
SSDCN1212K09	CSTB-4	-	-	-	T-15F
SSDPN1212H	CSTA-NO3	-	-	-	T-9F
SSDCN1616H09	CSTB-3.5L	DTS5-3.5	SSS32	P-3.5	T-15F
SSDPN1616H	CSTA-NO5	-	-	-	T-9F

INSERT SELECTION

P

Application	Finishing to medium cutting	Medium cutting
Grade	T9215	T9215
Chipbreaker Shape	PS 	PM 
Cutting conditions	B018	

M

Application	Medium cutting
Grade	T6130
Chipbreaker Shape	PM 
Cutting conditions	B020

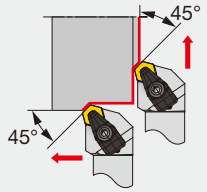
K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker Shape	CM 
Cutting conditions	B022

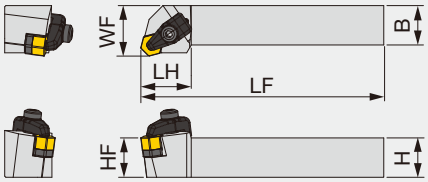
Reference pages: SSDC/PN: Inserts → B133, J099

CHSNR/L-RD

Double-clamp toolholder with 45° approach angle, for negative 120° hexagonal ceramic inserts with dimple



Cutting edge style **S**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
CHSNR2525M0507-RD	25	25	150	32	25	32	1.2	HN*D0507...	4

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench 1	Wrench 2
CHSNR2525M0507-RD	CCP4-A	CCS4-A	CH44-A	BH-40050-A	BP-5-A	P-3	P-4

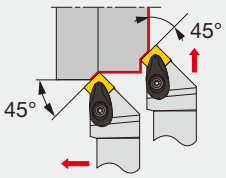
INSERT SELECTION

Application	Finishing to medium cutting
Grade	FX105
Chipbreaker Shape	-
Cutting conditions	C134

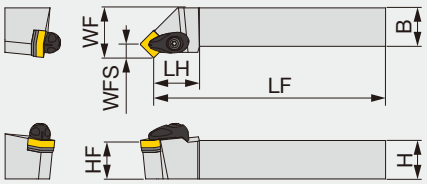
Reference pages
CHSNR/L-RD: Inserts → B108
Standard cutting conditions → C134

ASSNR/L

Double-clamp toolholder with 45° approach angle (S-style), for negative square inserts



Cutting edge style **S**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	WFS	RE**	Insert	Torque*
ASSNR/L2020K12-A	20	20	125	30	20	25	8.3	0.8	SN**1204...	3
ASSNR/L2525M12-A	25	25	150	30	25	32	8.3	0.8	SN**1204...	3
ASSNR/L2525M15-A	25	25	150	25	25	32	10.3	1.2	SN**1506...	6.4
ASSNR/L3232P15-A	32	32	170	25	32	40	10.3	1.2	SN**1506...	6.4
ASSNR/L3232P19-A	32	32	170	27.5	32	40	12.5	1.2	SN**1906...	6.4
ASSNR/L4040S19-A	40	40	250	27.5	40	50	12.5	1.2	SN**1906...	6.4

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench 1	Wrench 2
ASSNR/L**12-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASS422	CSTB-3.5	T-15F	-
ASSNR/L**15-A	ACP5S	ACS-6W	BP-8.8	SP-2.5	ASS533	CSTB-5	-	KEYV-T20
ASSNR/L**19-A	ACP6S	ACS-6W	BP-8.8	SP-2.5	ASS634	CSTB-5	-	KEYV-T20

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF 	TSF 	TM 	TH 
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF 	SM 	SH 
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round 	All-round 	All-round 
Cutting conditions	B010		

N

Application	Medium cutting
Grade	TH10
Chipbreaker Shape	P 
Cutting conditions	B012

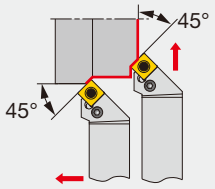
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN 	HRF 	HRM 
Cutting conditions	B014		

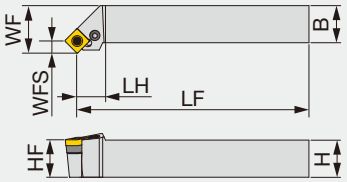
Reference pages: ASSNR/L: Inserts → B075 -, CBN → B175, PCD → B189

PSSNR/L

Lever-lock toolholder with 45° approach angle, for positive round inserts



Cutting edge style **S**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	WFS	RE**	Insert
PSSNR/L1616	16	16	94	16	16	20	6.1	0.8	SN**0903...
PSSNR/L2020	20	20	116	21	20	25	8.3	0.8	SN**1204...
PSSNR/L2525	25	25	141	21	25	32	8.3	0.8	SN**1204...
PSSNR3225	32	25	161	21	32	32	8.3	0.8	SN**1204...
PSSNR/L3232	32	32	157.5	27.5	32	40	12.5	1.2	SN**1906...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PSSNR/L1616	LSS33	LCS3	P-2.5	LSP3L	LCL3
PSSNR/L2020	LSS42	LCS4	P-3	LSP4	LCL4
PSSNR/L**25	LSS42	LCS4	P-3	LSP4	LCL4
PSSNR/L3232	LSS63	LCS6	P-4	LSP6	LCL6

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF 	TSF 	TM 	TH 
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF 	SM 	SH 
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round 	All-round 	All-round 
Cutting conditions	B010		

N

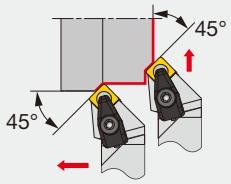
Application	Medium cutting
Grade	TH10
Chipbreaker Shape	P 
Cutting conditions	B012

S

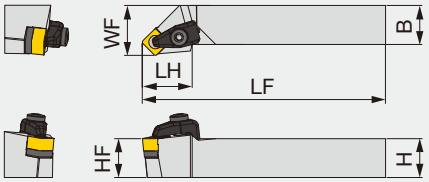
Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN 	HRF 	HRM 
Cutting conditions	B014		

Reference pages: PSSNR/L: Inserts → B075 -, CBN → B175, PCD → B189

Double-clamp toolholder with 45° approach angle, for negative square ceramic inserts with dimple



Cutting edge style **S**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
CSSNR/L2525M1207-RD	25	25	150	32	25	32	1.2	SN*D1207...	4

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench 1	Wrench 2
CSSNR/L2525M1207-RD	CCP4-A	CCS4-A	CS44-A	BH5-10-A	BP-5-A	P-3	P-4

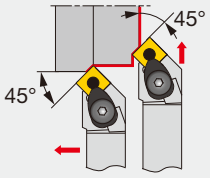
INSERT SELECTION

K	Application	Finishing to medium cutting
	Grade	FX105
	Chipbreaker Shape	- 
	Cutting conditions	C134

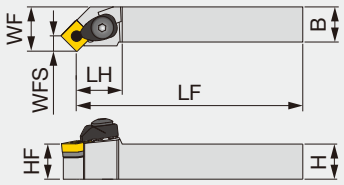
Reference pages CSSNR/L-RD: Insert → B083
Standard cutting conditions → C134

DSSNR/L

"One-Double" toolholder with 45° approach angle, for negative square inserts



Cutting edge style **S**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	WFS	RE**	Insert
DSSNR/L2020K12	20	20	125	34.3	20	25	8.3	0.8	SN**1204...
DSSNR/L2525M12	25	25	150	34.3	25	32	8.3	0.8	SN**1204...

Note: Except for 57-type chipbreaker inserts
**RE : Standard corner radius

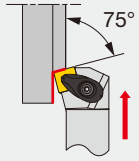
SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DSSNR/L...	DCPM-43	DLCL43	DPIS43	DLCS43	LSS42	BP-10	LSP4	P-3	P-4

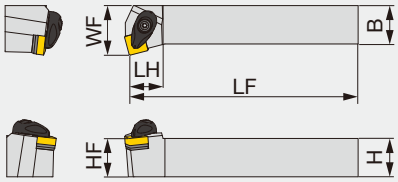
TURNING A

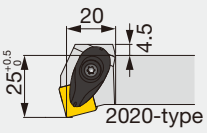
ASKNR/L

Double-clamp toolholder with 75° approach angle, for negative square inserts



Cutting edge style **K**





Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ASKNR/L2020K12-A	20	20	125	20	20	25	0.8	SN**1204...	3
ASKNR/L2525M12-A	25	25	150	22	25	32	0.8	SN**1204...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ASKNR/L**12-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASS422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B012	

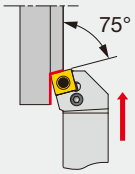
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

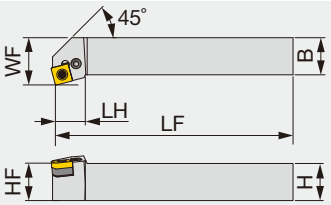
Reference pages: DSSNR/L, ASKNR/L: Inserts → B075 -, CBN → B175, PCD → B189

PSKNR/L

Lever-lock toolholder with 75° approach angle, for negative square inserts



Cutting edge style **K**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
PSKNR/L1616	16	16	100	17	16	25	0.8	SN**0903...
PSKNR/L2020	20	20	125	22	20	25	0.8	SN**1204...
PSKNR/L2525	25	25	150	22	25	32	0.8	SN**1204...
PSKNR3232	32	32	170	40	32	40	1.2	SN**1906...

**RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PSKNR/L1616	LSS33	LCS3	P-2.5	LSP3L	LCL3
PSKNR/L2*2*	LSS42	LCS4	P-3	LSP4	LCL4
PSKNR3232	LSS63	LCS6	P-4	LSP6	LCL6

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B012	

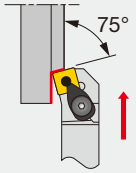
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

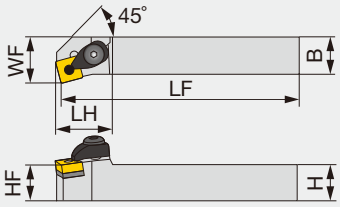
Reference pages: PSKNR/L: Inserts → B075 -, CBN → B175, PCD → B189

DSKNR/L

"One-Double" toolholder with 75° approach angle, for negative square inserts



Cutting edge style **K**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
DSKNR/L2020K12	20	20	125	31	20	25	0.8	SN**1204...
DSKNR/L2525M12	25	25	150	31	25	32	0.8	SN**1204...

Note: Except for 57-type chipbreaker inserts
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DSKNR/L...	DCPM-43	DLCL43	DPIS43	DLCS43	LSS42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B012	

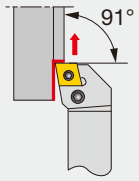
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

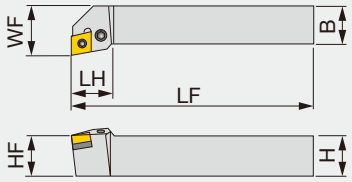
Reference pages: DSKNR/L: Inserts → B075 -, CBN → B175, PCD → B189

PCFNR/L

Lever-lock type toolholder for facing with 91° approach angle, for negative 80° rhombic inserts



Cutting edge style **F**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
PCFNR/L2020	20	20	125	28	20	25	0.8	CN**1204...
PCFNR/L2525	25	25	150	28	25	32	0.8	CN**1204...

**RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCFNR/L...	LSC42 D30	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

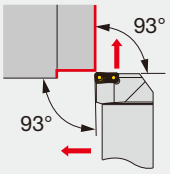
Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

H

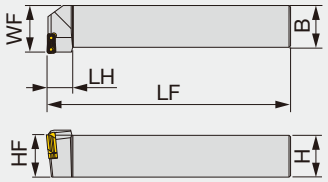
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: PCFNR/L: Inserts → B054 -, CBN → B170 -, PCD → B188 -

Screw-on toolholder for roughing with 93° approach angle, for negative tangential inserts



Cutting edge style **F**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	Insert
TLFNR/L2525M16	25	25	150	20	25	30	LNMX1606**L/R...
TLFNR/L3232P16	32	32	170	20	32	37	LNMX1606**L/R...

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

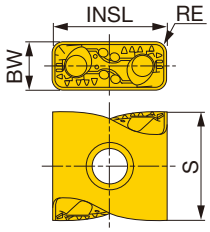
SPARE PARTS

Designation	Clamping screw	Shim	Spring pin	Wrench
TLFNR2525M16	CSTB-4L115-S	TSL16L	PSP-16	KEYV-T15
TLFNL2525M16	CSTB-4L115-S	TSL16R	PSP-16	KEYV-T15
TLFNR3232P16	CSTB-4L115-S	TSL16L	PSP-16	KEYV-T15
TLFNL3232P16	CSTB-4L115-S	TSL16R	PSP-16	KEYV-T15

INSERT

LNMX12/16/24



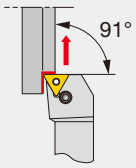


Designation	RE	Coated						BW	INSL	S
		T9115		T9125		AH725				
		R	L	R	L	R	L			
LNMX120408R/L-TDR	0.8	●	●	●	●			4.8	12	11.6
LNMX120412R/L-TDR	1.2	●	●	●	●			4.8	12	11.6
LNMX160608R/L-TDR	0.8	●	●	●	●			6.4	16.2	13.5
LNMX160612R/L-TDR	1.2	●	●	●	●			6.4	16.2	13.5
LNMX160616R/L-TDR	1.6	●	●	●	●			6.4	16.2	13.5
LNMX241016R/L-TDR	1.6	●	●	●	●			9.4	24	20.5
LNMX241024R/L-TDR	2.4	●	●	●	●			9.4	24	20.5
LNMX160608R/L-MDR	0.8	●	●			●	●	6.4	16.2	13.5
LNMX160612R/L-MDR	1.2	●	●			●	●	6.4	16.2	13.5
LNMX160608R/L-TWR	0.8	●	●	●	●			6.4	16.2	13.5
LNMX160612R/L-TWR	1.2	●	●	●	●			6.4	16.2	13.5

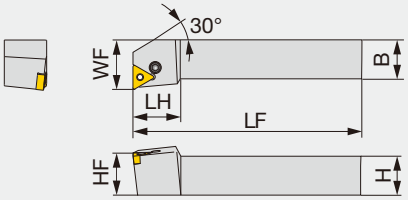
● : Line up

Reference pages: TLFNR/L: Standard cutting conditions → C134

Lever-lock toolholder with 91° approach angle, for negative triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PTFNR/L2020K1104	20	20	125	16	20	25	0.8	TN**1104...	2
PTFNR/L2525M1104	25	25	150	22	25	32	0.8	TN**1104...	2

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench	Lever
PTFNR/L**1104	LCS23A	P-2.5	LCL23

INSERT SELECTION

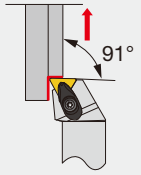
P	Application	Finishing	Medium cutting
	Grade	T9215	T9215
	Chipbreaker Shape	TSF	TM
	Cutting conditions	B006	

M	Application	Finishing	Medium cutting
	Grade	T6120	T6130
	Chipbreaker Shape	SS	SM
	Cutting conditions	B008	

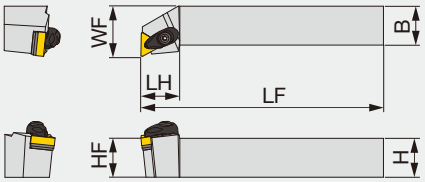
Reference pages: PTFNR/L-Eco: Inserts → B084 -

ATFNR/L

Double-clamp toolholder for facing with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ATFNR/L2020K16-A	20	20	125	25	20	25	0.8	TN**1604...	3
ATFNR/L2525M16-A	25	25	150	25	25	32	0.8	TN**1604...	3
ATFNR/L2525M22-A	25	25	150	29	25	32	0.8	TN**2204...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ATFNR/L**16-A	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F
ATFNR/L**22-A	ACP4S	ACS-5W	BP-7	SP-2.5	AST422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

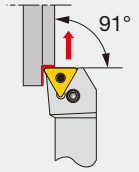
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

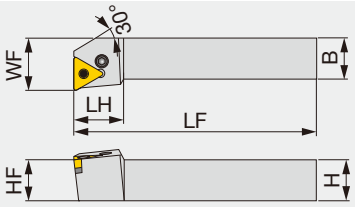
Reference pages: ATFNR/L: Inserts → B084 -, CBN → B176 -, PCD → B188

PTFNR/L

Lever-lock toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
PTFNR/L1616	16	16	100	22	16	20	0.8	TN**1604...
PTFNR/L2020	20	20	125	22	20	25	0.8	TN**1604...
PTFNR/L2525M3	25	25	150	22	25	32	0.8	TN**1604...
PTFNR/L2525M4	25	25	150	28	25	32	0.8	TN**2204...
PTFNR/L3225P4	32	25	170	28	32	32	0.8	TN**2204...

**RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PTFNR/L1616, 2020	LST317	LCS3	P-2.5	LSP3	LCL3
PTFNR/L2525M3	LST317	LCS3	P-2.5	LSP3	LCL3
PTFNR/L**25*4	LST42	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

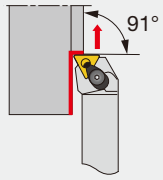
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

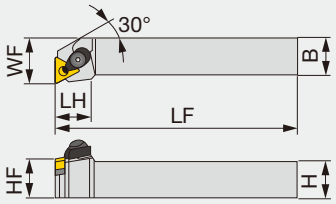
Reference pages: PTFNR/L: Inserts → B084 -, CBN → B176 -, PCD → B188

DTFNR/L

"One-Double" toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
DTFNR/L2020K16	20	20	125	23	20	25	0.8	TN**1604...
DTFNR/L2525M16	25	25	150	23	25	32	0.8	TN**1604...
DTFNR/L2525M22	25	25	150	31	25	32	0.8	TN**2204...

Note: Except for 57-type chipbreaker inserts
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DTFNR/L**16	DCPM-33	LCL33	DPIS33	DLCS33	LST317	BP-9	LSP3	P-2.5	P-3
DTFNR/L**22	DCPM-43	DLCL43	DPIS43	DLCS43	LST42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

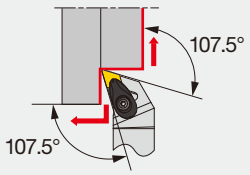
Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

H

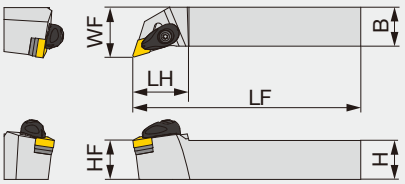
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: DTFNR/L: Inserts → B084 -, CBN → B176 -, PCD → B188

Double-clamp toolholder with 107.5° approach angle, for negative 55° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ADQNR/L2020K1104-A	20	20	125	30	20	25	0.8	DN**1104...	3
ADQNR/L2525M1104-A	25	25	150	30	25	32	0.8	DN**1104...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ADQNR/L**1104-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASD322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker Shape	TSF	TM
Cutting conditions	B006	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SS	SM
Cutting conditions	B008	

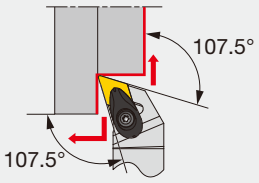
K

Application	Medium cutting
Grade	T515
Chipbreaker Shape	TM
Cutting conditions	B010

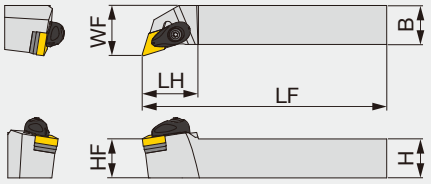
Reference pages: ADQNR/L-Eco: Inserts → B065 -

ADQNR/L

Double-clamp toolholder with 107.5° approach angle, for negative 55° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ADQNR/L2020K15-A	20	20	125	32	20	25	0.8	DN**1504...	3
ADQNR/L2020K1506-A	20	20	125	32	20	25	0.8	DN**1506...	3
ADQNR/L2525M15-A	25	25	150	36	25	32	0.8	DN**1504...	3
ADQNR/L2525M1506-A	25	25	150	36	25	32	0.8	DN**1506...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ADQNR/L**15-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASD432	CSTB-3.5	T-15F
ADQNR/L**1506-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASD423	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA	T-DIA (with rake)	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

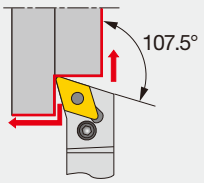
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

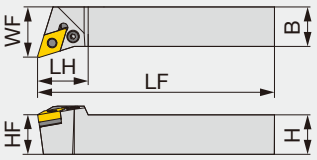
Reference pages: ADQNR/L: Inserts → B065 -, CBN → B172 -, PCD → B188

PDQNR/L

Lever-lock toolholder with 107.5° approach angle, for negative 55° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
PDQNR/L2525	25	25	150	32	25	32	0.8	DN**1504...

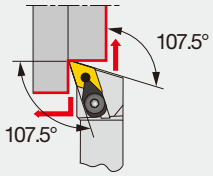
**RE : Standard corner radius

SPARE PARTS

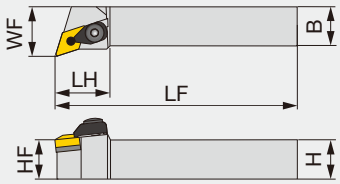
Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PDQNR/L...	LSD42 D30	LCS4	P-3	LSP4	LCL4

DDQNR/L

"One-Double" toolholder with 107.5° approach angle, for negative 55° rhombic inserts



Cutting edge style **Q**



Designation	H	B	LF	LH	HF	WF	RE**	Insert
DDQNR/L2020K15	20	20	125	35	20	25	0.8	DN**1504...
DDQNR/L2020K1506	20	20	125	35	20	25	0.8	DN**1506...
DDQNR/L2525M15	25	25	150	35	25	32	0.8	DN**1504...
DDQNR/L2525M1506	25	25	150	35	25	32	0.8	DN**1506...
DDQNR/L3225P15	32	25	170	35	32	32	0.8	DN**1504...
DDQNR/L3225P1506	32	25	170	35	32	32	0.8	DN**1506...

Note: Except for 57-type chipbreaker inserts
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DDQNR/L**15	DCPM-43	DLCL43	DPIS43	DLCS43	LSD42	BP-10	LSP4	P-3	P-4
DDQNR/L**1506	DCPM-43	DLCL43	DPIS44	DLCS43	LSD42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

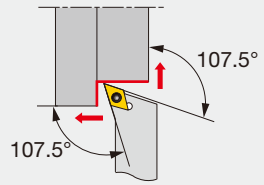
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

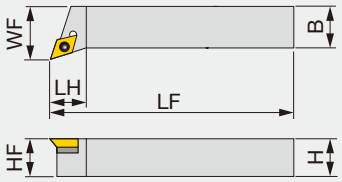
Reference pages: PDQNR/L, DDQNR/L: Inserts → B065 -, CBN → B172 -, PCD → B188

SDQCR/L

Screw-on toolholder with 107.5° approach angle, for positive 55° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
SDQCR/L2020K11	20	20	125	20.5	20	25	0.8	DC**11T3...
SDQCR2525M11	25	25	150	21.5	25	32	0.8	DC**11T3...

**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SDQCR/L...	CSTB-3.5L	DTS5-3.5	SSD32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Chipbreaker Shape	PSS	PS	PM
Cutting conditions	B018		

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Chipbreaker Shape	W**	PSF	PSS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker Shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B024		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker Shape	PSS	PS
Cutting conditions	B026	

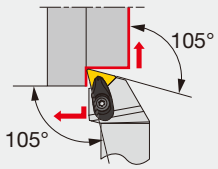
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

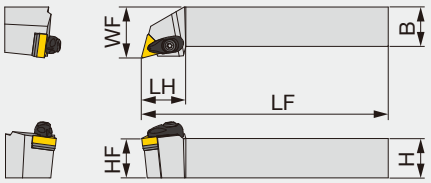
Reference pages: SDQCR/L: Inserts → B119 -, CBN → B181, PCD → B190

ATQNR/L

Double-clamp toolholder with 105° approach angle, for negative 60° triangular inserts



Cutting edge style **Q**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ATQNR/L2020K16-A	20	20	125	28	20	25	0.8	TN**1604...	3
ATQNR/L2525M16-A	25	25	150	28	25	32	0.8	TN**1604...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ATQNR/L**16-A	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

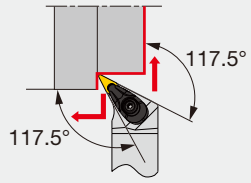
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

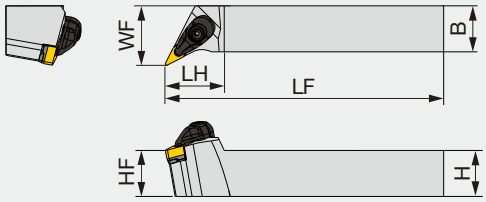
Reference pages: ATQNR/L: Inserts → B084 -, CBN → B176 -, PCD → B188

ISOTURN Eco
AVQNR/L-Eco

Double-clamp toolholder with 117.5° approach angle, for negative 35° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVQNR/L2020K1204-A	20	20	125	32	20	25	0.8	VN**1204...	3
AVQNR/L2525M1204-A	25	25	150	32	25	32	0.8	VN**1204...	3

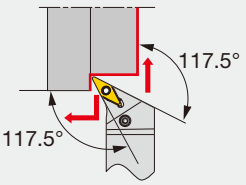
*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

SPARE PARTS

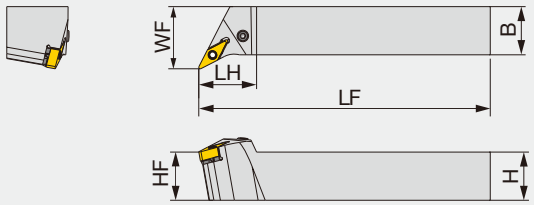
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVQNR/L**-A	ACP3L-E	ACS-5W	BP-7	SP-2.5	ASV222	CSTB-3.0	T-15F

ISOTURN Eco
PVQNR/L-Eco

Lever-lock toolholder with 117.5° approach angle, for negative 35° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PVQNR/L2020K1204	20	20	125	30	20	25	0.8	VN**1204...	2
PVQNR/L2525M1204	25	25	150	30	25	32	0.8	VN**1204...	2

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PVQNR/L**1204	LSV212	LCS3V	P-2.5	LSP3	LCL3V

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker Shape	TSF	TM
Cutting conditions	B006	

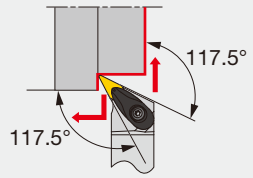
M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SS	SM
Cutting conditions	B008	

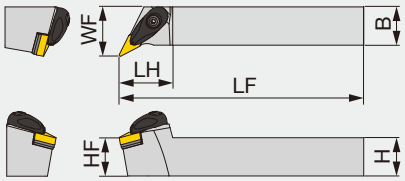
Reference pages: AVQNR/L-Eco, PVQNR/L-Eco: Insert → B095 -

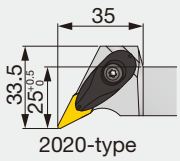
AVQNR/L

Double-clamp toolholder with 117.5° approach angle, for negative 35° and 25° rhombic inserts



Cutting edge style **Q**





Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVQNR/L2020K16-A	20	20	125	35	20	25	0.8	V/YN**1604...	3
AVQNR/L2525M16-A	25	25	150	35	25	32	0.8	V/YN**1604...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVQNR/L...	ACP3L	ACS-5W	BP-7	SP-2.5	ASV322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker Shape	TF	TSF	TM
Cutting conditions	B006		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing
Grade	DX120
Chipbreaker Shape	T-DIA with rake
Cutting conditions	B012

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

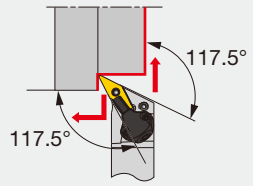
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

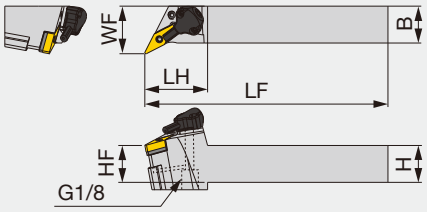
Reference pages: AVQNR/L: Inserts → B094 -, B107, CBN → B178, PCD → B188

PVQNR/L-CHP

Lever-lock toolholders with 117.5° approach angle, for negative 35° and 25° rhombic inserts, with high pressure coolant capability



Cutting edge style **Q**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PVQNR/L2020K16-CHP	20	20	125	42.5	20	32	0.8	V/YN**1604...	2
PVQNR/L2525M16-CHP	25	25	150	42.5	25	32	0.8	V/YN**1604...	2

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PVQNR/L**-CHP	LSV317	LCS3V	P-2.5	LSP3	LCL3V

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PVQNR/L**-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker Shape	TF	TSF	TM
Cutting conditions	B006		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing
Grade	DX120
Chipbreaker Shape	T-DIA with rake
Cutting conditions	B012

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

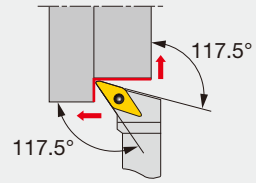
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

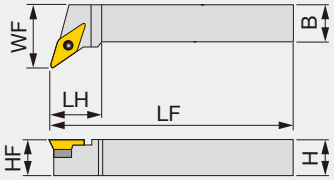
Reference pages PVQNR/L-CHP: Inserts → B094 -, B107, CBN → B178, PCD → B188
Parts for coolant hose → C132

SVQCR/L

Screw-on toolholder with 117.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
SVQCR/L2020K16	20	20	125	35	20	27	0.8	VC**1604...
SVQCR/L2525M16	25	25	150	35	25	32	0.8	VC**1604...

**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SVQCR/L...	CSTB-3.5L	DTS5-3.5	SSV32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Chipbreaker Shape	PSS	PS
Cutting conditions	B018	

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Chipbreaker Shape	PSF	PSS	PM
Cutting conditions	B020		

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker Shape	T-DIA	T-DIA (with rake)	AL
Cutting conditions	B024		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker Shape	PSS	PS
Cutting conditions	B026	

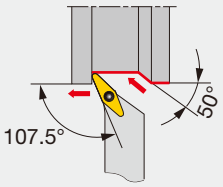
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

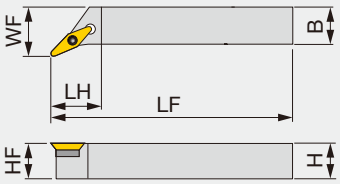
Reference pages: SVQCR/L: Inserts → B153 -, CBN → B186, PCD → B190

SVHCR/L

Screw-on toolholder with 107.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **H**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
SVHCR/L2525M22	25	25	150	33.8	25	32	0.8	VCG*2205...

**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SVHCR/L2525M22	CSTB-4.5L110P	DTS6-4.5	SSV42	P-4.5	T-15F

INSERT SELECTION

K

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B022

N

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B024

S

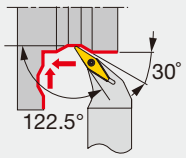
Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B026

Reference pages: SVHCR/L: Inserts → B154

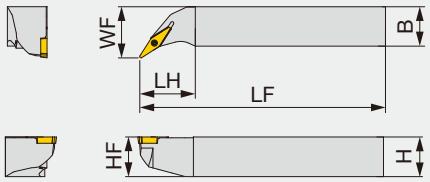
Y-PRO SERIES

SYQBR/L

Screw-on toolholder with 122.5° approach angle, for positive 25° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
SYQBR/L2020K16	20	20	125	35	20	27	0.8	YWMT16T3...
SYQBR/L2525M16	25	25	150	35	25	32	0.8	YWMT16T3...

**RE : Standard corner radius

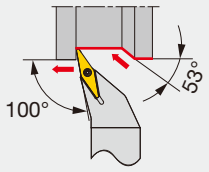
SPARE PARTS

Designation	Clamping screw	Wrench
SYQBR/L...	CSTB-2.5L080	T-8F

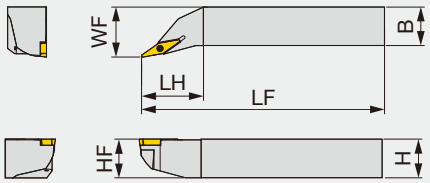
Y-PRO SERIES

SYHBR/L

Screw-on toolholder with 100° approach angle, for positive 25° rhombic inserts



Cutting edge style **H**



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert
SYHBR/L2020K16	20	20	125	35	20	27	0.8	YWMT16T3...
SYHBR/L2525M16	25	25	150	40	25	32	0.8	YWMT16T3...

**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
SYHBR/L...	CSTB-2.5L080	T-8F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9225
Chipbreaker Shape	ZM 
Cutting conditions	B006

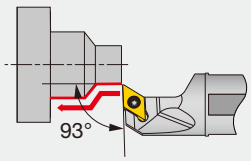
K

Application	Finishing to medium cutting
Grade	GT9530
Chipbreaker Shape	ZM 
Cutting conditions	B010

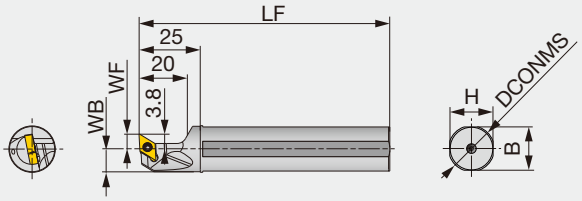
Reference pages: SYQBR/L, SYHBR/L: Inserts → B160

JS-SDUXL

Screw-on round-shank toolholder with 93° approach angle, for DXGU inserts



Cutting edge style **U**



Left hand (L) shown.

Designation	DCONMS	WF	LF	H	B	WB	RE**	Insert	Torque*
JS14H-SDUXL07	14	6	100	13	6.75	6.75	0.2	DXGU0703**L...	0.9
JS159F-SDUXL07	15.875	6	85	15	7.687	7.687	0.2	DXGU0703**L...	0.9
JS16F-SDUXL07	16	6	85	15	7.75	7.75	0.2	DXGU0703**L...	0.9
JS19G-SDUXL07	19.05	6	90	18	9.275	9.275	0.2	DXGU0703**L...	0.9
JS19X-SDUXL07	19.05	6	120	18	9.275	9.275	0.2	DXGU0703**L...	0.9
JS20G-SDUXL07	20	6	90	19	9.75	9.75	0.2	DXGU0703**L...	0.9
JS20X-SDUXL07	20	6	120	19	9.75	9.75	0.2	DXGU0703**L...	0.9
JS22X-SDUXL07	22	10	120	21	10.75	10.75	0.2	DXGU0703**L...	0.9
JS25H-SDUXL07	25	10	100	24	12.25	12.25	0.2	DXGU0703**L...	0.9
JS254X-SDUXL07	25.4	10	120	24	12.45	12.45	0.2	DXGU0703**L...	0.9

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use left-hand toolholders (L) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
JS**-SDUXL07	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker Shape	JSS	JTS
	Cutting conditions	C133	

M	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker Shape	JSS	JTS
	Cutting conditions	C133	

Small CNC lathes

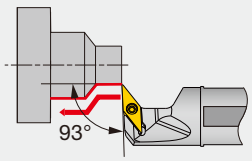
P	Application	Finishing	Medium cutting
	Grade	AH725	AH725
	Chipbreaker Shape	SS	TS
	Cutting conditions	C133	

M	Application	Finishing	Medium cutting
	Grade	AH8015	AH8015
	Chipbreaker Shape	SS	TS
	Cutting conditions	C133	

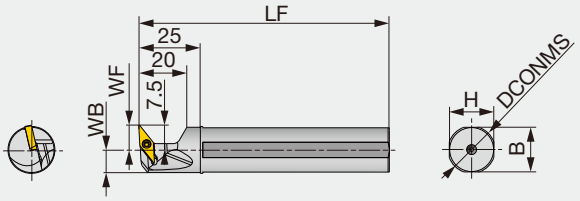
Reference pages JS-SDUXL: Inserts → B125 - Standard cutting conditions → C133

JS-SVUXL

Screw-on round-shank toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **U**



Left hand (L) shown.

Designation	DCONMS	WF	LF	H	B	WB	RE**	Insert	Torque*
JS159F-SVUXL09	15.875	10	85	15	7.7	7.7	0.2	VXGU09T2**L...	0.9
JS16F-SVUXL09	16	10	85	15	7.7	7.7	0.2	VXGU09T2**L...	0.9
JS19G-SVUXL09	19.05	10	90	18	9.2	9.2	0.2	VXGU09T2**L...	0.9
JS19X-SVUXL09	19.05	10	120	18	9.2	9.2	0.2	VXGU09T2**L...	0.9
JS20G-SVUXL09	20	10	90	19	9.7	9.7	0.2	VXGU09T2**L...	0.9
JS20X-SVUXL09	20	10	120	19	9.7	9.7	0.2	VXGU09T2**L...	0.9
JS22X-SVUXL09	22	10	120	21	10.7	10.7	0.2	VXGU09T2**L...	0.9
JS25H-SVUXL09	25	10	100	24	12.2	12.2	0.2	VXGU09T2**L...	0.9
JS254X-SVUXL09	25.4	10	120	24	12.4	12.4	0.2	VXGU09T2**L...	0.9

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use left-hand toolholders (L) with left-hand inserts (L).

SPARE PARTS




Designation	Clamping screw	Wrench
JS**-SVUXL09	SR34-508	T-7F

INSERT SELECTION

Swiss lathes

P	Application	Finishing	M	Application	Finishing
	Grade	SH725		Grade	SH725
	Chipbreaker Shape	JRP 		Chipbreaker Shape	JRP 
	Cutting conditions	C133		Cutting conditions	C133

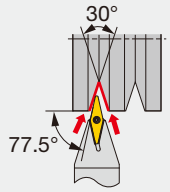
Small CNC lathes

P	Application	Finishing	M	Application	Finishing
	Grade	SH725		Grade	SH725
	Chipbreaker Shape	JRP 		Chipbreaker Shape	JRP 
	Cutting conditions	C133		Cutting conditions	C133

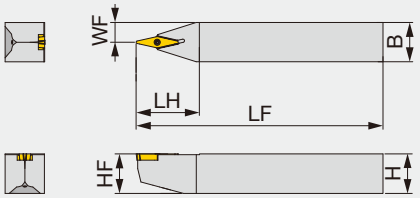
Reference pages JS-SVUXL: Inserts → B156
Standard cutting conditions → C133

SYIBN

Screw-on toolholder with 77.5° approach angle, for positive 25° rhombic inserts



Cutting edge style I



Designation	H	B	LF	LH	HF	WF	RE**	Insert
SYIBN2020K16	20	20	125	32	20	10	0.8	YWMT16T3...
SYIBN2525M16	25	25	150	40	25	12.5	0.8	YWMT16T3...

**RE : Standard corner radius

SPARE PARTS




Designation	Clamping screw	Wrench
SYIBN...	CSTB-2.5L080	T-8F

INSERT SELECTION

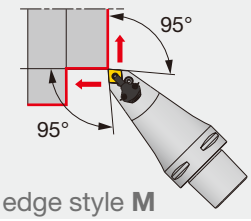
P	Application	Finishing to medium cutting
	Grade	T9225
	Chipbreaker Shape	ZM 
	Cutting conditions	B006

K	Application	Finishing to medium cutting
	Grade	GT9530
	Chipbreaker Shape	ZM 
	Cutting conditions	B010

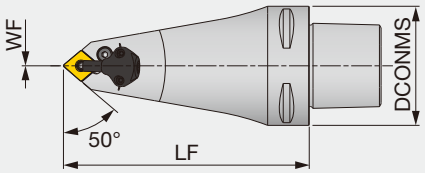
Reference pages: SYIBN: Inserts → B160

C-PCMNN-CHP

Lever-lock toolholder with TungCap connection, for negative 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **M**



Designation	DCONMS	LF	WF	RE	Insert
C6PCMNN00130-12-CHP	63	115	0	0.8	CN**1204...

Applicable for 14 MPa coolant
**RE : Standard corner radius

For external turning only

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C6PCMNN00130-12-CHP	LSC42	LCS4	P-3	LSP4	LCL4

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C6PCMNN00130-12-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

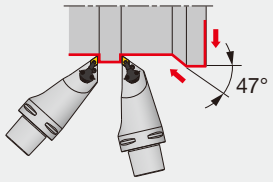
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

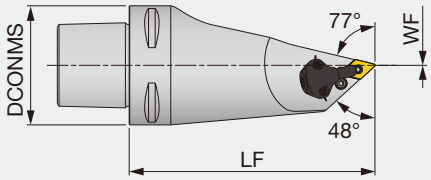
Reference pages C-PCMNN-CHP: Inserts → B054 -, CBN → B170 -, PCD → B188 -
Parts for coolant hose → C132

C-PDMNL-CHP

Lever-lock toolholder with TungCap connection, for negative 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **M**



Left hand (L) shown.

Designation	DCONMS	LF	WF	RE**	Insert
C6PDMNL00130-1104-CHP	63	130	0	0.8	DN**1104...

Applicable for 14 MPa coolant
**RE : Standard corner radius

For external turning only

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C6PDMNL00130-1104-CHP	ELSD32	LCS3	P-2.5	LSP3	LCL33L

SPARE PARTS

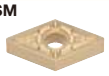
Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C6PDMNL00130-1104-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker Shape	TSF 	TM 
Cutting conditions	B006	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SS 	SM 
Cutting conditions	B008	

K

Application	Medium cutting
Grade	T515
Chipbreaker Shape	TM 
Cutting conditions	B010

Reference pages C-PDMNL-CHP: Inserts → B065 -
Parts for coolant hose → C132

PARTS FOR COOLANT HOSE

Connecting hose

Fig. 1

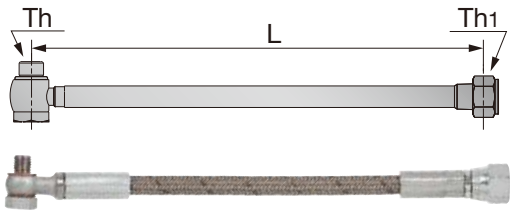
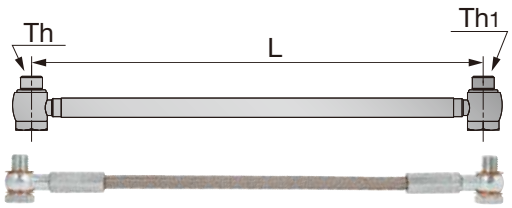
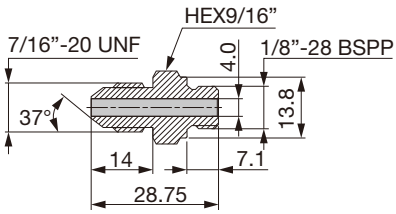


Fig. 2



Designation	L	Th	Th1	Max. pressure (Mpa)	Fig.
CHP-HOSE-G1/8-7/16-200BS	200	G1/8"-28 BSPP	7/16"-20 UNF	26	1
CHP-HOSE-G1/8-7/16-250BS	250	G1/8"-28 BSPP	7/16"-20 UNF	26	1
CHP-HOSE-5/16-7/16-200BS	200	5/16"-24UNF	7/16"-20 UNF	20	1
CHP-HOSE-5/16-G1/8-200BS	200	5/16"-24UNF	G1/8"-28 BSPP	20	1
CHP-HOSE-G1/8-G1/8-200BB	200	G1/8"-28 BSPP	G1/8"-28 BSPP	26	2
CHP-HOSE-G1/8-G1/8-250BB	250	G1/8"-28 BSPP	G1/8"-28 BSPP	26	2

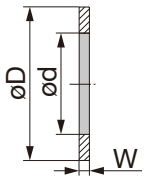
Connector





Designation
CHP-NIPPLE-G1/8-7/16UNF

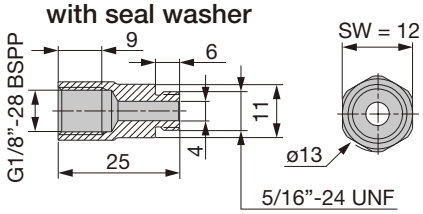
Seal washer





Designation	øD	ød	W
CHP-COPPER-SEAL1/8	15	10	1
CHP-COPPER-SEAL5/16	11	8	1
CHP-COPPER-SEAL5/16-2.5	11	8	2.5

Connector for small lathe with seal washer





Designation	L	Fig.
CHP-CONECTOR/5/16-G1/8	2.5	1
CHP-CONECTOR-G1/8-R1/8	2.54	2

FIXRTURN

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Chip Chipbreaker	Grade	Cutting Speed *Vc* (m/min)	Depth of cut *ap* (mm)	Feed *f* (mm/rev)
P	Steels S45C, SCM415, etc. C45, 18CrMo4, etc.	6RS	T9215	120 - 350	0.5 - 2	0.5 - 1
		6RS	T9225	100 - 300	0.5 - 2	0.5 - 1
		6RS	NS9530	150 - 250	0.5 - 2	0.5 - 1
		6RM	T9215	120 - 350	1 - 3	0.5 - 1
		6RM	T9225	100 - 300	1 - 3	0.5 - 1
		6RM	NS9530	150 - 250	1 - 3	0.5 - 1

Reference pages: SRGCR/L → C083

MINIFORCE TURN
STANDARD CUTTING CONDITIONS

Applications	ISO	Workpiece material	Priority	Chipbreaker	Grade	Cutting speed *Vc* (m/min)	Depth of cut *ap* (mm)	Feed *f* (mm/rev)
Swiss lathest	P	Low carbon steel SS400, etc. E275A, etc. Carbon steel S45C, etc. C45, etc. Low alloy steel SCM415, etc. 18CrMo4, etc. Alloy steel SCM440, etc. 42CrMo4, etc.	First choice	JS	SH725	50 - 180	0.1 - 3	0.03 - 0.1
			Sharpness	JSS	SH725	50 - 180	0.1 - 1.5	0.03 - 0.1
	M	Stainless steel (Austenitic) SUS304, etc. X5CrNi18-9, etc. Stainless steel (Martensitic and ferritic) SUS430, etc. X6Cr17, etc. Stainless steel (Precipitation hardened) SUS630, etc. X5CrNiCuNb16-4, etc.	First choice	JS	SH725	50 - 180	0.1 - 1.25	0.03 - 0.1
			Sharpness	JSS	SH725	50 - 180	0.1 - 1.5	0.03 - 0.1
Small CNC lathes	P	Low carbon steel SS400, etc. E275A, etc. Carbon steel S45C, etc. C45, etc. Low alloy steel SCM415, etc. 18CrMo4, etc. Alloy steel SCM440, etc. 42CrMo4, etc.	First choice	SS	AH725	50 - 180	0.15 - 1.5	0.05 - 0.2
				TS	AH725	50 - 180	0.3 - 2	0.08 - 0.3
			Surface quality	SS	NS9530	50 - 200	0.15 - 1.5	0.05 - 0.2
				TS	NS9530	50 - 200	0.3 - 2	0.08 - 0.3
			Wear resistance	SS	GT9530	50 - 250	0.15 - 1.5	0.05 - 0.2
				TS	GT9530	50 - 250	0.3 - 2	0.08 - 0.3
	M	Stainless steel (Austenitic) SUS304, etc. X5CrNi18-9, etc. Stainless steel (Martensitic and ferritic) SUS430, etc. X6Cr17, etc. Stainless steel (Precipitation hardened) SUS630, etc. X5CrNiCuNb16-4, etc.	First choice	SS	AH725	50 - 150	0.15 - 1.5	0.05 - 0.2
			Fracture resistance	TS	AH725	50 - 150	0.3 - 2	0.08 - 0.3

TURNTEEN FEED
STANDARD CUTTING CONDITIONS
For HD holder (High Depth of Cut)

ISO	Insert	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting Speed Vc (m/min)		
				T9215	T9125	T9225
P	POMG110612-MNW	0.8 - 5.5	0.4 - 1.2	150 - 400	80 - 180	120 - 300
	POMG130612-MNW	1.0 - 7.0	0.4 - 1.3	150 - 400	80 - 180	120 - 300

For HF holder (High Feed)

ISO	Insert	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting Speed Vc (m/min)		
				T9215	T9125	T9225
P	POMG110612-MNW	1.0 - 2.5	0.5 - 1.5	150 - 400	80 - 180	120 - 300
	POMG130612-MNW	1.0 - 3.0	0.5 - 2.0	150 - 400	80 - 180	120 - 300

TURNFEED
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Chipbreaker	Cutting Speed *Vc* (m/min)	Depth of cut *ap* (mm)	Feed *f* (mm/rev)
P	Mild and low carbon steels E275A, C15E4, etc. < 180 HB	T9225	ML	100 - 300	0.5 - 2.5	0.5 - 2.5
	Carbon and alloy steels C55, 42CrMo4, etc. < 300HB	T9215	ML	120 - 350	0.5 - 2.5	0.5 - 2.5
M	Stainless steels X5CrNi18-9, X5CrNiMo17-12-3, etc. < 250 HB	T9225	ML	100 - 300	0.5 - 2.5	0.5 - 2.5
K	Grey and ductile cast irons 250, 400-15S, etc.	AH120	ML	100 - 250	0.5 - 2.5	0.5 - 2.5

Note: When the side cutting edge is used for facing, the maximum feed is limited to within 1.0 mm/rev.

Reference pages
JSWL2XR/L, JSWLXR/L, JSWL2XR/L-CHP, JPWL2XR/L, JSWLXR-F → C029 - C031
JSDJ2XR/L, JSDJXR/L, JSDJ2XR/L-CHP, JPDJ2XR/L, JSDJXR-F → C037 - C039
JSVJ2XR/L, JSVJXR/L, JSVJ2XR/L-CHP, JPVJ2XR/L, JSVJXR-F → C054 - C056
SRGCR/L → C083, PPXOR/L-HD, PPXOR/L-HF → C094, XWXPR/L → C096
SRDCN → C099, JS-SDUXL, JS-SVUXL → C127 - C128

TURNTEC

STANDARD CUTTING CONDITIONS

*Values in red are for facing.

LNMX1204

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (m/min)	Depth of cut: *ap* (mm) RE : 0.8	Depth of cut: *ap* (mm) RE : 1.2	Feed: *f* (mm/rev) RE : 0.8	Feed: *f* (mm/rev) RE : 1.2
P	Steel (S45C, SCM415, etc.)	TDR	T9115	120 - 250	0.5 - 5 0.5 - 2.2	0.8 - 5 0.8 - 2.2	0.15 - 0.6	0.25 - 0.8
		TDR	T9125	80 - 180	0.5 - 5 0.5 - 2.2	0.8 - 5 0.8 - 2.2	0.15 - 0.6	0.25 - 0.8
M	Stainless steel (SUS304, SUS316, etc.)	TDR	T9115	100 - 180	0.5 - 5 0.5 - 2.2	0.8 - 5 0.8 - 2.2	0.15 - 0.6	0.25 - 0.8
		TDR	T9125	80 - 180	0.5 - 5 0.5 - 2.2	0.8 - 5 0.8 - 2.2	0.15 - 0.6	0.25 - 0.8

LNMX1606

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (m/min)	Depth of cut: *ap* (mm) RE : 0.8	RE : 1.2	RE : 1.6	Feed: *f* (mm/rev) RE : 0.8	RE : 1.2	RE : 1.6
P	Steel (S45C, SCM415, etc.)	TDR	T9115	120 - 250	0.5 - 5 0.5 - 3.2	0.8 - 6 0.8 - 3.2	1 - 8 1 - 3.2	0.15 - 0.6	0.25 - 0.8	0.3 - 1
		TDR	T9125	80 - 180	0.5 - 5 0.5 - 3.2	0.8 - 6 0.8 - 3.2	1 - 8 1 - 3.2	0.15 - 0.6	0.25 - 0.8	0.3 - 1
		TWR	T9115	120 - 250	1 - 8 1 - 3.2	0.8 - 6 0.8 - 3.2	-	0.15 - 0.6	0.25 - 0.8	-
		TWR	T9125	80 - 180	1 - 8 1 - 3.2	0.8 - 6 0.8 - 3.2	-	0.15 - 0.6	0.25 - 0.8	-
M	Stainless steel (SUS304, SUS316, etc.)	TDR	T9115	100 - 180	0.5 - 5 0.5 - 3.2	0.8 - 6 0.8 - 3.2	1 - 8 1 - 3.2	0.15 - 0.6	0.25 - 0.8	0.3 - 1
		TDR	T9125	80 - 180	0.5 - 5 0.5 - 3.2	0.8 - 6 0.8 - 3.2	1 - 8 1 - 3.2	0.15 - 0.6	0.25 - 0.8	0.3 - 1
		MDR	T9115	100 - 150	1.5 - 6 0.5 - 3.2	1.5 - 7 0.8 - 3.2	-	0.1 - 0.5	0.15 - 0.7	-
		MDR	AH725	50 - 150	1.5 - 6 0.5 - 3.2	1.5 - 7 0.8 - 3.2	-	0.1 - 0.5	0.15 - 0.7	-
		TWR	T9115	100 - 180	0.5 - 5 0.5 - 3.2	0.8 - 6 0.8 - 3.2	-	0.15 - 0.6	0.25 - 0.8	-
		TWR	T9125	80 - 180	0.5 - 5 0.5 - 3.2	0.8 - 6 0.8 - 3.2	-	0.15 - 0.6	0.25 - 0.8	-

LNMX2410

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (m/min)	Depth of cut: *ap* (mm) RE : 1.6	RE : 2.4	Feed: *f* (mm/rev) RE : 1.6	RE : 2.4
P	Steel (S45C, SCM415, etc.)	TDR	T9115	120 - 250	4 - 15 1 - 4.5	5 - 15 1 - 4.5	0.3 - 1	0.3 - 1.1
		TDR	T9125	80 - 150	4 - 15 1 - 4.5	5 - 15 1 - 4.5	0.3 - 1	0.3 - 1.1
M	Stainless steel (SUS304, SUS316, etc.)	TDR	T9115	100 - 180	4 - 15 1 - 4.5	5 - 15 1 - 4.5	0.3 - 1	0.3 - 1.1
		TDR	T9125	80 - 150	4 - 15 1 - 4.5	5 - 15 1 - 4.5	0.3 - 1	0.3 - 1.1

DIMPLEFX

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Depth of cut *ap* (mm)	Feed *f* (mm/rev)
K	Grey cast irons	FX105	700 (300 - 1000)	1 (0.05 - 3)	0.3 (0.05 - 0.6)
	Ductile cast irons	FX105	200 (100 - 300)	1 (0.05 - 3)	0.2 (0.05 - 0.4)

Reference pages CCLNR/L-RD → C020, CDJNR/L-RD → C044, CDNNN-RD → C063
CVVNN-RD → C068, TLANR/L → C076, TLBNR/L → C090, CHSNR/L → C103
CSSNR/L → C106, TLFNR/L → C111

Internal Toolholder



Internal Toolholder - Content structure

- Indexable toolholders are listed by cutting edge shape.
- In the same cutting edge shape, the inserts are sorted alphabetically.
  The order of the list: CN□□ insert → DN□□ insert → RN□□ insert → SN□□ insert → TN□□ insert → VN□□ insert → WN□□ insert
- Toolholders in the catalog are our standard stock items.

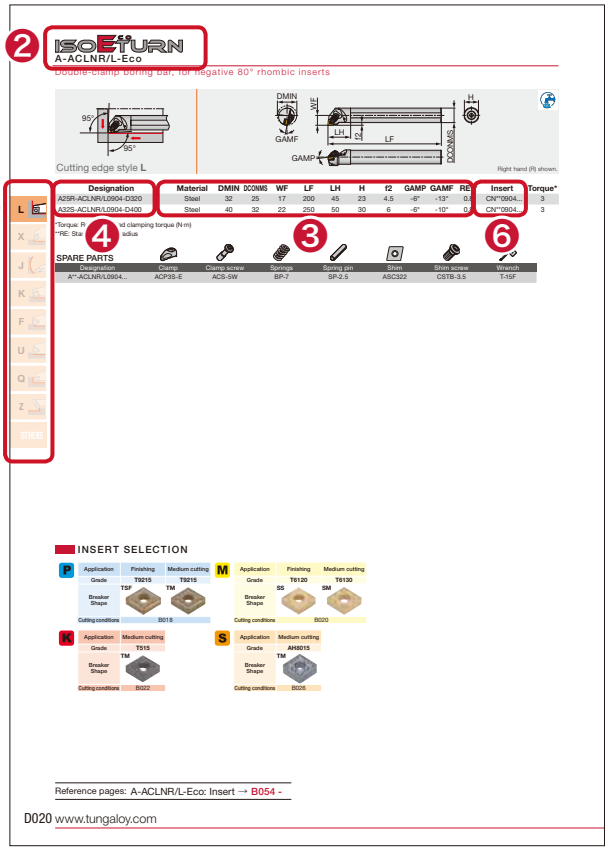
How to use the page

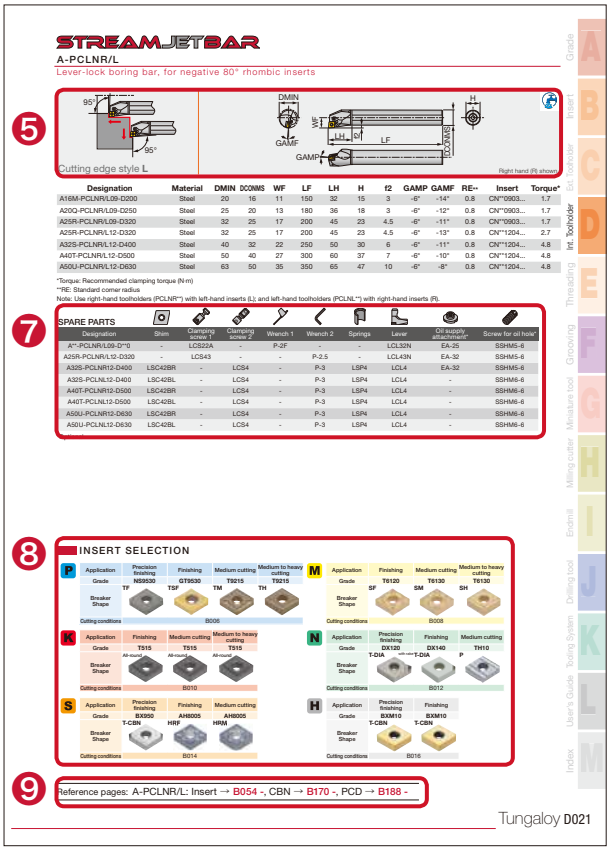
Method ① Select the cutting edge shape described at the left end of each page, jump to the page on the left index, and choose a designation you need (❹) in the dimension table (❸). Applicable inserts are shown in (❻) and (❽).

Method ② Select the cutting edge on D003 and check the details on the product page.

Method ③ Select the series name of a toolholder on D003 and check the details on each page.

Method ④ Select an item from Quick Guide on D004-D009.





❶ : Cutting edge shape
❷ : Series name of indexable boring bars
❸ : Dimension table
❹ : Toolholder designation
e.g. To select right-handed steel shank for minimum machining diameter ø13

→ **A10K-SDXXR07-D130**

❺ : Dimension drawing (conforming to ISO13399)
❻ : Applicable insert
❼ : Spare parts
❽ : Insert selection
❾ : Reference pages

When ordering
- Please specify the designation and quantity.
  e.g. **A12M-SDZXR/L07-D140 ...** 1 (one boring bar per package)
  * Inserts are not included. Please order those separately.

Main products

L 95° D012
X 100° D031
J 142° D034
K 75° D036
F 91° D040
U 93° D046
Q 107.5° D075
Z 93° D083
OTHERS D089



BOREMEISTER BORE MEISTER

Boring head suitable for L/D=10

Shank **ø16 - 60 mm**

D010



MINI FORCE TURN MINI FORCE TURN

Economical double-sided inserts with excellent sharpness

Shank **ø10 - 20 mm**

D026, D033, D083



ISO ECO TURN ISO ECO TURN

Small-sized “Eco” insert series for maximized profits

Shank **ø16 - 32 mm**

D019, D027, D043
D052, D059, D070



STREAMJETBAR STREAM JET BAR

Highly rigid toolholders providing good chip evacuation

Shank **ø4 - 50 mm**

D011



Y-PRO SERIES Y-PRO SERIES

Inserts with 25° corner angle for profiling

Shank **ø12 - 16 mm**

D074, D082



TURNINGA TURNING A

Highly rigid clamping system with excellent repeatability

Shank **ø25 - 50 mm**

D023, D030, D039
D045, D055, D072



TUNG TURN JET TUNG TURN JET

Toolholders for high pressure coolant supply

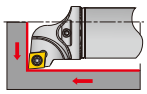
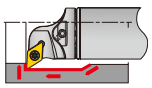
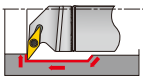
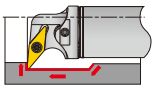
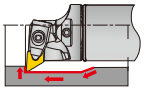
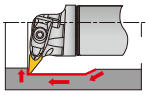
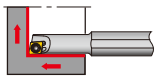
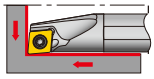
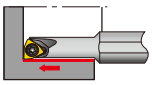
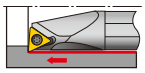
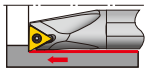
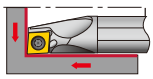
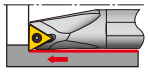
D023, D055

Sleeve

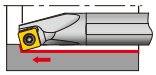
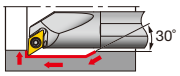
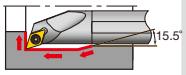
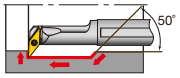
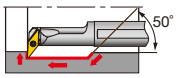
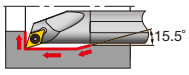
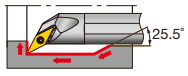
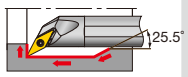
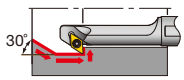
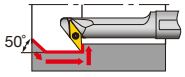
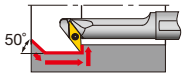
D090

Internal Toolholder - Quick Guide

Positive type

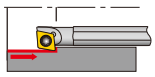
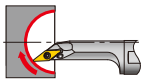
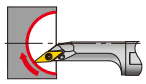
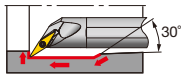
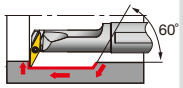
Style	Designation & Application	ISO Insert	Y-PRO SERIES	Material	BOREMEISTER	STREAMJETBAR	MINIFÜRN	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	Page
	**S-SCLCR/L-H** Boring & internal facing Insert : CC□□	✓		Steel	✓			ø20 – ø50	D012
	**S-SDUCR/L-H** Boring & internal profiling Insert : DC□□	✓		Steel	✓			ø20 – ø50	D046
	**S-SVUCR/L-H** Boring & internal profiling Insert : VC□□	✓		Steel	✓			ø27 – ø31	D064
	**S-SVLCR/L-H** Boring & internal profiling Insert : VC□□	✓		Steel	✓			ø40 – ø50	D024
	**S-DDUNR/L-H** Boring & internal profiling Insert : DN□□	✓		Steel	✓			ø40 – ø50	D050
	**S-DVUNR/L-H** Boring & internal profiling Insert : VN□□	✓		Steel	✓			ø52	D068
	**SEXPR/L** Boring & internal facing Insert : EP□□	✓		Steel Carbide		✓		ø4.5 – ø7 ø4.5 – ø7	D031 D032
	**SCLCR/L** Boring & internal facing Insert : Cc□□	✓		Steel Carbide Reinforced		✓		ø5 – ø27 ø5 – ø27 ø16 – ø32	D014 - D016
	**SWUBR/L** Boring Insert : WB□□	✓		Steel Carbide		✓		ø6 – ø8 ø6 – ø8	D073
	**STUPR/L** Boring Insert : TP□□	✓		Steel Carbide Reinforced		✓		ø8 – ø34 ø8 – ø27 ø14 – ø31	D056 - D058
	**STFPR/L** Blind hole boring Insert : TP□□	✓		Steel Carbide		✓		ø10 – ø27 ø10 – ø22	D041
	**SCLPR/L** Boring & internal facing Insert : CP□□	✓		Steel Carbide Reinforced		✓		ø10 – ø27 ø10 – ø20 ø14 – ø32	D017 D018
	**STFCR/L** Blind hole boring Insert : TC□□	✓		Steel Carbide		✓		ø12 – ø18 ø12 – ø18	D040

Positive type

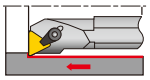
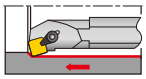
Style	Designation & Application	ISO Insert	Y-PRO SERIES	Material	BOREMEISTER	STREAMJETBAR	MINIFÜRN	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	Page
	**SSKPR** Through boring Insert : SP□□	✓		Steel		✓		ø20 ø31	D036
	**SDUCR/L** Boring & internal profiling Insert : DC□□	✓		Steel Carbide		✓		ø13 ø32 ø13 ø27	D048
	**SDUPR/L** Boring & internal profiling Insert : DPMT□□			Steel Carbide		✓		ø15 ø22 ø15 ø22	D049
	**SVUCR/L** Boring & internal profiling Insert : VC□□	✓		Steel Carbide Reinforced		✓		ø16 ø32 ø18 ø32 ø32	D066 D067
	**SVUBR/L** Boring & internal profiling Insert : VB□□	✓		Steel Carbide Reinforced		✓		ø20 ø32 ø24.5 ø34 ø25	D062 D063
	**SDQCR/L** Boring & internal profiling Insert : DC□□	✓		Steel Carbide Reinforced		✓		ø13 ø30 ø13 ø25 ø20 ø32	D075 D076
	**SDQPR/L** Boring & internal profiling Insert : DPMT□□			Steel Carbide		✓		ø15 ø22 ø15 ø22	D077
	**SVQCR/L** Boring & internal profiling Insert : VC□□	✓		Steel Carbide Reinforced		✓		ø13.5 ø21.5 ø13.5 ø21.5 ø32	D080 D081
	**SVQBR/L** Boring & internal profiling Insert : VB□□	✓		Steel Carbide Reinforced		✓		ø17 ø30.5 ø17 ø30.5 ø25	D078 D079
	**SDZCR/L** Back boring Insert : DC□□	✓		Steel Carbide		✓		ø14 ø25 ø18 ø22	D084
	**SVZCR/L** Back boring Insert : VC□□	✓		Steel		✓		ø16	D088
	**SVZBR/L** Back boring Insert : VB□□	✓		Steel		✓		ø20 ø40	D087

Internal Toolholder - Quick Guide

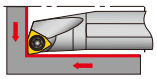
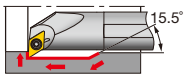
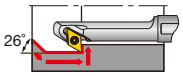
Positive type

Style	Designation & Application	ISO Insert	Y-PRO SERIES	Material	BOREMEISTER	STREAMJETBAR	MINIFÜRN	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	Page
	**SEZPR/L** Back boring Insert : EP□□	✓		Steel Carbide		✓		ø5.5 ø6.5 ø5.5 ø6.5	D086
	**SVJCR/L** Internal sphere cutting Insert : VC□□	✓		Steel		✓		ø16 ø20	D035
	**SVJBR/L** Internal sphere cutting Insert : VB□□	✓		Steel		✓		ø25 ø30	D034
	**SYQBR/L** Boring, undercutting & profiling Insert : YW□□		✓	Steel Carbide		✓		ø17 ø21.5 ø17 ø21.5	D082
	**SYUBR/L** Boring & internal profiling Insert : YW□□		✓	Steel Carbide		✓		ø20 ø20 ø24.5	D074

Clamp on

Style	Designation & Application	ISO Insert	Material	BOREMEISTER	STREAMJETBAR	MINIFÜRN	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	Page
	**CTFPR/L** Blind hole boring Insert : TP□□ (without hole)	✓	Steel Carbide				ø16 ø40 ø16 ø20	D042
	**CSKPR/L** Through boring Insert : SP□□ (without hole)	✓	Steel				ø20 ø32	D037

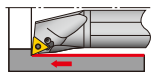
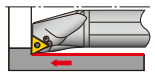
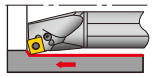
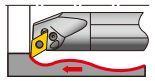
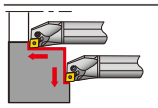
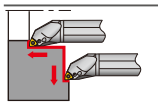
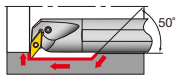
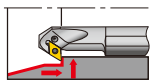
Positive double side

Style	Designation & Application	ISO Insert	MINIFÜRN	Material	MINIFÜRN	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	Page
	**SWLXR/L** Boring & internal facing Insert : WXGU		✓	Steel Carbide	✓	ø12 ø22 ø12 ø22	D026
	**SDXXR/L** Boring & internal profiling Insert : DXGU		✓	Steel Carbide	✓	ø13 ø24 ø13 ø24	D033
	**SDZXR/L** Back boring Insert : DXGU		✓	Steel Carbide	✓	ø14 ø20 ø18 ø22	D083

Internal Toolholder - Quick Guide

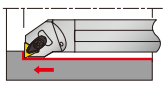
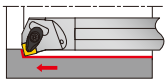
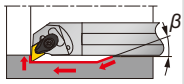
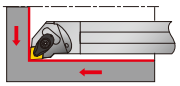
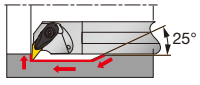
Negative type

Lever lock

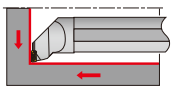
Style	Designation & Application	ISO Insert	ISOTURN	Material	STREAMJETBAR	TUNGTJET	Min. bore diameter DMIN (mm) 20 30 40 50 60 70	Page
	**PTUNR/L** Boring Insert : TN□□	✓	✓	Steel Reinforced	✓		ø20 ø40 ø20 ø63	D059 - D061
	**PTFNR/L** Boring Insert : TN□□	✓	✓	Steel	✓		ø32 ø63	D043 D044
	**PSKNR/L** Through boring Insert : SN□□	✓		Steel	✓		ø40 ø63	D038
	**PDUNR/L** Boring & internal profiling Insert : DN□□	✓	✓	Steel Reinforced	✓	✓	ø25 ø63 ø40 ø63	D052 - D055
	**PCLNR/L** Boring & internal facing Insert : CN□□	✓	✓	Steel Reinforced	✓	✓	ø20 ø63 ø20 ø63	D019 D021- D023
	**PWLNR/L** Boring & internal facing Insert : WN□□	✓	✓	Steel	✓		ø20 ø50	D027 D029 D030
	**PVUNR/L** Boring & internal profiling Insert : V/YN□□	✓	✓	Steel	✓		ø37 ø50	D070 D071
	**PDZNR/L** Back boring Insert : DN□□	✓		Steel	✓		ø40 ø63	D085

Negative type

Double clamp

Style	Designation & Application	ISO Insert	ISOTURN	Material	STREAMJETBAR	TURNINGA	Min. bore diameter DMIN (mm) 20 30 40 50 60 70	Page
	**ATFNR/L** Boring Insert : TN□□	✓		Steel		✓	ø32 — ø40	D045
	**ASKNR/L** Boring Insert : SN□□	✓		Steel		✓	ø32 — ø40	D039
	**ADUNR/L** Boring & internal profiling Insert : DN□□	✓	✓	Steel		✓	ø32 — ø63	D052 D055
	**ACLNR/L** Boring & internal facing Insert : CN□□, GN□□	✓	✓	Steel		✓	ø32 — ø63	D020 D023
	**AWLNR/L** Boring & internal facing Insert : WN□□	✓	✓	Steel		✓	ø32 — ø63	D028 D030
	**AVUNR/L** Boring & internal profiling Insert : VN□□	✓		Steel		✓	ø40 — ø50	D072

Screw-on

Style	Designation & Application	ISO Insert	TURNTEC	Material	TURNTEC	Min. bore diameter DMIN (mm) 40 50 60 70 80 90	Page
	**S-TLANR/L** Boring & internal facing Insert : LNMX□□		✓	Steel	✓	ø53 — ø85	D089

BOREMEISTER

BORE MEISTER

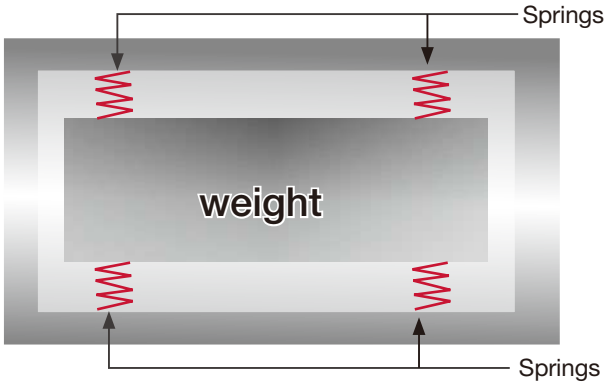


Unique anti-vibration mechanism in the tool body reduces vibration during deep hole boring with long overhangs of up to **L/D = 10**

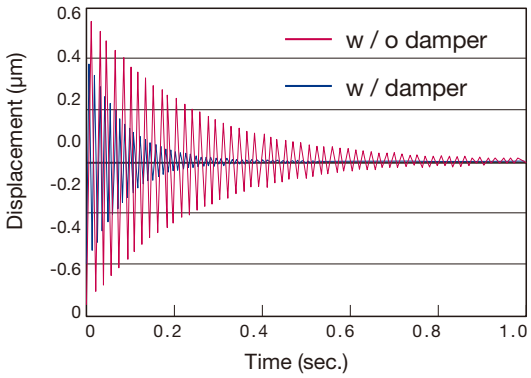
Vibration Dampening Mechanism

When cutting forces create vibration on boring bar set up with long overhangs, the bar's dampening mechanism counters the tool's motion and cancels the vibration.
The dampening mechanism consists of a weight supported by spring elements.
The vibrations die out quickly eliminating noise and chatter marks.

- Concept image of dampening

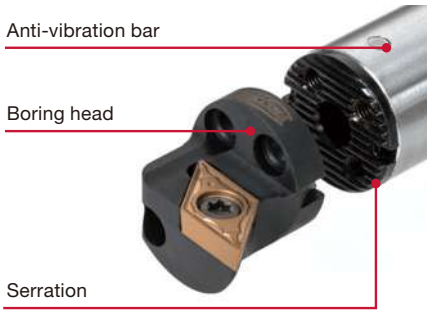


- Tool vibrations with and without vibration damper



Standard Lineup

BoreMeister is comprised of the anti-vibration bar and interchangeable boring head, featuring serrated interfaces for high precision indexing. They are connected by screws, allowing the fitting of a wide range of cutting heads for great flexibility.
- Minimum bore diameter : ø20 mm





Reference pages: D012, D024, D046, D050, D064, D068

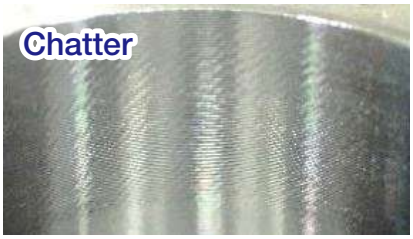
STREAMJETBAR

STREAM JET BAR



Engineered for tool strength and optimal chip evacuation

Tool body of special alloy steel, designed to reduce chatter !



Competitor



STREAMJETBAR

Minimum bore diameter from ø4.5 mm

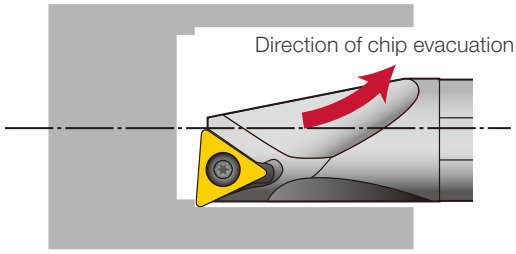
Steel and carbide shank available

New pocket design for excellent chip evacuation

Cutting performance

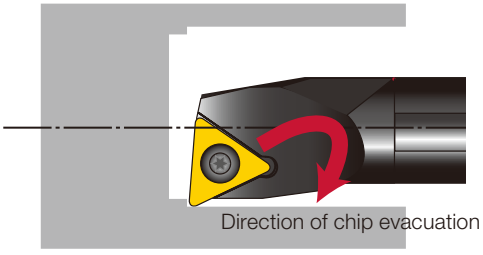
The excellent chip evacuation minimizes tool failure caused by recutting chips and poor chip control. Damage to the work surface from chips is also eliminated.

STREAMJETBAR



Combination of the well designed chip pocket and coolant flow helps chips to effectively evacuate.

Competitor



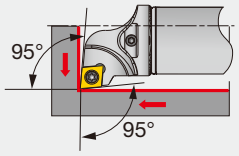
Chip packing is likely to occur.

Reference pages: D014, D021, D029, D031, D034, D036, D038, D040, D044, D048, D053, D056 D060, D062, D066, D071, D073, D075, D078, D084, D086, D087

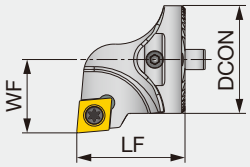
BOREMEISTER

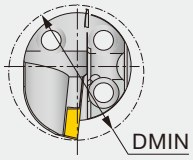
S-SCLCR/L-H

Screw-on exchangeable boring head, for positive 80° rhombic inserts



Cutting edge style **L**





Right hand (R) shown.

Designation	DMIN	DCON	WF	LF	Shank	Insert
S16-SCLCR/L06-H	20	16	11	20	D16	CC**0602...
S20-SCLCR/L09-H	25	20	13	20	D20	CC**09T3...
S25-SCLCR/L09-H	32	25	17	22	D25	CC**09T3...
S32-SCLCR/L09-H	40	30	22	32	D32	CC**09T3...
S40-SCLCR/L12T-H	50	40	27	38	D40, D50, D60	CC**1204...

Note: Use right-hand toolholders (SCLCR**) with left-hand inserts (L); and left-hand toolholders (SCLCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench	Shim	Shim screw
S16-SCLCR/L06-H	SR14-548	T-7/5	-	-
S20-SCLCR/L09-H	SR16-236	T-15/5	-	-
S25-SCLCR/L09-H	SR16-236	T-15/5	-	-
S32-SCLCR/L09-H	SR16-236	T-15/5	-	-
S40-SCLCR/L12T-H	SR16-212	T-20/5	TCC4-2	SRTC-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	NS9530	T9215	T9215
Breaker Shape	01	PSS	PS	PM
Cutting conditions	B018			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Breaker Shape	W**	PSF	PSS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA	with rake T-DIA	AL
Cutting conditions	B024		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B026	

H

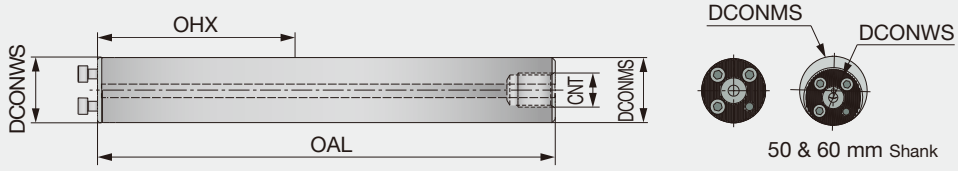
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: S-SCLCR/L-H: Insert → B109 -, CBN → B180, PCD → B190 -

BOREMEISTER

Anti-vibration bar

Anti-vibration bar for exchangeable turning heads, with through coolant



Designation	Material	DCONWS	DCONMS	OAL	OHX	CNT
D16-L156-7D-C	Steel	16	16	156	92	G1/8
G16-L204-10D-E	Carbide	16	16	204	140	-
D20-L200-7D-C	Steel	20	20	200	120	G1/4
G20-L260-10D-E	Carbide	20	20	260	180	-
D25-L255-7D-C	Steel	25	25	255	155	G1/4
D25-L330-10D-C	Steel	25	25	330	230	G1/4
D32-L320-7D-C	Steel	32	32	320	192	G3/8
D32-L416-10D-C	Steel	32	32	416	288	G3/8
D40-L408-7D-C	Steel	40	40	408	248	G1/2
D40-L528-10D-C	Steel	40	40	528	368	G1/2
D50-L518-7D-C	Steel	40	50	518	318	G1/2
D50-L668-10D-C	Steel	40	50	668	468	G1/2
D60-L628-7D-C	Steel	40	60	628	388	G3/4
D60-L808-10D-C	Steel	40	60	808	568	G3/4

SPARE PARTS

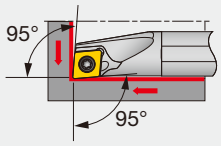



Designation	Clamping screw	Wrench
D16-L..., G16-L...	SRM3X10DIN912	HW2.5
D20-L..., G20-L...	SRM3.5X10DIN912	HW2.5
D25-L...	SRM4X12DIN912	HW3.0
D32-L...	SRM5X12DIN912	HW4.0
D40-L..., D50-L... D60-L...	SRM6X16DIN912-12.9	HW5.0

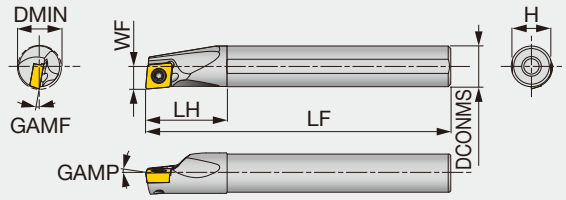
STREAMJETBAR

A/E-SCLCR/L

Screw-on boring bar, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A04F-SCLCR/L03-D050	Steel	5	4	2.5	80	8	3.8	0°	-15°	0.2	CC**03X1...	0.6
A05F-SCLCR/L03-D060	Steel	6	5	3	80	9	4.8	0°	-13°	0.2	CC**03X1...	0.6
A06G-SCLCR/L04-D070	Steel	7	6	3.5	90	11	5.75	0°	-13°	0.2	CC**04T1...	0.6
A07G-SCLCR/L04-D080	Steel	8	7	4	90	12	6.75	0°	-11°	0.2	CC**04T1...	0.6
A08H-SCLCR/L06-D100	Steel	10	8	5.5	100	16	7.5	0°	-13°	0.4	CC**0602...	1.2
A10F-SCLCR06-D120	Steel	12	10	6	80	20	9	0°	-10°	0.4	CC**0602...	1.2
A10K-SCLCR/L06-D120	Steel	12	10	6	125	20	9	0°	-10°	0.4	CC**0602...	1.2
A12H-SCLCR06-D140	Steel	14	12	7	100	24	11	0°	-8°	0.4	CC**0602...	1.2
A12M-SCLCR/L06-D140	Steel	14	12	7	150	24	11	0°	-8°	0.4	CC**0602...	1.2
A12H-SCLCR06-D160	Steel	16	12	9	100	24	11	0°	-7°	0.4	CC**0602...	1.2
A12M-SCLCR/L06-D160	Steel	16	12	9	150	24	11	0°	-7°	0.4	CC**0602...	1.2
A16K-SCLCR09-D180	Steel	18	16	9	125	32	15	0°	-9°	0.8	CC**09T3...	3
A16Q-SCLCR/L09-D180	Steel	18	16	9	180	32	15	0°	-10°	0.8	CC**09T3...	3
A16K-SCLCR09-D200	Steel	20	16	11	125	32	15	0°	-9°	0.8	CC**09T3...	3
A16Q-SCLCR/L09-D200	Steel	20	16	11	180	32	15	0°	-9°	0.8	CC**09T3...	3
A20R-SCLCR/L09-D220	Steel	22	20	11	200	32	18	0°	-8°	0.8	CC**09T3...	3
A25S-SCLCR/L09-D270	Steel	27	25	13.5	250	45	23	0°	-6°	0.8	CC**09T3...	3
E04G-SCLCR/L03-D050	Carbide	5	4	2.5	90	9	3.8	0°	-15°	0.2	CC**03X1...	0.6
E05G-SCLCR/L03-D060	Carbide	6	5	3	90	10	4.8	0°	-13°	0.2	CC**03X1...	0.6
E06H-SCLCR/L04-D070	Carbide	7	6	3.5	100	12	5.75	0°	-13°	0.2	CC**04T1...	0.6
E07H-SCLCR/L04-D080	Carbide	8	7	4	100	14	6.75	0°	-11°	0.2	CC**04T1...	0.6
E08G-SCLCR06-D100	Carbide	10	8	5.5	90	22	7.5	0°	-13°	0.4	CC**0602...	1.2
E08K-SCLCR/L06-D100	Carbide	10	8	5.5	125	22	7.5	0°	-13°	0.4	CC**0602...	1.2
E10F-SCLCR06-D120	Carbide	12	10	6	80	25	9	0°	-10°	0.4	CC**0602...	1.2
E10H-SCLCR06-D120	Carbide	12	10	6	100	25	9	0°	-10°	0.4	CC**0602...	1.2
E10M-SCLCR/L06-D120	Carbide	12	10	6	150	25	9	0°	-10°	0.4	CC**0602...	1.2
E12G-SCLCR06-D140	Carbide	14	12	7	90	27	11	0°	-8°	0.4	CC**0602...	1.2
E12J-SCLCR06-D140	Carbide	14	12	7	110	27	11	0°	-8°	0.4	CC**0602...	1.2
E12Q-SCLCR/L06-D140	Carbide	14	12	7	180	27	11	0°	-8°	0.4	CC**0602...	1.2
E12G-SCLCR06-D160	Carbide	16	12	9	90	27	11	0°	-7°	0.4	CC**0602...	1.2
E12J-SCLCR06-D160	Carbide	16	12	9	110	27	11	0°	-7°	0.4	CC**0602...	1.2
E12Q-SCLCR/L06-D160	Carbide	16	12	9	180	27	11	0°	-7°	0.4	CC**0602...	1.2
E16H-SCLCR09-D180	Carbide	18	16	9	100	32	15	0°	-10°	0.8	CC**09T3...	3
E16L-SCLCR09-D180	Carbide	18	16	9	130	32	15	0°	-10°	0.8	CC**09T3...	3
E16R-SCLCR/L09-D180	Carbide	18	16	9	200	32	15	0°	-10°	0.8	CC**09T3...	3
E16H-SCLCR09-D200	Carbide	20	16	11	100	32	15	0°	-9°	0.8	CC**09T3...	3
E16L-SCLCR09-D200	Carbide	20	16	11	130	32	15	0°	-9°	0.8	CC**09T3...	3
E16R-SCLCR/L09-D200	Carbide	20	16	11	200	32	15	0°	-9°	0.8	CC**09T3...	3
E20S-SCLCR09-D220	Carbide	22	20	11	250	36	18	0°	-8°	0.8	CC**09T3...	3
E25T-SCLCR09-D270	Carbide	27	25	13.5	300	45	23	0°	-6°	0.8	CC**09T3...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius
Note: Use right-hand toolholders (SCLCR**) with left-hand inserts (L); and left-hand toolholders (SCLCL**) with right-hand inserts (R).

Reference pages: A/E-SCLCR/L: Insert → B109 -, CBN → B180, PCD → B190 -

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SCLCR/L03-D...	CSTA-1.6	T-6F
A**-SCLCR/L04-D...	CSTB-2	T-6F
A**-SCLCR/L06-D...	CSTB-2.5S	T-8F
A**-SCLCR/L09-D...	CSTB-4S	T-15F
E**-SCLCR/L03-D...	CSTA-1.6	T-6F
E**-SCLCR/L04-D...	CSTB-2	T-6F
E**-SCLCR/L06-D...	CSTB-2.5S	T-8F
E16*-SCLCR/L09-D...	CSTB-4L060	T-15F
E2**-SCLCR/L09-D...	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	NS9530	T9215	T9215
Breaker Shape	01	PSS	PS	PM
Cutting conditions	B018			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Breaker Shape	W**	PSF	PSS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA (with rake)	T-DIA	AL
Cutting conditions	B024		

S

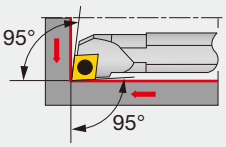
Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B026	

H

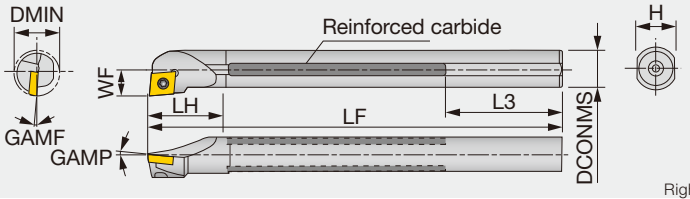
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

T-SCLCR/L

Screw-on boring bar, for positive 80° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	GAMF	GAMP	RE**	Insert	Torque*
T12M-SCLCR/L06	Reinforced	16	–	12	9	150	22	59	11	-10°	0°	0.4	CC**0602...	1.2
T16Q-SCLCR/L09	Reinforced	20	–	16	11	180	27	59	15	-10°	0°	0.8	CC**09T3...	3
T20R-SCLCR/L09C	Reinforced	25	Rc1/4	20	13	200	35	49	18	-8°	0°	0.8	CC**09T3...	3
T25S-SCLCR/L09C	Reinforced	32	Rc1/4	25	17	250	40	64	23	-6°	0°	0.8	CC**09T3...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Note: Use right-hand toolholders (SCLCR**) with left-hand inserts (L); and left-hand toolholders (SCLCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
T12M-SCLCR/L06	CSTB-2.5	T-8F
T16Q-SCLCR/L09	CSTB-4S	T-15F
T20R-SCLCR/L09C	CSTB-4S	T-15F
T25S-SCLCR/L09C	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B018			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	TH10	KS05F
Breaker Shape	T-DIA	W20 (with rake)	AL
Cutting conditions	B024		

S

Application	Precision finishing	Finishing to medium cutting
Grade	BX470	AH8005
Breaker Shape	T-CBN	PS
Cutting conditions	B026	

H

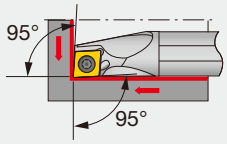
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: T-SCLCR/L: Insert → B109 -, CBN → B180, PCD → B190 -

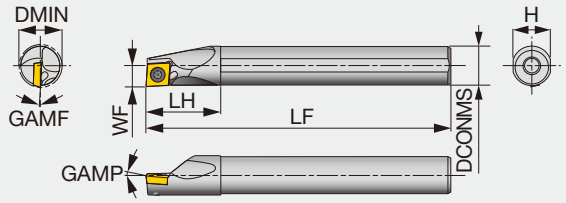
STREAMJETBAR

A/E-SCLPR/L

Screw-on boring bar, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A08H-SCLPR/L06-D100	Steel	10	8	5.5	100	16	7.5	5°	-8°	0.4	CP**0602...	1.2
A10K-SCLPR/L06-D120	Steel	12	10	6	125	20	9	5°	-5°	0.4	CP**0602...	1.2
A10K-SCLPR/L08-D120	Steel	12	10	6	125	20	9	5°	-5°	0.4	CP**0802...	1.4
A12M-SCLPR/L06-D140	Steel	14	12	7	150	24	11	5°	-4°	0.4	CP**0602...	1.2
A12M-SCLPR/L08-D140	Steel	14	12	7	150	24	11	5°	-4°	0.4	CP**0802...	1.4
A12M-SCLPR/L08-D160	Steel	16	12	9	150	24	11	5°	-3°	0.4	CP**0802...	1.4
A16Q-SCLPR/L09-D180	Steel	18	16	9	180	32	15	5°	-3.5°	0.8	CP**0903...	3
A16Q-SCLPR/L09-D200	Steel	20	16	11	180	32	15	5°	-3°	0.8	CP**0903...	3
A20R-SCLPR/L09-D220	Steel	22	20	11	200	36	18	5°	-2°	0.8	CP**0903...	3
A25S-SCLPR/L09-D270	Steel	27	25	13.5	250	45	23	5°	-1°	0.8	CP**0903...	3
E08K-SCLPR/L06-D100	Carbide	10	8	5.5	125	22	7.5	5°	-8°	0.4	CP**0602...	1.2
E10M-SCLPR/L06-D120	Carbide	12	10	6	150	25	9	5°	-5°	0.4	CP**0602...	1.2
E10H-SCLPR08-D120	Carbide	12	10	6	100	25	9	5°	-5°	0.4	CP**0802...	1.4
E10M-SCLPR/L08-D120	Carbide	12	10	6	150	25	9	5°	-5°	0.4	CP**0802...	1.4
E12Q-SCLPR/L06-D140	Carbide	14	12	7	180	27	11	5°	-4°	0.4	CP**0602...	1.2
E12G-SCLPR08-D140	Carbide	14	12	7	90	27	11	5°	-4°	0.4	CP**0802...	1.4
E12J-SCLPR08-D140	Carbide	14	12	7	110	27	11	5°	-4°	0.4	CP**0802...	1.4
E12Q-SCLPR/L08-D140	Carbide	14	12	7	180	27	11	5°	-4°	0.4	CP**0802...	1.4
E12G-SCLPR08-D160	Carbide	16	12	9	90	27	11	5°	-3°	0.4	CP**0802...	1.4
E12J-SCLPR08-D160	Carbide	16	12	9	110	27	11	5°	-3°	0.4	CP**0802...	1.4
E12Q-SCLPR/L08-D160	Carbide	16	12	9	180	27	11	5°	-3°	0.4	CP**0802...	1.4
E16H-SCLPR09-D180	Carbide	18	16	9	100	32	15	5°	-3.5°	0.8	CP**0903...	3
E16L-SCLPR09-D180	Carbide	18	16	9	130	32	15	5°	-3.5°	0.8	CP**0903...	3
E16R-SCLPL09-D180	Carbide	18	16	9	200	32	15	5°	-3.5°	0.8	CP**0903...	3
E16H-SCLPR09-D200	Carbide	20	16	11	100	32	15	5°	-3°	0.8	CP**0903...	3
E16L-SCLPR09-D200	Carbide	20	16	11	130	32	15	5°	-3°	0.8	CP**0903...	3
E16R-SCLPL09-D200	Carbide	20	16	11	200	32	15	5°	-3°	0.8	CP**0903...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius
Note: Use right-hand toolholders (SCLPR**) with left-hand inserts (L); and left-hand toolholders (SCLPL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SCLPR/L06-D...	CSTB-2.5S	T-8F
A10K-SCLPR/L08-D120	CSTB-3L042	T-9F
A12M-SCLPR/L08-D...	CSTB-3L050	T-9F
A**-SCLPR/L09-D...	CSTB-4L060	T-15F
E**-SCLPR/L06-D...	CSTB-2.5S	T-8F
E10*-SCLPR/L08-D...	CSTB-3L042	T-9F
E12*-SCLPR/L08-D...	CSTB-3L050	T-9F
E16*-SCLPR/L09-D...	CSTB-4L060	T-15F

INSERT SELECTION

P

Application	Finishing to medium cutting	Medium cutting
Grade	T9215	T9215
Breaker Shape	PS	PM
Cutting conditions	B018	

M

Application	Finishing to medium cutting	Medium cutting
Grade	T9215	T9215
Breaker Shape	PS	PM
Cutting conditions	B020	

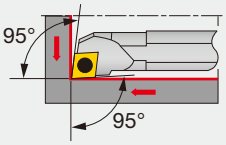
K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

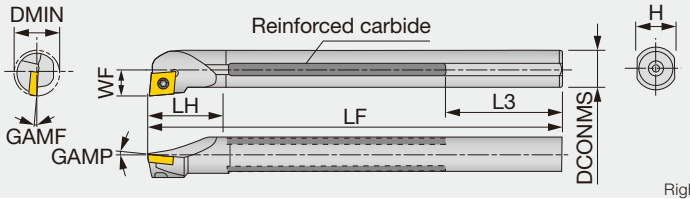
Reference pages: A/E-SCLPR/L: Insert → B116 -

T-SCLPR/L

Screw-on boring bar, for positive 80° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	GAMF	GAMP	RE**	Insert	Torque*
T12M-SCLPR08-D14	Reinforced	14	-	12	7	150	22	59	11	-4°	5°	0.4	CP**0802...	1.4
T12M-SCLPR/L08	Reinforced	16	-	12	9	150	25	59	11	-3°	5°	0.4	CP**0802...	1.4
T16Q-SCLPR09-D18	Reinforced	18	-	16	9	180	27	59	15	-3.5°	5°	0.8	CP**0903...	3
T16Q-SCLPR/L09	Reinforced	20	-	16	11	180	30	59	15	-4°	5°	0.8	CP**0903...	3
T20R-SCLPR09C-D22	Reinforced	22	Rc1/4	20	11	200	35	49	18	-2°	5°	0.8	CP**0903...	3
T20R-SCLPR/L09	Reinforced	25	-	20	13	200	35	49	18	-2°	5°	0.8	CP**0903...	3
T25S-SCLPR09C-D27	Reinforced	27	Rc1/4	25	13.5	250	40	64	23	-1°	5°	0.8	CP**0903...	3
T25S-SCLPR/L09	Reinforced	32	-	25	17	250	40	64	23	0°	5°	0.8	CP**0903...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius
Note: Use right-hand toolholders (SCLPR**) with left-hand inserts (L); and left-hand toolholders (SCLPL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
T12M-SCLPR/L08...	CSTB-3L050	T-9F
T16Q-SCLPR09-D18	CSTB-4L060	T-15F
T16Q-SCLPR/L09	CSTB-4S	T-15F
T20R-SCLPR09C-D22	CSTB-4L060	T-15F
T20R-SCLPR/L09	CSTB-4S	T-15F
T25S-SCLPR09C-D27	CSTB-4L060	T-15F
T25S-SCLPR/L09	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Breaker Shape	PSS	PS	PM
Cutting conditions	B018		

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Breaker Shape	PSF	PSS	PM
Cutting conditions	B020		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

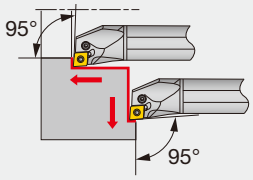
Application	Finishing
Grade	DX140
Breaker Shape	T-DIA
Cutting conditions	B024

S

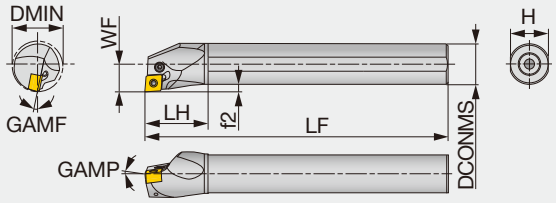
Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B026	

Reference pages: T-SCLPR/L: Insert → B116 -

Lever-lock boring bar, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16M-PCLNR/L0904-D200	Steel	20	16	11	150	32	15	3	-6°	-16°	0.8	CN**0904...	1.7
A20Q-PCLNR/L0904-D250	Steel	25	20	13	180	36	18	3	-6°	-12°	0.8	CN**0904...	1.7

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Oil supply attachment*	Screw for oil hole*
A16M-PCLNR/L0904-D200	LCS33	P-2F	LCL33N	-	SSHM3-4
A20Q-PCLNR/L0904-D250	LCS33	P-2F	LCL33N	EA-20	SSHM3-4

*Optional

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF	TM
Cutting conditions	B018	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SS	SM
Cutting conditions	B020	

K

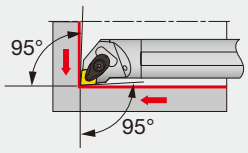
Application	Medium cutting
Grade	T515
Breaker Shape	TM
Cutting conditions	B022

S

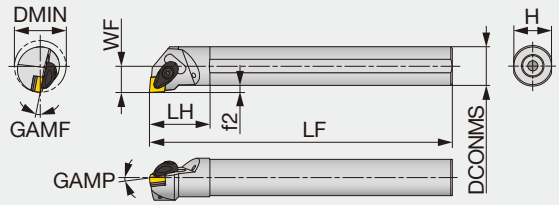
Application	Medium cutting
Grade	AH8015
Breaker Shape	TM
Cutting conditions	B026

Reference pages: A-PCLNR/L-Eco: Insert → B054 -

Double-clamp boring bar, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-ACLNR/L0904-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	CN**0904...	3
A32S-ACLNR/L0904-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	CN**0904...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Springs	Spring pin	Shim	Shim screw	Wrench
A**-ACLNR/L0904...	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASC322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF	TM
Cutting conditions	B018	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SS	SM
Cutting conditions	B020	

K

Application	Medium cutting
Grade	T515
Breaker Shape	TM
Cutting conditions	B022

S

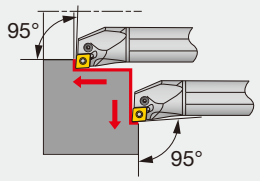
Application	Medium cutting
Grade	AH8015
Breaker Shape	TM
Cutting conditions	B026

Reference pages: A-ACLNR/L-Eco: Insert → B054 -

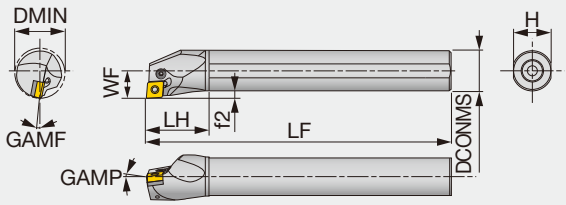
STREAMJETBAR

A-PCLNR/L

Lever-lock boring bar, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16M-PCLNR/L09-D200	Steel	20	16	11	150	32	15	3	-6°	-14°	0.8	CN**0903...	1.7
A20Q-PCLNR/L09-D250	Steel	25	20	13	180	36	18	3	-6°	-12°	0.8	CN**0903...	1.7
A25R-PCLNR/L09-D320	Steel	32	25	17	200	45	23	4.5	-6°	-11°	0.8	CN**0903...	1.7
A25R-PCLNR/L12-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	CN**1204...	2.7
A32S-PCLNR/L12-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	0.8	CN**1204...	4.8
A40T-PCLNR/L12-D500	Steel	50	40	27	300	60	37	7	-6°	-10°	0.8	CN**1204...	4.8
A50U-PCLNR/L12-D630	Steel	63	50	35	350	65	47	10	-6°	-8°	0.8	CN**1204...	4.8

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius
Note: Use right-hand toolholders (PCLNR**) with left-hand inserts (L); and left-hand toolholders (PCLNL**) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Springs	Lever	Oil supply attachment*	Screw for oil hole*
A**-PCLNR/L09-D**0	-	LCS22A	-	P-2F	-	-	LCL32N	EA-25	SSHM5-6
A25R-PCLNR/L12-D320	-	LCS43	-	-	P-2.5	-	LCL43N	EA-32	SSHM5-6
A32S-PCLNR12-D400	LSC42BR	-	LCS4	-	P-3	LSP4	LCL4	EA-32	SSHM5-6
A32S-PCLNL12-D400	LSC42BL	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A40T-PCLNR12-D500	LSC42BR	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A40T-PCLNL12-D500	LSC42BL	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A50U-PCLNR12-D630	LSC42BR	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A50U-PCLNL12-D630	LSC42BL	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

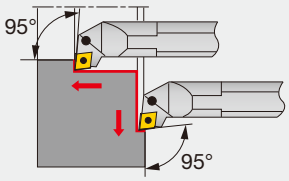
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

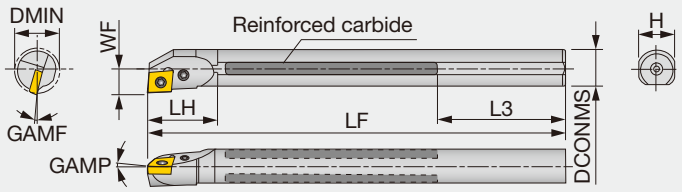
Reference pages: A-PCLNR/L: Insert → B054 -, CBN → B170 -, PCD → B188 -

T-PCLNR

Lever-lock boring bar, for negative 80° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	GAMP	GAMF	RE**	Insert	Torque*
T16Q-PCLNR09	Reinforced	20	-	16	11	180	27	59	15	-6°	-14°	0.8	CN**0903...	1.7
T20R-PCLNR09C	Reinforced	25	Rc1/4	20	13	200	35	49	18	-6°	-12°	0.8	CN**0903...	1.7
T25S-PCLNR09C	Reinforced	32	Rc1/4	25	17	250	40	64	23	-6°	-11°	0.8	CN**0903...	1.7
T32U-PCLNR12C	Reinforced	40	Rc1/2	32	22	350	50	103	30	-6°	-11°	0.8	CN**1204...	4.8
T40V-PCLNR12C	Reinforced	50	Rc1/2	40	27	400	55	88	37	-6°	-10°	0.8	CN**1204...	4.8
T50W-PCLNR12C	Reinforced	63	Rc1/2	50	35	450	65	63	47	-6°	-8°	0.8	CN**1204...	4.8

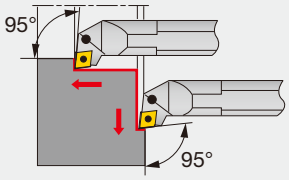
*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Springs	Lever
T**-PCLNR09...	-	LCS22A	-	P-2F	-	-	LCL32N
T**-PCLNR12C	LSC42BR	-	LCS4	-	P-3	LSP4	LCL4

S-PCLNR/L

Lever-lock boring bar, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMP	GAMF	RE**	Insert	Torque*
S16M-PCLNR/L09	Steel	20	16	11	150	30	15	15.5	-6°	-14°	0.8	CN**0903...	1.7
S20Q-PCLNR/L09	Steel	25	20	13	180	35	18	19	-6°	-12°	0.8	CN**0903...	1.7
S25R-PCLNR/L09	Steel	32	25	17	200	40	23	24	-6°	-11°	0.8	CN**0903...	1.7
S32S-PCLNR/L12	Steel	40	32	22	250	50	30	29.5	-6°	-11°	0.8	CN**1204...	4.8
S40T-PCLNR/L12	Steel	50	40	27	300	55	37	37.5	-6°	-10°	0.8	CN**1204...	4.8
S50U-PCLNR/L12	Steel	63	50	35	350	65	47	47.5	-6°	-8°	0.8	CN**1204...	4.8

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

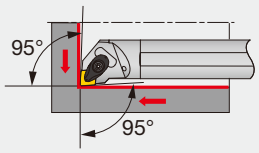
Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Springs	Lever
S**-PCLNR/L09	-	LCS22A	-	P-2F	-	-	LCL32N
S32S-PCLNR/L12	LSC42BR/L	-	LCS4	-	P-3	LSP4	LCL4
S40T-PCLNR/L12	LSC42BR/L	-	LCS4	-	P-3	LSP4	LCL4
S50U-PCLNR/L12	LSC42BR/L	-	LCS4	-	P-3	LSP4	LCL4

Reference pages: T-PCLNR, S-PCLNR/L: Insert → B054 -, CBN → B170 -, PCD → B188 -

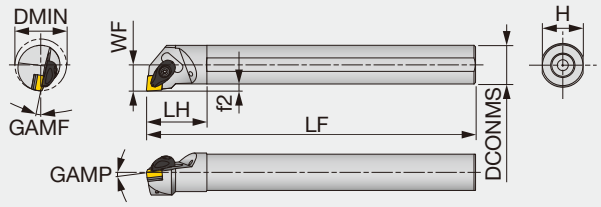
TURNING A

A-ACLNR/L

Double-clamp boring bar, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-ACLNR/L12-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	CN**1204...	3
A32S-ACLNR/L12-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	CN**1204...	3
A40T-ACLNR/L12-D500	Steel	50	40	27	300	55	37	7	-6°	-8°	0.8	CN**1204...	3
A50U-ACLNR12-D630	Steel	63	50	35	350	65	47	10	-6°	-7°	0.8	CN**1204...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

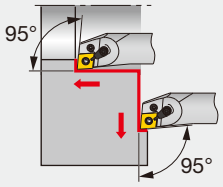
SPARE PARTS

Designation	Clamp	Clamp screw	Springs	Spring pin	Shim	Shim screw	Wrench
A**-ACLNR/L12-D...	ACP4S	ACS-5W	BP-7	SP-2.5	ASC422	CSTB-3.5	T-15F

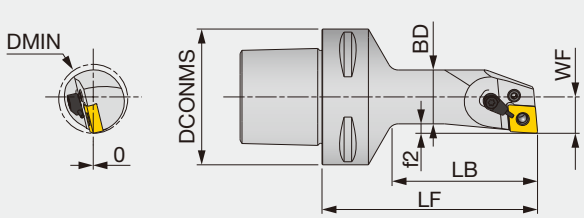
TUNGTURN TJET

C-PCLNL-CHP

Lever-lock boring bar with TungCap connection, with 95° approach angle, for negative 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **L**



Left hand (L) shown.

Designation	DMIN	DCONMS	BD	LF	LB	WF	f2	RE**	Insert
C6PCLNL17100-12-CHP	32	63	25	100	67.5	17	4.5	0.8	CN**1204...

Applicable for 14 MPa coolant
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	Lever
C6PCLNL17100-12-CHP	LCS43	S-CU-CHP	P-2.5F	LCL43N

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA	T-DIA with rake	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

H

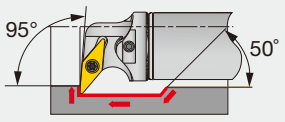
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: A-ACLNR/L, C-PCLNL-CHP: Insert → B054 -, CBN → B170 -, PCD → B188 -

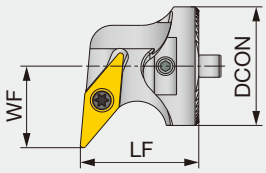
BOREMEISTER

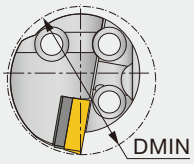
S-SVLCR/L-H

Screw-on exchangeable boring head, for positive 35° rhombic inserts



Cutting edge style **L**





Right hand (R) shown.

Designation	DMIN	DCON	WF	LF	Shank	Insert
S32-SVLCR/L16T-H	40	32	22	32	D32	VC**1604...
S40-SVLCR/L16T-H	50	40	27	32	D40, D50, D60	VC**1604...

Note: Use right-hand toolholders (SVLCR**) with left-hand inserts (L); and left-hand toolholders (SVLCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench	Shim	Shim screw
S32-SVLCR/L16T-H	SR16-236P	T-15/5	TVC 3-1P	SRTC-3P
S40-SVLCR/L16T-H	SR16-236P	T-15/5	TVC 3-1P	SRTC-3P

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PSS	PS
Cutting conditions	B018	

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Breaker Shape	PSF	PSS	PM
Cutting conditions	B020		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B024		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B026	

H

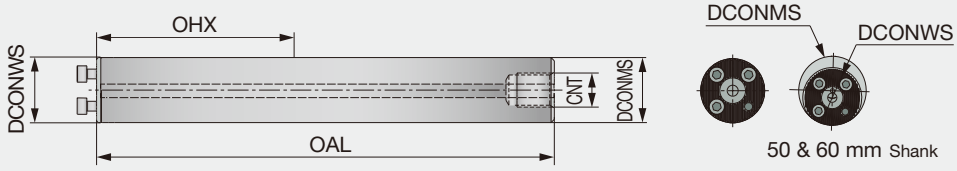
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: S-SVLCR/L-H: Insert → B153 -, CBN → B186, PCD → B190 -

BOREMEISTER

Anti-vibration bar

Anti-vibration bar for exchangeable turning heads, with through coolant



Designation	Material	DCONWS	DCONMS	OAL	OHX	CNT
D16-L156-7D-C	Steel	16	16	156	92	G1/8
G16-L204-10D-E	Carbide	16	16	204	140	-
D20-L200-7D-C	Steel	20	20	200	120	G1/4
G20-L260-10D-E	Carbide	20	20	260	180	-
D25-L255-7D-C	Steel	25	25	255	155	G1/4
D25-L330-10D-C	Steel	25	25	330	230	G1/4
D32-L320-7D-C	Steel	32	32	320	192	G3/8
D32-L416-10D-C	Steel	32	32	416	288	G3/8
D40-L408-7D-C	Steel	40	40	408	248	G1/2
D40-L528-10D-C	Steel	40	40	528	368	G1/2
D50-L518-7D-C	Steel	40	50	518	318	G1/2
D50-L668-10D-C	Steel	40	50	668	468	G1/2
D60-L628-7D-C	Steel	40	60	628	388	G3/4
D60-L808-10D-C	Steel	40	60	808	568	G3/4

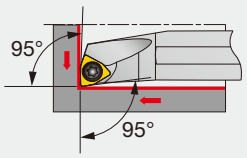
SPARE PARTS



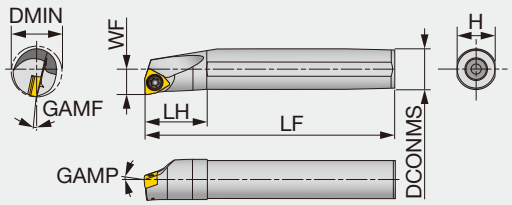

Designation	Clamping screw	Wrench
D16-L..., G16-L...	SRM3X10DIN912	HW2.5
D20-L..., G20-L...	SRM3.5X10DIN912	HW2.5
D25-L...	SRM4X12DIN912	HW3.0
D32-L...	SRM5X12DIN912	HW4.0
D40-L..., D50-L... D60-L...	SRM6X16DIN912-12.9	HW5.0

A/E-SWLXR/L

Screw-on boring bar, for WXGU inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A10K-SWLXR/L04-D120	Steel	12	10	6	125	20	9	-10°	-16°	0.4	WXGU0403**L/R...	0.9
A12M-SWLXR/L04-D140	Steel	14	12	7	150	24	11	-10°	-14°	0.4	WXGU0403**L/R...	0.9
A16Q-SWLXR/L04-D180	Steel	18	16	9	180	32	15	-10°	-11°	0.4	WXGU0403**L/R...	0.9
A20R-SWLXR/L04-D220	Steel	22	20	11	200	36	18	-10°	-10°	0.4	WXGU0403**L/R...	0.9
E10M-SWLXR/L04-D120	Carbide	12	10	6	150	25	9	-10°	-16°	0.4	WXGU0403**L/R...	0.9
E12Q-SWLXR/L04-D140	Carbide	14	12	7	180	27	11	-10°	-14°	0.4	WXGU0403**L/R...	0.9
E16R-SWLXR/L04-D180	Carbide	18	16	9	200	32	15	-10°	-11°	0.4	WXGU0403**L/R...	0.9
E20S-SWLXR/L04-D220	Carbide	22	20	11	250	36	18	-10°	-10°	0.4	WXGU0403**L/R...	0.9

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R)

SPARE PARTS

Designation	Clamping screw	Wrench
A/E**-SWLXR/L...	SR34-514	T-7F

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	NS9530	AH725
Breaker Shape	SS 	TS 
Cutting conditions	D093	

M

Application	Finishing	Medium cutting
Grade	AH8015	AH8015
Breaker Shape	SS 	TS 
Cutting conditions	D093	

K

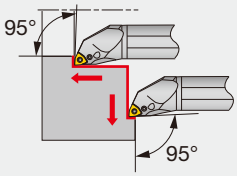
Application	Finishing	Medium cutting
Grade	NS9530	AH725
Breaker Shape	SS 	TS 
Cutting conditions	D093	

N

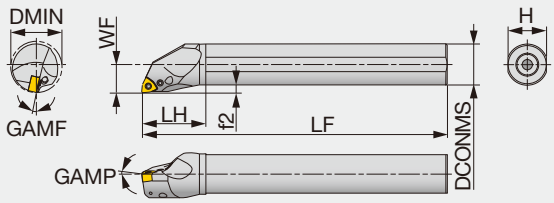
Application	Finishing	Medium cutting
Grade	KS05F	KS05F
Breaker Shape	SS 	TS 
Cutting conditions	D093	

Reference pages: A/E-SWLXR/L: Insert → B158 -
Standard cutting conditions → D093

Lever-lock boring bar, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16M-PWLNR/L0604-D200	Steel	20	16	11	150	32	15	3	-8°	-17°	0.8	WN**0604...	1.7
A20Q-PWLNR/L0604-D250	Steel	25	20	13	180	36	18	3	-6°	-14°	0.8	WN**0604...	1.7

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS



Designation	Clamping screw	Wrench	Lever	Oil supply attachment*	Screw for oil hole*
A16M-PWLNR/L0604-D200	LCS33	P-2F	LCL33N	-	SSHM3-4
A20Q-PWLNR/L0604-D250	LCS33	P-2F	LCL33N	EA-20	SSHM3-4

*Optional

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF	TM
Cutting conditions	B006	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SS	SM
Cutting conditions	B008	

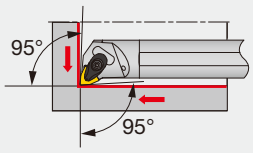
K

Application	Medium cutting
Grade	T515
Breaker Shape	TM
Cutting conditions	B010

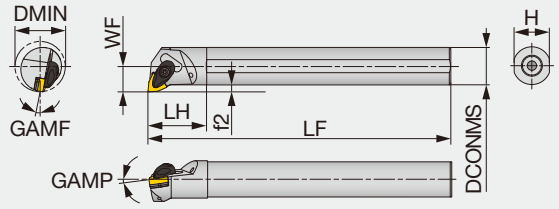
Reference pages: A-PWLNR/L-Eco: Insert → B099 -

A-AWLNR/L-Eco

Double-clamp boring bar, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-AWLNR/L0604-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	WN**0604...	3
A32S-AWLNR/L0604-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	WN**0604...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Springs	Spring pin	Shim	Shim screw	Wrench
A**-AWLNR/L...	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF	TM
Cutting conditions	B006	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SS	SM
Cutting conditions	B008	

K

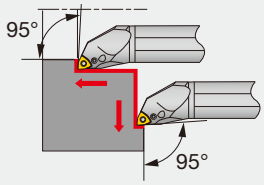
Application	Medium cutting
Grade	T515
Breaker Shape	TM
Cutting conditions	B010

Reference pages: A-AWLNR/L-Eco: Insert → B099 -

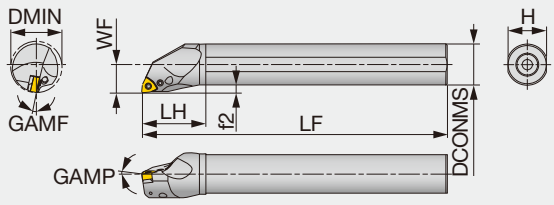
STREAMJETBAR

A-PWLNR/L

Lever-lock boring bar, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16M-PWLNR/L06-D200	Steel	20	16	11	150	32	15	3	-8°	-17°	0.8	WN**0604...	1.7
A20Q-PWLNR/L06-D250	Steel	25	20	13	180	36	18	3	-6°	-14°	0.8	WN**0604...	1.7
A25R-PWLNR/L06-D320	Steel	32	25	17	200	45	23	4.5	-6°	-12°	0.8	WN**0604...	2.7
A32S-PWLNR/L06-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	0.8	WN**0604...	2.7
A25R-PWLNR/L08-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	WN**0804...	2.7
A32S-PWLNR/L08-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	0.8	WN**0804...	4.8
A40T-PWLNR/L08-D500	Steel	50	40	27	300	60	37	7	-6°	-10°	0.8	WN**0804...	4.8

*Torque: Recommended clamping torque (N·m) **RE: Standard corner radius
Note: Use right-hand toolholders (PWLNR**) with left-hand inserts (L); and left-hand toolholders (PWLNL**) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Springs	Lever	Oil supply attachment*	Screw for oil hole*
A16M-PWLNR/L06-D200	-	LCS33	-	P-2F	-	-	LCL33N	-	SSHM3-4
A20Q-PWLNR/L06-D250	-	LCS33	-	P-2F	-	-	LCL33N	EA-20	SSHM3-4
A25R-PWLNR/L06-D320	LSW312BR/L	-	LCS3B	-	P-2.5	LSP3	LCL3	EA-25	SSHM4-5
A32S-PWLNR/L06-D400	LSW312BR/L	-	LCS3	-	P-2.5	LSP3	LCL3	EA-32	SSHM4-5
A25R-PWLNR/L08-D320	-	LCS43	-	-	P-2.5	-	LCL43N	EA-25	SSHM4-5
A32S-PWLNR/L08-D400	LSW42BR/L	-	LCS4	-	P-3	LSP4	LCL4	EA-32	SSHM4-5
A40T-PWLNR/L08-D500	LSW42BR/L	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM4-5

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

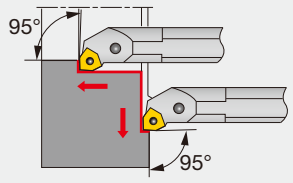
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

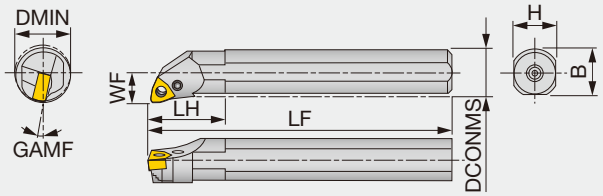
Reference pages: A-PWLNR/L: Insert → B099 -, CBN → B179

S-PWLNR/L

Lever-lock boring bar, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert
S16M-PWLNR/L06	Steel	20	16	11	150	30	15	15.5	-17°	0.8	WN**0604...
S20Q-PWLNR/L06	Steel	25	20	13	180	35	18	19	-14°	0.8	WN**0604...
S25R-PWLNR/L06	Steel	32	25	17	200	40	23	24	-12°	0.8	WN**0604...

SPARE PARTS

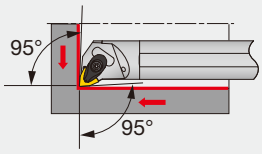
Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench	Spring	Lever
S**-PWLNR/L06	-	LCS33	-	P-2F	-	-	LCL33N
S25R-PWLNR06	LSW312BR	-	LCS3B	-	P-2.5	LSP3	LCL3
S25R-PWLNL06	LSW312BL	-	LCS3B	-	P-2.5	LSP3	LCL3

**RE : Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

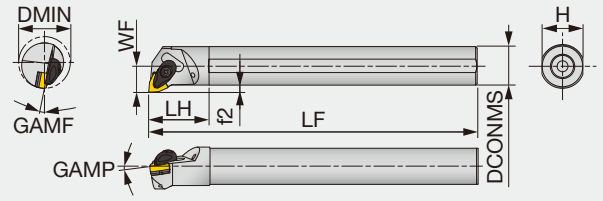
TURNING

A-AWLNR/L

Double-clamp boring bar, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-AWLNR/L06-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	WN**0604...	3
A32S-AWLNR/L06-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	WN**0604...	3
A25R-AWLNR/L08-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	WN**0804...	3
A32S-AWLNR/L08-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	WN**0804...	3
A40T-AWLNR/L08-D500	Steel	50	40	27	300	55	37	7	-6°	-8°	0.8	WN**0804...	3
A50U-AWLNR/L08-D630	Steel	63	50	35	350	65	47	10	-6°	-7°	0.8	WN**0804...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-AWLNR/L06-D...	ACP3S	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F
A**-AWLNR/L08-D...	ACP4S	ACS-5W	BP-7	SP-2.5	ASW422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

H

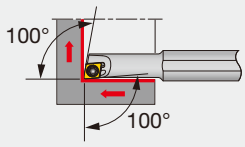
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: S-PWLNR/L, A-AWLNR/L:
Insert → B099 -, CBN → B179

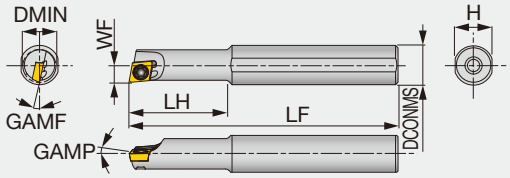
STREAMJETBAR

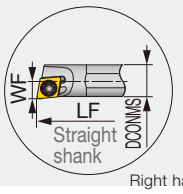
A/E-SEXPR/L

Screw-on boring bar, for positive 75° rhombic inserts



Cutting edge style **X**





Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A04F-SEXPR/L03-D045	Steel	4.5	4	2.3	80	8	3.8	0°	-15°	0.2	EP**03X1...	0.6
A04F-SEXPR/L03-D050	Steel	5	4	2.5	80	8	3.8	0°	-13°	0.2	EP**03X1...	0.6
A05F-SEXPR/L04-D055	Steel	5.5	5	2.75	80	9	4.8	0°	-12°	0.4	EP**0401...	0.6
A06G-SEXPR/L04-D070	Steel	7	6	3.6	90	11	5.75	0°	-12°	0.4	EP**0401...	0.6
A08H-SEXPR/L04-D055	Steel	5.5	8	2.75	100	16	7.5	0°	-12°	0.4	EP**0401...	0.6
A08H-SEXPR/L04-D070	Steel	7	8	3.6	100	20	7.5	0°	-12°	0.4	EP**0401...	0.6
E04G-SEXPR/L03-D045	Carbide	4.5	4	2.3	90	9	3.8	0°	-15°	0.2	EP**03X1...	0.6
E04G-SEXPR/L03-D050	Carbide	5	4	2.5	90	9	3.8	0°	-13°	0.2	EP**03X1...	0.6
E05G-SEXPR/L04-D055	Carbide	5.5	5	2.75	90	10	4.8	0°	-12°	0.4	EP**0401...	0.6
E06H-SEXPR/L04-D070	Carbide	7	6	3.6	100	12	5.75	0°	-12°	0.4	EP**0401...	0.6
E08K-SEXPR/L04-D055	Carbide	5.5	8	2.75	125	28	7.5	0°	-12°	0.4	EP**0401...	0.6
E08K-SEXPR/L04-D070	Carbide	7	8	3.6	125	40	7.5	0°	-12°	0.4	EP**0401...	0.6

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SEXPR**) with left-hand inserts (L); and left-hand toolholders (SEXPL**) with right-hand inserts (R).

SPARE PARTS




Designation	Clamping screw	Wrench
A**-SEXPR/L03-D...	CSTA-1.6	T-6F
A**-SEXPR/L04-D...	CSTB-2	T-6F
E**-SEXPR/L03-D...	CSTA-1.6	T-6F
E**-SEXPR/L04-D...	CSTB-2	T-6F

INSERT SELECTION

P

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B018

M

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B020

K

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B022

N

Application	Precision finishing	Finishing
Grade	DX140	GH110
Breaker Shape	T-DIA 	W08 
Cutting conditions	B024	

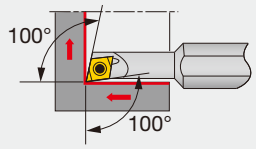
H

Application	Precision finishing
Grade	BX310
Breaker Shape	T-CBN 
Cutting conditions	B028

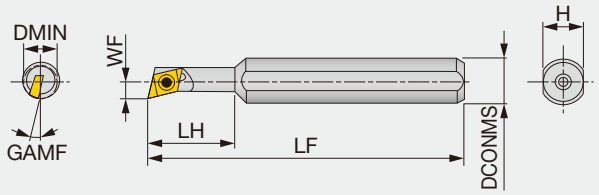
Reference pages: A/E-SEXPR/L: Insert → B127 -, CBN → B182, PCD → B191

JS-SEXPR/L

Screw-on boring bar, for positive 75° rhombic inserts



Cutting edge style **X**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	GAMF	RE**	Insert	Torque*
JS08H-SEXPR045	Steel	5.5	8	2.7	100	16	7	12°	0.4	EP**0401...	0.6
JS08H-SEXPR047	Steel	7	8	3.6	100	20	7	12°	0.4	EP**0401...	0.6

SPARE PARTS

Designation	Clamping screw	Wrench
JS08H-SEXPR04...	CSTB-2	T-6F

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SEXPR**) with left-hand inserts (L); and left-hand toolholders (SEXPL**) with right-hand inserts (R).

INSERT SELECTION

P

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B018

M

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B020

K

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B022

N

Application	Precision finishing	Finishing
Grade	DX140	GH110
Breaker Shape	T-DIA 	W08 
Cutting conditions	B024	

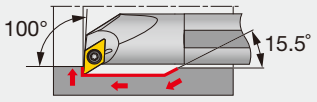
H

Application	Precision finishing
Grade	BX310
Breaker Shape	T-CBN 
Cutting conditions	B028

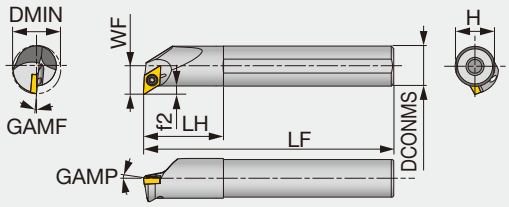
Reference pages: JS-SEXPR/L: Insert → B127 -, CBN → B182, PCD → B191

A/E-SDXXR/L

Screw-on boring bar, for DXGU inserts



Cutting edge style **X**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A10K-SDXXR/L07-D130	Steel	13	10	7.6	125	20	9	2.6	-14°	-16°	0.4	DXGU0703**L/R...	0.9
A12M-SDXXR/L07-D160	Steel	16	12	8.6	150	24	11	2.6	-14°	-14°	0.4	DXGU0703**L/R...	0.9
A16Q-SDXXR/L07-D200	Steel	20	16	10.6	180	32	15	2.6	-13°	-13°	0.4	DXGU0703**L/R...	0.9
A20R-SDXXR/L07-D240	Steel	24	20	12.6	200	36	18	2.6	-13°	-12°	0.4	DXGU0703**L/R...	0.9
E10M-SDXXR/L07-D130	Carbide	13	10	7.6	150	25	9	2.6	-14°	-16°	0.4	DXGU0703**L/R...	0.9
E12Q-SDXXR/L07-D160	Carbide	16	12	8.6	180	27	11	2.6	-14°	-14°	0.4	DXGU0703**L/R...	0.9
E16R-SDXXR/L07-D200	Carbide	20	16	10.6	200	32	15	2.6	-13°	-13°	0.4	DXGU0703**L/R...	0.9
E20S-SDXXR/L07-D240	Carbide	24	20	12.6	250	36	18	2.6	-13°	-12°	0.4	DXGU0703**L/R...	0.9

*Torque: Recommended clamping torque (N·m) **RE : Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R)

SPARE PARTS




Designation	Clamping screw	Wrench
A/E**-SDXXR/L...	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Breaker Shape	JSS	JTS
	Cutting conditions	D093	

M	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Breaker Shape	JSS	JTS
	Cutting conditions	D093	

Small CNC lathes

P	Application	Finishing	Medium cutting
	Grade	AH725	AH725
	Breaker Shape	SS	TS
	Cutting conditions	D093	

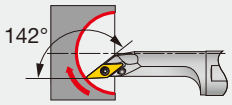
M	Application	Finishing	Medium cutting
	Grade	AH8015	AH8015
	Breaker Shape	SS	TS
	Cutting conditions	D093	

Reference pages: A/E-SDXXR/L: Insert → B125 -
Standard cutting conditions → D093

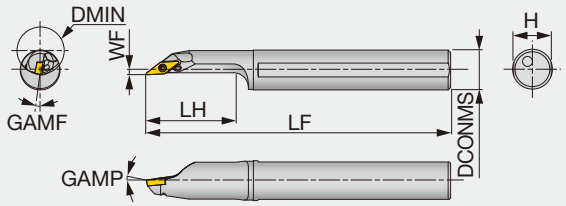
STREAMJETBAR

A-SVJBR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A20R-SVJBR/L11-D250	Steel	25	20	2	200	40	18	-5°	-5°	0.4	VB**1103...	1.2
A25S-SVJBR/L11-D300	Steel	30	25	3.5	250	50	23	-5°	-5°	0.4	VB**1103...	1.2

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVJBR**) with left-hand inserts (L); and left-hand toolholders (SVJBL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SVJB*11-D...	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B018	

M

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B020	

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

H

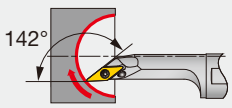
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: A-SVJBR/L: Insert → B150 -, CBN → B186

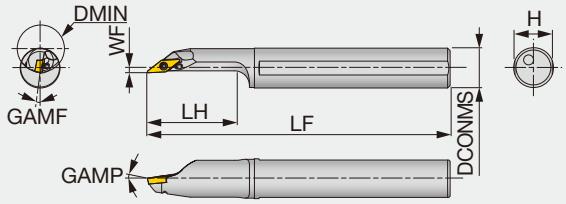
STREAMJETBAR

A-SVJCR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A12M-SVJCR/L08-D160	Steel	16	12	2	150	28	11	-5°	-5°	0.4	VC**0802...	0.6
A16Q-SVJCR/L08-D200	Steel	20	16	2	180	35	15	-5°	-5°	0.4	VC**0802...	0.6

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVJCR**) with left-hand inserts (L); and left-hand toolholders (SVJCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SVJC*08-D...	CSTB-2L	T-6F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B018

M

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B020

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA with rake	AL
Cutting conditions	B024	

S

Application	Finishing to medium cutting
Grade	AH8005
Breaker Shape	PS
Cutting conditions	B026

H

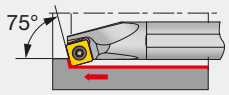
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: A-SVJCR/L: Insert → B153 -

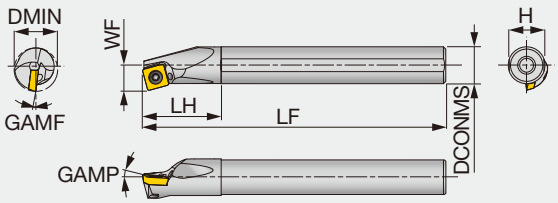
STREAMJETBAR

A-SSKPR

Screw-on boring bar, for positive square inserts



Cutting edge style **K**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A16Q-SSKPR09-D200	Steel	20	16	11	180	32	15	5°	-6°	0.8	SP**0903...	3
A20R-SSKPR09-D240	Steel	24	20	13	200	36	18	5°	-2°	0.8	SP**0903...	3
A25S-SSKPR12-D310	Steel	31	25	17	250	45	23	5°	-2°	0.8	SP**1204...	6

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SSKPR**) with left-hand inserts (L); and left-hand toolholders (SSKPL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SSKPR09-D2*0	CSTB-4L060	T-15F
A25S-SSKPR12-D310	CSTB-5S	T-20F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS 
Cutting conditions	B018

M

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS 
Cutting conditions	B020

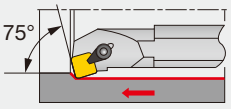
K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM 
Cutting conditions	B022

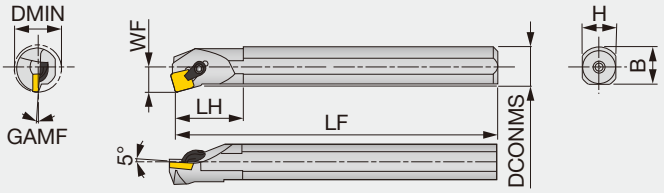
Reference pages: A-SSKPR: Insert → B134 -, CBN → B182

S/C-CSKPR/L

Clamp-on boring bar, for positive square inserts



Cutting edge style **K**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert
S16Q-CSKPR09	Steel	20	16	11	180	30	15	15	-4°	0.8	SP**0903...
S20R-CSKPR/L09	Steel	25	20	13	200	40	18	18.5	-2°	0.8	SP**0903...
S25S-CSKPR12	Steel	32	25	17	250	45	23	22.5	0°	0.8	SP**1203...

**RE : Standard corner radius

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamp set	Wrench
S16Q-CSKPR09	CSG-5S	P-2.5
S20R-CSKPR/L09	CSG-5	P-2.5
S25S-CSKPR12	CSG-6	P-3

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS 
Cutting conditions	B018

M

Application	Medium cutting
Grade	T6130
Breaker Shape	PM 
Cutting conditions	B020

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM 
Cutting conditions	B022

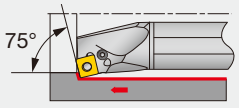
N

Application	Finishing
Grade	DX140
Breaker Shape	T-DIA 
Cutting conditions	B024

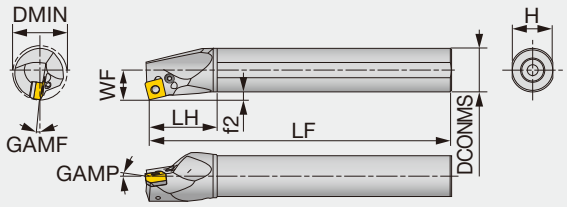
Reference pages: S/C-CSKPR/L: Insert → B134 -, CBN → B182, PCD → B191

A-PSKNR/L

Lever-lock boring bar, for negative square inserts



Cutting edge style **K**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A32S-PSKNR/L12-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	SN**1204...	4.8
A40T-PSKNR/L12-D500	Steel	50	40	27	300	60	37	7	-6°	-10°	0.8	SN**1204...	4.8
A50U-PSKNR/L12-D630	Steel	63	50	35	350	65	47	10	-6°	-8°	0.8	SN**1204...	4.8

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (PSKNR**) with left-hand inserts (L); and left-hand toolholders (PSKNL**) with right-hand inserts (R).

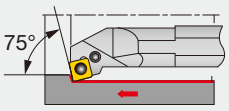
SPARE PARTS

Designation	Shim	Screw	Wrench	Spring	Lever	Oil supply attachment*	Screw for oil hole*
A32S-PSKNR/L12-D400	LSS42BR/L	LCS4	P-3	LSP4	LCL4	EA-32	SSHM4-5
A40T-PSKNR/L12-D500	LSS42BR/L	LCS4	P-3	LSP4	LCL4	-	SSHM6-6
A50U-PSKNR/L12-D630	LSS42BR/L	LCS4	P-3	LSP4	LCL4	-	SSHM6-6

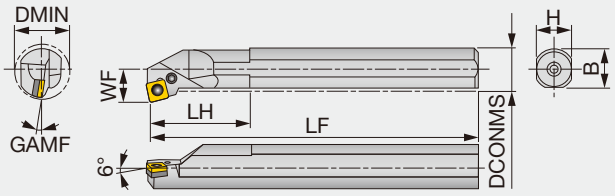
*Optional

S-PSKNR

Lever-lock boring bar, for negative square inserts



Cutting edge style **K**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert
S32S-PSKNR12	Steel	40	32	22	250	50	30	29.5	-10°	0.8	SN**1204...
S40T-PSKNR12	Steel	50	40	27	300	55	37	37.5	-10°	0.8	SN**1204...
S50U-PSKNR12	Steel	63	50	35	350	65	47	47.5	-8°	0.8	SN**1204...

**RE : Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

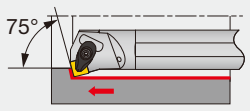
SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring	Lever
S**-PSKNR12	LSS42BR	LCS4	P-3	LSP4	LCL4

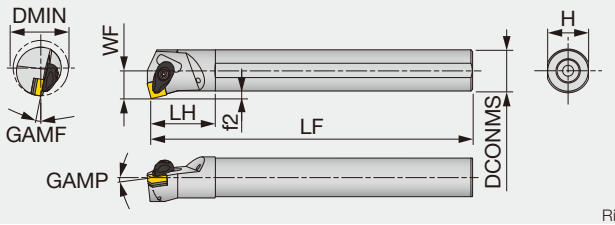
Reference pages: A-PSKNR/L, S-PSKNR: Insert → B075 -, CBN → B175, PCD → B189

A-ASKNR/L

Double-clamp boring bar, for negative square inserts



Cutting edge style **K**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-ASKNR/L12-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	SN**1204...	3
A32S-ASKNR/L12-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	SN**1204...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-ASKN*12-D...	ACP4S	ACS-5W	BP-7	SP-2.5	ASS422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Breaker Shape	T-DIA	P
Cutting conditions	B012	

S

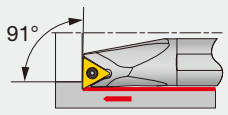
Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

Reference pages: A-ASKNR/L: Insert → B075 -, CBN → B175, PCD → B189

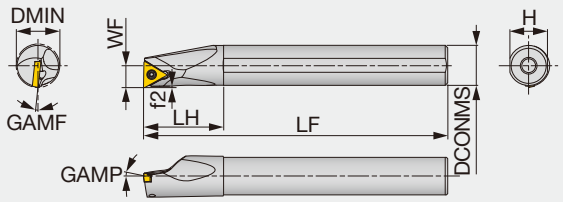
STREAMJETBAR

A/E-STFCR/L

Screw-on boring bar, for positive 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A10K-STFCR/L1103-D120	Steel	12	10	6.5	125	20	9	0.6	0°	-13°	0.4	TC**1103...	1.2
A12M-STFCR/L1103-D140	Steel	14	12	7	150	24	11	0.5	0°	-10°	0.4	TC**1103...	1.2
A16Q-STFCR/L1103-D180	Steel	18	16	9	180	32	15	0.5	0°	-7°	0.4	TC**1103...	1.2
E10M-STFCR/L1103-D120	Carbide	12	10	6.5	150	25	9	0.7	0°	-13°	0.4	TC**1103...	1.2
E12Q-STFCR/L1103-D140	Carbide	14	12	7	180	27	11	0.5	0°	-10°	0.4	TC**1103...	1.2
E16R-STFCR/L1103-D180	Carbide	18	16	9	200	32	15	0.5	0°	-7°	0.4	TC**1103...	1.2

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (STFCR**) with left-hand inserts (L); and left-hand toolholders (STFCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-STFCR/L1103-D...	CSTB-2.5	T-8F
E**-STFCR/L1103-D...	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B018			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

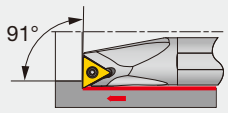
Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA	AL (with rake)
Cutting conditions	B024	

Reference pages: A/E-STFCR/L: Insert → B137 -, PCD → B190

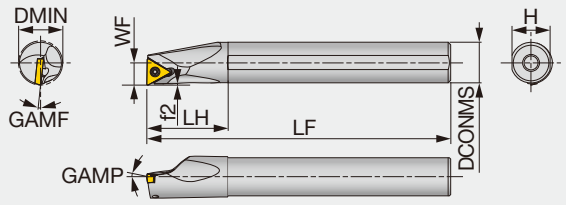
STREAMJETBAR

A/E-STFPR/L

Screw-on boring bar, for positive 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A08H-STFPR/L09-D100	Steel	10	8	5.5	100	16	7.5	0.7	5°	-8°	0.4	TP**0902...	0.9
A10K-STFPR/L1102-D120	Steel	12	10	6.5	125	20	9	0.7	5°	-6°	0.4	TP**1102...	1.2
A12M-STFPR/L1102-D140	Steel	14	12	7.0	150	24	11	0.6	5°	-4°	0.4	TP**1102...	1.2
A16Q-STFPR/L13-D180	Steel	18	16	9	180	32	15	0.7	5°	-2°	0.4	TP**1303...	1.4
A20R-STFPR13-D220	Steel	22	20	11	200	36	18	0.8	5°	-2°	0.4	TP**1303...	1.4
A25S-STFPR16-D270	Steel	27	25	13.5	250	45	23	0.6	5°	-1°	0.4	TP**16T3...	3
E08K-STFPR/L09-D100	Carbide	10	8	5.5	125	22	7.5	0.7	5°	-8°	0.4	TP**0902...	0.9
E10M-STFPR/L1102-D120	Carbide	12	10	6.5	150	25	9	0.7	5°	-6°	0.4	TP**1102...	1.2
E12Q-STFPR/L1102-D140	Carbide	14	12	7	180	27	11	0.6	5°	-4°	0.4	TP**1102...	1.2
E16R-STFPR13-D180	Carbide	18	16	9	200	32	15	0.7	5°	-2°	0.4	TP**1303...	1.4
E20S-STFPR13-D220	Carbide	22	20	11	250	36	18	0.8	5°	-2°	0.4	TP**1303...	1.4

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (STFPR**) with left-hand inserts (L); and left-hand toolholders (STFPL**) with right-hand inserts (R).
(1) TPGH, TPGM, and TPGA inserts cannot be used.

SPARE PARTS

Designation	Clamping screw	Wrench
A08H-STFPR/L09-D100	CSTB-2.2S	T-7F
A10K-STFPR/L1102-D120	CSTB-2.5B	T-8F
A12M-STFPR/L1102-D140	CSTB-2.5	T-8F
A16Q-STFPR/L13-D180	CSTB-3S	T-9F
A20R-STFPR13-D220	CSTB-3	T-9F
A25S-STFPR16-D270	CSTB-4M	T-15F
E08K-STFPR/L09-D100	CSTB-2.2S	T-7F
E10M-STFPR/L1102-D120	CSTB-2.5B	T-8F
E12Q-STFPR/L1102-D140	CSTB-2.5	T-8F
E16R-STFPR13-D180	CSTB-3S	T-9F
E20S-STFPR13-D220	CSTB-3	T-9F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	T9215	T9215
Breaker Shape	JS	PS	PM
Cutting conditions	B018		

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	T9215	T9215
Breaker Shape	JS	PS	PM
Cutting conditions	B020		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing
Grade	DX120
Breaker Shape	T-DIA with rake
Cutting conditions	B024

S

Application	Precision finishing
Grade	BX470
Breaker Shape	T-CBN
Cutting conditions	B026

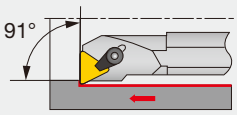
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

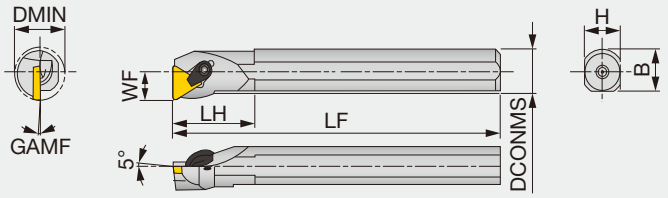
Reference pages: A/E-STFPR/L: Insert → B142 -, CBN → B183 -, PCD → B192

S/C-CTFPR/L

Clamp-on boring bar, for positive 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert
S12M-CTFPR/L11	Steel	16	12	9	150	25	11	11.5	-6°	0.4	TP**1103...
S16Q-CTFPR/L11	Steel	20	16	11	180	30	15	15	-4°	0.4	TP**1103...
S20R-CTFPR/L16	Steel	25	20	13	200	40	18	18.5	-2°	0.8	TP**1603...
S25S-CTFPR/L16	Steel	32	25	17	250	45	23	22.5	0°	0.8	TP**1603...
S32T-CTFPR/L16	Steel	40	32	22	300	50	30	29.5	0°	0.8	TP**1603...
C12Q-CTFPR/L11	Carbide	16	12	9	180	-	11	-	-6°	0.4	TP**1103...
C16R-CTFPR/L11	Carbide	20	16	11	200	-	15	-	-4°	0.4	TP**1103...

**RE : Standard corner radius

*The hole specification of applicable inserts conforms to ISO standard.

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamp set 1	Clamp set 2	Wrench	Shim	Shim screw
S12M-CTFPR/L11	CSW-00	-	P-2.5	-	-
S16Q-CTFPR/L11	-	CSG-5S	P-2.5	-	-
S20R-CTFPR/L16	-	CSG-6S	P-3	-	-
S25S-CTFPR/L16	-	CSG-6	P-3	-	-
S32T-CTFPR/L16	-	CSG-6	P-3	PAT-32	M3X0.5X6
C12Q-CTFPR/L11	CSW-00	-	P-2.5	-	-
C16R-CTFPR/L11	-	CSG-5S	P-2.5	-	-

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	NS9530	T9215	T9215
Breaker Shape	01	PSS	PS	PM
Cutting conditions	B018			

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Breaker Shape	PSF	PSS	PM
Cutting conditions	B020		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

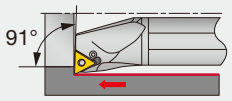
Application	Finishing
Grade	DX140
Breaker Shape	T-DIA
Cutting conditions	B024

H

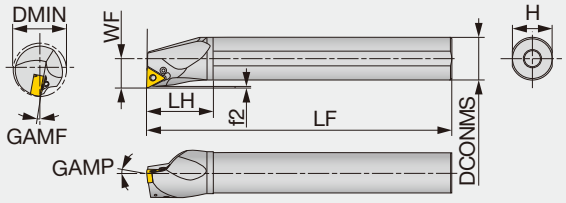
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: S/C-CTFPR/L: Insert → B142 -, CBN → B183 -, PCD → B192

Lever-lock boring bar, for negative triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-PTFNR/L1104-D320	Steel	32	25	17	200	45	23	1.31	-6°	-12°	0.8	TN**1104...	2
A32S-PTFNR/L1104-D400	Steel	40	32	22	250	50	30	1.25	-6°	-10°	0.8	TN**1104...	2

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Oil supply attachment*	Screw for oil hole*
A25R-PTFNR/L...	LCS23A	P-2.5	LCL23	EA-25	SSHM4-5
A32S-PTFNR/L...	LCS23A	P-2.5	LCL23	EA-32	SSHM4-5

*Optional

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF 	TM 
Cutting conditions	B006	

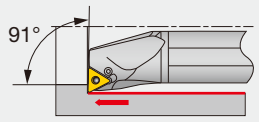
M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SS 	SM 
Cutting conditions	B008	

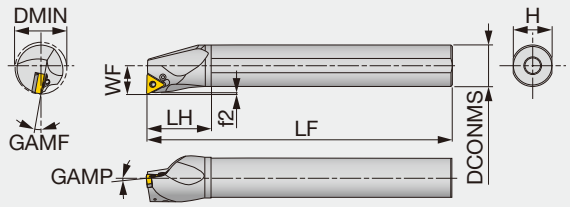
Reference pages: A-PTFNR/L-Eco: Insert → B084 -

A-PTFNR/L

Lever-lock boring bar, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-PTFNR/L16-D320	Steel	32	25	17	200	45	23	1.2	-6°	-12°	0.8	TN**1604...	2.7
A32S-PTFNR/L16-D400	Steel	40	32	22	250	50	30	1.1	-6°	-10°	0.8	TN**1604...	2.7
A40T-PTFNR/L16-D500	Steel	50	40	27	300	60	37	1.1	-6°	-10°	0.8	TN**1604...	2.7
A50U-PTFNR/L16-D630	Steel	63	50	35	350	65	47	1.1	-6°	-8°	0.8	TN**1604...	2.7

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (PTFNR**) with left-hand inserts (L); and left-hand toolholders (PTFNL**) with right-hand inserts (R).

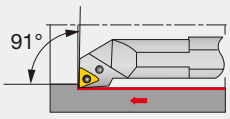
SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring	Lever	Oil supply attachment*	Screw for oil hole*
A25R-PTFNR/L16-D320	ELST317BR/L	LCS3	P-2.5	LSP3	LCL33	EA-25	SSHM4-5
A32S-PTFNR/L16-D400	LST317BR/L	LCS3	P-2.5	LSP3	LCL3	EA-32	SSHM4-5
A40T-PTFNR/L16-D500	LST317BR/L	LCS3	P-2.5	LSP3	LCL3	-	SSHM6-6
A50U-PTFNR/L16-D630	LST317BR/L	LCS3	P-2.5	LSP3	LCL3	-	SSHM6-6

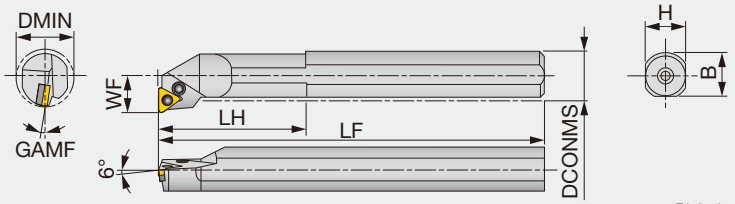
*Optional

S-PTFNR/L

Lever-lock boring bar, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert	Torque*
S32S-PTFNR/L16	Steel	40	32	22	250	50	30	29.5	-10°	0.8	TN**1604...	2.7
S40T-PTFNR/L16	Steel	50	40	27	300	55	37	37.5	-10°	0.8	TN**1604...	2.7
S50U-PTFNR16	Steel	63	50	35	350	65	47	47.5	-8°	0.8	TN**1604...	2.7

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

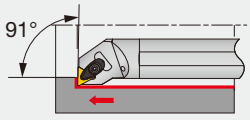
SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring	Lever
S32S-PTFNR16	LST317BR	LCS3	P-2.5	LSP3	LCL3
S32S-PTFNL16	LST317BL	LCS3	P-2.5	LSP3	LCL3
S40T-PTFNR16	LST317BR	LCS3	P-2.5	LSP3	LCL3
S40T-PTFNL16	LST317BL	LCS3	P-2.5	LSP3	LCL3
S50U-PTFNR16	LST317BR	LCS3	P-2.5	LSP3	LCL3

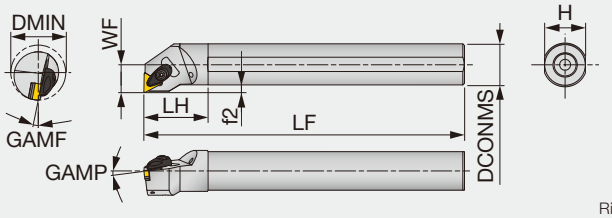
Reference pages: A-PTFNR/L, S-PTFNR/L: Insert → B084 -, CBN → B176 -, PCD → B188 -

A-ATFNR/L

Double-clamp boring bar, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-ATFNR/L16-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	TN**1604...	3
A32S-ATFNR/L16-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	TN**1604...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-ATFNR/L16-D...	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

H

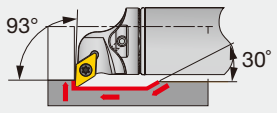
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: A-ATFNR/L: Insert → B084 -, CBN → B176 -, PCD → B188 -

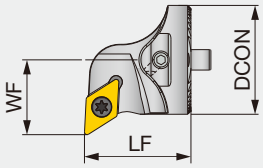
BOREMEISTER

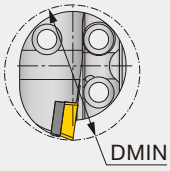
S-SDUCR/L-H

Screw-on exchangeable boring head, for positive 55° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Designation	DMIN	DCON	WF	LF	Shank	Insert
S16-SDUCR/L07-H	20	16	11	20	D16	DC**0702...
S20-SDUCR/L11-H	25	20	13	20	D20	DC**11T3...
S25-SDUCR/L11-H	32	25	17	20	D25	DC**11T3...
S32-SDUCR/L11T-H	40	32	22	32	D32	DC**11T3...
S40-SDUCR/L11T-H	50	40	27	32	D40, D50, D60	DC**11T3...

Note: Use right-hand toolholders (SDUCR**) with left-hand inserts (L); and left-hand toolholders (SDUCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench	Shim	Shim screw
S16-SDUCR/L07-H	SR14-548	T-7/5	-	-
S20-SDUCR/L11-H	SR16-236P	T-15/5	-	-
S25-SDUCR/L11-H	SR16-236P	T-15/5	-	-
S32-SDUCR/L11T-H	SR16-236P	T-15/5	TDC3-1P	SRTC-3P
S40-SDUCR/L11T-H	SR16-236P	T-15/5	TDC3-1P	SRTC-3P

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Breaker Shape	PSS	PS	PM
Cutting conditions	B018		

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Breaker Shape	W**	PSF	PSS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B024		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B026	

H

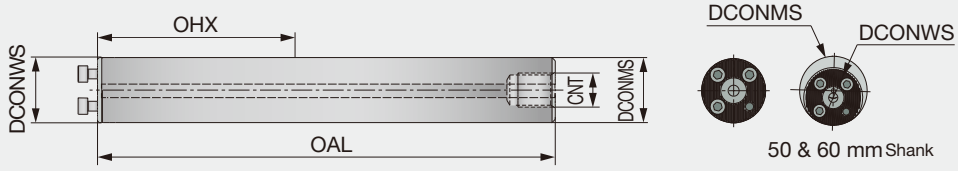
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: S-SDUCR/L-H: Insert → B119 -, CBN → B181, PCD → B190 -

BOREMEISTER

Anti-vibration bar

Anti-vibration bar for exchangeable turning heads, with through coolant



Designation	Material	DCONWS	DCONMS	OAL	OHX	CNT
D16-L156-7D-C	Steel	16	16	156	92	G1/8
G16-L204-10D-E	Carbide	16	16	204	140	-
D20-L200-7D-C	Steel	20	20	200	120	G1/4
G20-L260-10D-E	Carbide	20	20	260	180	-
D25-L255-7D-C	Steel	25	25	255	155	G1/4
D25-L330-10D-C	Steel	25	25	330	230	G1/4
D32-L320-7D-C	Steel	32	32	320	192	G3/8
D32-L416-10D-C	Steel	32	32	416	288	G3/8
D40-L408-7D-C	Steel	40	40	408	248	G1/2
D40-L528-10D-C	Steel	40	40	528	368	G1/2
D50-L518-7D-C	Steel	40	50	518	318	G1/2
D50-L668-10D-C	Steel	40	50	668	468	G1/2
D60-L628-7D-C	Steel	40	60	628	388	G3/4
D60-L808-10D-C	Steel	40	60	808	568	G3/4

SPARE PARTS

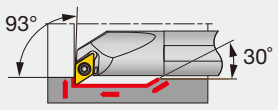



Designation	Clamping screw	Wrench
D16-L..., G16-L...	SRM3X10DIN912	HW2.5
D20-L..., G20-L...	SRM3.5X10DIN912	HW2.5
D25-L...	SRM4X12DIN912	HW3.0
D32-L...	SRM5X12DIN912	HW4.0
D40-L..., D50-L... D60-L...	SRM6X16DIN912-12.9	HW5.0

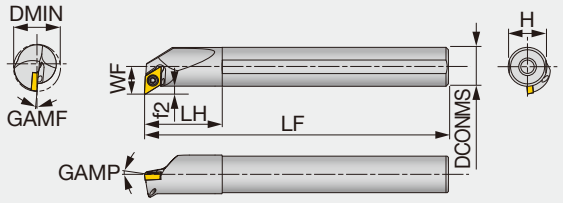
STREAMJETBAR

A/E-SDUCR/L

Screw-on boring bar, for positive 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A10K-SDUCR/L07-D130	Steel	13	10	7	125	20	9	2	0°	-10°	0.4	DC**0702...	1.2
A12M-SDUCR/L07-D160	Steel	16	12	9.3	150	24	11	3.3	0°	-6°	0.4	DC**0702...	1.2
A16Q-SDUCR/L07-D200	Steel	20	16	11.3	180	32	15	3.3	0°	-5°	0.4	DC**0702...	1.2
A20R-SDUCR/L11-D270	Steel	27	20	16.1	200	36	18	6.1	0°	-5°	0.8	DC**11T3...	3
A25S-SDUCR/L11-D320	Steel	32	25	18.6	250	45	23	6.1	0°	-4°	0.8	DC**11T3...	3
E10H-SDUCR07-D130	Carbide	13	10	7	100	25	9	1.9	5°	-3.5°	0.4	DC**0702...	1.2
E10M-SDUCR/L07-D130	Carbide	13	10	7	150	25	9	2	0°	-10°	0.4	DC**0702...	1.2
E12J-SDUCR07-D160	Carbide	16	12	9.3	110	27	11	3.2	0°	-6°	0.4	DC**0702...	1.2
E12Q-SDUCR/L07-D160	Carbide	16	12	9.3	180	27	11	3.3	0°	-6°	0.4	DC**0702...	1.2
E16L-SDUCR07-D200	Carbide	20	16	11.3	130	32	15	3.2	0°	-5°	0.4	DC**0702...	1.2
E16R-SDUCR/L07-D200	Carbide	20	16	11.3	200	32	15	3.3	0°	-5°	0.4	DC**0702...	1.2
E20S-SDUCR11-D270	Carbide	27	20	16.1	250	36	18	6.1	0°	-5°	0.8	DC**11T3...	3

*Torque: Recommended clamping torque (N·m)

**RE : Standard corner radius

Note: Use right-hand toolholders (SDUCR**) with left-hand inserts (L); and left-hand toolholders (SDUCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A1**-SDUCR/L07-D1*0	CSTB-2.5S	T-8F
A16Q-SDUCR/L07-D200	CSTB-2.5	T-8F
A2**-SDUCR/L11-D**0	CSTB-4S	T-15F
E1**-SDUCR/L07-D1*0	CSTB-2.5S	T-8F
E16*-SDUCR/L07-D200	CSTB-2.5	T-8F
E20S-SDUCR11-D270	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B018			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA with rake	AL
Cutting conditions	B024	

S

Application	Precision finishing	Finishing to medium cutting
Grade	BX470	AH8005
Breaker Shape	T-CBN	PS
Cutting conditions	B026	

H

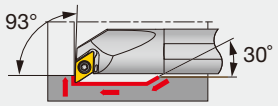
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: A/E-SDUCR/L: Insert → B119 -, CBN → B181, PCD → B190 -

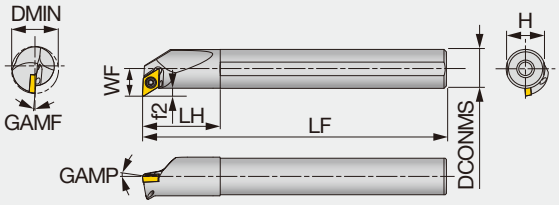
STREAMJETBAR

A/E-SDUPR/L

Screw-on boring bar, for positive 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SDUPR07-D150-P	Special alloy steel	15	12	8.3	150	24	11	2.3	5	0	0.4	DPMT0702...	1.2
A12M-SDUPL07-D150-P	Special alloy steel	15	12	8.3	150	24	11	2.3	5	0	0.4	DPMT0702...	1.2
A12M-SDUPR07-D180-P	Special alloy steel	18	12	10.3	150	24	11	4.3	5	0	0.4	DPMT0702...	1.2
A12M-SDUPL07-D180-P	Special alloy steel	18	12	10.3	150	24	11	4.3	5	0	0.4	DPMT0702...	1.2
A16Q-SDUPR07-D220-P	Special alloy steel	22	16	12.3	180	32	15	4.3	5	0	0.4	DPMT0702...	1.2
A16Q-SDUPL07-D220-P	Special alloy steel	22	16	12.3	180	32	15	4.3	5	0	0.4	DPMT0702...	1.2
E12Q-SDUPR07-D150	Carbide	15	12	8.3	180	27	11	2.3	5	0	0.4	DPMT0702...	1.2
E12Q-SDUPL07-D150	Carbide	15	12	8.3	180	27	11	2.3	5	0	0.4	DPMT0702...	1.2
E12Q-SDUPR07-D180	Carbide	18	12	10.3	180	27	11	4.3	5	0	0.4	DPMT0702...	1.2
E12Q-SDUPL07-D180	Carbide	18	12	10.3	180	27	11	4.3	5	0	0.4	DPMT0702...	1.2
E16R-SDUPR07-D220	Carbide	22	16	12.3	200	32	15	4.3	5	0	0.4	DPMT0702...	1.2
E16R-SDUPL07-D220	Carbide	22	16	12.3	200	32	15	4.3	5	0	0.4	DPMT0702...	1.2

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SCLPR**) with left-hand inserts (L); and left-hand toolholders (SCLPL**) with right-hand inserts (R).

SPARE PARTS




Designation	Clamping screw	Wrench
A**-SDUPR/L07-D**0-P	CSTB-2.5S	T-8F
E**-SDUPR/L07-D**0	CSTB-2.5S	T-8F

INSERT SELECTION

P

Application	Finishing to medium cutting	
Grade	T9225	NS9530
Breaker Shape	PS 	PS 
Cutting conditions	B018	

S

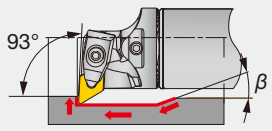
Application	Finishing to medium cutting
Grade	AH8015
Breaker Shape	PS 
Cutting conditions	B026

Reference pages: A/E-SDUPR/L: Insert → B125

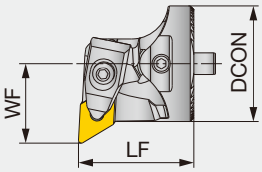
BOREMEISTER

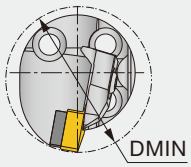
S-DDUNR/L-H

Double-clamp exchangeable boring head, for negative 55° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Designation	DMIN	DCON	WF	LF	Shank	Insert
S32-DDUNR/L11T-H	40	32	22	32	D32	DN**1104...
S40-DDUNR/L15T-H	50	40	27	32	D40, D50, D60	DN**1504/06...

Note: Use right-hand toolholders (DDUNR**) with left-hand inserts (L); and left-hand toolholders (DDUNL**) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Shim screw	Clamp	Clamp Screw	Spring	Wrench
S32-DDUNR/L11T-H	RDT3-2	SR40085I	LCGR-3	SRRC3	KSP3	HW2.5
S40-DDUNR/L15T-H	RDT433	SR14-506	DLM4	DLS4	DSP4	HW3.0
S40-DDUNR/L15T-H	RDT443	SR14-506	DLM4	DLS4	DSP4	HW3.0

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

H

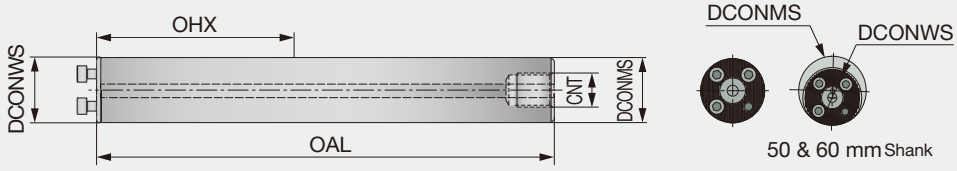
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: S-DDUNR/L-H: Insert → B065 -, CBN → B172 -, PCD → B188 -

BOREMEISTER

Anti-vibration bar

Anti-vibration bar for exchangeable turning heads, with through coolant



Designation	Material	DCONWS	DCONMS	OAL	OHX	CNT
D16-L156-7D-C	Steel	16	16	156	92	G1/8
G16-L204-10D-E	Carbide	16	16	204	140	-
D20-L200-7D-C	Steel	20	20	200	120	G1/4
G20-L260-10D-E	Carbide	20	20	260	180	-
D25-L255-7D-C	Steel	25	25	255	155	G1/4
D25-L330-10D-C	Steel	25	25	330	230	G1/4
D32-L320-7D-C	Steel	32	32	320	192	G3/8
D32-L416-10D-C	Steel	32	32	416	288	G3/8
D40-L408-7D-C	Steel	40	40	408	248	G1/2
D40-L528-10D-C	Steel	40	40	528	368	G1/2
D50-L518-7D-C	Steel	40	50	518	318	G1/2
D50-L668-10D-C	Steel	40	50	668	468	G1/2
D60-L628-7D-C	Steel	40	60	628	388	G3/4
D60-L808-10D-C	Steel	40	60	808	568	G3/4

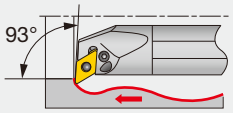
SPARE PARTS



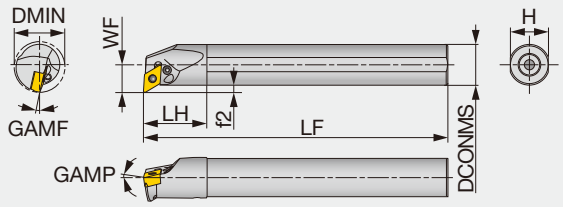

Designation	Clamping screw	Wrench
D16-L..., G16-L...	SRM3X10DIN912	HW2.5
D20-L..., G20-L...	SRM3.5X10DIN912	HW2.5
D25-L...	SRM4X12DIN912	HW3.0
D32-L...	SRM5X12DIN912	HW4.0
D40-L..., D50-L... D60-L...	SRM6X16DIN912-12.9	HW5.0

ISOETURN
A-PDUNR/L-Eco

Lever-lock boring bar, for negative 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A20Q-PDUNR/L1104-D250	Steel	25	20	13	180	36	18	3	-6°	-14°	0.8	DN**1104...	1.7

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (PDUNR**) with left-hand inserts (L); and left-hand toolholders (PDUNL**) with right-hand inserts (R).

SPARE PARTS

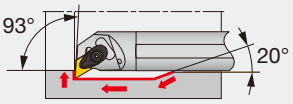


Designation	Clamping screw	Wrench	Lever	Oil supply attachment*	Screw for oil hole*
A20Q-PDUNR/L1104-D250	LCS22A	P-2F	LCL33NL	EA-20	SSHM2.5-3

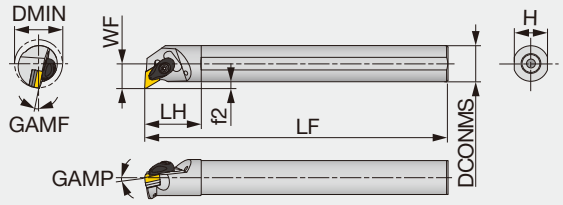
*Optional

ISOETURN
A-ADUNR/L-Eco

Double-clamp boring bar, for negative 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-ADUNR/L1104-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	DN**1104...	3
A32S-ADUNR/L1104-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	0.8	DN**1104...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS



Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-ADUNR/L...	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASD322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF 	TM 
Cutting conditions	B006	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SS 	SM 
Cutting conditions	B008	

K

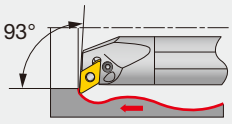
Application	Medium cutting
Grade	T515
Breaker Shape	TM 
Cutting conditions	B010

Reference pages: A-PDUNR/L-Eco, A-ADUNR/L-Eco: Insert → B065 -

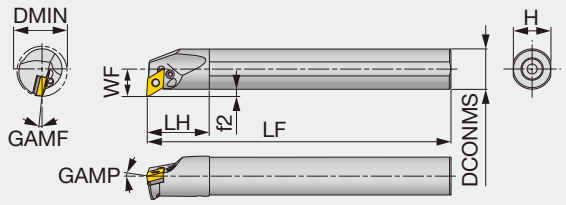
STREAMJETBAR

A-PDUNR/L

Lever-lock boring bar, for negative 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A20Q-PDUNR/L11-D250	Steel	25	20	13	180	36	18	3	-6°	-14°	0.8	DN**1104...	1.7
A25R-PDUNR/L11-D320	Steel	32	25	17	200	45	23	4.5	-6°	-12°	0.8	DN**1104...	2.7
A32S-PDUNR/L15-D400	Steel	40	32	22	250	50	30	6	-6°	-13°	0.8	DN**1504...	4.8
A40T-PDUNR/L15-D500	Steel	50	40	27	300	60	37	7	-6°	-10°	0.8	DN**1504...	4.8
A50U-PDUNR/L15-D630	Steel	63	50	35	350	65	47	10	-6°	-8°	0.8	DN**1504...	4.8
A32S-PDUNR/L1506-D400	Steel	40	32	22	250	50	30	6	-6°	-13°	0.8	DN**1506...	4.8
A40T-PDUNR/L1506-D500	Steel	50	40	27	300	60	37	7	-6°	-11°	0.8	DN**1506...	4.8
A50U-PDUNR/L1506-D630	Steel	63	50	35	350	65	47	10	-6°	-10°	0.8	DN**1506...	4.8

*Torque: Recommended clamping torque (N·m) **RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring	Lever	Oil supply attachment*	Screw for oil hole*
A20Q-PDUNR/L11-D250	-	LCS22A	-	P-2F	-	-	LCL33NL	EA-20	SSHM2.5-3
A25R-PDUNR/L11-D320	ELSD317BR/L	-	LCS3	-	P-2.5	LSP3	LCL33L	EA-25	SSHM3-4
A32S-PDUNR/L15-D400	LSD42BR/L	-	LCS4	-	P-3	LSP4	LCL4	EA-32	SSHM5-6
A40T-PDUNR/L15-D500	LSD42BR/L	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A50U-PDUNR/L15-D630	LSD42BR/L	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A32S-PDUNR/L1506-D400	ELSD42	-	ELCS4	-	P-3	LSP4S	LCL44	EA-20	SSHM5-6
A40T-PDUNR/L1506-D500	ELSD42	-	ELCS4	-	P-3	LSP4S	LCL44	-	SSHM6-6
A50U-PDUNR/L1506-D630	ELSD42	-	ELCS4	-	P-3	LSP4S	LCL44	-	SSHM6-6

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

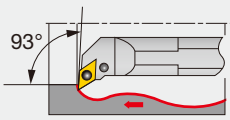
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

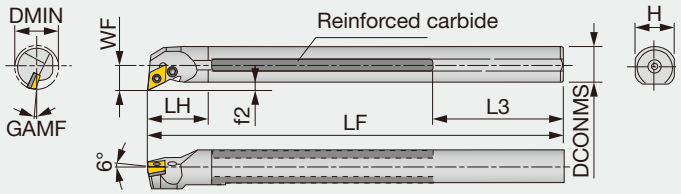
Reference pages: A-PDUNR/L: Insert → B065 -, CBN → B172 -, PCD → B188 -

T-PDUNR

Lever-lock boring bar, for negative 55° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	f2	GAMF	RE**	Insert
T32U-PDUNR15C	Reinforced	40	Rc1/2	32	22	350	50	103	30	6	-13°	0.8	DN**1504...
T40V-PDUNR15C	Reinforced	50	Rc1/2	40	27	400	55	88	37	7	-10°	0.8	DN**1504...
T50W-PDUNR15C	Reinforced	63	Rc1/2	50	35	450	65	63	47	10	-8°	0.8	DN**1504...

**RE : Standard corner radius

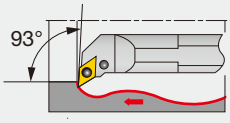
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

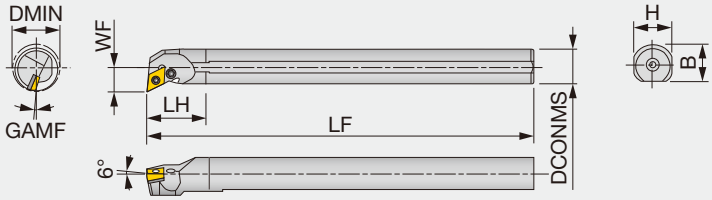
Designation	Shim	Clamping screw	Wrench	Spring	Lever
T**-PDUNR15C	LSD42BR	LCS4	P-3	LSP4	LCL4

S-PDUNR/L

Lever-lock boring bar, for negative 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert
S20Q-PDUNR/L11	Steel	25	20	13	180	35	18	19	-14°	0.8	DN**1104...
S25R-PDUNR/L11	Steel	32	25	17	200	40	23	24	-12°	0.8	DN**1104...
S32S-PDUNR/L15	Steel	40	32	22	250	50	30	29.5	-13°	0.8	DN**1504...
S40T-PDUNR/L15	Steel	50	40	27	300	55	37	37.5	-10°	0.8	DN**1504...
S50U-PDUNR/L15	Steel	63	50	35	350	65	47	47.5	-8°	0.8	DN**1504...

**RE : Standard corner radius

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

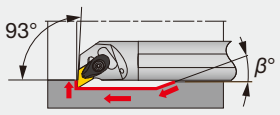
SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring	Lever
S20Q-PDUNR/L11	-	LCS22A	-	P-2F	-	-	LCL33NL
S25R-PDUNR11	ELSD317BR	-	LCS3	-	P-2.5	LSP3	LCL33L
S25R-PDUNL11	ELSD317BL	-	LCS3	-	P-2.5	LSP3	LCL33L
S32S-PDUNR15	LSD42BR	-	LCS4	-	P-3	LSP4	LCL4
S32S-PDUNL15	LSD42BL	-	LCS4	-	P-3	LSP4	LCL4
S40T-PDUNR15	LSD42BR	-	LCS4	-	P-3	LSP4	LCL4
S40T-PDUNL15	LSD42BL	-	LCS4	-	P-3	LSP4	LCL4
S50U-PDUNR15	LSD42BR	-	LCS4	-	P-3	LSP4	LCL4
S50U-PDUNL15	LSD42BL	-	LCS4	-	P-3	LSP4	LCL4

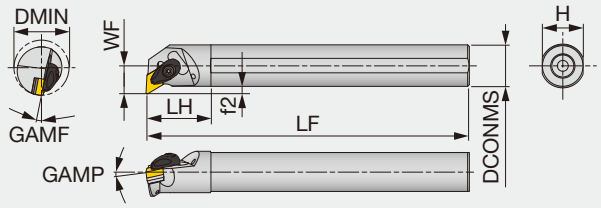
Reference pages: T-PDUNR, S-PDUNR/L: Insert → B065 -, CBN → B172 -, PCD → B188 -

A-ADUNR/L

Double-clamp boring bar, for negative 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	β°	RE**	Insert	Torque*
A25R-ADUNR/L15-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	30	0.8	DN**1504...	3
A32S-ADUNR/L15-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	20	0.8	DN**1504...	3
A40T-ADUNR15-D500	Steel	50	40	27	300	55	37	7	-6°	-8°	15	0.8	DN**1504...	3
A50U-ADUNR15-D630	Steel	63	50	35	350	65	47	10	-6°	-7°	15	0.8	DN**1504...	3
A25R-ADUNR/L1506-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	15	0.8	DN**1506...	3
A32S-ADUNR/L1506-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	20	0.8	DN**1506...	3

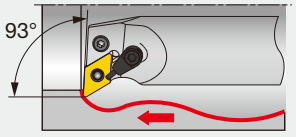
*Torque: Recommended clamping torque (N·m) **RE : Standard corner radius

SPARE PARTS

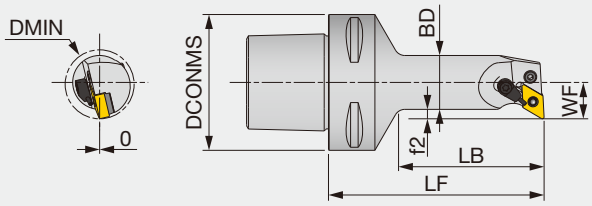
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-ADUNR/L15-D...	ACP4S	ACS-5W	BP-7	SP-2.5	ASD432	CSTB-3.5	T-15F
A**-ADUNR/L1506-D...	ACP4S	ACS-5W	BP-7	SP-2.5	ASD423	CSTB-3.5	T-15F

C-PDUNL-CHP

Lever-lock boring bar with TungCap connection, with 93° approach angle, for negative 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **U**



Left hand (L) shown.

Designation	DMIN	DCONMS	BD	LF	LB	WF	f2	RE**	Insert
C6PDUNL17100-1104-CHP	32	63	25	100	67.5	17	4.5	0.8	DN**1104...

Applicable for 14 MPa coolant
**RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Coolant unit	Wrench	Spring pin	Lever
C6PDUNL17100-1104-CHP	ELSD317BL	LCS43	S-CU-CHP	P-2.5	LSP3	LCL33L

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

H

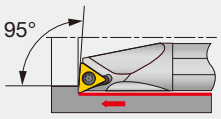
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: A-ADUNR/L, C-PDUNR/L-CHP Insert → B065 -, CBN → B172 -, PCD → B188 -

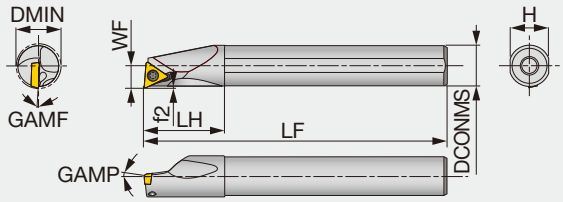
STREAMJETBAR

A/E-STUPR/L

Screw-on boring bar, for positive 60° triangular inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A07G-STUPR/L07-D080	Steel	8	7	4	90	12	6.75	0.4	5°	-10°	0.4	TP**0701...	0.9
A08H-STUPR/L07-D080	Steel	8	8	4	100	19.5	7.5	0.5	5°	-10°	0.4	TP**0701...	0.9
A08H-STUPR/L09-D100	Steel	10	8	5.5	100	16	7.5	0.6	5°	-8°	0.4	TP**0902...(1)	0.9
A10F-STUPR1102-D120	Steel	12	10	6.5	80	20	9	1.4	5°	-6°	0.4	TP**1102...(1)	1.2
A10K-STUPR/L1102-D120	Steel	12	10	6.5	125	20	9	0.7	5°	-6°	0.4	TP**1102...(1)	1.2
A10K-STUPR/L1103-D120	Steel	12	10	6.5	125	20	9	0.6	5°	-10°	0.4	TP**1103...(1)	1.4
A12H-STUPR1102-D140	Steel	14	12	7	100	24	11	0.8	5°	-4°	0.4	TP**1102...(1)	1.2
A12M-STUPR/L1102-D140	Steel	14	12	7	150	24	11	0.8	5°	-4°	0.4	TP**1102...(1)	1.2
A12M-STUPR/L1103-D140	Steel	14	12	7	150	24	11	0.6	5°	-6°	0.4	TP**1103...(1)	1.4
A12H-STUPR1102-D160	Steel	16	12	9	100	24	11	0.6	5°	-3°	0.4	TP**1102...(1)	1.2
A12M-STUPR/L1102-D160	Steel	16	12	9	150	24	11	0.6	5°	-3°	0.4	TP**1102...(1)	1.2
A16K-STUPR13-D180	Steel	18	16	9	125	32	15	0.8	5°	-3°	0.4	TP**1303...(1)	1.4
A16Q-STUPR/L1103-D180	Steel	18	16	9	180	32	15	0.8	5°	-4°	0.4	TP**1103...(1)	1.4
A16Q-STUPR/L13-D180	Steel	18	16	9	180	32	15	0.8	5°	-3°	0.4	TP**1303...(1)	1.4
A16K-STUPR13-D200	Steel	20	16	11	125	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
A16Q-STUPR/L13-D200	Steel	20	16	11	180	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
A20R-STUPR/L1103-D220	Steel	22	20	11	200	36	18	0.7	5°	-2°	0.4	TP**1103...(1)	1.4
A20R-STUPR/L13-D220	Steel	22	20	11	200	36	18	0.7	5°	-2°	0.4	TP**1303...(1)	1.4
A25S-STUPR/L16-D270	Steel	27	25	13.5	250	45	23	0.5	5°	-1°	0.8	TP**16T3...(1)	3
A32T-STUPR/L16-D340	Steel	34	32	17	300	50	30	0.7	5°	0°	0.8	TP**16T3...	3
E07H-STUPR/L07-D080	Carbide	8	7	4	100	14	6.75	0.3	5°	-10°	0.4	TP**0701...	0.9
E08G-STUPR07-D080	Carbide	8	8	4	90	44.5	7.5	0.5	5°	-10°	0.4	TP**0701...	0.9
E08K-STUPR/L07-D080	Carbide	8	8	4	125	44.5	7.5	0.5	5°	-10°	0.4	TP**0701...	0.9
E08G-STUPR09-D100	Carbide	10	8	5.5	90	22	7	0.6	5°	-8°	0.4	TP**0902...(1)	0.9
E08K-STUPR/L09-D100	Carbide	10	8	5.5	125	22	7	0.6	5°	-8°	0.4	TP**0902...(1)	0.9
E10F-STUPR1102-D120	Carbide	12	10	6.5	80	25	9	0.5	5°	-6°	0.4	TP**1102...(1)	1.2
E10H-STUPR1102-D120	Carbide	12	10	6.5	100	25	9	0.6	5°	-6°	0.4	TP**1102...(1)	1.2
E10M-STUPR/L1102-D120	Carbide	12	10	6.5	150	25	9	0.6	5°	-6°	0.4	TP**1102...(1)	1.2
E10M-STUPR/L1103-D120	Carbide	12	10	6.5	150	25	9	0.7	5°	-10°	0.4	TP**1103...(1)	1.4
E12G-STUPR1102-D140	Carbide	14	12	7	90	27	11	0.8	5°	-4°	0.4	TP**1102...(1)	1.2
E12J-STUPR1102-D140	Carbide	14	12	7	110	27	11	0.8	5°	-4°	0.4	TP**1102...(1)	1.2
E12Q-STUPR/L1102-D140	Carbide	14	12	7	180	27	11	0.8	5°	-4°	0.4	TP**1102...(1)	1.2
E12Q-STUPR/L1103-D140	Carbide	14	12	7	180	27	11	0.7	5°	-6°	0.4	TP**1103...(1)	1.4
E12G-STUPR1102-D160	Carbide	16	12	9	90	27	11	0.6	5°	-3°	0.4	TP**1102...(1)	1.2
E12J-STUPR1102-D160	Carbide	16	12	9	110	27	11	0.6	5°	-3°	0.4	TP**1102...(1)	1.2
E12Q-STUPR/L1102-D160	Carbide	16	12	9	180	27	11	0.6	5°	-3°	0.4	TP**1102...(1)	1.2
E16H-STUPR13-D180	Carbide	18	16	9	100	32	15	0.9	5°	-3°	0.4	TP**1303...(1)	1.4
E16R-STUPR/L1103-D180	Carbide	18	16	9	200	32	15	0.8	5°	-3°	0.4	TP**1103...(1)	1.4
E16L-STUPR13-D180	Carbide	18	16	9	130	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
E16R-STUPR/L13-D180	Carbide	18	16	9	200	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
E16H-STUPR13-D200	Carbide	20	16	11	100	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
E16L-STUPR13-D200	Carbide	20	16	11	130	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
E16R-STUPL13-D200	Carbide	20	16	11	200	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
E20S-STUPR1103-D220	Carbide	22	20	11	250	36	18	0.7	5°	-2°	0.4	TP**1103...(1)	1.4
E20S-STUPR13-D220	Carbide	22	20	11	250	36	18	0.6	5°	-2°	0.4	TP**1303...(1)	1.4
E25T-STUPR16-D270	Carbide	27	25	13.5	300	45	23	0.5	5°	-1°	0.8	TP**16T3...	3

*Torque: Recommended clamping torque (N·m)

**RE : Standard corner radius

Note: Use right-hand toolholders (STUPR**) with left-hand inserts (L); and left-hand toolholders (STUPL**) with right-hand inserts (R).

(1) TPGH, TPGM, and TPGA inserts cannot be used.

Reference pages: A/E-STUPR/L: Insert → B142 -, CBN → B183 -, PCD → B192

SPARE PARTS




Designation	Clamping screw	Wrench
A07/08-STUPR/L07/09-D...	CSTB-2.2L038	T-7F
A10*-STUPR/L1102-D120	CSTB-2.5S	T-8F
A12*-STUPR/L1102-D...	CSTB-2.5B	T-8F
A12M-STUPR/L1103-D140	CSTB-3L050	T-9F
A16*-STUPR/L13-D...	CSTB-3S	T-9F
A20R-STUPR/L13-D220	CSTB-3	T-9F
A**-STUPR/L16-D...	CSTB-4M	T-15F
E07/08-STUPR/L07/09-D...	CSTB-2.2L038	T-7F
E10*-STUPR/L1102-D120	CSTB-2.5S	T-8F
E12*-STUPR/L1102-D...	CSTB-2.5B	T-8F
E**-STUPR/L1103-D...	CSTB-3L050	T-9F
E16*-STUPR/L13-D...	CSTB-3S	T-9F
E20S-STUPR13-D220	CSTB-3	T-9F
E25T-STUPR16-D270	CSTB-4M	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	T9215	T9215
Breaker Shape	JS	PS	PM
Cutting conditions	B018		

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	T9215	T9215
Breaker Shape	JS	PS	PM
Cutting conditions	B020		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing
Grade	DX120
Breaker Shape	T-DIA with rake
Cutting conditions	B024

S

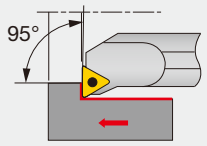
Application	Precision finishing
Grade	BX470
Breaker Shape	T-CBN
Cutting conditions	B026

H

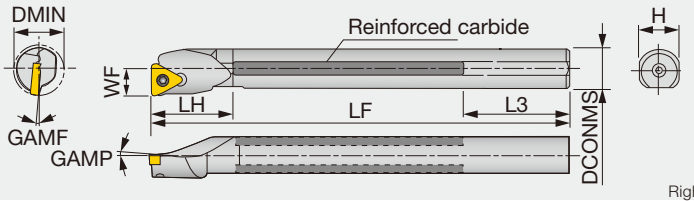
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

T-STUPR/L

Screw-on boring bar, for positive 60° triangular inserts (Tsuppari-Ichiban)



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	GAMP	GAMF	RE**	Insert	Torque*
T12M-STUPR11-D14	Reinforced	14	-	12	7	150	24	59	11	5°	-4°	0.4	TP**1102...	1.2
T12M-STUPR/L11	Reinforced	16	-	12	9	150	25	58	11	5°	-4°	0.4	TP**1102...	1.2
T16Q-STUPR13-D18	Reinforced	18	-	16	9	180	30	59	15	5°	-3.5°	0.4	TP**1303...	1.4
T16Q-STUPR/L13	Reinforced	20	-	16	11	180	30	59	15	5°	-3°	0.4	TP**1303...	1.4
T20R-STUPR13C-D22	Reinforced	22	Rc1/4	20	11	200	35	49	18	5°	-2°	0.4	TP**1303...	1.4
T20R-STUPR/L13	Reinforced	24	-	20	13	200	40	49	18	5°	-2°	0.4	TP**1303...	1.4
T25S-STUPR16C-D27	Reinforced	27	Rc1/4	25	13.5	250	40	64	23	5°	-1°	0.8	TP**16T3...	3
T25S-STUPR/L16	Reinforced	31	-	25	17	250	45	64	23	5°	0°	0.8	TP**16T3...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (STUPR**) with left-hand inserts (L); and left-hand toolholders (STUPL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
T12M-STUPR11-D14	CSTB-2.5B	T-8F
T12M-STUPR/L11	CSTB-2.5	T-8F
T16Q-STUPR13-D18	CSTB-3S	T-9F
T16Q-STUPR/L13	CSTB-3	T-9F
T20R-STUPR13C-D22	CSTB-3S	T-9F
T20R-STUPR/L13	CSTB-3	T-9F
T25S-STUPR/L16...	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	NS9530	T9215	T9215
Breaker Shape	01	PSS	PS	PM
Cutting conditions	B018			

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Breaker Shape	PSF	PSS	PM
Cutting conditions	B020		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

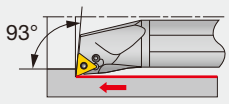
Application	Finishing
Grade	DX140
Breaker Shape	T-DIA
Cutting conditions	B024

H

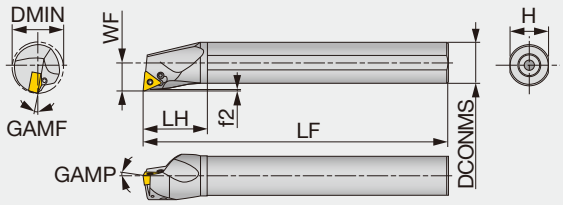
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: T-STUPR/L: Insert → B142 -, CBN → B183 -, PCD → B192

Lever-lock boring bar, for negative triangular inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-PTUNR/L1104-D320	Steel	32	25	17	200	45	23	1.22	-6°	-12°	0.8	TN**1104...	2
A32S-PTUNR/L1104-D400	Steel	40	32	22	250	50	30	1.16	-6°	-10°	0.8	TN**1104...	2

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS



Designation	Clamping screw	Wrench	Lever	Oil supply attachment*	Screw for oil hole*
A25R-PTUNR/L1104-D320	LCS23A	P-2.5	LCL23	EA-25	SSHM4-5
A32S-PTUNR/L1104-D400	LCS23A	P-2.5	LCL23	EA-32	SSHM4-5

*Optional

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF 	TM 
Cutting conditions	B006	

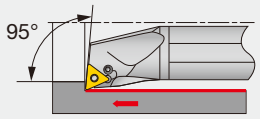
M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SS 	SM 
Cutting conditions	B008	

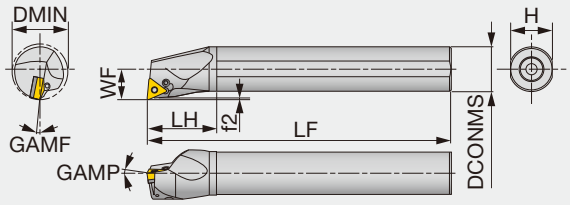
Reference pages: A-PTUNR/L-Eco: Insert → B084 -

A-PTUNR/L

Lever-lock boring bar, for negative 60° triangular inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16M-PTUNR/L11-D200	Steel	20	16	11	150	32	15	1	-6°	-14°	0.4	TN**1103...	1.7
A20Q-PTUNR/L11-D250	Steel	25	20	13	180	36	18	1	-6°	-12°	0.4	TN**1103...	1.7
A25R-PTUNR/L16-D320	Steel	32	25	17	200	45	23	1.4	-6°	-12°	0.8	TN**1604...	2.7
A32S-PTUNR/L16-D400	Steel	40	32	22	250	50	30	1.3	-6°	-10°	0.8	TN**1604...	2.7

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Toolholder length may not conform to ISO standard.
Note: Use right-hand toolholders (PTUNR**) with left-hand inserts (L); and left-hand toolholders (PTUNL**) with right-hand inserts (R).

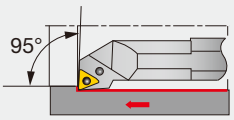
SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring	Lever	Oil supply attachment*	Screw for oil hole*
A16M-PTUNR/L11-D200	-	LCS22A	-	P-2F	-	-	LCL22N	-	SSHM3-4
A20Q-PTUNR/L11-D250	-	LCS22A	-	P-2F	-	-	LCL22N	EA-20	SSHM3-4
A25R-PTUNR/L16-D320	ELST317BR/L	-	LCS3	-	P-2.5	LSP3	LCL33	EA-25	SSHM4-5
A32S-PTUNR/L16-D400	LST317BR/L	-	LCS3	-	P-2.5	LSP3	LCL3	EA-32	SSHM4-5

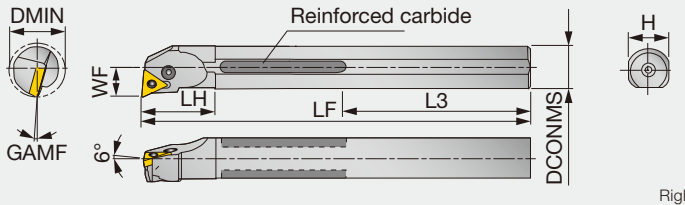
*Optional

T-PTUNR

Lever-lock boring bar, for negative 60° triangular inserts (Tsuppari-Ichiban)



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	GAMF	RE**	Insert	Torque*
T16Q-PTUNR11	Reinforced	20	-	16	11	180	27	59	15	-14°	0.4	TN**1103...	1.7
T20R-PTUNR11C	Reinforced	25	Rc1/4	20	13	200	35	49	18	-12°	0.4	TN**1103...	1.7
T25S-PTUNR16C	Reinforced	32	Rc1/4	25	17	250	40	64	23	-12°	0.8	TN**1604...	2.7
T32U-PTUNR16C	Reinforced	40	Rc1/2	32	22	350	50	103	30	-10°	0.8	TN**1604...	2.7
T40V-PTUNR16C	Reinforced	50	Rc1/2	40	27	400	55	88	37	-10°	0.8	TN**1604...	2.7
T50W-PTUNR16C	Reinforced	63	Rc1/2	50	35	450	65	63	47	-8°	0.8	TN**1604...	2.7

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Toolholder length may not conform to ISO standard.
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

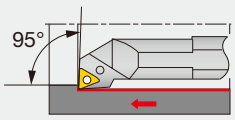
SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring	Lever
T**-PTUNR11...	-	LCS22A	-	P-2F	-	-	LCL22N
T25S-PTUNR16C	ELST317BR	-	LCS3	-	P-2.5	LSP3	LCL33
T**-PTUNR16C	LST317BR	-	LCS3	-	P-2.5	LSP3	LCL3

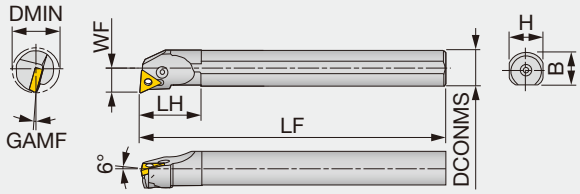
Reference pages: A-PTUNR/L, T-PTUNR: Insert → B084 -, CBN → B176 -, PCD → B188 -

A/S-PTUNR/L

Lever-lock boring bar, for negative 60° triangular inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert	Torque*
S16M-PTUNR/L11	Steel	20	16	11	150	30	15	15.5	-14°	0.4	TN**1103...	1.7
S20Q-PTUNR/L11	Steel	25	20	13	180	35	18	19	-12°	0.4	TN**1103...	1.7
S25R-PTUNR/L16	Steel	32	25	17	200	40	23	24	-12°	0.8	TN**1604...	2.7
A32S-PTUNR/L16	Steel	40	32	22	250	50	30	29.5	-12°	0.8	TN**1604...	2.7

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Toolholder length may not conform to ISO standard.
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring	Lever	Oil supply attachment*
S**-PTUNR/L11	-	LCS22A	-	P-2F	-	-	LCL22N	-
S25R-PTUNR16	ELST317BR	-	LCS3	-	P-2.5	LSP3	LCL33	-
S25R-PTUNL16	ELST317BL	-	LCS3	-	P-2.5	LSP3	LCL33	-
A32S-PTUNR16	LST317BR	-	LCS3	-	P-2.5	LSP3	LCL3	EA-32
A32S-PTUNL16	LST317BL	-	LCS3	-	P-2.5	LSP3	LCL3	EA-32

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

H

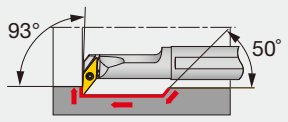
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: A/S-PTUNR/L: Insert → B084 -, CBN → B176 -, PCD → B188 -

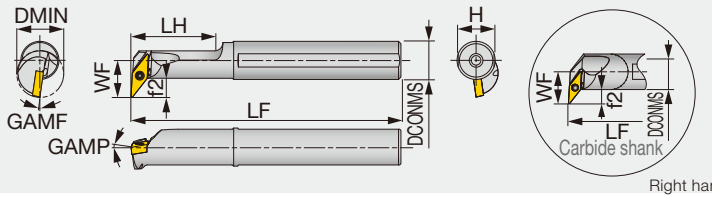
STREAMJETBAR

A/E-SVUBR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16Q-SVUBR/L11-D200	Steel	20	16	15.5	180	35	15	8	0°	-8°	0.4	VB**1103...	1.2
A20R-SVUBR/L11-D250	Steel	25	20	17.5	200	40	19	8	0°	-7°	0.4	VB**1103...	1.2
A25S-SVUBR/L16-D320	Steel	32	25	20.5	250	50	23	8.5	0°	-6°	0.8	VB**1604...	3
E16R-SVUBR/L11-D245	Carbide	24.5	16	16	200	-	15	8	0°	-8°	0.4	VB**1103...	1.2
E20S-SVUBR/L11-D285	Carbide	28.5	20	18	250	-	19	8	0°	-7°	0.4	VB**1103...	1.2
E25T-SVUBR/L16-D340	Carbide	34	25	21	300	-	23	8.5	0°	-6°	0.8	VB**1604...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVUBR**) with left-hand inserts (L); and left-hand toolholders (SVUBL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SVUBR/L11-D2*0	CSTB-2.5	T-8F
A25S-SVUBR/L16-D320	CSTB-3.5	T-15F
E**-SVUBR/L11-D2*5	CSTB-2.5	T-8F
E25T-SVUBR/L16-D340	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B018	

M

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B020	

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

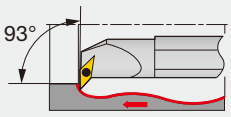
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

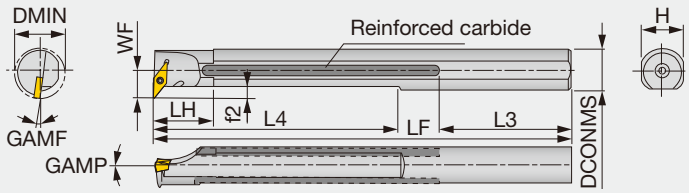
Reference pages: A/E-SVUBR/L: Insert → B150 -, CBN → B186

T-SVUBR

Screw-on boring bar, for positive 35° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	L4	H	f2	GAMP	GAMF	RE**	Insert	Torque*
T20R-SVUBR11C	Reinforced	25	Rc1/4	20	14	200	30	59	121	18	4	0°	-8°	0.4	VB**1103...	1.2

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVUBR**) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
T20R-SVUBR11C	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PSS	PS
Cutting conditions	B018	

M

Application	Finishing	Finishing to medium cutting
Grade	AH725	AH630
Breaker Shape	PSF	PSS
Cutting conditions	B020	

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B026	

H

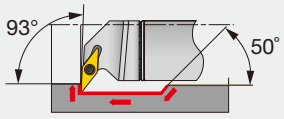
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: T-SVUBR: Insert → B150 -, CBN → B186

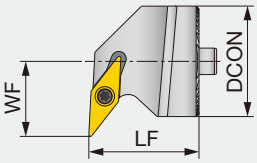
BOREMEISTER

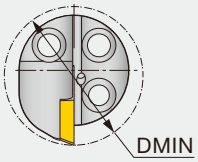
S-SVUCR/L-H

Screw-on exchangeable boring head, for positive 35° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Designation	DMIN	DCON	WF	LF	Shank	Insert
S20-SVUCR/L11-H	27	20	16	20	D20	VC**1103...
S25-SVUCR/L11-H	31	25	17	25	D25	VC**1103...

Note: Use right-hand toolholders (SVUCR**) with left-hand inserts (L); and left-hand toolholders (SVUCL**) with right-hand inserts (R).

SPARE PARTS





Designation	Clamping screw	Wrench
S20-SVUCR/L11-H	SR14-560	T-8/5
S25-SVUCR/L11-H	SR14-560	T-8/5

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PSS	PS
Cutting conditions	B018	

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Breaker Shape	PSF	PSS	PM
Cutting conditions	B020		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B024		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B026	

H

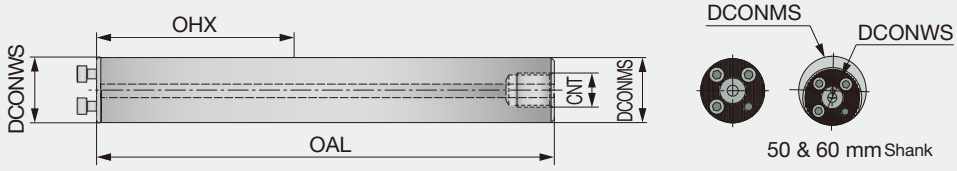
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: S-SVUCR/L-H: Insert → B153 -, CBN → B186, PCD → B190 -

BOREMEISTER

Anti-vibration bar

Anti-vibration bar for exchangeable turning heads, with through coolant



Designation	Material	DCONWS	DCONMS	OAL	OHX	CNT
D16-L156-7D-C	Steel	16	16	156	92	G1/8
G16-L204-10D-E	Carbide	16	16	204	140	-
D20-L200-7D-C	Steel	20	20	200	120	G1/4
G20-L260-10D-E	Carbide	20	20	260	180	-
D25-L255-7D-C	Steel	25	25	255	155	G1/4
D25-L330-10D-C	Steel	25	25	330	230	G1/4
D32-L320-7D-C	Steel	32	32	320	192	G3/8
D32-L416-10D-C	Steel	32	32	416	288	G3/8
D40-L408-7D-C	Steel	40	40	408	248	G1/2
D40-L528-10D-C	Steel	40	40	528	368	G1/2
D50-L518-7D-C	Steel	40	50	518	318	G1/2
D50-L668-10D-C	Steel	40	50	668	468	G1/2
D60-L628-7D-C	Steel	40	60	628	388	G3/4
D60-L808-10D-C	Steel	40	60	808	568	G3/4

SPARE PARTS

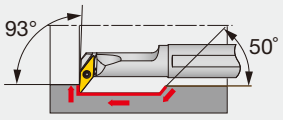



Designation	Clamping screw	Wrench
D16-L..., G16-L...	SRM3X10DIN912	HW2.5
D20-L..., G20-L...	SRM3.5X10DIN912	HW2.5
D25-L...	SRM4X12DIN912	HW3.0
D32-L...	SRM5X12DIN912	HW4.0
D40-L..., D50-L... D60-L...	SRM6X16DIN912-12.9	HW5.0

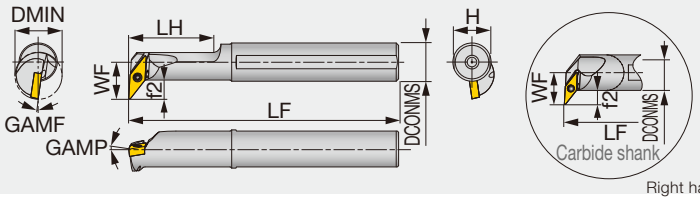
STREAMJETBAR

A/E-SVUCR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SVUCR/L08-D160	Steel	16	12	11	150	30	11	5.5	0°	-8°	0.4	VC**0802...	0.6
A25S-SVUCR/L16-D320	Steel	32	25	19	250	45	23	6.5	0°	-5°	0.8	VC**1604...	3
E12Q-SVUCR/L08-D180	Carbide	18	12	11.5	180	-	11	5.5	0°	-8°	0.4	VC**0802...	0.6
E25T-SVUCR/L16-D320	Carbide	32	25	19	300	-	23	6.5	0°	-5°	0.8	VC**1604...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVUCR**) with left-hand inserts (L); and left-hand toolholders (SVUCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A12M-SVUCR/L08-D160	CSTB-2L	T-6F
A25S-SVUCR/L16-D320	CSTB-3.5	T-15F
E12Q-SVUCR/L08-D180	CSTB-2L	T-6F
E25T-SVUCR/L16-D320	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B018

M

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B020

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA with rake	AL
Cutting conditions	B024	

S

Application	Finishing to medium cutting
Grade	AH8005
Breaker Shape	PS
Cutting conditions	B026

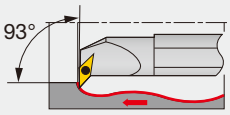
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

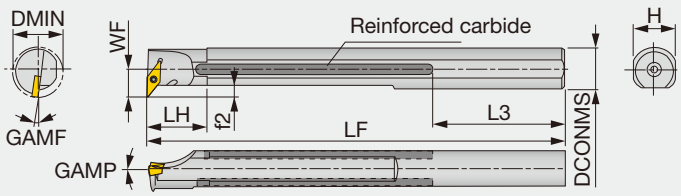
Reference pages: A/E-SVUCR/L: Insert → B153 -, CBN → B186, PCD → B190 -

T-SVUCR

Screw-on boring bar, for positive 35° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
T25S-SVUCR16C	Reinforced	32	Rc1/4	25	19	250	40	64	23	6.5	0°	-5°	0.8	VC**1604...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Note: Use right-hand toolholders (SVUCR**) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
T25S-SVUCR16C	CSTB-3.5L	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PSS	PS
Cutting conditions	B018	

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Breaker Shape	PSF	PSS	PM
Cutting conditions	B020		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA	T-DIA (with rake)	AL
Cutting conditions	B024		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B026	

H

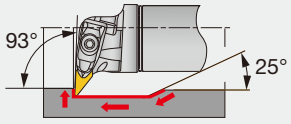
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: T-SVUCR: Insert → B153 -, CBN → B186, PCD → B190 -

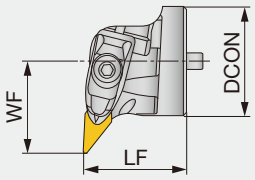
BOREMEISTER

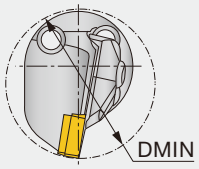
S-DVUNR/L-H

Double-clamp exchangeable boring head, for negative 35° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Designation	DMIN	DCON	WF	LF	Shank	Insert
S40-DVUNR/L16T-H	52	40	30	36	D40, D50, D60	VN**1604...

SPARE PARTS

Designation	Shim	Shim screw	Clamp	Clamp screw	Spring	Wrench
S40-DVUNR/L16T-H	ASV322	SR35080I	DLM3V	SR10402267	KSP5	HW4.0

L X J K F U Q Z OTHERS

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Breaker Shape	TF	TSF	TM
Cutting conditions	B006		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing
Grade	DX120
Breaker Shape	T-DIA with rake
Cutting conditions	B012

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

H

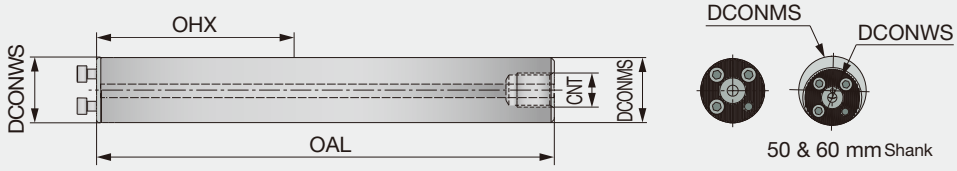
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: S-DVUNR/L-H: Insert → B094 -, CBN → B178, PCD → B188

BOREMEISTER

Anti-vibration bar

Anti-vibration bar for exchangeable turning heads, with through coolant



Designation	Material	DCONWS	DCONMS	OAL	OHX	CNT
D16-L156-7D-C	Steel	16	16	156	92	G1/8
G16-L204-10D-E	Carbide	16	16	204	140	-
D20-L200-7D-C	Steel	20	20	200	120	G1/4
G20-L260-10D-E	Carbide	20	20	260	180	-
D25-L255-7D-C	Steel	25	25	255	155	G1/4
D25-L330-10D-C	Steel	25	25	330	230	G1/4
D32-L320-7D-C	Steel	32	32	320	192	G3/8
D32-L416-10D-C	Steel	32	32	416	288	G3/8
D40-L408-7D-C	Steel	40	40	408	248	G1/2
D40-L528-10D-C	Steel	40	40	528	368	G1/2
D50-L518-7D-C	Steel	40	50	518	318	G1/2
D50-L668-10D-C	Steel	40	50	668	468	G1/2
D60-L628-7D-C	Steel	40	60	628	388	G3/4
D60-L808-10D-C	Steel	40	60	808	568	G3/4

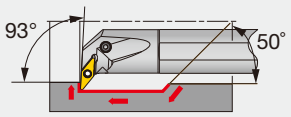
SPARE PARTS



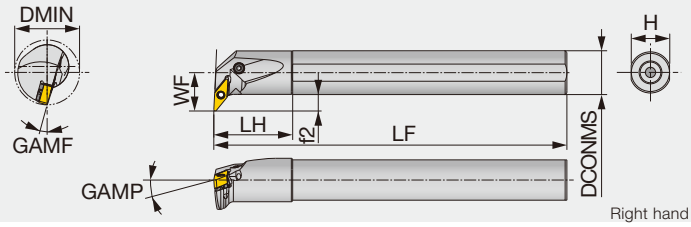

Designation	Clamping screw	Wrench
D16-L..., G16-L...	SRM3X10DIN912	HW2.5
D20-L..., G20-L...	SRM3.5X10DIN912	HW2.5
D25-L...	SRM4X12DIN912	HW3.0
D32-L...	SRM5X12DIN912	HW4.0
D40-L..., D50-L... D60-L...	SRM6X16DIN912-12.9	HW5.0

A-PVUNR/L-Eco

Lever-lock boring bar, for negative 35° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-PVUNR/L1204-D320	Steel	32	25	18	200	45	23	5.0	-5°	-15°	0.8	VN**1204...	3
A25R-PVUNR/L1204-D370	Steel	37	25	22	200	45	23	8.0	-4°	-15°	0.8	VN**1204...	3
A32S-PVUNR/L1204-D400	Steel	40	32	22	250	50	30	5.5	-6°	-12°	0.8	VN**1204...	3

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Shim	Spring pin	Oil supply attachment*	Screw for oil hole*
A25R-PVUNR/L1204-D...	LCS3V	P-2.5	LCL3V	LSV212	LSP3	EA-25	SSHM4-5
A32S-PVUNR/L1204-D400	LCS3V	P-2.5	LCL3V	LSV212	LSP3	EA-32	SSHM4-5

*Optional

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF	TM
Cutting conditions	B006	

M

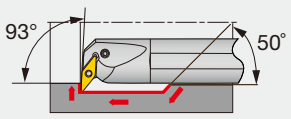
Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SS	SM
Cutting conditions	B008	

Reference pages: A-PVUNR/L-Eco: Insert → B095 -

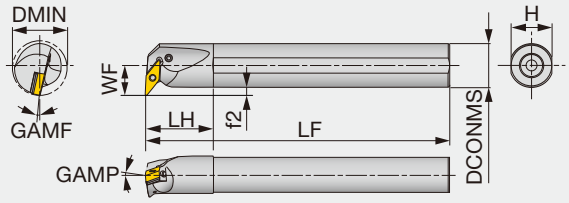
STREAMJETBAR

A-PVUNR/L

Lever-lock boring bar, for negative 35° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-PVUNR/L16-D370	Steel	37	25	22	200	45	23	9.5	-5°	-14°	0.8	V/YN**1604...	2.7
A32S-PVUNR/L16-D400	Steel	40	32	22	250	50	30	6	-5°	-12°	0.8	V/YN**1604...	2.7
A40T-PVUNR/L16-D500	Steel	50	40	27	300	60	37	7	-5°	-10°	0.8	V/YN**1604...	2.7

*Torque: Recommended clamping torque (N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring	Lever	Oil supply attachment*	Screw for oil hole*
A25R-PVUNR/L16-D370	LSV317BR/L	LCS3V	P-2.5	LSP3	LCL3V	EA-25	SSHM4-5
A32S-PVUNR/L16-D400	LSV317BR/L	LCS3V	P-2.5	LSP3	LCL3V	EA-32	SSHM4-5
A40T-PVUNR/L16-D500	LSV317BR/L	LCS3V	P-2.5	LSP3	LCL3V	-	SSHM5-6

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Breaker Shape	TF	TSF	TM
Cutting conditions	B006		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing
Grade	DX120
Breaker Shape	T-DIA with rake
Cutting conditions	B012

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

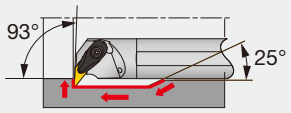
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

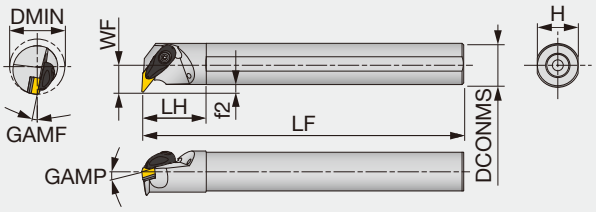
Reference pages: A-PVUNR/L: Insert → B094 -, B107, CBN → B178, PCD → B188

A-AVUNR/L

Double-clamp boring bar, for negative 35° and 25° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A32S-AVUNR/L16-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	V/YN**1604...	3
A40T-AVUNR/L16-D500	Steel	50	40	27	300	55	37	7	-6°	-8°	0.8	V/YN**1604...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-AVUNR/L16-D...	ACP3L	ACS-5W	BP-7	SP-2.5	ASV322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Breaker Shape	TF	TSF	TM
Cutting conditions	B006		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SF	SM
Cutting conditions	B008	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing
Grade	DX120
Breaker Shape	T-DIA with rake
Cutting conditions	B012

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

H

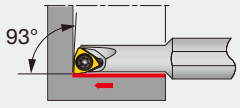
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: A-AVUNR/L: Insert → B094 -, B107, CBN → B178, PCD → B188

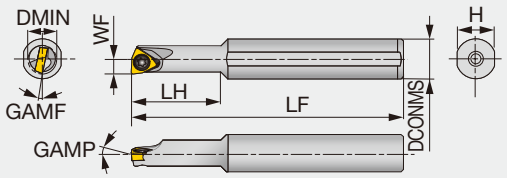
STREAMJETBAR

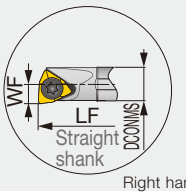
A/E-SWUBR/L

Screw-on boring bar, for positive 80° trigon inserts



Cutting edge style **U**





Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A05F-SWUBR/L03-D060	Steel	6	5	3	80	9	4.8	0°	-13°	0.4	WB**0301...	0.6
A06G-SWUBR/L03-D070	Steel	7	6	3.5	90	11	5.75	0°	-12°	0.4	WB**0301...	0.6
A07G-SWUBR/L03-D080	Steel	8	7	4	90	12	6.75	0°	-11°	0.4	WB**0301...	0.6
A08H-SWUBR03-D060	Steel	6	8	3.1	100	18	7.5	0°	-12°	0.4	WB**0301...	0.6
A08H-SWUBR03-D070	Steel	7	8	3.6	100	20	7.5	0°	-12°	0.4	WB**0301...	0.6
E05G-SWUBR/L03-D060	Carbide	6	5	3	90	10	4.8	0°	-13°	0.4	WB**0301...	0.6
E06H-SWUBR/L03-D070	Carbide	7	6	3.5	100	12	5.75	0°	-12°	0.4	WB**0301...	0.6
E07H-SWUBR/L03-D080	Carbide	8	7	4	100	14	6.75	0°	-11°	0.4	WB**0301...	0.6
E08K-SWUBR03-D060	Carbide	6	8	3.1	125	30	7.5	0°	-12°	0.4	WB**0301...	0.6
E08K-SWUBR03-D070	Carbide	7	8	3.6	125	40	7.5	0°	-12°	0.4	WB**0301...	0.6

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVUCR*) with left-hand inserts (L); and left-hand toolholders (SWUBL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A/E**-SWUBR/L...	CSTB-2	T-6F

INSERT SELECTION

P

Application	Finishing
Grade	SH725
Breaker Shape	W08 
Cutting conditions	B006

M

Application	Finishing
Grade	SH725
Breaker Shape	W08 
Cutting conditions	B008

K

Application	Finishing
Grade	TH10
Breaker Shape	W08 
Cutting conditions	B010

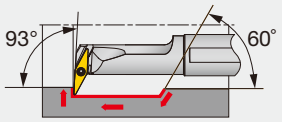
N

Application	Finishing
Grade	GH110
Breaker Shape	W08 
Cutting conditions	B012

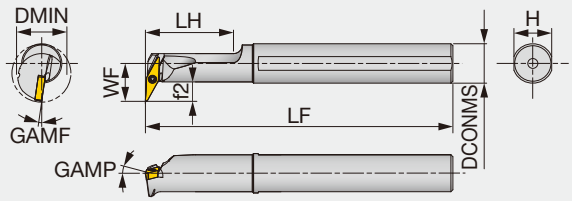
Reference pages: A/E-SWUBR/L: Insert → B157 -

A/E-SYUBR/L

Screw-on boring bar, for positive 25° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16Q-SYUBR/L11-D200	Steel	20	16	15.5	180	35	15	8	0°	-8°	0.4	YW**11T2...	0.6
E12Q-SYUBR/L11-D200	Carbide	20	12	13.5	180	27	11	7.5	0°	-8°	0.4	YW**11T2...	0.6
E16R-SYUBR/L11-D245	Carbide	24.5	16	16	200	32	15	8	0°	-8°	0.4	YW**11T2...	0.6

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
A16Q-SYUBR/L11-D200	CSTB-2L	T-6F
E**-SYUBR/L11-D...	CSTB-2L	T-6F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9225
Breaker Shape	ZM 
Cutting conditions	B018

K

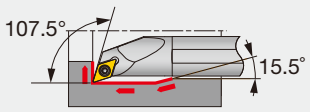
Application	Finishing to medium cutting
Grade	GT9530
Breaker Shape	ZM 
Cutting conditions	B022

Reference pages: A/E-SYUBR/L: Insert → B160

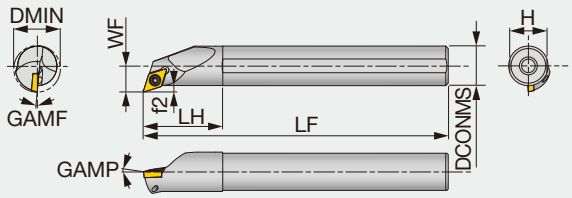
STREAMJETBAR

A/E-SDQCR/L

Screw-on boring bar, for positive 55° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A10K-SDQCR/L07-D130	Steel	13	10	7.6	125	20	9	2.6	0°	-8°	0.4	DC**0702...	1.2
A12M-SDQCR/L07-D160	Steel	16	12	8.6	150	24	11	2.6	0°	-6°	0.4	DC**0702...	1.2
A16Q-SDQCR/L07-D200	Steel	20	16	10.6	180	32	15	2.6	0°	-5°	0.4	DC**0702...	1.2
A20R-SDQCR/L11-D250	Steel	25	20	13.7	200	36	18	3.7	0°	-7°	0.8	DC**11T3...	3
A25S-SDQCR/L11-D300	Steel	30	25	16.2	250	45	23	3.7	0°	-4°	0.8	DC**11T3...	3
E10H-SDQCR07-D130	Carbide	13	10	7.6	100	25	9	2.5	0°	-8°	0.4	DC**0702...	1.2
E10M-SDQCR/L07-D130	Carbide	13	10	7.6	150	25	9	2.6	0°	-8°	0.4	DC**0702...	1.2
E12J-SDQCR07-D160	Carbide	16	12	8.6	110	27	11	2.5	0°	-6°	0.4	DC**0702...	1.2
E12Q-SDQCR/L07-D160	Carbide	16	12	8.6	180	27	11	2.6	0°	-6°	0.4	DC**0702...	1.2
E16L-SDQCR07-D200	Carbide	20	16	10.6	130	32	15	2.5	0°	-5°	0.4	DC**0702...	1.2
E16R-SDQCR/L07-D200	Carbide	20	16	10.6	200	32	15	2.6	0°	-5°	0.4	DC**0702...	1.2
E20S-SDQCR/L11-D250	Carbide	25	20	13.7	250	36	18	3.7	0°	-7°	0.8	DC**11T3...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SDQCR**) with left-hand inserts (L); and left-hand toolholders (SDQCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A1**-SDQCR/L07-D**0	CSTB-2.5S	T-8F
A2**-SDQCR/L11-D**0	CSTB-4S	T-15F
E1**-SDQCR/L07-D**0	CSTB-2.5S	T-8F
E20S-SDQCR/L11-D250	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B018			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA with rake	AL
Cutting conditions	B024	

S

Application	Precision finishing	Finishing to medium cutting
Grade	BX470	AH8005
Breaker Shape	T-CBN	PS
Cutting conditions	B026	

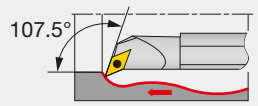
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

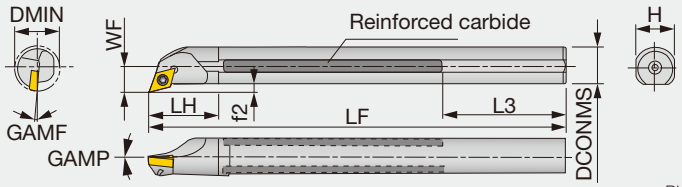
Reference pages: A/E-SDQCR/L: Insert → B119 -, CBN → B181, PCD → B190 -

T-SDQCR/L

Screw-on boring bar, for positive 55° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **Q**



Right hand (R) shown.

Designation	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
T16Q-SDQCR/L07	Reinforced	20	-	16	11	180	27	59	15	3	0°	-6°	0.4	DC**0702...	1.2
T20R-SDQCR/L11C	Reinforced	25	Rc1/4	20	13	200	35	49	18	3	0°	-6°	0.8	DC**11T3...	3
T25S-SDQCR/L11C	Reinforced	32	Rc1/4	25	17	250	40	64	23	4.5	0°	-4°	0.8	DC**11T3...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Note: Use right-hand toolholders (SDQCR**) with left-hand inserts (L); and left-hand toolholders (SDQCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
T16Q-SDQCR/L07	CSTB-2.5	T-8F
T20R-SDQCR/L11C	CSTB-4M	T-15F
T25S-SDQCR/L11C	CSTB-4	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Breaker Shape	PSS	PS	PM
Cutting conditions	B018		

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Breaker Shape	W**	PSF	PSS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA (with rake)	T-DIA	AL
Cutting conditions	B024		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B026	

H

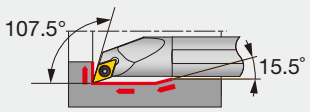
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: T-SDQCR/L: Insert → B119 -, CBN → B181, PCD → B190 -

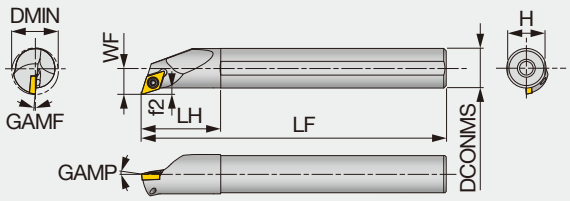
STREAMJETBAR

A/E-SDQPR/L

Screw-on boring bar, for positive 55° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SDQPR07-D150-P	Special alloy steel	15	12	8.3	150	24	11	2.3	5	0	0.40	DPMT0702...	1.2
A12M-SDQPL07-D150-P	Special alloy steel	15	12	8.3	150	24	11	2.3	5	0	0.40	DPMT0702...	1.2
A12M-SDQPR07-D180-P	Special alloy steel	18	12	9.6	150	24	11	3.6	5	0	0.40	DPMT0702...	1.2
A12M-SDQPL07-D180-P	Special alloy steel	18	12	9.6	150	24	11	3.6	5	0	0.40	DPMT0702...	1.2
A16Q-SDQPR07-D220-P	Special alloy steel	22	16	11.6	180	32	15	3.6	5	0	0.40	DPMT0702...	1.2
A16Q-SDQPL07-D220-P	Special alloy steel	22	16	11.6	180	32	15	3.6	5	0	0.40	DPMT0702...	1.2
E12Q-SDQPR07-D150	Carbide	15	12	8.3	180	27	11	2.3	5	0	0.40	DPMT0702...	1.2
E12Q-SDQPL07-D150	Carbide	15	12	8.3	180	27	11	2.3	5	0	0.40	DPMT0702...	1.2
E12Q-SDQPR07-D180	Carbide	18	12	9.6	180	27	11	3.6	5	0	0.40	DPMT0702...	1.2
E12Q-SDQPL07-D180	Carbide	18	12	9.6	180	27	11	3.6	5	0	0.40	DPMT0702...	1.2
E16R-SDQPR07-D220	Carbide	22	16	11.6	200	32	15	3.6	5	0	0.40	DPMT0702...	1.2
E16R-SDQPL07-D220	Carbide	22	16	11.6	200	32	15	3.6	5	0	0.40	DPMT0702...	1.2

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SDQCR**) with left-hand inserts (L); and left-hand toolholders (SDQCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SDQPR/L07-D**0-P	CSTB-2.5S	T-8F
E**-SDQPR/L07-D**0	CSTB-2.5S	T-8F

INSERT SELECTION

P

Application	Finishing to medium cutting	
Grade	T9225	NS9530
Breaker Shape	PS 	PS 
Cutting conditions	B018	

S

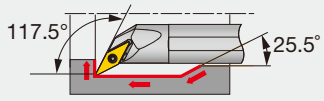
Application	Finishing to medium cutting
Grade	AH8015
Breaker Shape	PS 
Cutting conditions	B026

Reference pages: A/E-SDQPR/L: Insert → B125

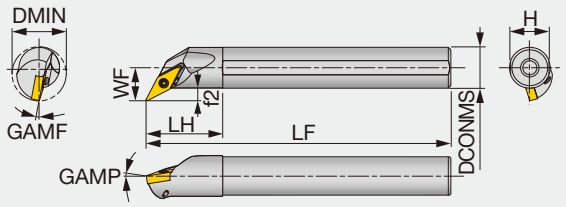
STREAMJETBAR

A/E-SVQBR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SVQBR/L11-D170	Steel	17	12	10.5	150	24	11	4.5	-5°	-10°	0.4	VB**1103...	1.2
A16Q-SVQBR/L11-D215	Steel	21.5	16	13	180	30	15	5	-5°	-8°	0.4	VB**1103...	1.2
A20R-SVQBR/L11-D255	Steel	25.5	20	15	200	36	18	5	-5°	-6°	0.4	VB**1103...	1.2
A25S-SVQBR/L16-D305	Steel	30.5	25	17.5	250	45	23	5	-5°	-8°	0.8	VB**1604...	3
E12Q-SVQBR/L11-D170	Carbide	17	12	10.5	180	27	11	4.5	-5°	-10°	0.4	VB**1103...	1.2
E16R-SVQBR/L11-D215	Carbide	21.5	16	13	200	32	15	5	-5°	-8°	0.4	VB**1103...	1.2
E20S-SVQBR/L11-D255	Carbide	25.5	20	15	250	36	18	5	-5°	-6°	0.4	VB**1103...	1.2
E25T-SVQBR/L16-D305	Carbide	30.5	25	17.5	300	45	23	5	-5°	-8°	0.8	VB**1604...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVQBR**) with left-hand inserts (L); and left-hand toolholders (SVQBL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SVQBR/L11-D...	CSTB-2.5	T-8F
A25S-SVQBR/L16-D305	CSTB-3.5	T-15F
E**-SVQBR/L11-D...	CSTB-2.5	T-8F
E25T-SVQBR/L16-D305	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B018	

M

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B020	

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

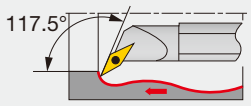
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

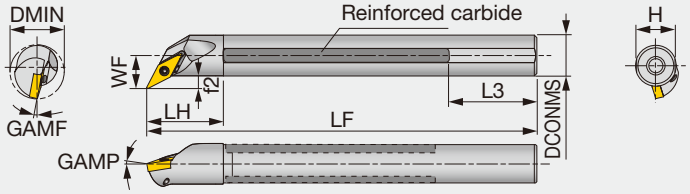
Reference pages: A/E-SVQBR/L: Insert → B150 -, CBN → B186

T-SVQBR

Screw-on boring bar, for positive 35° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **Q**



Right hand (R) shown.

Designation	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
T20R-SVQBR11C	Reinforced	25	Rc1/4	20	14	200	30	59	18	4	-5°	-7°	0.4	VB**1103...	1.2

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
T20R-SVQBR11C	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PSS	PS
Cutting conditions	B018	

M

Application	Finishing	Finishing to medium cutting
Grade	AH725	AH630
Breaker Shape	PSF	PSS
Cutting conditions	B020	

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B026	

H

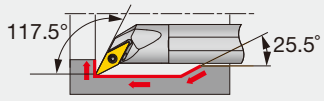
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: T-SVQBR: Insert → B150 -, CBN → B186

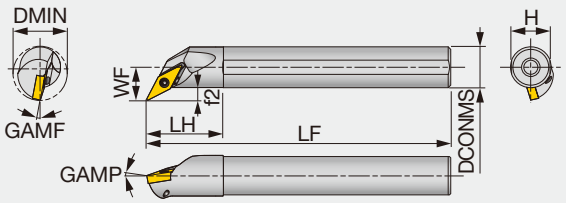
STREAMJETBAR

A/E-SVQCR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A10K-SVQCR/L08-D135	Steel	13.5	10	8	125	20	9	3	-5°	-8°	0.4	VC**0802...	0.6
A16Q-SVQCR/L11-D215	Steel	21.5	16	13	180	30	15	4.9	-5°	-8°	0.4	VC**1103...	1.2
E10M-SVQCR/L08-D135	Carbide	13.5	10	8	150	25	9	3	-5°	-8°	0.4	VC**0802...	0.6
E16R-SVQCR/L11-D215	Carbide	21.5	16	13	200	32	15	4.9	-5°	-8°	0.4	VC**1103...	1.2

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVQCR**) with left-hand inserts (L); and left-hand toolholders (SVQCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A10K-SVQCR/L08-D135	CSTB-2L	T-6F
A16Q-SVQCR/L11-D215	CSTB-2.5	T-8F
E10M-SVQCR/L08-D135	CSTB-2L	T-6F
E16R-SVQCR/L11-D215	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B018

M

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B020

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA (with rake)	AL
Cutting conditions	B024	

S

Application	Finishing to medium cutting
Grade	AH8005
Breaker Shape	PS
Cutting conditions	B026

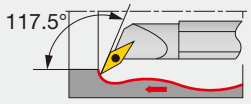
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

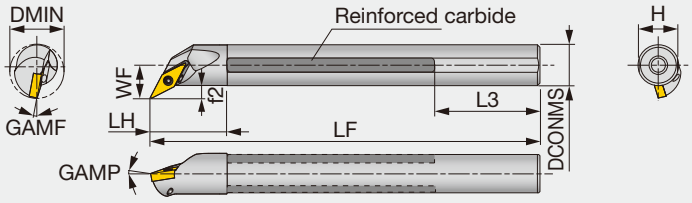
Reference pages: A/E-SVQCR/L: Insert → B153 -

T-SVQCR

Screw-on boring bar, for positive 35° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **Q**



Right hand (R) shown.

Designation	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
T25S-SVQCR16C	Reinforced	32	Rc1/4	25	17	250	40	64	23	8	0°	-5°	0.8	VC**1604...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
T25S-SVQCR16C	CSTB-3.5L	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PSS	PS
Cutting conditions	B018	

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Breaker Shape	PSF	PSS	PM
Cutting conditions	B020		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA	T-DIA (with rake)	AL
Cutting conditions	B024		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B026	

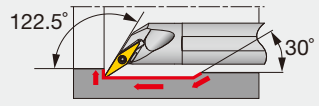
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

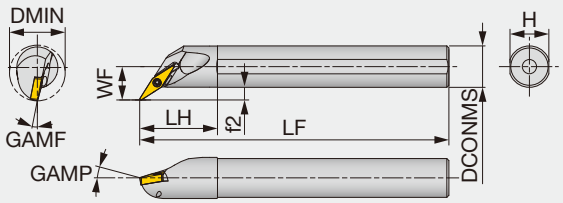
Reference pages: T-SVQCR: Insert → B153 -, CBN → B186, PCD → B190 -

A/E-SYQBR/L

Screw-on boring bar, for positive 25° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SYQBR/L11-D170	Steel	17	12	10.5	150	24	11	4.5	-5°	-10°	0.4	YW**11T2...	0.6
A16Q-SYQBR/L11-D215	Steel	21.5	16	13	180	30	15	5	-5°	-8°	0.4	YW**11T2...	0.6
E12Q-SYQBR/L11-D170	Carbide	17	12	10.5	180	27	11	4.5	-5°	-10°	0.4	YW**11T2...	0.6
E16R-SYQBR/L11-D215	Carbide	21.5	16	13	200	32	15	5	-5°	-8°	0.4	YW**11T2...	0.6

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SYQBR/L11-D...	CSTB-2L	T-6F
E**-SYQBR/L11-D...	CSTB-2L	T-6F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9225
Breaker Shape	ZM 
Cutting conditions	B018

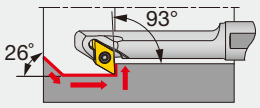
K

Application	Finishing to medium cutting
Grade	GT9530
Breaker Shape	ZM 
Cutting conditions	B022

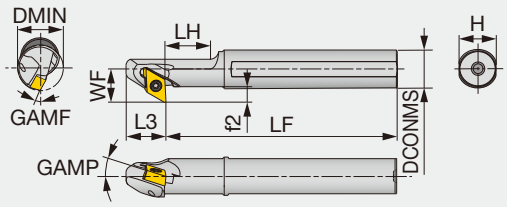
Reference pages: A/E-SYQBR/L: Insert → B160

A/E-SDZXR/L

Screw-on boring bar, for DXGU inserts



Cutting edge style **Z**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SDZXR/L07-D140	Steel	14	12	10.5	150	30	13	11	4.5	-10°	-14°	0.4	DXGU0703**R/L...	0.9
A16Q-SDZXR/L07-D160	Steel	16	16	12.5	180	35	13	15	4.5	-10°	-12.5°	0.4	DXGU0703**R/L...	0.9
A20R-SDZXR/L07-D200	Steel	20	20	14.5	200	40	13	18	4.5	-10°	-10.5°	0.4	DXGU0703**R/L...	0.9
E12Q-SDZXR/L07-D180	Carbide	18	12	10.5	180	-	13	11	4.5	-11°	-11°	0.4	DXGU0703**R/L...	0.9
E16R-SDZXR/L07-D220	Carbide	22	16	12.5	200	-	13	15	4.5	-11°	-9°	0.4	DXGU0703**R/L...	0.9

*Torque: Recommended clamping torque (N·m) **RE : Standard corner radius

Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
A/E**-SDZXR/L...	SR34-514	T-7F

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	NS9530	AH725
Breaker Shape	SS	TS
Cutting conditions	D093	

M

Application	Finishing	Medium cutting
Grade	AH8015	AH8015
Breaker Shape	SS	TS
Cutting conditions	D093	

K

Application	Finishing	Medium cutting
Grade	NS9530	AH725
Breaker Shape	SS	TS
Cutting conditions	D093	

N

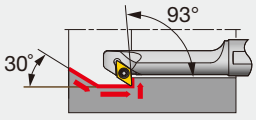
Application	Finishing	Medium cutting
Grade	KS05F	KS05F
Breaker Shape	SS	TS
Cutting conditions	D093	

Reference pages: A/E-SDZXR/L: Insert → B125 -
Standard cutting conditions → D093

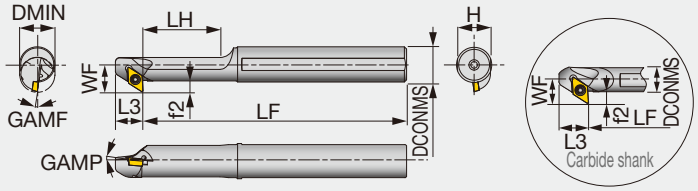
STREAMJETBAR

A/E-SDZCR/L

Screw-on boring bar, for positive 55° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SDZCR/L07-D140	Steel	14	12	10.5	150	30	12.5	11	4.5	0°	-9°	0.4	DC**0702...	1.2
A16Q-SDZCR/L07-D160	Steel	16	16	12.5	180	35	12.5	15	4.5	0°	-8°	0.4	DC**0702...	1.2
A20R-SDZCR/L11-D200	Steel	20	20	15.5	200	40	15.0	18	5.5	0°	-8°	0.8	DC**11T3...	3
A25S-SDZCR/L11-D250	Steel	25	25	18	250	50	15	23	5.5	0°	-6°	0.8	DC**11T3...	3
E12Q-SDZCR/L07-D180	Carbide	18	12	10.5	180	-	12.5	11	4.5	0°	-8°	0.4	DC**0702...	1.2
E16R-SDZCR/L07-D220	Carbide	22	16	12.5	200	-	12.5	15	4.5	0°	-6°	0.4	DC**0702...	1.2

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SDZCR**) with right-hand inserts (R); and left-hand toolholders (SDZCL**) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
A1**-SDZCR/L07-D1*0	CSTB-2.5	T-8F
A2**-SDZCR/L11-D2*0	CSTB-4S	T-15F
E1**-SDZCR/L07-D**0	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B018			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA (with rake)	AL
Cutting conditions	B024	

S

Application	Precision finishing	Finishing to medium cutting
Grade	BX470	AH8005
Breaker Shape	T-CBN	PS
Cutting conditions	B026	

H

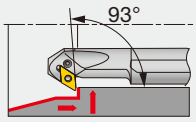
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: A/E-SDZCR/L: Insert → B119 -, CBN → B181, PCD → B190 -

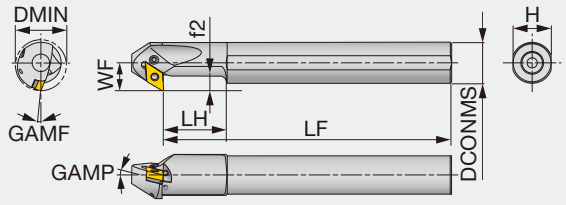
STREAMJETBAR

A-PDZNR/L

Lever-lock boring bar, for negative 55° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A32S-PDZNR/L15-D400	Steel	40	32	22	250	50	30	11.5	-6°	-13°	0.8	DN**1504...	4.8
A40T-PDZNR/L15-D500	Steel	50	40	27	300	60	37	14.5	-6°	-10°	0.8	DN**1504...	4.8
A50U-PDZNR/L15-D630	Steel	63	50	35	350	65	47	14.5	-6°	-8°	0.8	DN**1504...	4.8

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (PDZNR**) with right-hand inserts (R); and left-hand toolholders (PDZNL**) with left-hand inserts (L).

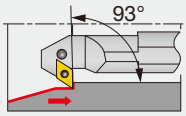
*Optional

SPARE PARTS

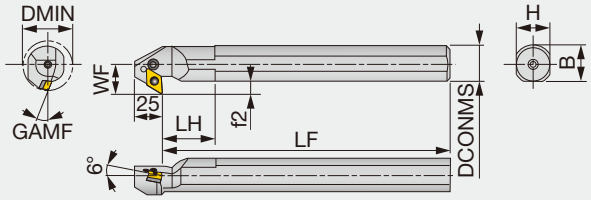
Designation	Shim	Clamping screw	Wrench	Spring	Lever	Oil supply attachment*	Screw for oil hole*
A32S-PDZNR15-D400	LSZ42BR	LCS4	P-3	LSP4	LCL4	EA-32	SSHM4-5
A32S-PDZNL15-D400	LSZ42BL	LCS4	P-3	LSP4	LCL4	EA-32	SSHM4-5
A40T-PDZNR15-D500	LSZ42BR	LCS4	P-3	LSP4	LCL4	-	SSHM5-6
A40T-PDZNL15-D500	LSZ42BL	LCS4	P-3	LSP4	LCL4	-	SSHM5-6
A50U-PDZNR15-D630	LSZ42BR	LCS4	P-3	LSP4	LCL4	-	SSHM6-6
A50U-PDZNL15-D630	LSZ42BL	LCS4	P-3	LSP4	LCL4	-	SSHM6-6

S-PDZNR/L

Lever-lock boring bar, for negative 55° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	B	GAMF	RE**	Insert
S32S-PDZNR/L15	Steel	40	32	22	250	30	30	6	29.5	-13°	0.8	DN**1504...
S40T-PDZNR15	Steel	50	40	27	300	35	37	7	37.5	-10°	0.8	DN**1504...
S50U-PDZNR15	Steel	60	50	35	350	40	47	10	47.5	-8°	0.8	DN**1504...

**RE : Standard corner radius
Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring	Lever
S32S-PDZNR15	LSZ42BR	LCS4	P-3	LSP4	LCL4
S32S-PDZNL15	LSZ42BL	LCS4	P-3	LSP4	LCL4
S*0*-PDZNR15	LSZ42BR	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

H

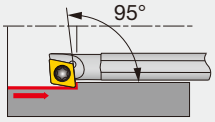
Application	Precision finishing	Finishing
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages: A-PDZNR/L, S-PDZNR/L: Insert → B065 -, CBN → B172 -, PCD → B188 -

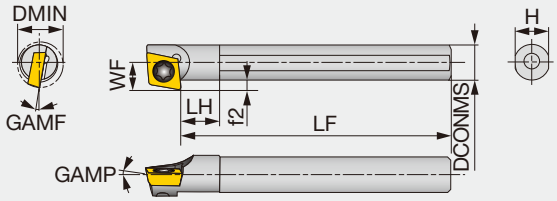
STREAMJETBAR

A/E-SEZPR/L

Screw-on boring bar, for positive 75° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A04F-SEZPR/L03-D055	Steel	5.5	4	3.2	80	4	3.8	1.2	0°	-8°	0.2	EP**03X1...	0.6
A05F-SEZPR/L03-D065	Steel	6.5	5	3.7	80	5	4.8	1.2	0°	-6°	0.2	EP**03X1...	0.6
E04G-SEZPR/L03-D055	Carbide	5.5	4	3.2	90	5	3.8	1.2	0°	-8°	0.2	EP**03X1...	0.6
E05G-SEZPR/L03-D065	Carbide	6.5	5	3.7	90	6	4.8	1.2	0°	-6°	0.2	EP**03X1...	0.6

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SEZPR**) with right-hand inserts (R); and left-hand toolholders (SEZPL**) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SEZPR/L03-D...	CSTA-1.6	T-6F
E**-SEZPR/L03-D...	CSTA-1.6	T-6F

INSERT SELECTION

P

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B006

M

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B008

K

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B010

N

Application	Precision finishing	Finishing
Grade	DX140	GH110
Breaker Shape	T-DIA 	W08 
Cutting conditions	B012	

H

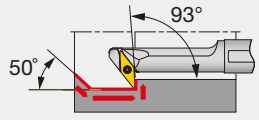
Application	Precision finishing
Grade	BX310
Breaker Shape	T-CBN 
Cutting conditions	B016

Reference pages: A/E-SEZPR/L: Insert → B127 -, CBN → B182

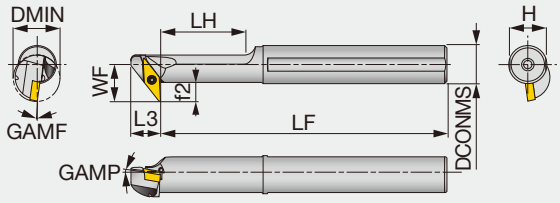
STREAMJETBAR

A-SVZBR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16Q-SVZBR/L11-D200	Steel	20	16	15.5	180	35	12.5	15	8	0°	-8°	0.4	VB**1103...	1.2
A20R-SVZBR/L11-D250	Steel	25	20	17.5	200	40	12.5	18	8	0°	-7°	0.4	VB**1103...	1.2
A25S-SVZBR/L16-D320	Steel	32	25	24	250	50	17.5	23	12	0°	-6°	0.8	VB**1604...	3
A32T-SVZBR/L16-D400	Steel	40	32	27.5	300	72	17.5	30	12	0°	-5°	0.8	VB**1604...	3

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVZBR**) with right-hand inserts (R); and left-hand toolholders (SVZBL**) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SVZBR/L11-D2*0	CSTB-2.5	T-8F
A25S-SVZBR/L16-D320	CSTB-3.5	T-15F
A32T-SVZBR/L16-D400	CSTB-3.5L	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B018	

M

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B020	

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

H

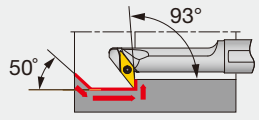
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: A-SVZBR/L: Insert → B150 -, CBN → B186

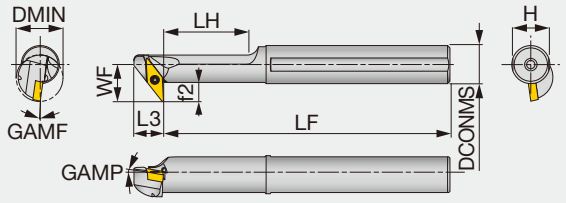
STREAMJETBAR

A-SVZCR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SVZCR/L08-D160	Steel	16	12	11	150	30	10	11	5.5	0°	-8°	0.4	VC**0802...	0.6

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Note: Use right-hand toolholders (SVZCR**) with right-hand inserts (R); and left-hand toolholders (SVZCL**) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
A12M-SVZCR/L08-D160	CSTB-2L	T-6F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B018

M

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B020

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA (with rake)	AL
Cutting conditions	B024	

S

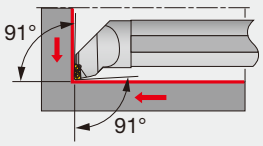
Application	Finishing to medium cutting
Grade	AH8005
Breaker Shape	PS
Cutting conditions	B026

H

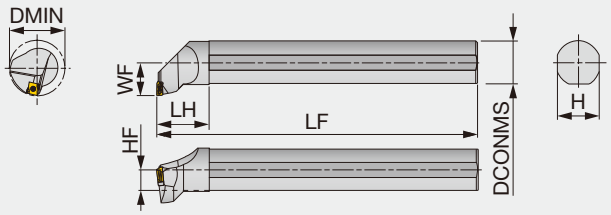
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages: A-SVZCR/L: Insert → B153 -

Screw-on boring bar for roughing, for negative tangential inserts



Cutting edge style **A**



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	HF	Insert
S25T-TLANR/L12-D530	Steel	53	25	17	300	40	23	11.5	LNMX1204**L/R...
S32U-TLANR/L12-D530	Steel	53	32	22	350	45	30	15	LNMX1204**L/R...
S40V-TLANR/L12-D530	Steel	53	40	27	400	53	37	18.5	LNMX1204**L/R...
S50U-TLANR/L16-D850	Steel	85	50	37	350	63	47	23.5	LNMX1606**L/R...

Note: Use right-hand toolholders (TLANR**) with left-hand inserts (L); and left-hand toolholders (TLANL**) with right-hand inserts (R).

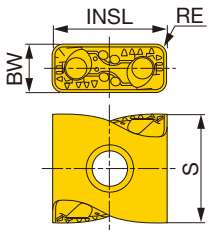
SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Spring pin	Wrench 1	Wrench 2
S**-TLANR/L12-D530	CSTB-3.5L115-S	CSTF-2L055-S	TSL12L/RI	-	KEYV-T10	T-6F-S
S50U-TLANR16-D850	CSTB-4L115-S	-	TSL16LI	PSP-16	KEYV-T15	-
S50U-TLANL16-D850	CSTB-4L115-S	-	TSL16RI	PSP-16	KEYV-T15	-

INSERT

LNMX12/16/24





Designation	RE	Coated						BW	INSL	S
		T9115		T9125		AH725				
		R	L	R	L	R	L			
LNMX120408R/L-TDR	0.8	●	●	●	●			4.8	12	11.6
LNMX120412R/L-TDR	1.2	●	●	●	●			4.8	12	11.6
LNMX160608R/L-TDR	0.8	●	●	●	●			6.4	16.2	13.5
LNMX160612R/L-TDR	1.2	●	●	●	●			6.4	16.2	13.5
LNMX160616R/L-TDR	1.6	●	●	●	●			6.4	16.2	13.5
LNMX241016R/L-TDR	1.6	●	●	●	●			9.4	24	20.5
LNMX241024R/L-TDR	2.4	●	●	●	●			9.4	24	20.5
LNMX160608R/L-MDR	0.8	●	●			●	●	6.4	16.2	13.5
LNMX160612R/L-MDR	1.2	●	●			●	●	6.4	16.2	13.5
LNMX160608R/L-TWR	0.8	●	●	●	●			6.4	16.2	13.5
LNMX160612R/L-TWR	1.2	●	●	●	●			6.4	16.2	13.5

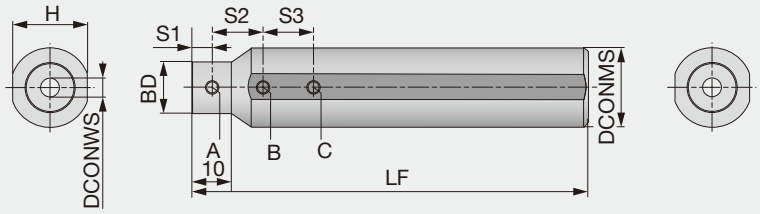
● : Line up

Reference pages: Standard cutting conditions → D094

STREAMJETBAR

BLM sleeve

Round shank sleeve for StreamJetBar-Mini series



Designation	DCONMS	DCONWS	BD	LF	H	S1	S2	S3
BLM159-04	15.875	4	15	100	15	5	15	15
BLM159-05	15.875	5	15	100	15	5	15	15
BLM159-06	15.875	6	15	100	15	5	20	20
BLM159-07	15.875	7	15	100	15	5	20	20
BLM16-04	16	4	15	100	15	5	15	15
BLM16-05	16	5	15	100	15	5	15	15
BLM16-06	16	6	15	100	15	5	20	20
BLM16-07	16	7	15	100	15	5	20	20
BLM19-04	19.05	4	18	100	18	5	15	15
BLM19-05	19.05	5	18	100	18	5	15	15
BLM19-06	19.05	6	18	100	18	5	20	20
BLM19-07	19.05	7	18	100	18	5	20	20
BLM20-04	20	4	13	100	19	5	15	15
BLM20-05	20	5	14	100	19	5	15	15
BLM20-06	20	6	15	100	19	5	20	20
BLM20-07	20	7	16	100	19	5	20	20
BLM22-04	22	4	13	125	21	5	15	15
BLM22-05	22	5	14	125	21	5	15	15
BLM22-06	22	6	15	125	21	5	20	20
BLM22-07	22	7	16	125	21	5	20	20
BLM25-04	25	4	13	125	24	5	15	15
BLM25-05	25	5	14	125	24	5	15	15
BLM25-06	25	6	15	125	24	5	20	20
BLM25-07	25	7	16	125	24	5	20	20
BLM254-04	25.4	4	13	125	24	5	15	15
BLM254-05	25.4	5	14	125	24	5	15	15
BLM254-06	25.4	6	15	125	24	5	20	20
BLM254-07	25.4	7	16	125	24	5	20	20

SPARE PARTS



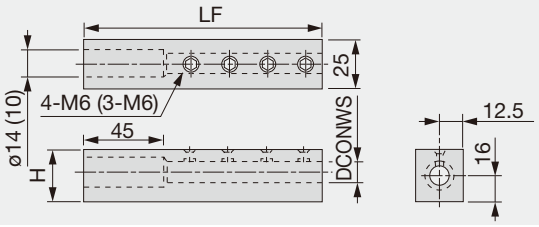



Designation	Clamping screw A	Clamping screw B, C	Wrench	Seal cap* (inner screw)
BLM159, 16...	SSHM4-4	SSHM4-4	P-2	CA-16(M6)
BLM19-04	SSHM4-4	SSHM4-6	P-2	CA-16(M6)
BLM19-05, 06, 07	SSHM4-4	SSHM4-4	P-2	CA-16(M6)
BLM20-04, 05	SSHM4-4	SSHM4-6	P-2	CA-16(M6)
BLM20-06, 07	SSHM4-4	SSHM4-4	P-2	CA-16(M6)
BLM22-...	SSHM4-4	SSHM4-6	P-2	CA-16(M6)
BLM25-04, 05	SSHM4-4	SSHM4-8	P-2	CA-16(M6)
BLM25-06	SSHM4-4	SSHM4-8	P-2	CA-16(M6)
BLM25-07	SSHM4-4	SSHM4-6	P-2	CA-16(M6)
BLM254-04, 05, 06	SSHM4-4	SSHM4-8	P-2	CA-16(M6)
BLM254-07	SSHM4-4	SSHM4-6	P-2	CA-16(M6)

*Optional

BLS sleeve

Square shank sleeve for boring bars (regular length)



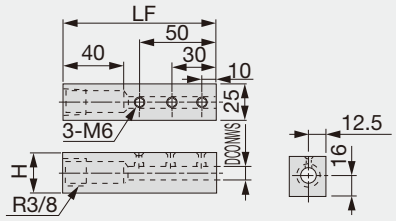
Designation	DCONWS	LF	H
BLS16-08	8	125	28
BLS16-10	10	125	28
BLS16-12	12	125	28

SPARE PARTS

Designation	Wrench
BLS16-...	P-3

BLS-C sleeve

Square shank sleeve for boring bars (short type)



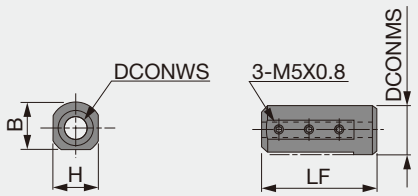
Designation	DCONWS	LF	H
BLS16-08C	8	100	28
BLS16-10C	10	100	28
BLS16-12C	12	100	28

SPARE PARTS

Designation	Wrench
BLS16-**C	P-3

BLM sleeve

Round shank sleeve for boring bars



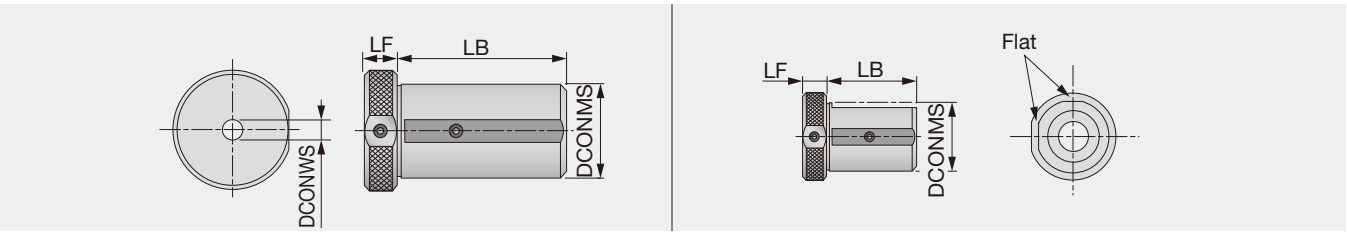
Designation	DCONWS	DCONMS	LF	H	B
BLM19-08	8	19.05	100	18	18
BLM20-08	8	20	100	18	19
BLM22-08	8	22	125	21	21
BLM254-08	8	25.4	125	24	24
BLM25-08C	8	25	55	23	24
BLM25-10C	10	25	55	23	24
BLM25-12C	12	25	55	23	24

SPARE PARTS

Designation	Wrench
BLM...	P-2.5

BLC sleeve

Round shank sleeve for boring bars



Designation	DCONWS	LB	LF	DCONMS
BLC40-8	8	73	13	40
BLC40-10	10	73	13	40
BLC40-12	12	73	13	40
BLC40-16	16	73	13	40
BLC32-8C	8	45	20	32
BLC32-10C	10	45	20	32
BLC32-12C	12	45	20	32
BLC40-8C	8	55	13	40
BLC40-10C	10	55	13	40
BLC40-12C	12	55	13	40
BLC40-16C	16	55	13	40

SPARE PARTS

Designation	Wrench
BLC40-8	P-3
BLC40-1...	P-4
BLC32-8C	P-3
BLC32-1*C	P-4
BLC40-8C	P-3
BLC40-1*C	P-4

STANDARD CUTTING CONDITIONS

Internal turning

ISO	Workpiece material	Grade: First Choice	Grade: For surface finish	Grade: For wear resistance (High speed)	Cutting speed *Vc* (m/min)	Depth of cut *ap* (mm)	Feed *f* (mm/rev)
P	Low carbon steel (SS400 / E275A, S25C / C25, etc.)	AH725	-	-	50 - 180	0.3 - 2	0.08 - 0.3
		-	-	AH8015	50 - 200	0.3 - 2	0.08 - 0.3
		-	NS9530	-	80 - 250	0.3 - 2	0.08 - 0.3
		-	GT9530	-	80 - 300	0.3 - 2	0.08 - 0.3
	Carbon steel (S45C / C45, S55C / C55, etc.)	AH725	-	-	50 - 180	0.3 - 2	0.08 - 0.3
		-	-	AH8015	50 - 200	0.3 - 2	0.08 - 0.3
		-	NS9530	-	80 - 250	0.3 - 2	0.08 - 0.3
		-	GT9530	-	80 - 300	0.3 - 2	0.08 - 0.3
	Low alloy steel (SCM415, etc.)	AH725	-	-	50 - 180	0.3 - 2	0.08 - 0.3
		-	-	AH8015	50 - 200	0.3 - 2	0.08 - 0.3
		-	NS9530	-	80 - 250	0.3 - 2	0.08 - 0.3
		-	GT9530	-	80 - 300	0.3 - 2	0.08 - 0.3
	Alloy steel (SCM440 / 42CrMo4, SCr420 / 20Cr4, etc.)	AH725	-	-	50 - 180	0.3 - 2	0.08 - 0.3
		-	-	AH8015	50 - 200	0.3 - 2	0.08 - 0.3
		-	NS9530	-	80 - 250	0.3 - 2	0.08 - 0.3
		-	GT9530	-	80 - 300	0.3 - 2	0.08 - 0.3
M	Stainless steel (Austenitic) (SUS304 / X5CrNi18-9, SUS316 / X5CrNiMo17-12-3, etc.)	AH8015	-	-	50 - 150	0.3 - 2	0.08 - 0.3
	Stainless steel (Martensitic and ferritic) (SUS430 / X6Cr17, SUS416 / X20Cr13, etc.)	AH8015	-	-	50 - 150	0.3 - 2	0.08 - 0.3
	Stainless steel (Precipitation hardening) (SUS630 / X5CrNiCuNb16-4, etc.)	AH8015	-	-	50 - 150	0.3 - 2	0.08 - 0.3
K	Grey cast iron (FC250 / 250 / GG25, etc.)	AH725	-	-	50 - 180	0.3 - 2	0.08 - 0.3
		-	-	AH8015	50 - 200	0.3 - 2	0.08 - 0.3
		-	NS9530	-	80 - 250	0.3 - 2	0.08 - 0.3
		-	GT9530	-	80 - 300	0.3 - 2	0.08 - 0.3
	Ductile cast iron (FCD700 / GGG70, etc.)	AH725	-	-	50 - 180	0.3 - 2	0.08 - 0.3
		-	-	AH8015	50 - 200	0.3 - 2	0.08 - 0.3
		-	NS9530	-	80 - 250	0.3 - 2	0.08 - 0.3
		-	GT9530	-	80 - 300	0.3 - 2	0.08 - 0.3
N	Non ferrous Metal (Aluminum alloy, etc.)	KS05F	-	-	100 - 300	0.3 - 2	0.08 - 0.3
	Non ferrous Metal (Copper Alloy, etc.)	KS05F	-	-	100 - 300	0.3 - 2	0.08 - 0.3
S	Heat-resistant alloy (Titanium alloy, etc.)	AH8015	-	-	20 - 80	0.3 - 2	0.08 - 0.3
	Heat-resistant alloy (Ni-base alloy, etc.)	AH8015	-	-	20 - 80	0.3 - 2	0.08 - 0.3

Reference pages: A/E-SWLXR/L → D026, A/E-SDXXR/L → D033
A/E-SDZXR/L → D083

TURNTEC STANDARD CUTTING CONDITIONS

*Values in red are for facing.

LNMX1204

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (m/min)	Depth of cut: *ap* (mm)		Feed: *f* (mm/rev)	
					RE : 0.8	RE : 1.2	RE : 0.8	RE : 1.2
P	Steel (S45C, SCM415, etc.)	TDR	T9115	120 - 250	0.5 - 5 0.5 - 2.2	0.8 - 5 0.8 - 2.2	0.15 - 0.6	0.25 - 0.8
		TDR	T9125	80 - 180	0.5 - 5 0.5 - 2.2	0.8 - 5 0.8 - 2.2	0.15 - 0.6	0.25 - 0.8
M	Stainless steel (SUS304, SUS316, etc.)	TDR	T9115	100 - 180	0.5 - 5 0.5 - 2.2	0.8 - 5 0.8 - 2.2	0.15 - 0.6	0.25 - 0.8
		TDR	T9125	80 - 180	0.5 - 5 0.5 - 2.2	0.8 - 5 0.8 - 2.2	0.15 - 0.6	0.25 - 0.8

LNMX1606

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (m/min)	Depth of cut: *ap* (mm)			Feed: *f* (mm/rev)		
					RE : 0.8	RE : 1.2	RE : 1.6	RE : 0.8	RE : 1.2	RE : 1.6
P	Steel (S45C, SCM415, etc.)	TDR	T9115	120 - 250	0.5 - 5 0.5 - 3.2	0.8 - 6 0.8 - 3.2	1 - 8 1 - 3.2	0.15 - 0.6	0.25 - 0.8	0.3 - 1
		TDR	T9125	80 - 180	0.5 - 5 0.5 - 3.2	0.8 - 6 0.8 - 3.2	1 - 8 1 - 3.2	0.15 - 0.6	0.25 - 0.8	0.3 - 1
		TWR	T9115	120 - 250	1 - 8 1 - 3.2	0.8 - 6 0.8 - 3.2	-	0.15 - 0.6	0.25 - 0.8	-
		TWR	T9125	80 - 180	1 - 8 1 - 3.2	0.8 - 6 0.8 - 3.2	-	0.15 - 0.6	0.25 - 0.8	-
M	Stainless steel (SUS304, SUS316, etc.)	TDR	T9115	100 - 180	0.5 - 5 0.5 - 3.2	0.8 - 6 0.8 - 3.2	1 - 8 1 - 3.2	0.15 - 0.6	0.25 - 0.8	0.3 - 1
		TDR	T9125	80 - 180	0.5 - 5 0.5 - 3.2	0.8 - 6 0.8 - 3.2	1 - 8 1 - 3.2	0.15 - 0.6	0.25 - 0.8	0.3 - 1
		MDR	T9115	100 - 150	1.5 - 6 0.5 - 3.2	1.5 - 7 0.8 - 3.2	-	0.1 - 0.5	0.15 - 0.7	-
		MDR	AH725	50 - 150	1.5 - 6 0.5 - 3.2	1.5 - 7 0.8 - 3.2	-	0.1 - 0.5	0.15 - 0.7	-
		TWR	T9115	100 - 180	0.5 - 5 0.5 - 3.2	0.8 - 6 0.8 - 3.2	-	0.15 - 0.6	0.25 - 0.8	-
		TWR	T9125	80 - 180	0.5 - 5 0.5 - 3.2	0.8 - 6 0.8 - 3.2	-	0.15 - 0.6	0.25 - 0.8	-

LNMX2410

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (m/min)	Depth of cut: *ap* (mm)		Feed: *f* (mm/rev)	
					RE : 1.6	RE : 2.4	RE : 1.6	RE : 2.4
P	Steel (S45C, SCM415, etc.)	TDR	T9115	120 - 250	4 - 15 1 - 4.5	5 - 15 1 - 4.5	0.3 - 1	0.3 - 1.1
		TDR	T9125	80 - 150	4 - 15 1 - 4.5	5 - 15 1 - 4.5	0.3 - 1	0.3 - 1.1
M	Stainless steel (SUS304, SUS316, etc.)	TDR	T9115	100 - 180	4 - 15 1 - 4.5	5 - 15 1 - 4.5	0.3 - 1	0.3 - 1.1
		TDR	T9125	80 - 150	4 - 15 1 - 4.5	5 - 15 1 - 4.5	0.3 - 1	0.3 - 1.1

Reference pages: S-TLANR/L → D089

Threading Tool

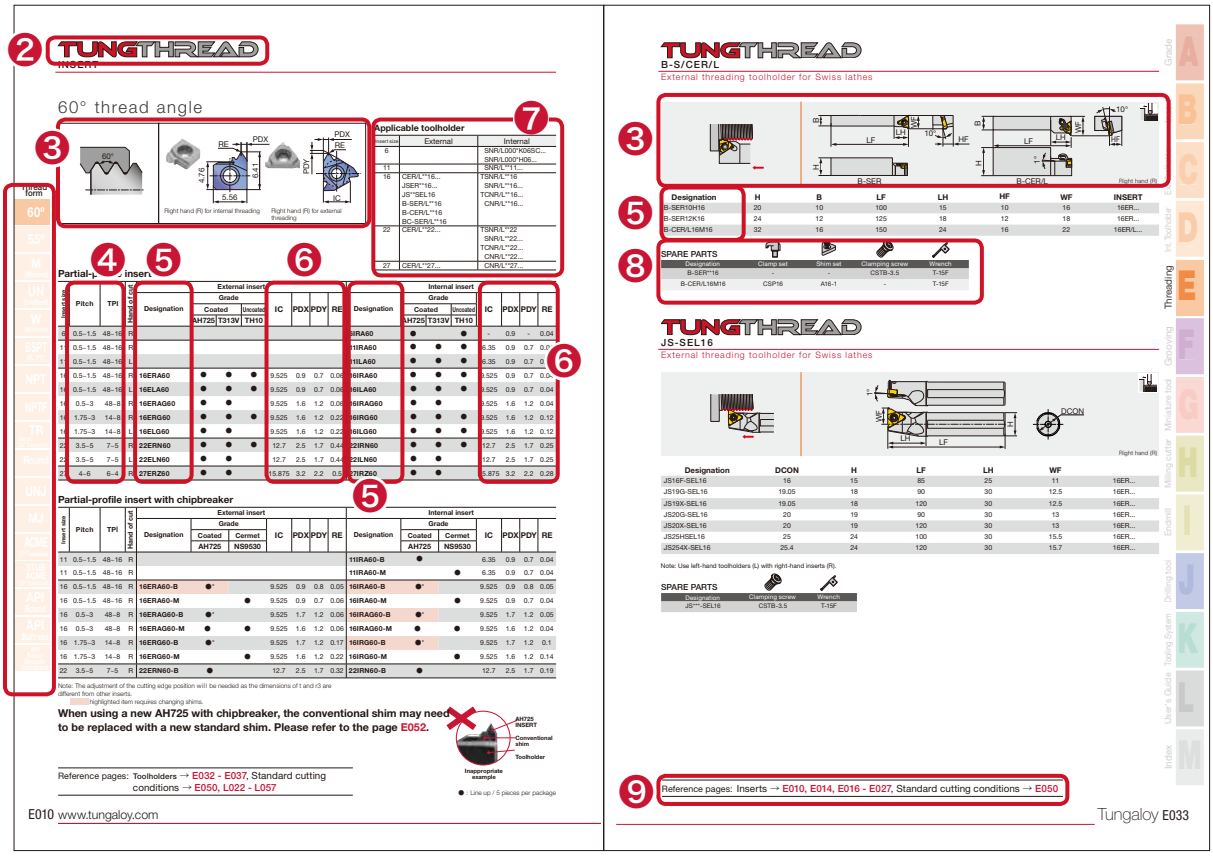


Threading Tool - Content structure

- Products are listed by product series and thread shape to be machined.
- Inserts and toolholders in the catalog are our standard stock items.

How to use the page

Method ① Select the screw shape described at the left end of each page, jump to the page on the left index, and choose a designation you need (❺) in the dimension table (❻). Applicable toolholders are shown in (❼).
Method ② Select the series name on E003 and check the details on the product page.
Method ③ Select an item from Quick Guide on E004-E007.



❶ : Screw shape
❷ : Series name
❸ : Drawing of thread, threading insert, threading toolholder
❹ : Applicable pitch and the number of threads
❺ : Designation (for external, for internal)
❻ : Dimension table (conforming to ISO13399)
❼ : Applicable toolholder
❽ : Spare parts
❾ : Reference page

When ordering
- Please specify the designation and quantity for threading toolholders.
  e.g. **TSNR0020R22 ...** 1 (one threading toolholder per package)
- Please specify the designation, grade, and quantity for threading inserts.
  e.g. **16IR175ISO AH725 ...** 5 (five threading inserts per package)

Main products

Screw shape

60° E010
55° E014
M (Metric) E016
UN (Unified) E018
W (Whitworth) E020
BSPT (R, PT) E021
NPT E022
NPTF E023
TR (Metric, 30°Trapezoidal) E024
Round (DIN405) E024
UNJ E025
MJ E025
ACME (29°Trapezoidal) E026
STUB ACME (29°Trapezoidal) E027
API Round E028
API Buttress E029
API Rotary Shoulder Connection E031



TUNGTHREAD
Lay down insert, toolholder

Standard items cover a wide variety of threading inserts. Standard tool series with double-clamp system for excellent insert stability in machining API-standard threads.

E004 - E007, E010 - E041, E050



On edge insert, toolholder

ACME and STUB ACME inserts can be used for the range of 16 to 3TPI with 2 types of toolholders. The special full-profile insert realizes both the fine adjustment of thread height and the minimum burr on the crest.

E004 - E007, E026 - E030, E039 - E040



Chaser

Threading tool with multiple cutting edges for highly efficient machining of API-standard round, buttress, and NPT.

E005 - E007, E023, E028 - E031, E041



TETRAMINICUT

Standard tool with 4 corners for threading on Swiss lathes. In small diameter threading using the center of the tool post on general NC lathes, interference with the center is less likely occur.

E004 - E008, E011, E042 - E043, E050



DUOJUSTCUT

Standard tool suitable for all types of threading on Swiss lathes. The incomplete thread part from the workpiece face to the thread groove can be the shortest thanks to the excellent accessibility to the workpiece face.

E004 - E009, E011, E043 - E044, E051



TUNGT-CLAMP

Tool with high clamp rigidity that firmly holds the insert with a clamp. Grooving insert and threading insert can be used with the same toolholder.

E004 - E008, E012, E045 - E046, E050



J-SERIES

Tool series with 3-cornered inserts. Subselection for threading on Swiss lathes. Standard tool also suitable for radial Swiss lathes.

E004, E012 - E013, E015, E046 - E047



TINYMINITURN

Internal threading tool suitable for the minimum machining diameter ø4.All tools have oil holes that can supply coolant from the cutting edge.

E006, E048, E051

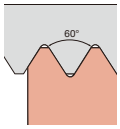
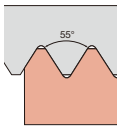
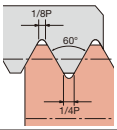
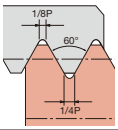
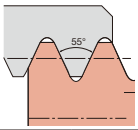
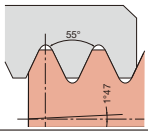
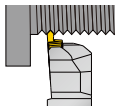
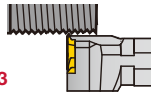
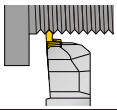
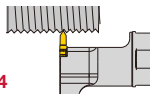
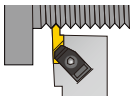
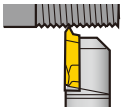
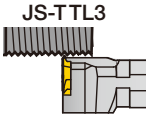
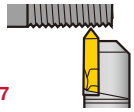
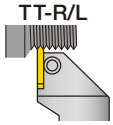


Other tool

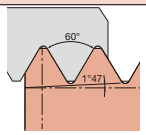
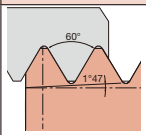
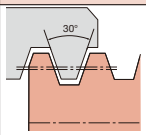
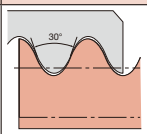
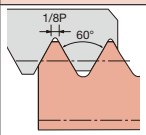
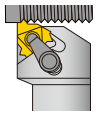
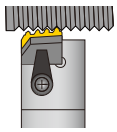
TT type

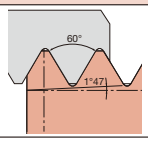
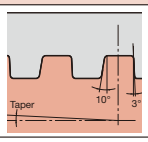
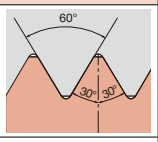
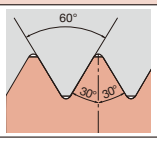
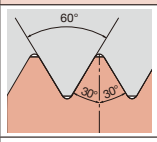
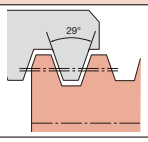
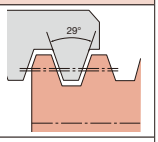
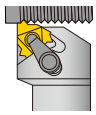
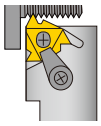
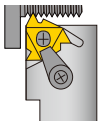
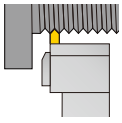
E004 - E006, E013, E015, E048 - E049

Applicable tool for each external thread type

Applicable tool for each external thread type	General purpose		General purpose		Pipe		
Thread type	National taper pipe		Full profile				
	60°	55°	ISO metric	Unified	Whitworth	Parallel pipe thread	Taper pipe thread
	-	-	M	UNC, UNF UNEF	BSW, BSF W	G BSP, PF	R, PT, BSPT
Thread form / Tool type							
ST type  E032	0.5 ~ 6 mm 48 ~ 4TPI E010	0.5 ~ 5 mm 48 ~ 5TPI E014	0.5 ~ 6 mm E016	32 ~ 5TPI E018	28 ~ 5TPI E020		28 ~ 11TPI E021
TETRAMCUT STCR/L-18  E042	0.4 ~ 3 mm 64 ~ 8TPI E011	—	—	—	—	—	—
TETRAMCUT JS-STCL18  E043	0.4 ~ 3 mm 64 ~ 8TPI E011	—	—	—	—	—	—
DUOJCUT JSXXR/L  E043	0.2 ~ 1.5 mm 127 ~ 16TPI E011	—	—	—	—	—	—
DUOJCUT JS-SXXL09  E044	0.2 ~ 1.5 mm 127 ~ 16TPI E011	—	—	—	—	—	—
TUNGT-CLAMP  E045	1.27 ~ 4.23 mm 20 ~ 6TPI E012	—	—	—	—	—	—
JSTTR/L  E046	0.5 ~ 1 mm 48 ~ 25TPI E012	0.5 ~ 1 mm 48 ~ 25TPI E015	—	—	—	—	—
JS-TTL3  E047	0.5 ~ 1 mm 48 ~ 25TPI E012	0.5 ~ 1 mm 48 ~ 25TPI E015	—	—	—	—	—
JSXBR/L  E047	0.5 ~ 1 mm 48 ~ 25TPI E013	—	—	—	—	—	—
TT-R/L  E048	~ 3 mm ~ 8TPI E013	~ 3 mm ~ 8TPI E015	—	—	—	—	—

Please see the page E*** for the product details.

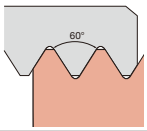
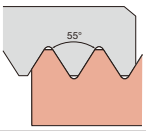
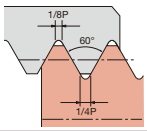
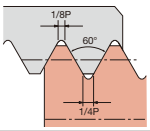
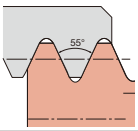
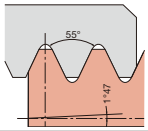
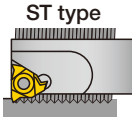
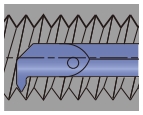
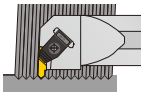
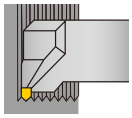
Applicable tool for each external thread type	Pipe		Machine parts		Aerospace	
Thread type	Full profile					
	National taper pipe		30°Trapezoidal	Round DIN405	UNJ	
	NPT	NPTF	TR	Rd	UNJC,UNJF	
Thread form / Tool type						
ST type  E032	27 ~ 8TPI E022	27 ~ 8TPI E023	1.5 ~ 6 mm E024	8TPI, 6TPI E024	32 ~ 8TPI E025	
Chaser  E041	11.5TPI, 8TPI E023	——	——	——	——	

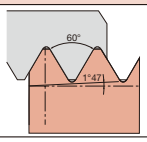
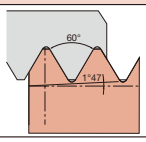
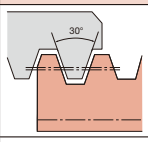
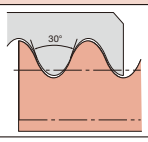
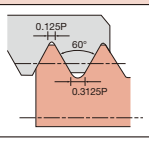
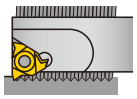
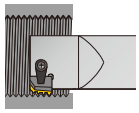
Applicable tool for each external thread type	Energy					Machine parts, Pipe	
Thread type	Full profile						
	API Tubing & Casing		API Rotary Shoulder Connection			ACME	STUB ACME
	Round	Buttress	V-0.038R	V-0.040	V-0.050		
Thread form / Tool type							
ST type  E032	10TPI, 8TPI E027	5TPI (0.75TPF) E029	——	——	——	12 ~ 5TPI E026	——
Lay down (Single side)  E037	——	5TPI (0.75TPF) 5TPI (1TPF) E029	——	——	——	——	——
Lay down (Double side)  E038	——	——	4TPI (2TPF) 4TPI (3TPF) E031	5TPI (3TPF) E031	4TPI (2TPF) 4TPI (3TPF) E031	——	——
On edge  E039	10TPI, 8TPI E028	5TPI (0.75TPF) 5TPI (1TPF) E030	——	——	——	16 ~ 3TPI E026	16 ~ 3TPI E027
Chaser  E041	10TPI, 8TPI E028	5TPI (0.75TPF) E030	——	——	——	——	——

Please see the page E*** for the product details.

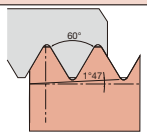
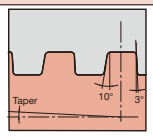
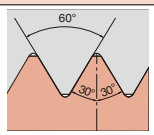
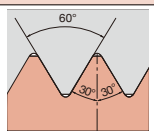
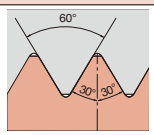
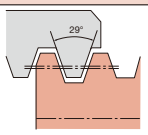
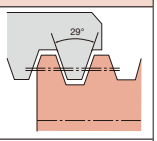
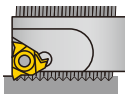
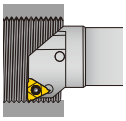
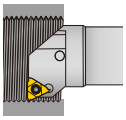
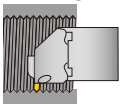
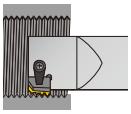
TUNGTHREAD

Applicable tool for each internal thread type

Applicable tool for each external thread type	General purpose		General purpose		Pipe		
Thread type	National taper pipe		Full profile				
	60°	55°	ISO metric	Unified	Whitworth	Parallel pipe thread	Taper pipe thread
	-	-	M	UNC, UNF UNEF	BSW, BSF W	G, Rp BSP, PF, PS	Rc, PT, BSPT
Thread form / Tool type							
ST type  E035	0.5 ~ 6 mm 48 ~ 4TPI E010	0.5 ~ 5 mm 48 ~ 5TPI E014	0.5 ~ 6 mm E016	32 ~ 5TPI E018	28 ~ 5TPI E020		19 ~ 11TPI E021
TINYMINITURN  E048	0.5 ~ 1.5 mm 48 ~ 16TPI E048						
TUNGT-CLAMP  E045	1.27 ~ 4.23 mm 20 ~ 6TPI E012	—	—	—	—		—
TT-R/L  E048	~ 3 mm ~ 8TPI E013	~ 3 mm ~ 8TPI E015	—	—	—		—

Applicable tool for each external thread type	Pipe		Machine parts		Aerospace	
Thread type	Full profile					
	National taper pipe		30°Trapezoidal (DIN103)	Round (DIN405)	MJ	
	NPT	NPTF	TR	Rd	MJ	
Thread form / Tool type						
ST type  E035	27 ~ 8TPI E022	14 ~ 8TPI E023	1.5 ~ 5 mm E024	6TPI E024	1.0mm E025	
Chaser  E041	11.5TPI, 8TPI E023	—	—	—	—	

Please see the page E*** for the product details.

Applicable tool for each external thread type	Energy					Machine parts, Pipe	
Thread type	Full profile						
	API Tubing & Casing		API Rotary Shoulder Connection			ACME	STUB ACME
	Round	Buttress	V-0.038R	V-0.040	V-0.050		
Thread form / Tool type							
ST type  E035	10TPI, 8TPI E027	5TPI (0.75TPF) E029	—	—	—	12 ~ 5TPI E026	—
Lay down (Single side)  E038	—	5TPI (0.75TPF) 5TPI (1TPF) E029	—	—	—	—	—
Lay down (Double side)  E039	—	—	4TPI (2TPF) 4TPI (3TPF) E031	5TPI (3TPF) E031	4TPI (2TPF) 4TPI (3TPF) E031	—	—
On edge  E040	10TPI, 8TPI E028	5TPI (0.75TPF) 5TPI (1TPF) E030	—	—	—	—	—
Chaser  E041	10TPI, 8TPI E028	5TPI (0.75TPF) E030	—	—	—	—	—

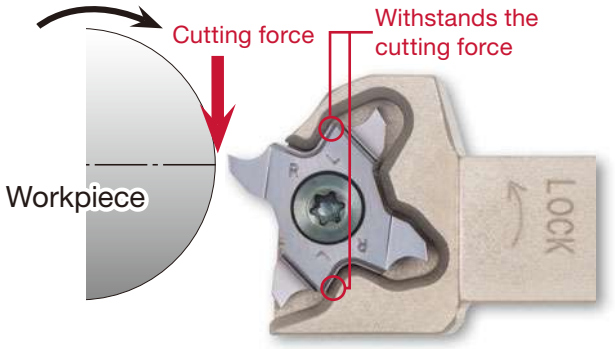
Please **see the page E***** for the product details.

TETRAMINI CUT



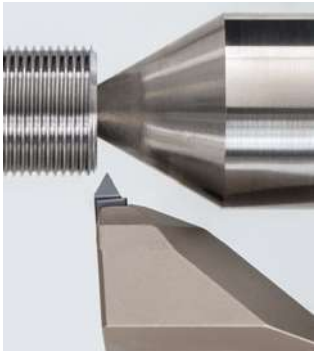
Unique 3-point clamping system

The unique pocket design provides accurate indexing repeatability of the cutting edge height.



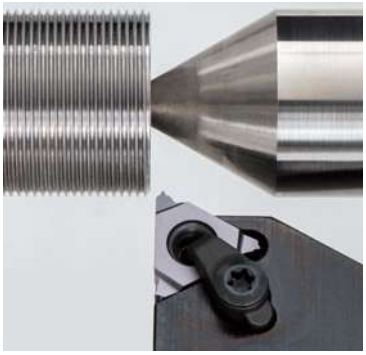
No tool interference with the lathe center when machining small parts

TETRAMINI CUT
M16x1



Insert: TCT18R-60N-020

Conventional
M24x1



Insert: 16ER10ISO

Reference pages: Inserts → E011, Toolholders → E042 - E043, Standard cutting conditions → E050

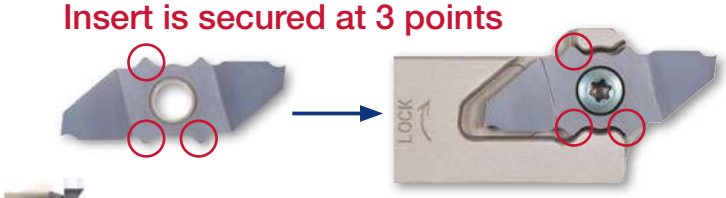
DUOJCUT



Unique clamping system for highly rigid clamping

The unused cutting edge is always protected due to the innovative clamping system.
Even if the first cutting edge is chipped, the other unused cutting edge can be used because the insert is clamped in the center.

Insert is secured at 3 points



Excellent accessibility to the workpiece face

Utilizing various tools minimizes the incomplete thread part.



	Insert shape		
	60A	60B	60N
Right hand			
Left hand			



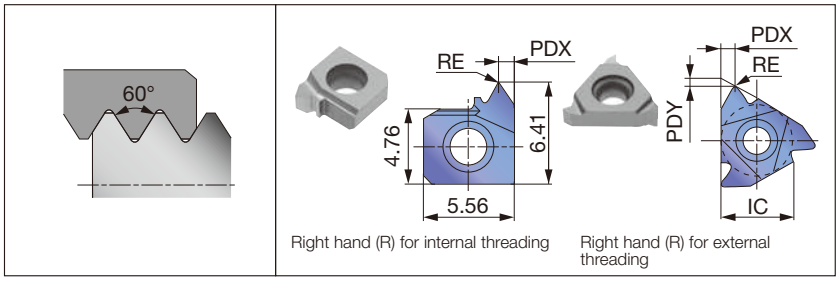
DUOJCUT

Insert designation	Cutting edge geometry (mm)	PDX (mm)	Pitch (mm) 0.2	0.25	0.35	0.4	0.5	0.6	0.8	1	1.25	1.5
JXTG12FR-60A-000	0.05 (flat)	0.25	Applicable area									
JXTG12FL-60A-000												
JXTG12FR-60B-000	0.05 (flat)	2.25										
JXTG12FL-60B-000												
JXTG12FR-60A-005	R0.05	0.6				Applicable area						
JXTG12FL-60A-005												
JXTG12FR-60B-005	R0.05	1.9										
JXTG12FL-60B-005												
JXTG12FR-60N-010	R0.1	1.25								Applicable area		
JXTG12FL-60N-010												
			127		72		52		32			16

Threads per inch (TPI)

Reference pages: Inserts → E011, Toolholders → E043 - E044,
Standard cutting conditions → E051

60° thread angle



Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
11		SNR/L**11...
16	CER/L**16... JSER**16... JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...
27	CER/L**27...	CNR/L**27...

Partial-profile insert

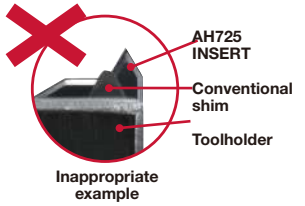
Insert size	Pitch	TPI	Hand of cut	External insert: Designation	Grade: Coated AH725	Grade: Coated T313V	Grade: Uncoated TH10	IC	PDX	PDY	RE	Internal insert: Designation	Grade: Coated AH725	Grade: Coated T313V	Grade: Uncoated TH10	IC	PDX	PDY	RE
6	0.5~1.5	48~16	R									6IRA60	●		●	-	0.9	-	0.04
11	0.5~1.5	48~16	R									11IRA60	●	●	●	6.35	0.9	0.7	0.04
11	0.5~1.5	48~16	L									11ILA60	●	●	●	6.35	0.9	0.7	0.04
16	0.5~1.5	48~16	R	16ERA60	●	●	●	9.525	0.9	0.7	0.06	16IRA60	●	●	●	9.525	0.9	0.7	0.04
16	0.5~1.5	48~16	L	16ELA60	●	●	●	9.525	0.9	0.7	0.06	16ILA60	●	●	●	9.525	0.9	0.7	0.04
16	0.5~3	48~8	R	16ERAG60	●	●		9.525	1.6	1.2	0.06	16IRAG60	●	●		9.525	1.6	1.2	0.04
16	1.75~3	14~8	R	16ERG60	●	●	●	9.525	1.6	1.2	0.22	16IRG60	●	●	●	9.525	1.6	1.2	0.12
16	1.75~3	14~8	L	16ELG60	●	●		9.525	1.6	1.2	0.22	16ILG60	●	●	●	9.525	1.6	1.2	0.12
22	3.5~5	7~5	R	22ERN60	●	●	●	12.7	2.5	1.7	0.44	22IRN60	●	●	●	12.7	2.5	1.7	0.25
22	3.5~5	7~5	L	22ELN60	●	●		12.7	2.5	1.7	0.44	22ILN60	●	●		12.7	2.5	1.7	0.25
27	4~6	6~4	R	27ERZ60	●	●		15.875	3.2	2.2	0.5	27IRZ60	●	●		15.875	3.2	2.2	0.28

Partial-profile insert with chipbreaker

Insert size	Pitch	TPI	Hand of cut	External insert: Designation	Grade: Coated AH725	Grade: Cermet NS9530	IC	PDX	PDY	RE	Internal insert: Designation	Grade: Coated AH725	Grade: Cermet NS9530	IC	PDX	PDY	RE
11	0.5~1.5	48~16	R								11IRA60-B	●		6.35	0.9	0.7	0.04
11	0.5~1.5	48~16	R								11IRA60-M		●	6.35	0.9	0.7	0.04
16	0.5~1.5	48~16	R	16ERA60-B	●*		9.525	0.9	0.8	0.05	16IRA60-B	●*		9.525	0.9	0.8	0.05
16	0.5~1.5	48~16	R	16ERA60-M		●	9.525	0.9	0.7	0.06	16IRA60-M		●	9.525	0.9	0.7	0.04
16	0.5~3	48~8	R	16ERAG60-B	●*		9.525	1.7	1.2	0.06	16IRAG60-B	●*		9.525	1.7	1.2	0.05
16	0.5~3	48~8	R	16ERAG60-M	●	●	9.525	1.6	1.2	0.06	16IRAG60-M	●	●	9.525	1.6	1.2	0.04
16	1.75~3	14~8	R	16ERG60-B	●*		9.525	1.7	1.2	0.17	16IRG60-B	●*		9.525	1.7	1.2	0.1
16	1.75~3	14~8	R	16ERG60-M		●	9.525	1.6	1.2	0.22	16IRG60-M		●	9.525	1.6	1.2	0.14
22	3.5~5	7~5	R	22ERN60-B	●		12.7	2.5	1.7	0.32	22IRN60-B	●		12.7	2.5	1.7	0.19

Note: The adjustment of the cutting edge position will be needed as the dimensions of t and r3 are different from other inserts.
highlighted item requires changing shims.

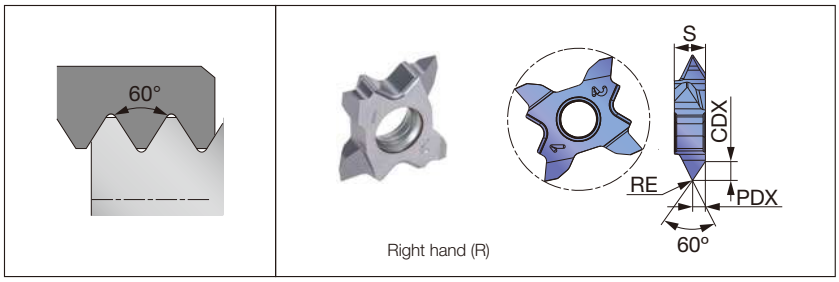
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page E052.



Reference pages: Toolholders → E032 - E037, Standard cutting conditions → E050, L022 - L057

● : Line up / 5 pieces per package

60° thread angle



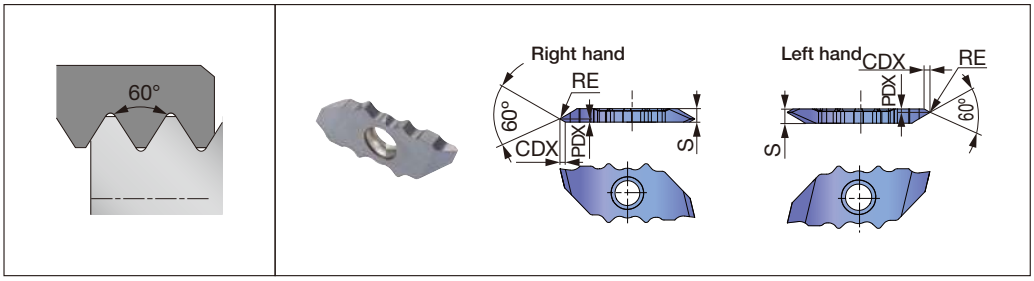
Applicable toolholder

External
STCR/L**-18
STCR/L**18-CHP
JS**-STCL18

Partial-profile insert

Pitch	TPI	Hand of cut	Designation	External insert Grade Coated SH725	AH725	PDX	CDX	RE	S
0.4 - 1	25 - 64	R	**TCT18FR-60A-005**	●		0.6	0.99	0.05	4
1 - 2	25 - 12	R	**TCT18FR-60A-010**	●		1	1.63	0.1	4
0.8 - 3	8 - 32	R/L	**TCT18R/L-60N-010**		●	1.6	2.67	0.1	4
1.5 - 3	8 - 16	R/L	**TCT18R/L-60N-020**		●	1.6	2.57	0.2	4

60° thread angle



Applicable toolholder

External
JSXXR/L**09
JSXXR/L**09-CHP
JS**-SXXL09

Partial-profile insert

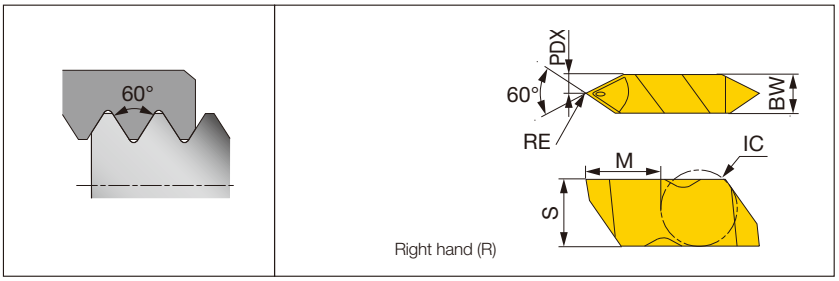
Insert size	Pitch	TPI	Hand of cut	Designation	External insert Grade Coated SH725 R	L	PDX	CDX	RE	S
12	0.2 - 0.4	64 - 127	R/L	**JXTG12FR/L-60A-000**	●	●	0.25	0.4	0.05 max flat	2.5
12	0.2 - 0.4	64 - 127	R/L	**JXTG12FR/L-60B-000**	●	●	2.25	0.4	0.05 max flat	2.5
12	0.4 - 1	25 - 64	R/L	**JXTG12FR/L-60A-005**	●	●	0.6	0.99	0.05	2.5
12	0.4 - 1	25 - 64	R/L	**JXTG12FR/L-60B-005**	●	●	1.9	0.99	0.05	2.5
12	1 - 1.5	16 - 25	R/L	**JXTG12FR/L-60N-010**	●	●	1.25	2.07	0.1	2.5

	Insert shape 60A	60B	60N
Right hand			
Left hand			

Reference pages: TetraMini-Cut : Toolholders → E042 - E043,
Standard cutting conditions → E050, L022 - L057
DuoJust-cut : Toolholders → E043 - E044,
Standard cutting conditions → E051, L022 - L057

● : Line up / 5 pieces per package

60° thread angle



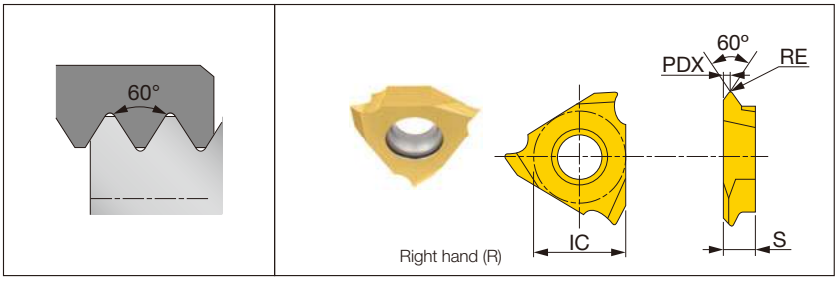
Applicable toolholder

External	Internal
FLASR/L-1616M3	A**M-FLER/L3
FLSR/L-**M3	HS**-FLER3W

Partial-profile insert for external and internal threads

TPI	Hand of cut	External Pitch	Internal Pitch	Designation	Grade Coated AH725	IC	PDX	BW	RE	S	M
6 - 20	R/L	1.27 - 4.23	2.11 - 5.08	**FLT-3R/L-HCB**	●	9.525	2.49	4.95	0.17	8.74	10.16
11 - 20	R/L	2.31 - 4.23	3.175 - 5.08	**FLT-3R/LC-HCB**	●	9.525	2.49	4.95	0.35	8.74	10.16
6 - 20	R/L	1.27 - 4.23	2.11 - 5.08	**FLT-3R/L-CB**	●	9.525	2.49	4.95	0.17	8.74	10.16

60° thread angle



Applicable toolholder

External
JSTTR/L**3
JS**-TTL3

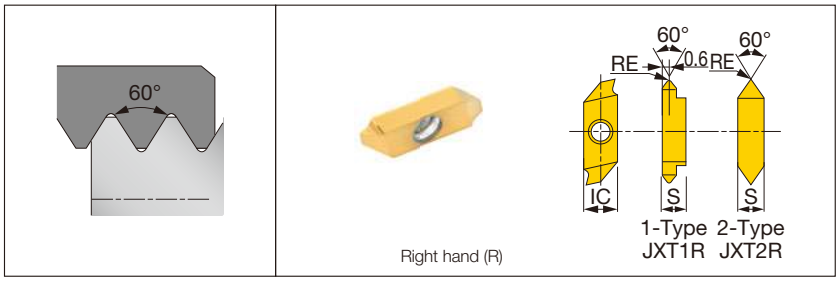
Partial-profile insert

Pitch	TPI	Hand of cut	Designation	External insert: Grade: Coated: SH725 R	SH725 L	J740 R	J740 L	Cermet: NS9530 R	NS9530 L	Uncoated: TH10 R	TH10 L	IC	PDX	S	RE
0.5 - 1	25 - 48	R/L	**JTTR/L3005F**	●	●	●		●		●		9.525	0.9	3.18	0.05
0.5 - 1	25 - 48	R/L	**JTTR/L3010F**	●	●	●		●		●		9.525	0.9	3.18	0.1

Reference pages: TungT-Clamp : Toolholders → E045 - E046,
Standard cutting conditions → E050, L022 - L057
J-Series : Toolholders → E046 - E047

● : Line up

60° thread angle



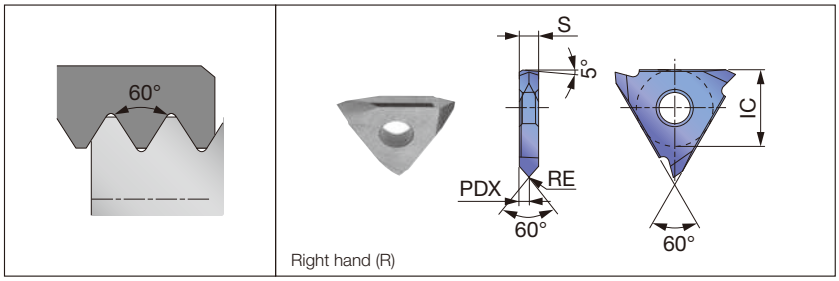
Applicable toolholder

External
JSXBR**K8
JSXBR**K8-C

Partial-profile insert

Pitch	TPI	Hand of cut	External insert: Designation	Grade: Coated J740	Grade: Uncoated TH10	IC	S	RE
0.5 - 1	25 - 48	R	**JXT1R6000F**	●	●	8	3.97	0.03
0.5 - 1	25 - 48	R	**JXT2R6000F**	●	●	8	3.97	0.03

TT type / 60° thread angle



Applicable toolholder

External	Internal
TT-****RE/LI	TT-2525RI

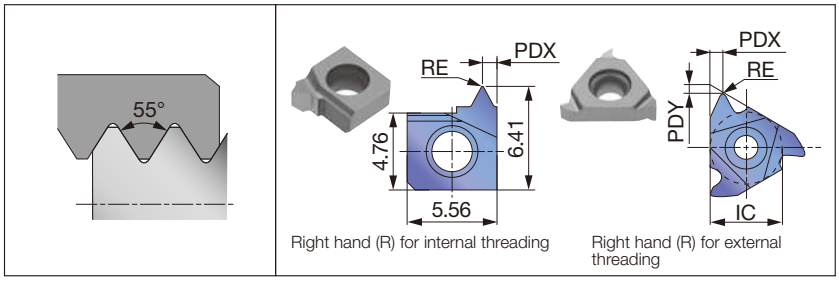
Partial-profile insert for external and internal threads

Pitch	TPI	Hand of cut	Designation	Grade: Cermet NS9530	Grade: Uncoated TH10	IC	PDX	S	RE
≤ 3	≥ 8	R	**TTR42M-005**	●	●	12.7	1.6	3.2	0.05
≤ 3	≥ 8	L	**TTL42M-005**	●	●	12.7	1.6	3.2	0.05

Reference pages: J-Series : Toolholders → E046 - E047,
Standard cutting conditions → E050, L022 - L057

● : Line up

55°thread angle (General purpose)



Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
11		SNR/L**11...
16	CER/L**16... JSER**16... JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

Partial-profile insert

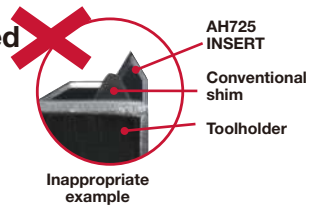
Insert size	Pitch	TPI	Hand of cut	External insert								Internal insert							
				Designation	Grade			IC	PDX	PDY	RE	Designation	Grade			IC	PDX	PDY	RE
					Coated		Uncoated						Coated		Uncoated				
					AH725	T313V	TH10						AH725	T313V	TH10				
6	0.5~1.5	48~16	R									6IRA55	●		●	-	0.9	-	0.07
11	0.5~1.5	48~16	R									11IRA55	●	●	●	6.35	0.9	0.7	0.07
16	0.5~1.5	48~16	R	16ERA55	●	●	●	9.525	0.9	0.7	0.07	16IRA55	●	●	●	9.525	0.9	0.7	0.07
16	0.5~3	48~8	R	16ERAG55	●			9.525	1.7	1.2	0.07	16IRAG55	●			9.525	1.7	1.2	0.07
16	1.75~3	14~8	R	16ERG55	●	●	●	9.525	1.6	1.2	0.25	16IRG55	●	●	●	9.525	1.7	1.2	0.25
22	3.5~5	7~5	R	22ERN55	●	●	●	12.7	2.5	1.7	0.5	22IRN55	●	●	●	12.7	2.5	1.7	0.5

Partial-profile insert with chipbreaker

Insert size	Pitch	TPI	Hand of cut	External insert							Internal insert						
				Designation	Grade	IC	PDX	PDY	RE	Designation	Grade	IC	PDX	PDY	RE	
					Coated						Coated						
					AH725						AH725						
16	0.5~3	48~16	R	16ERAG55-B	●*	9.525	1.7	1.2	0.07	16IRAG55-B	●*	9.525	1.7	1.2	0.05		
16	1.75~3	14~8	R	16ERG55-B	●*	9.525	1.7	1.2	0.23	16IRG55-B	●*	9.525	1.7	1.2	0.2		

Note: The adjustment of the cutting edge position will be needed as the dimensions of t and r3 are different from other inserts.
highlighted item requires changing shims.

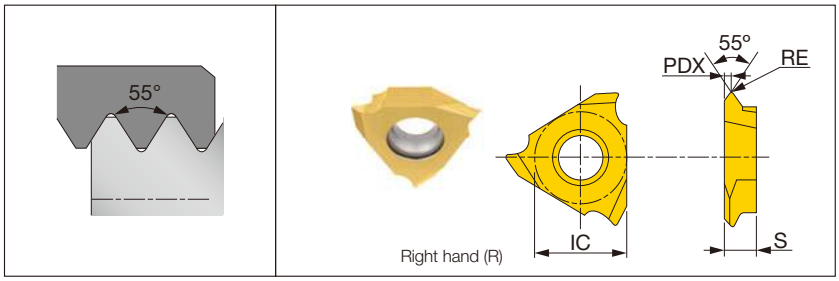
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page E052.



Reference pages: Toolholders → E032 - E037,
Standard cutting conditions → E050, L022 - L057

● : Line up / 5 pieces per package

55°thread angle (General purpose)



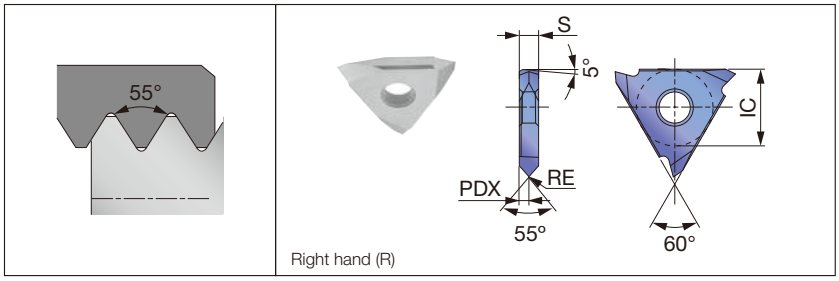
Applicable toolholder

External
JSTTR/L**3
JS**-TTL3

Partial-profile insert

Pitch	TPI	Hand of cut	Designation	External insert							
				Grade				IC	PDX	S	RE
				Coated							
				SH725		J740					
				R	L	R	L				
0.5 - 1	25 - 48	R/L	**JTTR/L3005F-55**	●		●		9.525	0.6	3.18	0.05

TT type / 55°thread angle (General purpose)



Applicable toolholder

External	Internal
TT-****RE/LI	TT-2525RI

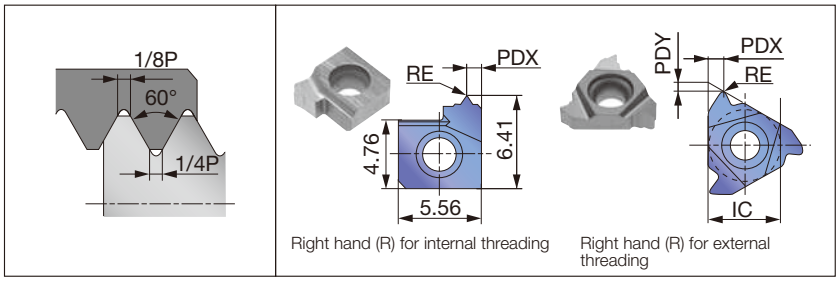
Partial-profile insert for external and internal threads

Pitch	TPI	Hand of cut	Designation	Grade		IC	PDX	S	RE
				Cermet	Uncoated				
				NS9530	TH10				
≤ 3	≥ 8	R	**TTR42W-005**	●	●	12.7	1.6	3.2	0.05
≤ 3	≥ 8	L	**TTL42W-005**	●	●	12.7	1.6	3.2	0.05

Reference pages: J-Series : Toolholders→ E046 - E047,
TungThread : Toolholders → E048

● : Line up / 5 pieces per package

ISO metric (General purpose)



Right hand (R) for internal threading

Right hand (R) for external threading

Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
11		SNR/L**11...
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...
27	CER/L**27...	CNR/L**27...

Full-profile insert

Insert size	Pitch	TPI	Hand of cut	External insert: Designation	Grade: Coated AH725	Coated AH8015	Coated T313V	Uncoated TH10	IC	PDX	PDY	RE	Internal insert: Designation	Grade: Coated AH725	Coated T313V	Uncoated TH10	IC	PDX	PDY	RE
6	0.75		R										6IR075ISO	●		●	-	0.5	-	0.05
6	1		R										6IR10ISO	●		●	-	0.9	-	0.07
6	1.25		R										6IR125ISO	●		●	-	0.9	-	0.09
6	1.5		R										6IR15ISO	●		●	-	0.9	-	0.11
6	1.75		R										6IR175ISO	●		●	-	0.9	-	0.12
6	2		R										6IR20ISO	●		●	-	0.9	-	0.14
11	0.5		R										11IR05ISO	●		●	6.35	0.5	1.2	0.04
11	0.75		R										11IR075ISO	●			6.35	0.5	1.2	0.05
11	1		R										11IR10ISO	●	●	●	6.35	0.9	0.7	0.07
11	1		L										11IL10ISO	●			6.35	0.9	0.7	0.07
11	1.25		R										11IR125ISO	●			6.35	0.9	0.7	0.09
11	1.25		L										11IL125ISO	●			6.35	0.9	0.7	0.09
11	1.5		R										11IR15ISO	●	●	●	6.35	0.9	0.7	0.11
11	1.5		L										11IL15ISO	●			6.35	0.9	0.7	0.11
11	1.75		R										11IR175ISO	●	●		6.35	0.9	0.7	0.12
11	1.75		L										11IL175ISO	●			6.35	0.9	0.7	0.12
11	2		R										11IR20ISO	●	●		6.35	0.9	0.7	0.14
11	2		L										11IL20ISO	●			6.35	0.9	0.7	0.14
16	0.5		R	16ER05ISO	●			●	9.525	0.5	1.2	0.06	16IR05ISO	●			9.525	0.5	1.2	0.04
16	0.75		R	16ER075ISO	●		●	●	9.525	0.5	1.2	0.09	16IR075ISO	●			9.525	0.5	1.2	0.05
16	1		R	16ER10ISO	●		●	●	9.525	0.9	0.7	0.13	16IR10ISO	●	●	●	9.525	0.9	0.7	0.07
16	1		L	16EL10ISO					9.525	0.9	0.7	0.13	16IL10ISO	●			9.525	0.9	0.7	0.07
16	1.25		R	16ER125ISO	●		●		9.525	0.9	0.7	0.16	16IR125ISO	●			9.525	0.9	0.7	0.09
16	1.25		L	16EL125ISO					9.525	0.9	0.7	0.16	16IL125ISO	●			9.525	0.9	0.7	0.09
16	1.5		R	16ER15ISO	●		●	●	9.525	0.9	0.7	0.19	16IR15ISO	●	●	●	9.525	0.9	0.7	0.11
16	1.5		L	16EL15ISO					9.525	0.9	0.7	0.19	16IL15ISO	●			9.525	0.9	0.7	0.11
16	1.75		R	16ER175ISO	●		●		9.525	1.6	1.2	0.22	16IR175ISO	●	●		9.525	1.6	1.2	0.12
16	2		R	16ER20ISO	●	●	●	●	9.525	1.6	1.2	0.25	16IR20ISO	●	●	●	9.525	1.6	1.2	0.14
16	2		L	16EL20ISO	●				9.525	1.6	1.2	0.25	16IL20ISO	●			9.525	1.6	1.2	0.14
16	2.5		R	16ER25ISO	●		●	●	9.525	1.6	1.2	0.31	16IR25ISO	●	●	●	9.525	1.6	1.2	0.18
16	3		R	16ER30ISO	●		●	●	9.525	1.6	1.2	0.38	16IR30ISO	●	●	●	9.525	1.6	1.2	0.21
16	3		L	16EL30ISO					9.525	1.6	1.2	0.38	16IL30ISO	●			9.525	1.6	1.2	0.21

Reference pages: Toolholders → E032 - E037,
Standard cutting conditions → E050, L022 - L057

● : Line up / 5 pieces per package

Insert size	Pitch	TPI	Hand of cut	External insert: Designation	Grade: Coated AH725	Grade: Coated T313V	Grade: Uncoated TH10	IC	PDX	PDY	RE	Internal insert: Designation	Grade: Coated AH725	Grade: Coated T313V	Grade: Uncoated TH10	IC	PDX	PDY	RE
22	3.5		R	22ER35ISO	●	●		12.7	2.5	1.7	0.44	22IR35ISO	●	●		12.7	2.5	1.7	0.25
22	4		R	22ER40ISO	●	●		12.7	2.5	1.7	0.5	22IR40ISO	●	●		12.7	2.5	1.7	0.28
22	4.5		R	22ER45ISO	●			12.7	2.5	1.7	0.56	22IR45ISO	●			12.7	2.5	1.7	0.32
22	5		R	22ER50ISO	●	●		12.7	2.5	1.7	0.63	22IR50ISO	●	●		12.7	2.5	1.7	0.35
27	6		R	27ER60ISO	●	●		15.875	3.2	2.2	0.75	27IR60ISO	●	●		15.875	3.2	2.2	0.42

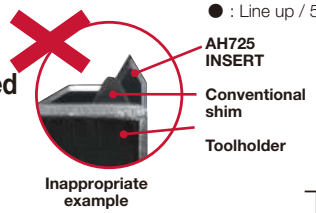
Full-profile insert with chipbreaker

Insert size	Pitch	TPI	Hand of cut	External insert: Designation	Grade: Coated AH725	Grade: Coated AH8015	Grade: Cermet NS9530	IC	PDX	PDY	RE	Internal insert: Designation	Grade: Coated AH725	Grade: Coated AH8015	Grade: Cermet NS9530	IC	PDX	PDY	RE
11	0.5		R									11IR05ISO-B	●			6.35	0.5	1.2	0.04
11	0.5		R									11IR05ISO-M			●	6.35	0.5	1.2	0.04
11	0.75		R									11IR075ISO-B	●			6.35	0.5	1.2	0.05
11	0.75		R									11IR075ISO-M			●	6.35	0.5	1.2	0.05
11	1		R									11IR10ISO-B	●			6.35	0.9	0.7	0.08
11	1		R									11IR10ISO-M			●	6.35	0.9	0.7	0.08
11	1.25		R									11IR125ISO-B	●			6.35	0.9	0.7	0.1
11	1.25		R									11IR125ISO-M			●	6.35	0.9	0.7	0.1
11	1.5		R									11IR15ISO-B	●			6.35	0.9	0.7	0.12
11	1.5		R									11IR15ISO-M			●	6.35	0.9	0.7	0.12
11	1.75		R									11IR175ISO-B	●			6.35	0.9	0.7	0.12
11	1.75		R									11IR175ISO-M			●	6.35	0.9	0.7	0.12
11	2		R									11IR20ISO-B	●			6.35	0.9	0.7	0.14
11	2		R									11IR20ISO-M			●	6.35	0.9	0.7	0.14
16	0.5		R	16ER05ISO-M			●	9.525	0.5	1.2	0.06								
16	0.75		R	16ER075ISO-B	●*			9.525	0.6	0.6	0.08								
16	0.75		R	16ER075ISO-M			●	9.525	0.5	1.2	0.09								
16	1		R	16ER10ISO-B	●*			9.525	0.7	0.7	0.11	16IR10ISO-B	●*			9.525	0.7	0.6	0.05
16	1		R	16ER10ISO-M	●		●	9.525	0.9	0.7	0.13	16IR10ISO-M		●	●	9.525	0.9	0.7	0.08
16	1.25		R	16ER125ISO-B	●*			9.525	0.9	0.8	0.14	16IR125ISO-B	●*			9.525	0.9	0.8	0.07
16	1.25		R	16ER125ISO-M		●	●	9.525	0.9	0.7	0.16	16IR125ISO-M			●	9.525	0.9	0.7	0.1
16	1.5		R	16ER15ISO-B	●*			9.525	1	0.8	0.19	16IR15ISO-B	●*			9.525	1	0.8	0.08
16	1.5		R	16ER15ISO-M	●	●	●	9.525	0.9	0.7	0.19	16IR15ISO-M	●	●	●	9.525	0.9	0.7	0.12
16	1.75		R	16ER175ISO-B	●*			9.525	1.2	0.9	0.2	16IR175ISO-B	●*			9.525	1.2	0.9	0.10
16	1.75		R	16ER175ISO-M			●	9.525	1.6	1.2	0.22	16IR175ISO-M			●	9.525	1.6	1.2	0.14
16	2		R	16ER20ISO-B	●*			9.525	1.3	1	0.24	16IR20ISO-B	●*			9.525	1.3	1	0.11
16	2		R	16ER20ISO-M	●		●	9.525	1.6	1.2	0.25	16IR20ISO-M			●	9.525	1.6	1.2	0.14
16	2.5		R	16ER25ISO-B	●*			9.525	1.5	1.1	0.3	16IR25ISO-B	●*			9.525	1.5	1.1	0.14
16	2.5		R	16ER25ISO-M			●	9.525	1.6	1.2	0.31	16IR25ISO-M			●	9.525	1.6	1.2	0.18
16	3		R	16ER30ISO-B	●*			9.525	1.6	1.2	0.38	16IR30ISO-B	●*			9.525	1.5	1.1	0.18
16	3		R	16ER30ISO-M			●	9.525	1.6	1.2	0.38	16IR30ISO-M			●	9.525	1.6	1.2	0.21
22	3.5		R	22ER35ISO-B	●			12.7	2.3	1.6	0.48								
22	4		R	22ER40ISO-B	●			12.7	2.3	1.6	0.52								

Note: The adjustment of the cutting edge position will be needed as the dimensions of t and r3 are different from other inserts.
highlighted item requires changing shims.

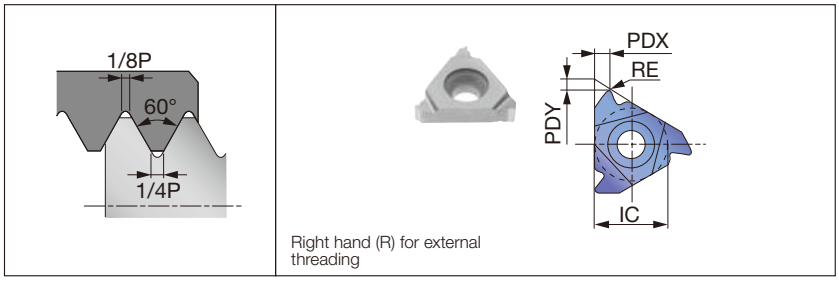
● : Line up / 5 pieces per package

When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page E052.



Reference pages: Toolholders → E032 - E037,
Standard cutting conditions → E050, L022 - L057

Unified (General purpose)



Right hand (R) for external threading

Applicable toolholder

Insert size	External	Internal
11		SNR/L**11...
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

Full-profile insert

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert: Designation	Grade: Coated AH725	Grade: Coated T313V	IC	PDX	PDY	RE	Internal insert: Designation	Grade: Coated AH725	Grade: Coated T313V	IC	PDX	PDY	RE
11	(0.794)	32	R								11IR32UN	●		6.35	0.5	1.2	0.06
11	(0.907)	28	R								11IR28UN	●		6.35	0.5	1.2	0.06
11	(1.058)	24	R								11IR24UN	●		6.35	0.9	0.7	0.07
11	(1.27)	20	R								11IR20UN	●		6.35	0.9	0.7	0.09
11	(1.411)	18	R								11IR18UN	●		6.35	0.9	0.7	0.1
11	(1.588)	16	R								11IR16UN	●		6.35	0.9	0.7	0.11
11	(1.814)	14	R								11IR14UN	●		6.35	0.9	0.7	0.13
16	(0.794)	32	R	16ER32UN	●		9.525	0.5	1.2	0.1	16IR32UN	●		9.525	0.5	1.2	0.06
16	(0.907)	28	R	16ER28UN	●		9.525	0.5	1.2	0.11	16IR28UN	●		9.525	0.5	1.2	0.06
16	(1.058)	24	R	16ER24UN	●		9.525	0.9	0.7	0.13	16IR24UN	●		9.525	0.9	0.7	0.07
16	(1.27)	20	R	16ER20UN	●		9.525	0.9	0.7	0.16	16IR20UN	●		9.525	0.9	0.7	0.09
16	(1.411)	18	R	16ER18UN	●		9.525	0.9	0.7	0.18	16IR18UN	●		9.525	0.9	0.7	0.1
16	(1.588)	16	R	16ER16UN	●	●	9.525	0.9	0.7	0.2	16IR16UN	●	●	9.525	0.9	0.7	0.11
16	(1.814)	14	R	16ER14UN	●	●	9.525	1.6	1.2	0.23	16IR14UN	●	●	9.525	1.6	1.2	0.13
16	(1.954)	13	R	16ER13UN	●		9.525	1.6	1.2	0.24	16IR13UN	●		9.525	1.6	1.2	0.14
16	(2.117)	12	R	16ER12UN	●	●	9.525	1.6	1.2	0.27	16IR12UN	●	●	9.525	1.6	1.2	0.15
16	(2.309)	11	R	16ER11UN	●		9.525	1.6	1.2	0.29	16IR11UN	●		9.525	1.6	1.2	0.16
16	(2.54)	10	R	16ER10UN	●		9.525	1.6	1.2	0.32	16IR10UN	●		9.525	1.6	1.2	0.18
16	(2.822)	9	R	16ER9UN	●		9.525	1.6	1.2	0.35	16IR9UN	●		9.525	1.6	1.2	0.2
16	(3.175)	8	R	16ER8UN	●	●	9.525	1.6	1.2	0.4	16IR8UN	●	●	9.525	1.6	1.2	0.22
22	(3.629)	7	R	22ER7UN	●		12.7	2.5	1.7	0.45	22IR7UN	●		12.7	2.5	1.7	0.25
22	(4.233)	6	R	22ER6UN	●		12.7	2.5	1.7	0.53	22IR6UN	●		12.7	2.5	1.7	0.3
22	(5.08)	5	R	22ER5UN	●		12.7	2.5	1.7	0.64	22IR5UN	●		12.7	2.5	1.7	0.36

Reference pages: Toolholders → E032 - E037,
Standard cutting conditions → E050, L022 - L057

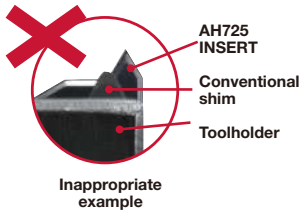
● : Line up / 5 pieces per package

Full-profile insert with chipbreaker

Insert size	Pitch	TPI	Hand of cut	External insert							Internal insert						
				Designation	Grade		IC	PDX	PDY	RE	Designation	Grade		IC	PDX	PDY	RE
					Coated AH725	Cermet NS9530						Coated AH725	Cermet NS9530				
16		24	R	**16ER24UN-B**	●*		9.525	0.8	0.7	0.11							
16		24	R	**16ER24UN-M**		●	9.525	0.9	0.7	0.13							
16		20	R	**16ER20UN-B**	●*		9.525	0.9	0.8	0.14	**16IR20UN-B**	●*		9.525	0.9	0.8	0.06
16		20	R	**16ER20UN-M**		●	9.525	0.9	0.7	0.16	**16IR20UN-M**		●	9.525	0.9	0.7	0.09
16		18	R	**16ER18UN-B**	●*		9.525	1	0.8	0.15	**16IR18UN-B**	●*		9.525	1	0.8	0.08
16		18	R	**16ER18UN-M**		●	9.525	0.9	0.7	0.18	**16IR18UN-M**		●	9.525	0.9	0.7	0.1
16		16	R	**16ER16UN-B**	●*		9.525	1.1	0.9	0.19	**16IR16UN-B**	●*		9.525	1.1	0.9	0.09
16		16	R	**16ER16UN-M**		●	9.525	0.9	0.7	0.2	**16IR16UN-M**		●	9.525	0.9	0.7	0.11
16		14	R	**16ER14UN-B**	●*		9.525	1.2	1	0.22	**16IR14UN-B**	●*		9.525	1.2	0.9	0.11
16		14	R	**16ER14UN-M**		●	9.525	1.6	1.2	0.23	**16IR14UN-M**		●	9.525	1.6	1.2	0.13
16		13	R	**16ER13UN-B**	●*		9.525	1.3	1	0.24							
16		12	R	**16ER12UN-B**	●*		9.525	1.4	1.1	0.25	**16IR12UN-B**	●*		9.525	1.4	1.1	0.12
16		12	R	**16ER12UN-M**		●	9.525	1.6	1.2	0.27	**16IR12UN-M**		●	9.525	1.6	1.2	0.15
16		8	R	**16ER8UN-B**	●*		9.525	1.6	1.2	0.41	**16IR8UN-B**	●*		9.525	1.5	1.1	0.19
16		8	R	**16ER8UN-M**		●	9.525	1.6	1.2	0.4	**16IR8UN-M**		●	9.525	1.6	1.2	0.22

Note: The adjustment of the cutting edge position will be needed as the dimensions of t and r3 are different from other inserts.
highlighted item requires changing shims.

When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page E052.

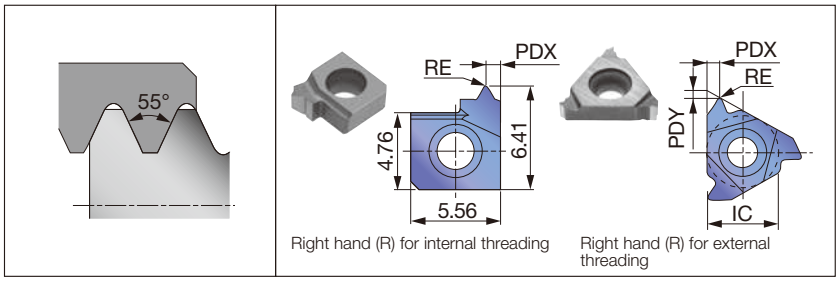


Inappropriate example

Reference pages: Toolholders → E032 - E037,
Standard cutting conditions → E050, L022 - L057

● : Line up / 5 pieces per package

Whitworth, Parallel pipe thread



Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
11		SNR/L**11...
16	CER/L**16... JSER**16 JSE**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

Thread form: 60° | 55° | M (Metric) | UN (Unified) | W (Whitworth) | BSPT (R, PT) | NPT | NPTF | TR (Metric, 30° Trapezoidal) | Round (DIN405) | UNJ | MJ | ACME (29° Trapezoidal) | STUB ACME (29° Trapezoidal) | API Round | API Buttress | API Rotary Shoulder Connection

Full-profile insert

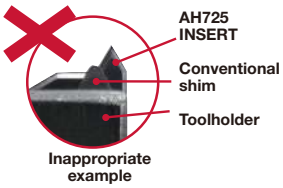
Insert size	Pitch (Reference)	TPI	Hand of cut	External insert: Designation	Grade: Coated AH725	Coated T313V	Uncoated TH10	IC	PDX	PDY	RE	Internal insert: Designation	Grade: Coated AH725	Coated T313V	Uncoated TH10	IC	PDX	PDY	RE
6	(1.337)	19	R									6IR19W	●		●	-	0.9	-	0.17
11	(1.337)	19	R									11IR19W	●	●	●	6.35	0.9	0.7	0.17
11	(1.814)	14	R									11IR14W	●	●	●	6.35	0.9	0.7	0.23
16	(0.907)	28	R	16ER28W	●	●		9.525	0.9	0.7	0.11	16IR28W	●			9.525	0.9	0.7	0.11
16	(0.97)	26	R	16ER26W	●			9.525	0.9	0.7	0.12	16IR26W	●			9.525	0.9	0.7	0.12
16	(1.27)	20	R	16ER20W	●			9.525	0.9	0.7	0.16	16IR20W	●			9.525	0.9	0.7	0.16
16	(1.337)	19	R	16ER19W	●	●		9.525	0.9	0.7	0.17	16IR19W	●			9.525	0.9	0.7	0.17
16	(1.411)	18	R	16ER18W	●			9.525	0.9	0.7	0.18	16IR18W	●			9.525	0.9	0.7	0.18
16	(1.588)	16	R	16ER16W	●	●		9.525	0.9	0.7	0.2	16IR16W	●	●		9.525	0.9	0.7	0.2
16	(1.814)	14	R	16ER14W	●	●	●	9.525	1.6	1.2	0.23	16IR14W	●	●	●	9.525	1.6	1.2	0.23
16	(1.814)	14	L	16EL14W	●			9.525	1.6	1.2	0.23								
16	(2.117)	12	R	16ER12W	●	●		9.525	1.6	1.2	0.27	16IR12W	●	●		9.525	1.6	1.2	0.27
16	(2.309)	11	R	16ER11W	●	●	●	9.525	1.6	1.2	0.29	16IR11W	●	●	●	9.525	1.6	1.2	0.29
16	(2.54)	10	R	16ER10W	●	●		9.525	1.6	1.2	0.32	16IR10W	●	●		9.525	1.6	1.2	0.32
16	(2.822)	9	R	16ER9W	●			9.525	1.6	1.2	0.35	16IR9W	●			9.525	1.6	1.2	0.35
16	(3.175)	8	R	16ER8W	●	●		9.525	1.6	1.2	0.4	16IR8W	●	●		9.525	1.6	1.2	0.4
22	(3.629)	7	R	22ER7W	●			12.7	2.5	1.7	0.45	22IR7W	●			12.7	2.5	1.7	0.45
22	(4.233)	6	R	22ER6W	●			12.7	2.5	1.7	0.53	22IR6W	●			12.7	2.5	1.7	0.53
22	(5.08)	5	R	22ER5W	●			12.7	2.5	1.7	0.64	22IR5W	●			12.7	2.5	1.7	0.64

Full-profile insert with chipbreaker

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert: Designation	Grade: Coated AH725	Cermet NS9530	IC	PDX	PDY	RE	Internal insert: Designation	Grade: Coated AH725	Coated AH8015	Cermet NS9530	IC	PDX	PDY	RE
16	(1.337)	19	R	16ER19W-B	●*		9.525	1	0.8	0.16								
16	(1.337)	19	R	16ER19W-M		●	9.525	0.9	0.7	0.17	16IR19W-M			●	9.525	0.9	0.7	0.17
16	(1.588)	16	R	16ER16W-B	●*		9.525	1.1	0.9	0.2	16IR16W-B	●*			9.525	1.1	0.9	0.18
16	(1.814)	14	R	16ER14W-B	●*		9.525	1.2	1	0.24	16IR14W-B	●*			9.525	1.2	1	0.21
16	(1.814)	14	R	16ER14W-M		●	9.525	1.6	1.2	0.23	16IR14W-M		●	●	9.525	1.6	1.2	0.23
16	(2.309)	11	R	16ER11W-B	●*		9.525	1.5	1.1	0.27	16IR11W-B	●*			9.525	1.5	1.1	0.27
16	(2.309)	11	R	16ER11W-M		●	9.525	1.6	1.2	0.29	16IR11W-M			●	9.525	1.6	1.2	0.29

Note: The adjustment of the cutting edge position will be needed as the dimensions of t and r3 are different from other inserts.
highlighted item requires changing shims.

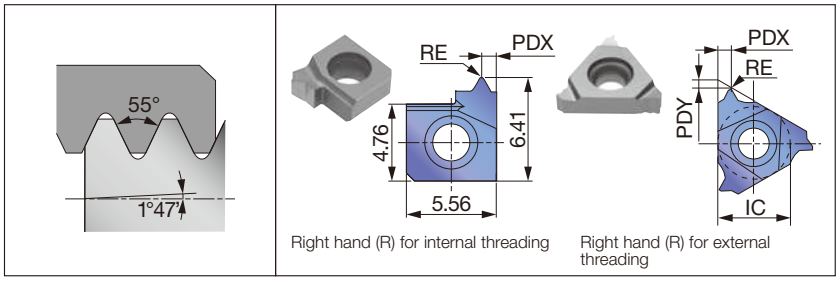
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page E052.



● : Line up / 5 pieces per package

Reference pages: Toolholders → E032 - E037,
Standard cutting conditions → E050, L022 - L057

BSPT (for Pipe)



Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
11		SNR/L**11...
16	CER/L**16... JSER**16 JSE**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...

Full-profile insert

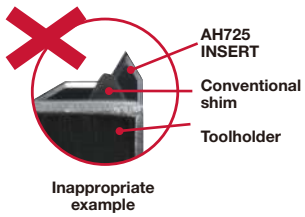
Insert size	Pitch (Reference)	TPI	Hand of cut	External insert: Designation	Grade: Coated AH725	Grade: Coated T313V	Grade: Uncoated TH10	IC	PDX	PDY	RE	Internal insert: Designation	Grade: Coated AH725	Grade: Coated T313V	Grade: Uncoated TH10	IC	PDX	PDY	RE
6	(1.337)	19	R									6IR19PT	●		●	-	0.9	-	0.14
11	(1.337)	19	R									11IR19PT	●	●	●	6.35	0.9	0.7	0.14
11	(1.814)	14	R									11IR14PT	●	●	●	6.35	0.9	0.7	0.16
16	(0.907)	28	R	16ER28PT	●	●		9.525	0.9	0.7	0.09								
16	(1.337)	19	R	16ER19PT	●	●		9.525	0.9	0.7	0.14	16IR19PT	●			9.525	0.9	0.7	0.14
16	(1.814)	14	R	16ER14PT	●	●		9.525	1.6	1.2	0.16	16IR14PT	●	●	●	9.525	1.6	1.2	0.16
16	(2.309)	11	R	16ER11PT	●	●		9.525	1.6	1.2	0.26	16IR11PT	●	●	●	9.525	1.6	1.2	0.26

Full-profile insert with chipbreaker

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert: Designation	Grade: Coated AH725	Grade: Cermet NS9530	IC	PDX	PDY	RE	Internal insert: Designation	Grade: Coated AH725	Grade: Cermet NS9530	IC	PDX	PDY	RE
16	(1.337)	19	R	16ER19PT-M		●	9.525	0.9	0.7	0.18	16IR19PT-M		●	9.525	0.9	0.7	0.18
16	(1.814)	14	R	16ER14PT-B	●*		9.525	1.2	1	0.21	16IR14PT-B	●*		9.525	1	1.2	0.21
16	(1.814)	14	R	16ER14PT-M		●	9.525	1.6	1.2	0.25	16IR14PT-M		●	9.525	1.6	1.2	0.25
16	(2.309)	11	R	16ER11PT-B	●*		9.525	1.5	1.1	0.28	16IR11PT-B	●*		9.525	1.5	1.1	0.28
16	(2.309)	11	R	16ER11PT-M		●	9.525	1.6	1.2	0.32	16IR11PT-M		●	9.525	1.6	1.2	0.32

Note: The adjustment of the cutting edge position will be needed as the dimensions of t and r3 are different from other inserts.
highlighted item requires changing shims.

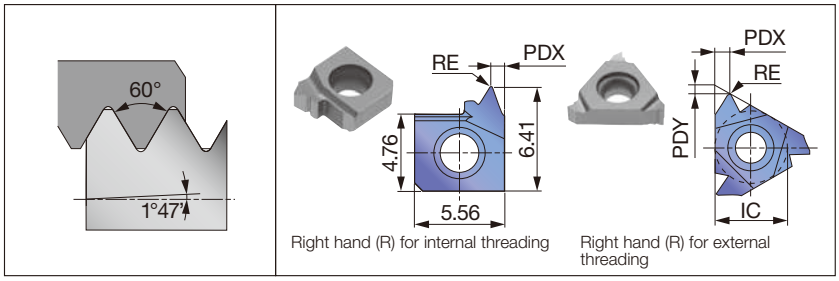
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page E052.



Reference pages: Toolholders → E032 - E037,
Standard cutting conditions → E050, L022 - L057

● : Line up / 5 pieces per package

NPT (for Pipe)



Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...

Full-profile insert

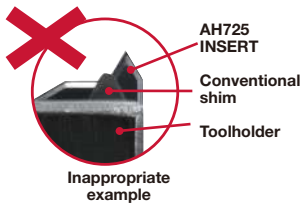
Insert size	Pitch (Reference)	TPI	Hand of cut	External insert: Designation	Grade: Coated AH725	Grade: Coated T313V	Grade: Uncoated TH10	IC	PDX	PDY	RE	Internal insert: Designation	Grade: Coated AH725	Grade: Coated T313V	Grade: Uncoated TH10	IC	PDX	PDY	RE
6	(1.411)	18	R									6IR18NPT	●		●	-	0.9	-	0.03
16	(0.941)	27	R	16ER27NPT	●			9.525	0.5	1.2	0.02	16IR27NPT	●			9.525	0.5	1.2	0.02
16	(1.411)	18	R	16ER18NPT	●	●		9.525	0.9	0.7	0.03	16IR18NPT	●			9.525	0.9	0.7	0.03
16	(1.814)	14	R	16ER14NPT	●			9.525	1.6	1.2	0.04	16IR14NPT	●		●	9.525	1.6	1.2	0.04
16	(2.209)	11.5	R	16ER115NPT	●			9.525	1.6	1.2	0.05	16IR115NPT	●		●	9.525	1.6	1.2	0.05
16	(3.175)	8	R	16ER8NPT	●			9.525	1.6	1.2	0.07	16IR8NPT	●		●	9.525	1.6	1.2	0.07

Full-profile insert with chipbreaker

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert: Designation	Grade: Coated AH725	Grade: Cermet NS9530	IC	PDX	PDY	RE	Internal insert: Designation	Grade: Coated AH725	Grade: Cermet NS9530	IC	PDX	PDY	RE
16	(1.411)	18	R	16ER18NPT-B	●*		9.525	1	0.8	0.05							
16	(1.411)	18	R	16ER18NPT-M		●	9.525	0.9	0.7	0.07	16IR18NPT-M		●	9.525	0.9	0.7	0.07
16	(1.814)	14	R	16ER14NPT-B	●*		9.525	1.2	0.9	0.05	16IR14NPT-B	●*		9.525	1.2	0.9	0.05
16	(1.814)	14	R	16ER14NPT-M		●	9.525	1.6	1.2	0.08	16IR14NPT-M		●	9.525	1.6	1.2	0.08
16	(2.209)	11.5	R	16ER115NPT-B	●*		9.525	1.5	1.1	0.09	16IR115NPT-B	●*		9.525	1.5	1.1	0.09
16	(2.209)	11.5	R	16ER115NPT-M		●	9.525	1.6	1.2	0.09	16IR115NPT-M		●	9.525	1.6	1.2	0.09
16	(3.175)	8	R	16ER8NPT-B	●*		9.525	1.8	1.3	0.12	16IR8NPT-B	●*		9.525	1.8	1.3	0.12

Note: The adjustment of the cutting edge position will be needed as the dimensions of t and r3 are different from other inserts.
highlighted item requires changing shims.

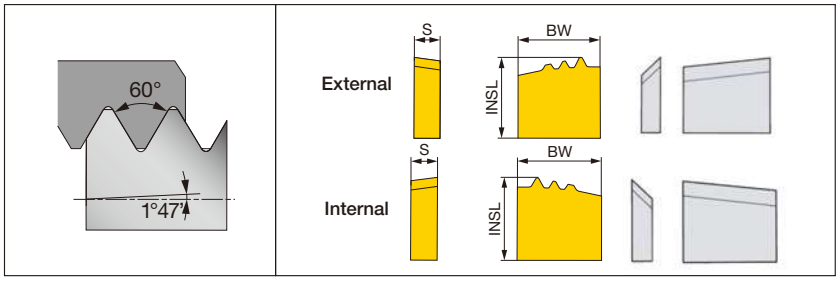
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page E052.



Reference pages: Toolholders → E032 - E037,
Standard cutting conditions → E050, L022 - L057

● : Line up / 5 pieces per package

NPT (for Pipe)



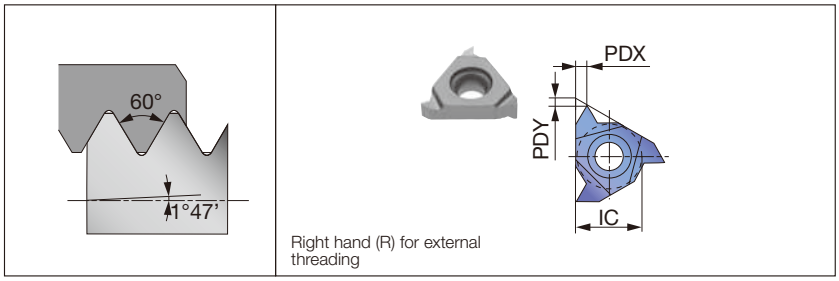
Applicable toolholder

External	Internal
CLVOR-**M...	SI-CLHOR...

Full-profile insert (chaser)

Pitch (Reference)	TPI	Taper		External insert						Internal insert					
		mm/mm	TPF	Designation	Grade Coated AH725	BW	INSL	S	Breakerpiece	Designation	Grade Coated AH725	BW	INSL	S	Breakerpiece
(2.209)	11.5	1/16	0.75	**CR-11.5NPT-4E**	●	16	15.7	5.2	CR-8R / 10R-3E / 4E-CB	**CR-11.5NPT-4I**	●	16	15.7	5.2	CR-8R / 10R-3I / 4I-CB
(3.175)	8	1/16	0.75	**CR-8NPT-4E**	●	16	15.7	5.2	CR-8R / 10R-3E / 4E-CB	**CR-8NPT-4I**	●	16	15.7	5.2	CR-8R / 10R-3I / 4I-CB

NPTF (for Pipe)



Applicable toolholder

Insert size	External	Internal
16	CER/L**16... JSER**16 JSE**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...

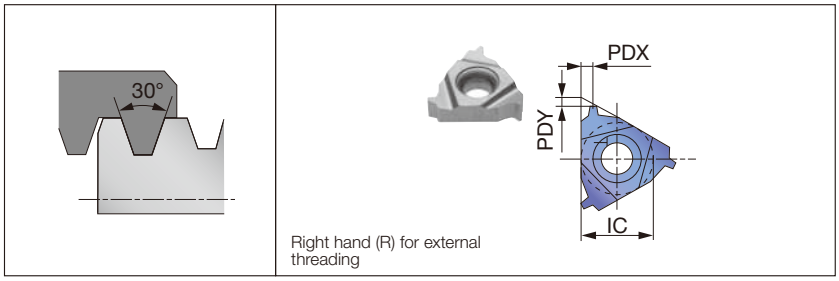
Full-profile insert

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert						Internal insert					
				Designation	Grade Coated AH725	IC	PDX	PDY	RE	Designation	Grade Coated AH725	IC	PDX	PDY	RE
16	(0.941)	27	R	**16ER27NPTF**	●	9.525	0.5	1.2	-						
16	(1.411)	18	R	**16ER18NPTF**	●	9.525	0.9	0.7	-						
16	(1.814)	14	R	**16ER14NPTF**	●	9.525	1.6	1.2	-	**16IR14NPTF**	●	9.525	1.6	1.2	-
16	(2.209)	11.5	R	**16ER115NPTF**	●	9.525	1.6	1.2	-	**16IR115NPTF**	●	9.525	1.6	1.2	-
16	(3.175)	8	R	**16ER8NPTF**	●	9.525	1.6	1.2	-	**16IR8NPTF**	●	9.525	1.6	1.2	-

Reference pages: Toolholders → E032 - E041,
Standard cutting conditions → E050, L022 - L057

● : Line up / 5 pieces per package

30°Trapezoidal / DIN103 (for Machine parts)



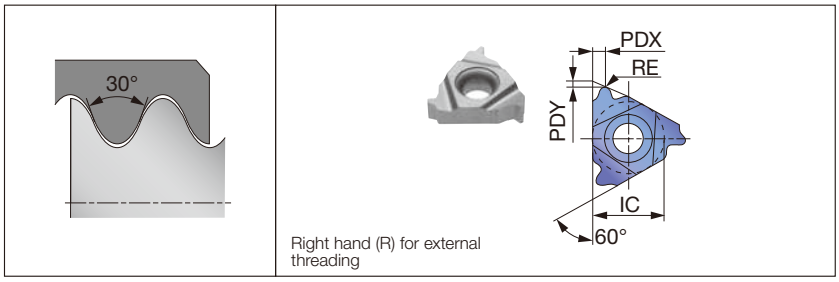
Applicable toolholder

Insert size	External	Internal
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...
27	CER/L**27...	CNR/L**27...

With the special full-profile insert (Please see the page L042)

Insert size	Pitch	TPI	Hand of cut	External insert: Designation	Grade: Coated: AH725	Grade: Coated: T313V	IC	PDX	PDY	Internal insert: Designation	Grade: Coated: AH725	Grade: Coated: T313V	IC	PDX	PDY
16	1.5		R	**16ER15TR**	●		9.525	0.9	0.7	**16IR15TR**	●		9.525	0.9	0.7
16	2		R	**16ER20TR**	●	●	9.525	1.6	1.3	**16IR20TR**	●	●	9.525	1.6	1.3
16	3		R	**16ER30TR**	●	●	9.525	1.6	1.3	**16IR30TR**	●	●	9.525	1.6	1.3
22	4		R	**22ER40TR**	●	●	12.7	2.5	2	**22IR40TR**	●	●	12.7	2.5	2
22	5		R	**22ER50TR**	●	●	12.7	2.5	2	**22IR50TR**	●	●	12.7	2.5	2
27	6		R	**27ER60TR**	●	●	15.875	3.2	2.5						

Round / DIN405 (for Machine parts)



Applicable toolholder

Insert size	External	Internal
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...

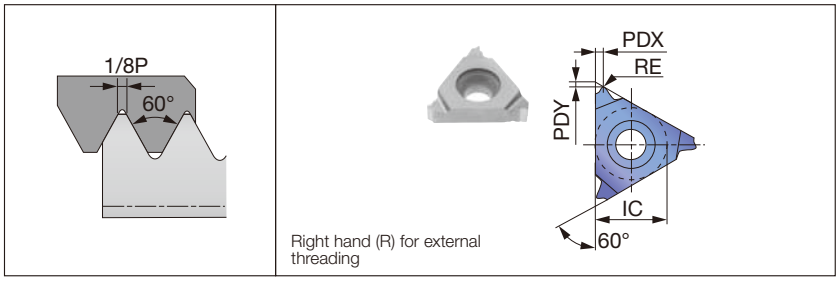
Full-profile insert

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert: Designation	Grade: Coated: AH725	IC	PDX	PDY	RE	Internal insert: Designation	Grade: Coated: AH725	IC	PDX	PDY	RE
16		8	R	**16ER8RD-B**	●	9.525	1.3	1.4	-						
16		6	R	**16ER6RD-B**	●	9.525	1.7	1.5	-	**16IR6RD-B**	●	9.525	1.5	1.4	-

Reference pages: Toolholders → E032 - E041,
Standard cutting conditions → E050, L022 - L057

● : Line up / 5 pieces per package

UNJ (for Aerospace industry)



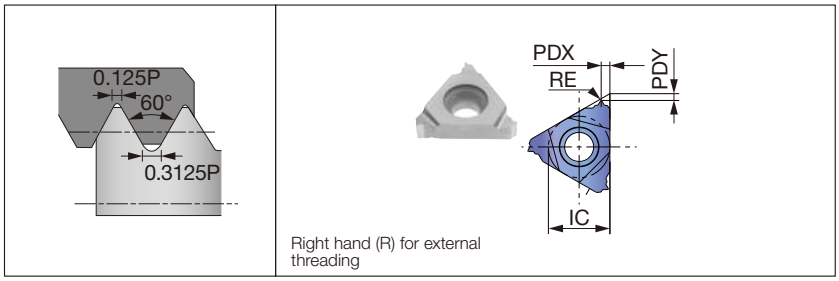
Applicable toolholder

Insert size	External
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16

Full-profile insert

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert					
				Designation	Grade / Coated / AH725	IC	PDX	PDY	RE
16	32		R	**16ER32UNJ**	●	9.525	0.5	1.2	0.13
16	28		R	**16ER28UNJ**	●	9.525	0.5	1.2	0.15
16	24		R	**16ER24UNJ**	●	9.525	0.9	0.7	0.18
16	20		R	**16ER20UNJ**	●	9.525	0.9	0.7	0.21
16	18		R	**16ER18UNJ**	●	9.525	0.9	0.7	0.24
16	16		R	**16ER16UNJ**	●	9.525	0.9	0.7	0.26
16	14		R	**16ER14UNJ**	●	9.525	1.6	1.2	0.3
16	12		R	**16ER12UNJ**	●	9.525	1.6	1.2	0.35
16	10		R	**16ER10UNJ**	●	9.525	1.6	1.2	0.42
16	8		R	**16ER8UNJ**	●	9.525	1.6	1.2	0.53

MJ (for Aerospace industry)



Applicable toolholder

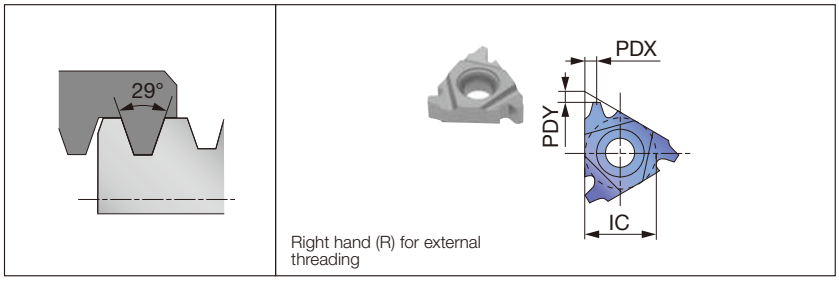
Insert size	External	Internal
11		SNR**11...

Insert size	Pitch	TPI	Hand of cut	Internal insert					
				Designation	Grade / Coated / AH8015	IC	PDX	PDY	RE
11	1		R	**11IR10MJ**	●	6.35	0.9	0.7	0.05

Reference pages: Toolholders → E032 - E041,
Standard cutting conditions → E050, L022 - L057

● : Line up / 5 pieces per package

29°Trapezoidal / ACME (for Machine parts, Pipe)



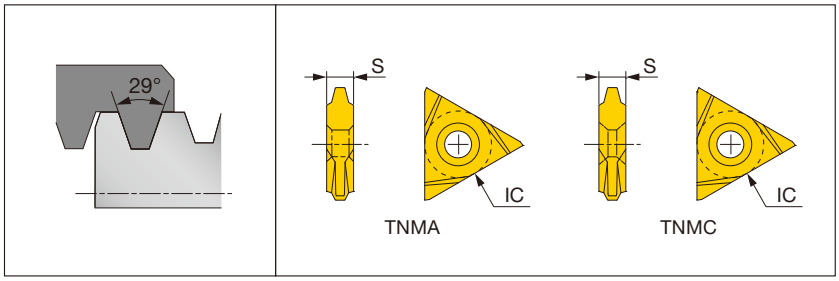
Applicable toolholder

Insert size	External	Internal
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

With the special full-profile insert (Please see the page L042)

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert						Internal insert					
				Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY	Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY
16	(2.117)	12	R	**16ER12ACME**	●		9.525	1.6	1.3	**16IR12ACME**	●		9.525	1.6	1.3
16	(2.540)	10	R	**16ER10ACME**	●		9.525	1.6	1.3	**16IR10ACME**	●		9.525	1.6	1.3
16	(3.175)	8	R	**16ER8ACME**	●	●	9.525	1.6	1.3	**16IR8ACME**	●	●	9.525	1.6	1.3
22	(4.233)	6	R	**22ER6ACME**	●	●	12.7	2.5	2	**22IR6ACME**	●	●	12.7	2.5	2
22	(5.080)	5	R	**22ER5ACME**	●	●	12.7	2.5	2	**22IR5ACME**	●	●	12.7	2.5	2

29°Trapezoidal / ACME (for Machine parts, Pipe)



Applicable toolholder

External
MTVOR-**M..
STVOR-**M...

On edge

Pitch	TPI	Taper mm/mm	Taper TPF	External insert Designation	Grade Coated AH725	IC	S
	16	-	-	**TNMA43NT16PEXT-PT**	●	12.7	4.8
	14	-	-	**TNMA43NT14PEXT-PT**	●	12.7	4.8
	12	-	-	**TNMA43NT12PEXT-PT**	●	12.7	4.8
	10	-	-	**TNMA43NT10PEXT-PT**	●	12.7	4.8
	8	-	-	**TNMA43NT8PEXT-PT**	●	12.7	4.8
	6	-	-	**TNMA43NT6PEXT-PT**	●	12.7	4.8
	5	-	-	**TNMA54NT5PEXT-PT**	●	15.875	6.4
	4	-	-	**TNMA54NT4PEXT-PT**	●	15.875	6.4
	3	-	-	**TNMA54NT3PEXT-PT**	●	15.875	6.4
	16	-	-	**TNMC43NT16PEXT-PT**	●	12.7	4.8
	14	-	-	**TNMC43NT14PEXT-PT**	●	12.7	4.8
	12	-	-	**TNMC43NT12PEXT-PT**	●	12.7	4.8
	10	-	-	**TNMC43NT10PEXT-PT**	●	12.7	4.8
	8	-	-	**TNMC43NT8PEXT-PT**	●	12.7	4.8
	6	-	-	**TNMC43NT6PEXT-PT**	●	12.7	4.8
	5	-	-	**TNMC54NT5PEXT-PT**	●	15.875	6.4
	4	-	-	**TNMC54NT4PEXT-PT**	●	15.875	6.4
	3	-	-	**TNMC54NT3PEXT-PT**	●	15.875	6.4

Reference pages: Toolholders → E032 - E041,
Standard cutting conditions → E050, L022 - L057

● : Line up / 5 pieces per package

29°Trapezoidal/ STUB ACME (for Machine parts, Pipe)

On edge

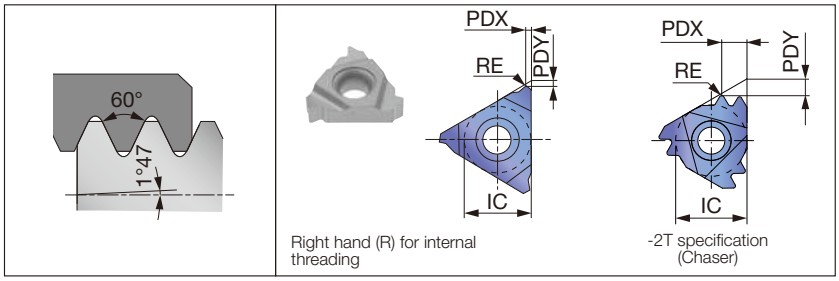
Pitch	TPI	Taper		External insert			
		mm/mm	TPF	Designation	Grade Coated AH725	IC	S
	16	-	-	**TNMA43NT16PSTUBE-PT**	●	12.7	4.8
	14	-	-	**TNMA43NT14PSTUBE-PT**	●	12.7	4.8
	12	-	-	**TNMA43NT12PSTUBE-PT**	●	12.7	4.8
	10	-	-	**TNMA43NT10PSTUBE-PT**	●	12.7	4.8
	8	-	-	**TNMA43NT8PSTUBE-PT**	●	12.7	4.8
	6	-	-	**TNMA43NT6PSTUBE-PT**	●	12.7	4.8
	5	-	-	**TNMA54NT5PSTUBE-PT**	●	15.875	6.4
	4	-	-	**TNMA54NT4PSTUBE-PT**	●	15.875	6.4
	3	-	-	**TNMA54NT3PSTUBE-PT**	●	15.875	6.4
	16	-	-	**TNMC43NT16PSTUBE-PT**	●	12.7	4.8
	14	-	-	**TNMC43NT14PSTUBE-PT**	●	12.7	4.8
	12	-	-	**TNMC43NT12PSTUBE-PT**	●	12.7	4.8
	10	-	-	**TNMC43NT10PSTUBE-PT**	●	12.7	4.8
	8	-	-	**TNMC43NT8PSTUBE-PT**	●	12.7	4.8
	6	-	-	**TNMC43NT6PSTUBE-PT**	●	12.7	4.8
	5	-	-	**TNMC54NT5PSTUBE-PT**	●	15.875	6.4
	4	-	-	**TNMC54NT4PSTUBE-PT**	●	15.875	6.4
	3	-	-	**TNMC54NT3PSTUBE-PT**	●	15.875	6.4

ACME and STUB ACME can cut crest radius. Crest flat of ACME and STUB ACME need to be cut by another tool.

Applicable toolholder

External
MTVOR-**M..
STVOR-**M...

API Round (for Energy)



Applicable toolholder

Insert size	External	Internal
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
		TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

Full-profile insert

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert							Internal insert						
				Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY	RE	Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY	RE
16	(2.54)	10	R	**16ER10RAPI**	●		9.525	1.6	1.2	0.36	**16IR10RAPI**	●	●	9.525	1.6	1.2	0.36
16	(3.175)	8	R	**16ER8RAPI**	●		9.525	1.6	1.2	0.43	**16IR8RAPI**	●	●	9.525	1.6	1.2	0.43
22	(3.175)	8	R								**22IR8RAPI-2T**	●		12.7	4.5	3	0.43

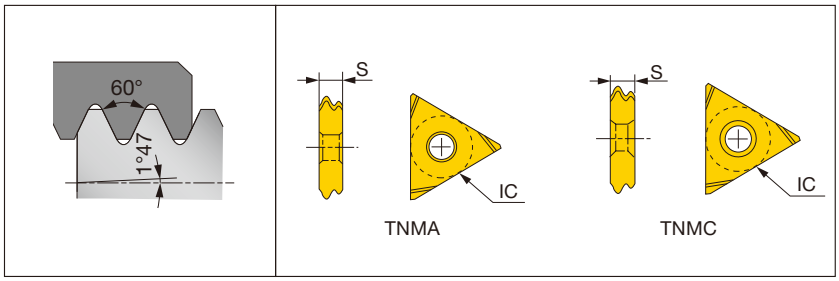
Full-profile insert with chipbreaker

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert							Internal insert						
				Designation	Grade Coated AH725	IC	PDX	PDY	RE		Designation	Grade Coated AH725	IC	PDX	PDY	RE	
16	(2.54)	10	R	**16ER10RD-CB**	●	9.525	1.2	1.5	0.36		**16IR10RD-CB**	●	9.525	1.2	1.5	0.36	
16	(3.175)	8	R	**16ER8RD-CB**	●	9.525	1.3	1.5	0.43		**16IR8RD-CB**	●	9.525	1.3	1.5	0.43	

Reference pages: Toolholders → E032 - E041,
Standard cutting conditions → E050, L022 - L057

● : Line up / 5 pieces per package

API Round (for Energy)

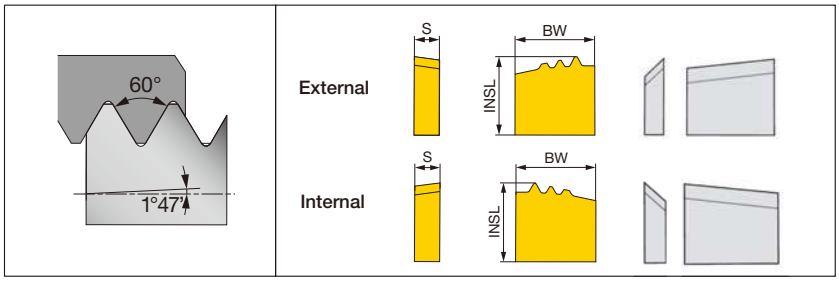


Applicable toolholder

External	External
MTVOR-**M.. STVOR-**M...	HS**-MTHOR...

On edge

Pitch (Reference)	TPI	Taper		External insert				Internal insert			
		mm/mm	TPF	Designation	Grade Coated AH725	IC	S	Designation	Grade Coated AH725	IC	S
(2.54)	10	1/16	0.75	**TNMA4310RDEXT**	●	12.7	4.8	**TNMA4310RDINT**	●	12.7	4.8
(3.175)	8	1/16	0.75	**TNMA438RDEXT**	●	12.7	4.8	**TNMA438RDINT**	●	12.7	4.8
(2.54)	10	1/16	0.75	**TNMC4310RDEXT**	●	12.7	4.8	**TNMC4310RDINT**	●	12.7	4.8
(3.175)	8	1/16	0.75	**TNMC438RDEXT**	●	12.7	4.8	**TNMC438RDINT**	●	12.7	4.8

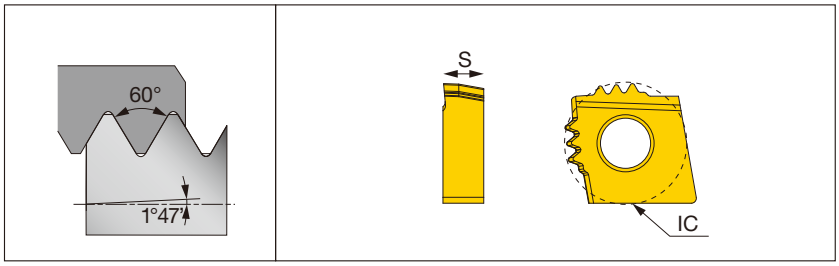


Applicable toolholder

External	Internal
CLVOR-**M...	SI-CLHOR...

Full-profile insert (chaser)

Pitch (Reference)	TPI	Taper		External insert						Internal insert					
		mm/mm	TPF	Designation	Grade Coated AH725	BW	INSL	S	Breakerpiece	Designation	Grade Coated AH725	BW	INSL	S	Breakerpiece
(3.175)	8	1/16	0.75	**CR-8R-3E**	●	16	15	5.2	CR-8R / 10R-3E / 4E-CB	**CR-8R-3I**	●	16	15	5.2	CR-8R / 10R-3I / 4I-CB
(2.54)	10	1/16	0.75	**CR-10R-3E**	●	16	15.9	5.2	CR-8R / 10R-3E / 4E-CB	**CR-10R-3I**	●	16	15.9	5.2	CR-8R / 10R-3I / 4I-CB



Full-profile insert (chaser)

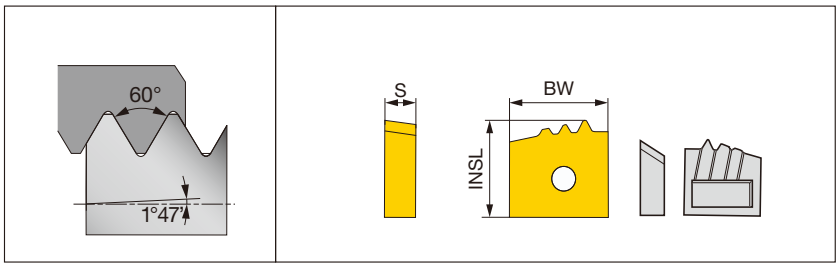
Pitch (Reference)	TPI	Taper		External insert			
		mm/mm	TPF	Designation	Grade Coated AH725	IC	S
(2.54)	10	1/16	0.75	**CNGA-10R-3E**	●	19.05	6.4
(3.175)	8	1/16	0.75	**CNGA-8R-3E**	●	19.05	6.4

Note: Toolholders need to be customized for these types of inserts.

Reference pages: Toolholders → E032 - E041,
Standard cutting conditions → E050

● : Line up / 5 pieces per package

API Round (for Energy)
For tool-rotating machines

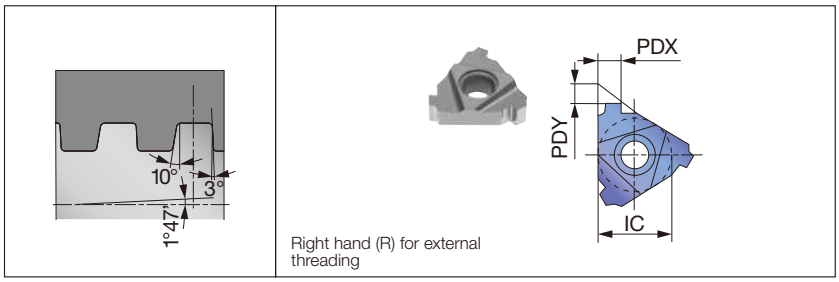


Full-profile insert (chaser)

Pitch (Reference)	TPI	Taper		External insert					
		mm/mm	TPF	Designation	Grade Coated AH725	BW	INSL	S	Breakerpiece
(3.175)	8	1/16	0.75	**CR-8R-3E #1**	●	16	14.7	5.2	TD39318R-1-CBW/CAVITY
(3.175)	8	1/16	0.75	**CR-8R-3E #2**	●	16	14.9	5.2	TD39328R-2-CBW/CAVITY
(3.175)	8	1/16	0.75	**CR-8R-3E #3**	●	16	15	5.2	TD39338R-3-CBW/CAVITY

Note: Toolholders need to be customized for these types of inserts.

API Buttress (for Energy industry)

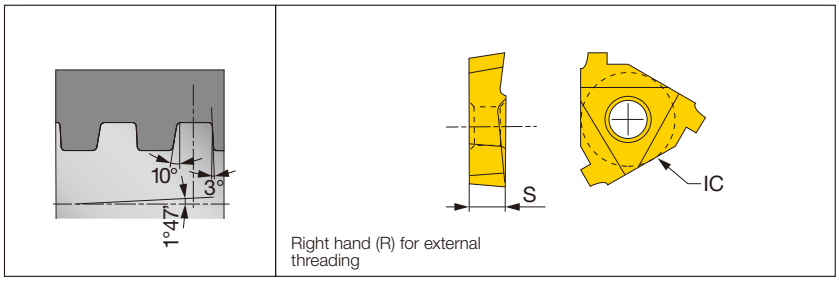


Applicable toolholder

Insert size	External	Internal
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

Full-profile insert

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert					Internal insert				
				Designation	Grade Coated AH725	IC	PDX	PDY	Designation	Grade Coated AH725	IC	PDX	PDY
22	(5.08)	5	R	**22ER5BAPI**	●	12.7	3.72	2.2	**22IR5BAPI**	●	12.7	3.45	2.2



Applicable toolholder

External	Internal
MTVNR**M5	HS**-LNFR...

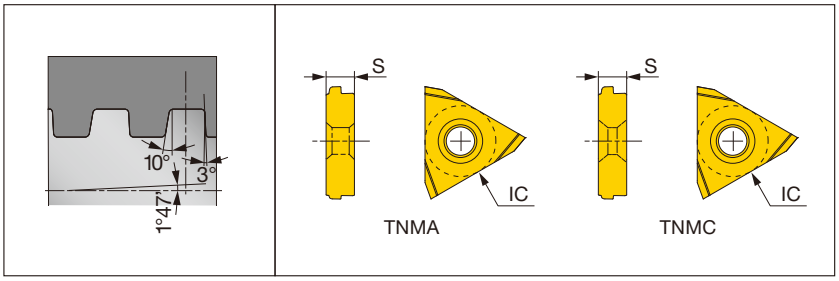
Full-profile insert (single side)

Pitch (Reference)	TPI	Taper		External insert				Internal insert			
		mm/mm	TPF	Designation	Grade Coated AH725	IC	S	Designation	Grade Coated AH725	IC	S
(5.08)	5	1/16	0.75	**L535B75EXT-FC**	●	15.875	4.8	**L535B75INT-FC**	●	15.875	4.8
(5.08)	5	1/12	1	**L535B1EXT-FC**	●	15.875	4.8	**L535B1INT-FC**	●	15.875	4.8

Reference pages: Toolholders → E032 - E041,
Standard cutting conditions → E050

● : Line up / 5 pieces per package

API Buttress (for Energy industry)

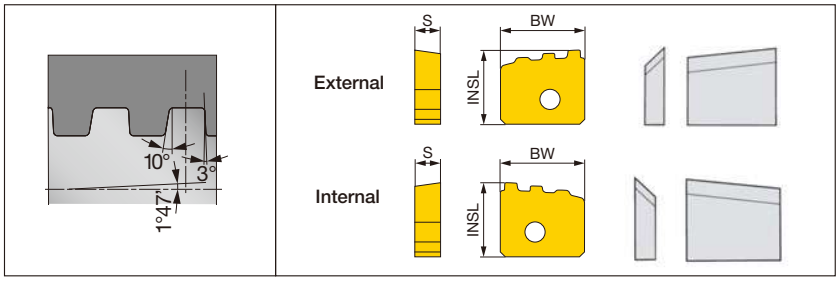


Applicable toolholder

External	External
MTVOR-**M.. STVOR-**M...	HS**-MTHOR...

On edge

Pitch (Reference)	TPI	Taper		External insert				Internal insert			
		mm/mm	TPF	Designation	Grade Coated AH725	IC	S	Designation	Grade Coated AH725	IC	S
(5.08)	5	1/12	1	**TNMA545B1EXT-FC**	●	15.875	6.4	**TNMA545B1INT-FC**	●	15.875	6.4
(5.08)	5	1/16	0.75	**TNMA545B75EXT-FC**	●	15.875	6.4	**TNMA545B75INT-FC**	●	15.875	6.4
(5.08)	5	1/12	1	**TNMC545B1EXT-FC**	●	15.875	6.4	**TNMC545B1INT-FC**	●	15.875	6.4
(5.08)	5	1/16	0.75	**TNMC545B75EXT-FC**	●	15.875	6.4	**TNMC545B75INT-FC**	●	15.875	6.4

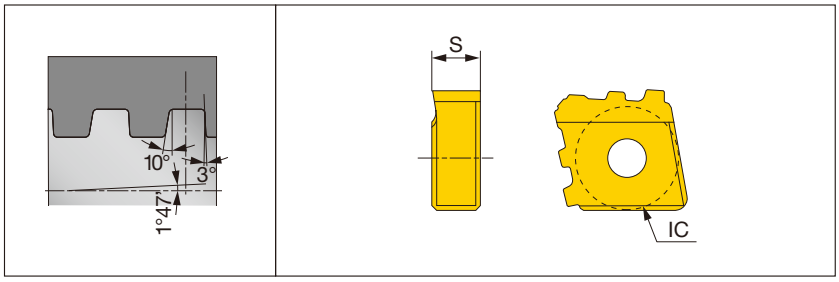


Applicable toolholder

External	Internal
CLVOR-**M...	SI-CLHOR...

Full-profile insert (chaser)

Pitch (Reference)	TPI	Taper		External insert							Internal insert					
		mm/mm	TPF	Designation	Grade Coated AH725	BW	INSL	S	Breakerpiece		Designation	Grade Coated AH725	BW	INSL	S	Breakerpiece
(5.08)	5	1/16	0.75	**CR-5B75-4E**	●	20.4	15.9	5.1	CR-5B75 / 5B1-4E-CB		**CR-5B75-3I**	●	16	15.8	5.2	CR-8R / 10R-3I / 4I-CB



Full-profile insert (chaser)

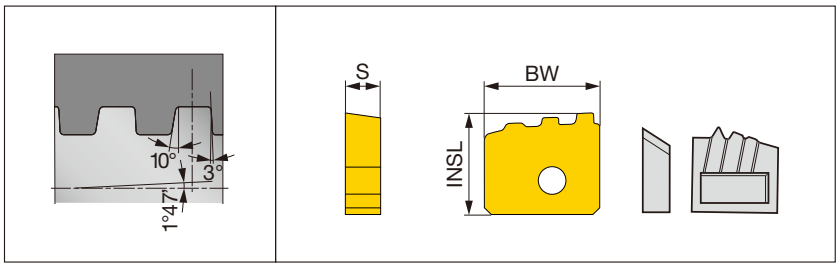
Pitch (Reference)	TPI	Taper		External insert			
		mm/mm	TPF	Designation	Grade Coated AH725	IC	S
(5.08)	5	1/16	0.75	**CNGA-5B75-3E**	●	19.05	6.4

Note: Toolholders need to be customized for these types of inserts.

Reference pages: Toolholders → E032 - E041,
Standard cutting conditions → E050

● : Line up / 5 pieces per package

API Buttress (for Energy industry)
For tool-rotating machines

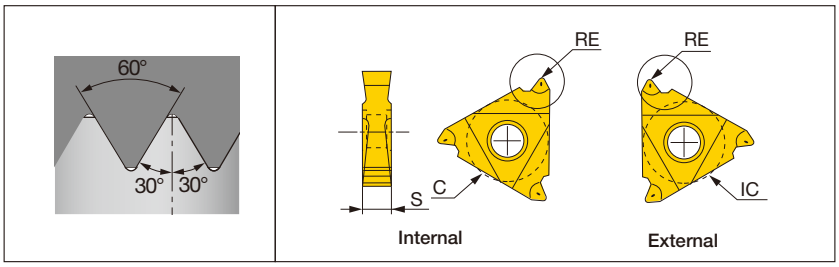


Full-profile insert (chaser)

Pitch (Reference)	TPI	Taper		External insert						
				Designation	Grade	BW	INSL	S	RE	Breakerpiece
		mm/mm	TPF		Coated AH725					
(5.08)	5	1/16	0.75	**CR-5B75-3E #1**	●	17	14.6	5.2		TD46015B75-1-CBW/CAVITY
(5.08)	5	1/16	0.75	**CR-5B75-3E #2**	●	17	14.8	5.2		TD46025B75-2-CBW/CAVITY
(5.08)	5	1/16	0.75	**CR-5B75-3E #3**	●	17	15	5.2		TD46035B75-3-CBW/CAVITY

Note: Toolholders need to be customized for these types of inserts.

API Rotary shoulder connection (for Energy industry)



Applicable toolholder

External	Internal
MTVNR-3232M54	HS**-LNFR-54API

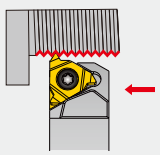
Full-profile insert (Double side)

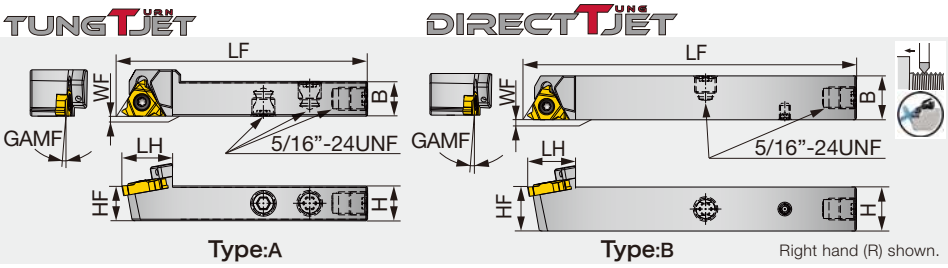
Pitch (Reference)	TPI	Connection	Taper		Designation	Grade	IC	S	RE
			mm/mm	TPF		Coated AH725			
(6.35)	4	V-0.038R	1/6	2	**LDS54428FT-CB #1**	●	15.875	6.4	0.97
(6.35)	4	V-0.038R	1/4	3	**LDS54438FT-CB #2**	●	15.875	6.4	0.97
(6.35)	4	V-0.050	1/6	2	**LDS54425FT-CB #3**	●	15.875	6.4	0.64
(6.35)	4	V-0.050	1/4	3	**LDS54435FT-CB #4**	●	15.875	6.4	0.64
(5.08)	5	V-0.040	1/4	3	**LDS54530FT-CB #5**	●	15.875	6.4	0.51

● : Line up / 5 pieces per package

JSE2R16-CHP

External threading toolholder with DirectTungJet connection, with high pressure coolant capability





Designation	H	B	LF	LH	HF	WF	GAMF	Type	INSERT
JSE2R1212F16-CHP ※	12	12	85	19	12	0	1°	A	16ER...
JSE2R1212X16-CHP	12	12	120	19	12	0	1°	B	16ER...
JSE2R1616X16-CHP	16	16	120	19	16	0	1°	B	16ER...

*connection with external coolant tube

SPARE PARTS

Designation	Clamping screw	Wrench
JSE2R**16-CHP	CSTB-3.5	T-15F

DIRECTTJET system

DirectTungJet system

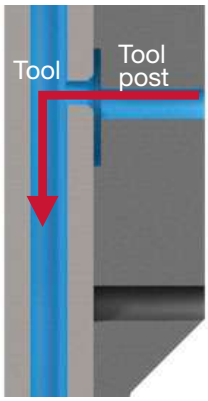
No need for coolant tube setup.
Eliminates chip entanglement on tubes and streamlines tool replacement.

Coolant is supplied from the tool post directly to the tools

Internal thread
Optional connection with external coolant tube

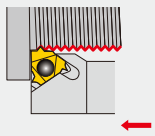


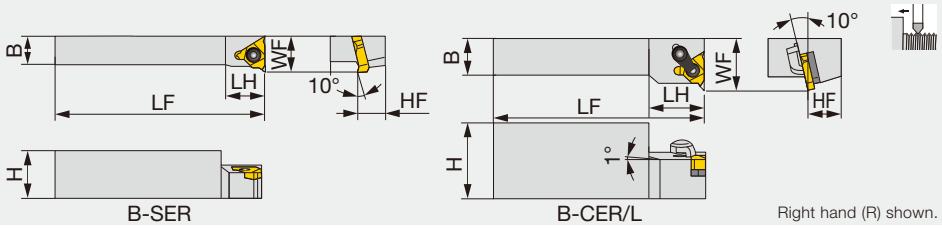
Detailed view of the coolant flow after connection



Reference pages: Inserts → E010, E014, E016 - E027, Standard cutting conditions → E050

TUNGTHREAD
B-S/CER/L
External threading toolholder for Swiss lathes





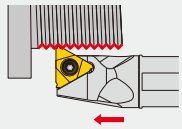
Right hand (R) shown.

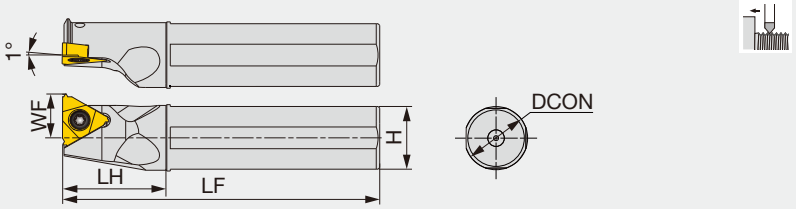
Designation	H	B	LF	LH	HF	WF	Insert
B-SER10H16	20	10	100	15	10	16	16ER...
B-SER12K16	24	12	125	18	12	18	16ER...
B-CER/L16M16	32	16	150	24	16	22	16ER/L...

SPARE PARTS

Designation	Clamp set	Shim set	Clamping screw	Wrench
B-SER**16	-	-	CSTB-3.5	T-15F
B-CER/L16M16	CSP16	A16-1	-	T-15F

TUNGTHREAD
JS-SEL16
External threading toolholder for Swiss lathes





Right hand (R) shown.

Designation	DCON	H	LF	LH	WF	Insert
JS16F-SEL16	16	15	85	25	11	16ER...
JS19G-SEL16	19.05	18	90	30	12.5	16ER...
JS19X-SEL16	19.05	18	120	30	12.5	16ER...
JS20G-SEL16	20	19	90	30	13	16ER...
JS20X-SEL16	20	19	120	30	13	16ER...
JS25HSEL16	25	24	100	30	15.5	16ER...
JS254X-SEL16	25.4	24	120	30	15.7	16ER...

Note: Use left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

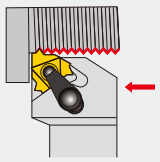
Designation	Clamping screw	Wrench
JS***-SEL16	CSTB-3.5	T-15F

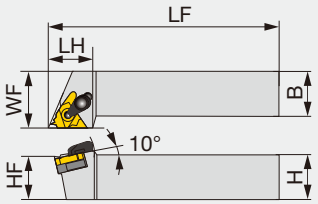
Reference pages: Inserts → E010, E014, E016 - E027, Standard cutting conditions → E050

TUNGTHREAD

CER/L

Clamp-on external threading toolholder (alternative clamping of screw-on or clamp-on only for DT type)





Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	INSERT
CER/L1212H16DT	12	12	100	24	12	16	16ER/L...
CER/L1616H16DT	16	16	100	24	16	20	16ER/L...
CER/L2020K16DT	20	20	125	24	20	25	16ER/L...
CER/L2525M16DT	25	25	150	28	25	32	16ER/L...
CER/L2525M22DT	25	25	150	31.3	25	32	22ER/L...
CER3232P16T	32	32	170	32	32	40	16ER...
CER3232P22T	32	32	170	32	32	40	22ER...
CER2525M27T	25	25	150	34	25	32	27ER...
CER3232P27T	32	32	170	34	32	40	27ER...

Note: A clamp set consists of a clamp and a clamping screw. A shim set consists of a shim and a shim screw to secure the shim to the shank.
Standard shims can be used on both right- and left-hand toolholders. Please use either of the sides depending on the tool hand.

When using DT type, please remove either the clamp set or the insert clamping screw.

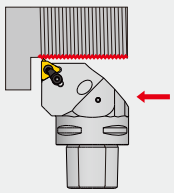
SPARE PARTS

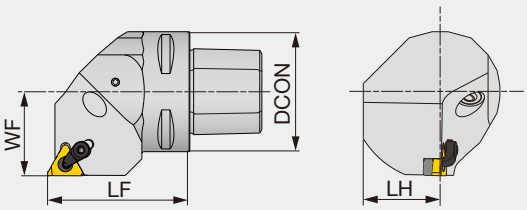
Designation	Clamp set	Clamping screw	Shim screw	Shim	Shim set	Wrench 1	Wrench 2	Wrench 3
CER/L**16DT	CSP16	CSTB-3.5ST	DTS5-3.5	A16-1DT	-	P-3.5	T-15F	-
CER/L2525M22DT	CSP22	CSTB-4ST	DTS6-4	GX22-1DT	-	P-4	T-15F	T-20F
CER3232P16T	CSP16	-	-	-	A16-1	-	T-15F	-
CER3232P22T	CSP22	-	-	-	NXE22-1	-	T-20F	-
CER**27T	CSP27	-	-	-	NXE27-1	P-4	-	-

TUNGCAP

C-CER/L

Clamp-on external threading toolholder





Right hand (R) shown.

Designation	DCON	LF	LH	WF	RE	INSERT
C4CER/L27050-16ERN(2)	40	50	25	27	0.8	16ER/L...
C5CER/L35060-16ER(1)	50	60	32	35	0.8	16ER/L...
C5CER/L35060-16ERN(2)	50	60	32	35	0.8	16ER/L...
C6CER/L45065-16ER(1)	63	65	41	45	0.8	16ER/L...
C6CER/L45065-16ERN(2)	63	65	41	45	0.8	16ER/L...

(1) Applicable for 3 MPa coolant (2) Applicable for 7 MPa coolant

SPARE PARTS

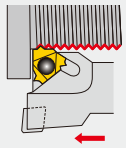
Designation	Clamp set	Clamping screw	Coolant parts	Shim screw	Shim	Wrench 1	Wrench 2
C5CE*35060-16ER	CSP16	CSTB-3.5ST	EZ104	DTS5-3.5	A16-1DT	P-3.5	T-15F
C5CE*35060-16ERN	CSP16	CSTB-3.5ST	SATZ-M10X1-M5	DTS5-3.5	A16-1DT	P-3.5	T-15F
C6CE*45065-16ER	CSP16	CSTB-3.5ST	EZ104	DTS5-3.5	A16-1DT	P-3.5	T-15F
C6CE*45065-16ERN	CSP16	CSTB-3.5ST	SATZ-M10X1-M5	DTS5-3.5	A16-1DT	P-3.5	T-15F

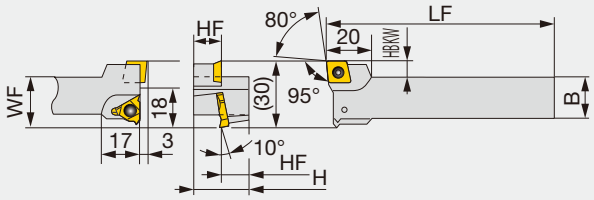
Reference pages: Inserts → E010, E014, E016 - E027, Standard cutting conditions → E050

TUNGTHREAD

BC-SER/L

External threading toolholder for multi-functional Swiss lathes





Right hand (R) shown.

Designation	H	B	LF	HF	WF	HBKW	INSERT
BC-SER12K16	24	16	125	12	23	7	16ER..., CC*T09T3...

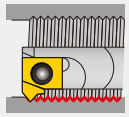
SPARE PARTS

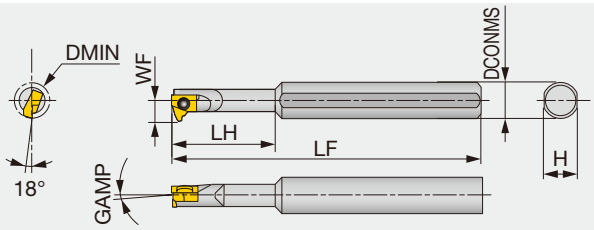
Designation	Clamping screw	Wrench
BC-SER12K16	CSTB-3.5	T-15F

TUNGTHREAD

SNR/L-2/3

Screw-on internal threading toolholder





Right hand (R)
Carbide shank

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	INSERT
SNR0006H06-2	Steel	8	8	4.7	100	18	7	2°	6IR...
SNR0006H06-3	Steel	8	8	4.7	100	18	7	3°	6IR...
SNR0008H06-2	Steel	10	8	5.7	100	18	7	2°	6IR...
SNR0008H06-3	Steel	10	8	5.7	100	18	7	3°	6IR...
SNR0006K06SC-2	Uncoated	8	8	4.7	125	30	7	2°	6IR...
SNR0006K06SC-3	Uncoated	8	8	4.7	125	30	7	3°	6IR...
SNR0008K06SC-2	Uncoated	10	8	5.7	125	18	7	2°	6IR...
SNR0008K06SC-3	Uncoated	10	8	5.7	125	18	7	3°	6IR...

Note: Use right-hand toolholders (R) with right-hand inserts (R).

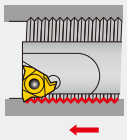
SPARE PARTS

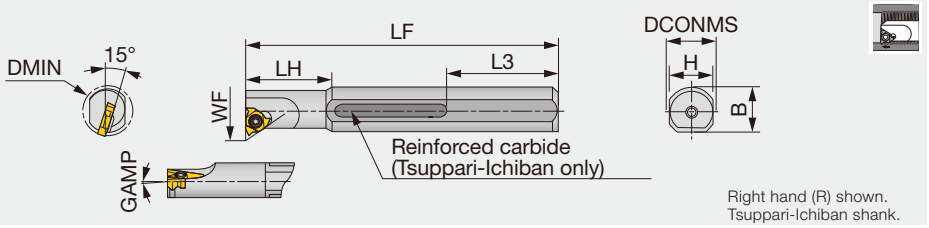
Designation	Clamping screw	Wrench
SNR0006H06...	CSTB-2L040	T-6F
SNR0008H06...	CSTB-2L	T-6F
SNR0006K06SC...	CSTB-2L040	T-6F
SNR0008K06SC...	CSTB-2L	T-6F

Reference pages: BC-SER/L: Inserts → B109 - (CC*T09T3...), E010, E014, E016 - E027 (16ER...),
Standard cutting conditions → E050
SNR/L-2/3: Inserts → E016, E020 - E022, Standard cutting conditions → E050

SNR/L

Screw-on internal threading toolholder





Right hand (R) shown.
Tsuppari-Ichiban shank.

Designation	Material	DMIN	DCONMS	WF	LF	LH	L3	H	B	GAMP	Insert
TSNR0016Q16	Reinforced	19	16	10.6	180	40	59	15	-	1°	16IR...
TSNR0020R22	Reinforced	24	20	13.9	200	50	49	18	-	1°	22IR...
SNR/L0010K11	Steel	12	16	6.6	125	25	-	15	15.5	1°	11IR/L...
SNR0010K11-2	Steel	12	16	6.6	125	25	-	15	15.5	2°	11IR...
SNR0010K11-3	Steel	12	16	6.6	125	25	-	15	15.5	3°	11IR...
SNR/L0013L11	Steel	15	16	8.2	140	32.5	-	15	15.5	1°	11IR/L...
SNR0013L11-2	Steel	15	16	8.2	140	32.5	-	15	15.5	2°	11IR...
SNR0013L11-3	Steel	15	16	8.2	140	32.5	-	15	15.5	3°	11IR...
SNR/L0016M16	Steel	19	16	10.6	150	40	-	15	15.5	1°	16IR/L...
SNR0016M16-2	Steel	19	16	10.6	150	40	-	15	15.5	2°	16IR...
SNR0016M16-3	Steel	19	16	10.6	150	40	-	15	15.5	3°	16IR...
SNR/L0020Q22	Steel	24	20	13.9	180	50	-	18	19	1°	22IR/L...
SNR0020Q22-2	Steel	24	20	13.9	180	50	-	18	19	2°	22IR...
SNR0020Q22-3	Steel	24	20	13.9	180	50	-	18	19	3°	22IR...
SNR0010M11SC	Uncoated	13	10	7.4	150	24	-	9	-	1°	11IR...
SNR0010M11SC-2	Uncoated	13	10	7.4	150	24	-	9	-	2°	11IR...
SNR0010M11SC-3	Uncoated	13	10	7.4	150	24	-	9	-	3°	11IR...
SNR0012P11SC	Uncoated	15	12	8.5	170	28	-	11	-	1°	11IR...
SNR0012P11SC-2	Uncoated	15	12	8.5	170	28	-	11	-	2°	11IR...
SNR0012P11SC-3	Uncoated	15	12	8.5	170	28	-	11	-	3°	11IR...
SNR/L0016R16SC	Uncoated	20	16	11.9	200	35	-	15	-	1°	16IR/L...
SNR0016R16SC-2	Uncoated	20	16	11.9	200	35	-	15	-	2°	16IR...

Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).

SPARE PARTS





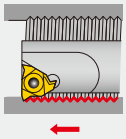
Designation	Clamping screw	Wrench
TSNR0016Q16	CSTB-3.5	T-15F
TSNR0020R22	CSTB-4	T-15F
SNR/L00**11...	CSTB-2.5	T-8F
SNR/L0016M16...	CSTB-3.5	T-15F
SNR/L0020Q22...	CSTB-4	T-15F
SNR00**11SC...	CSTB-2.5	T-8F
SNR/L0016R16SC...	CSTB-3.5	T-15F

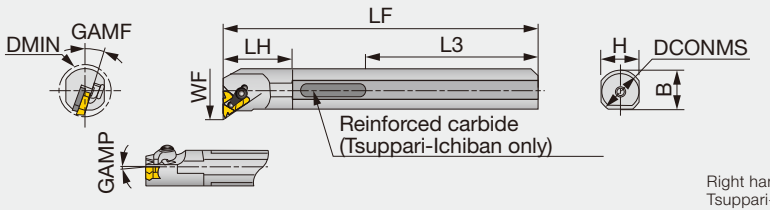
Reference pages: Inserts → E010, E014, E016 - E027, Standard cutting conditions → E050

TUNGTHREAD

CNR/L

Clamp-on internal threading toolholder (alternative clamping of screw-on or clamp-on only for DT type)





Right hand (R) shown.
Tsuppari-Ichiban shank.

Designation	Material	DMIN	DCONMS	WF	LF	LH	L3	H	B	GAMF	GAMP	Insert
TCNR0020R16DT	Reinforced	24	20	14	200	30	49	18	-	15°	1°	16IR...
TCNR0025S16DT	Reinforced	29	25	16.5	250	38	64	23	-	15°	1°	16IR...
TCNR0025S22DT	Reinforced	30	25	18.2	250	38	64	23	-	15°	1°	22IR...
CNR/L0020P16	Steel	24	20	14	170	30	-	18	19	15°	1°	16IR/L...
CNR/L0025R16	Steel	29	25	16.5	200	38	-	23	24	15°	1°	16IR/L...
CNR/L0032S16	Steel	37	32	20.1	250	48	-	30	31	15°	1°	16IR/L...
CNR/L0025R22	Steel	30	25	18.2	200	38	-	23	24	15°	1°	22IR/L...
CNR/L0032S22	Steel	38	32	21.9	250	48	-	30	31	15°	1°	22IR/L...
CNR0040T27	Steel	46	40	26.9	300	60	-	37	38.5	10°	1°	27IR ...

Note: A clamp set consists of a clamp and a clamping screw.
A shim set consists of a shim and a shim screw to secure the shim to the shank.
Standard shims can be used on both right- and left-hand toolholders. Please use either of the sides depending on the tool hand.
When using DT type, please remove either the clamp set or the insert clamping screw.

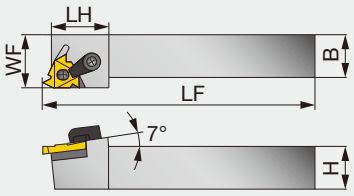
SPARE PARTS

Designation	Clamp set	Clamping screw	Shim screw	Shim	Shim set R	Shim set L	Wrench 1	Wrench 2	Wrench 3
TCNR002**16DT	CSP16	CSTB-3.5ST	DTS5-3.5	A16-1DT	-	-	P-3.5	T-15F	-
TCNR0025S22DT	CSP22	CSTB-4ST	DTS6-4	GX22-1DT	-	-	P-4	T-15F	T-20F
CNR/L**16	CSP16	-	-	-	A16-1	A16-1	-	T-15F	-
CNR/L**22	CSP22	-	-	-	NXN22-1	NXE22-1	-	T-20F	-
CNR0040T27	CSP27	-	-	-	NXN27-1	NXE27-1	P-4	-	-

TUNGTHREAD

MTVNR/L-5

External threading toolholder, for single-sided lay down inserts



Right hand (R) shown.

Designation	B	H	LF	LH	WF	Insert
MTVNR-2525M5	25	25	152	39	31.8	L535B**EXT-FC
MTVNR-3232M5	32	32	178	39	38.1	L535B**EXT-FC

SPARE PARTS

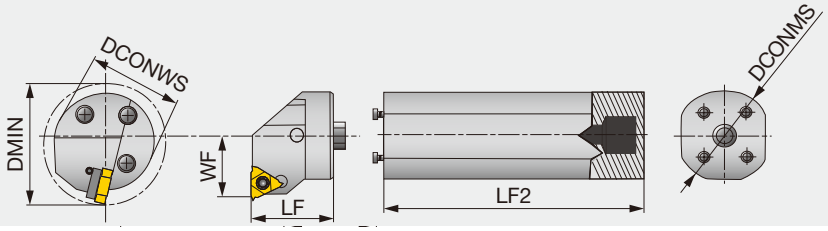
Designation	Shim	Lock pin	Clamp	Clamping screw	Wrench
MTVNR...	LS53NOFORMEXT	NL-58	TC-250	STC-11	1/8HEX

Reference pages: CNR/L: Inserts → E010, E014, E016 - E027, Standard cutting conditions → E050

TUNGTHREAD

HS-LNFR/L-53

Head exchangeable internal threading, for single-sided lay down inserts



Right hand (R) shown.

Designation	DMIN	DCONWS	WF	LF	Insert
HS40-LNFR-53	50	40	28.7	41.3	L535B**INT-FC
HS50-LNFR-53	63	50	32.7	41.3	L535B**INT-FC

SPARE PARTS

Designation	Lock pin	Clamp	Clamping screw	Wrench
HS**-LNFR-53	NL-56	TC-250	STC-11	1/8HEX

Shank

Designation	DCONMS	LF2
S-570-40M-40	40	273
S-570-50M-50	50	366

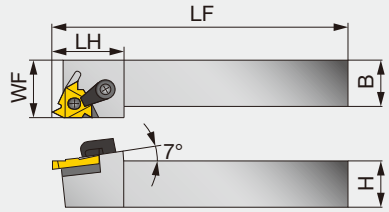
SPARE PARTS

Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

TUNGTHREAD

MTVNR/L-54

External threading toolholder, for double-sided lay down inserts



Right hand (R) shown.

Designation	H	B	LF	LH	WF	Insert
MTVNR-3232M54	32	32	178	39	38.1	LDS54**FT-CB#...

SPARE PARTS

Designation	Shim	Lock pin	Clamp	Clamping screw	Wrench
MTVNR-3232M54	LS53NOFORMEXT	NL-58	TC-250	STC-11	1/8HEX



External, right hand

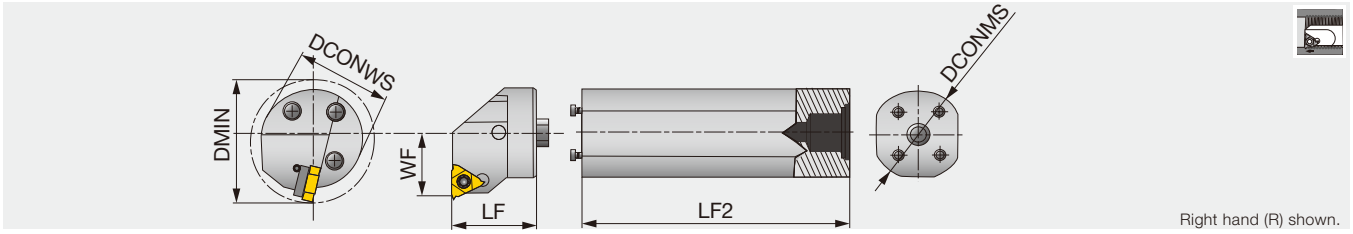
Both external and internal

Internal, right hand

Reference pages: HS-LNFR/L-53: Inserts → E029, Standard cutting conditions → E050
MTVNR/L-54: Inserts → E031, Standard cutting conditions → E050

TUNGTHREAD
HS-LNFR/L-54API

Head exchangeable internal threading toolholder, for double-sided lay down inserts



Right hand (R) shown.

Designation	DMIN	DCONWS	WF	LF	Insert
HS40-LNFR-54API	50	40	27	32	LDS54**FT-CB#...
HS50-LNFR-54API	63	50	35	40	LDS54**FT-CB#...

SPARE PARTS

Designation	Lock pin	Clamp	Clamping screw	Wrench
HS40-LNFR-54API	H410-1	TC-250	STC-11	1/8HEX
HS50-LNFR-54API	NL-56	TC-250	STC-11	1/8HEX

Shank

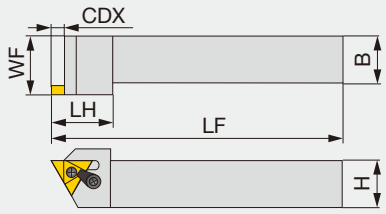
Designation	DCONMS	LF2
S-570-40M-40	40	273
S-570-50M-50	50	366

SPARE PARTS

Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

TUNGTHREAD
MTVOR/L

Multi-clamp external threading toolholder, for on edge inserts



Right hand (R) shown.

Designation	H	B	LF	LH	WF	CDX	Insert
MTVOR-2525M4	25	25	150	31	31.7	5.8	TNM*43...
MTVOR-3232M4	32	32	178	31	38.1	5.8	TNM*43...
MTVOR-2525M5	25	25	150	36	31.7	7.3	TNM*54...
MTVOR-3232M5	32	32	178	36	38.1	7.3	TNM*54...

Note: STVOR/L is recommended for TNMC insert although the insert can be used on multi-clamp (M type) toolholder.

SPARE PARTS

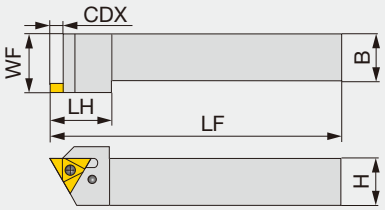
Designation	Lock pin	Clamp	Clamping screw	Wrench
MTVOR-**M4	NL-44	TC-190	STC-5	3/32HEX
MTVOR-**M5	NL-56	TC-250	STC-11	1/8HEX

Reference pages: HS-LNFR/L-54API: Inserts → E031, Standard cutting conditions → E050

TUNGTHREAD

STVOR/L

Screw-on external threading toolholder, for on edge inserts



Right hand (R) shown.

Designation	H	B	LF	LH	WF	CDX	INSERT
STVOR-2525M4	25	25	150	31	31.7	5.8	TNMC43...
STVOR-3232M4	32	32	178	31	38.1	5.8	TNMC43...
STVOR-2525M5	25	25	150	36	31.7	7.3	TNMC54...
STVOR-3232M5	32	32	178	36	38.1	7.3	TNMC54...

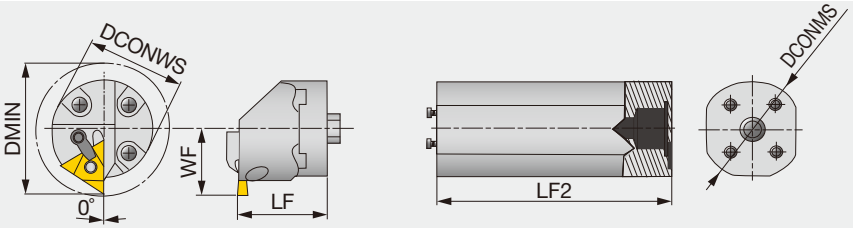
SPARE PARTS

Designation	Clamping screw	Clamp (Optional parts)	Clamping screw (Optional parts)	Wrench	
STVOR-**M4	SD2	TC-190	STC-9	T-20TORX	3/32HEX
STVOR-**M5	SD3	TC-250	STC-11	T-20TORX	1/8HEX

TUNGTHREAD

HS-MTHOR/L

Multi-clamp internal threading toolholder, for on edge inserts



Right hand (R) shown.

Designation	DMIN	DCONWS	WF	LF	Insert
HS40-MTHOR-4	66.7	40	25.9	32	TNM*43...
HS50-MTHOR-4	73	50	35.9	40	TNM*43...
HS40-MTHOR-5	81.3	40	30.6	32	TNM*54...
HS50-MTHOR-5	82.6	50	35.9	40	TNM*54...

SPARE PARTS

Designation	Lock pin	Clamp	Clamping screw	Wrench
HS**-MTHOR-4	NL-44	TC-190	STC-5	3/32HEX
HS**-MTHOR-5	NL-56	TC-250	STC-11	1/8HEX

Shank

Designation	DCONMS	LF2
S-570-40M-40	40	273
S-570-50M-50	50	366

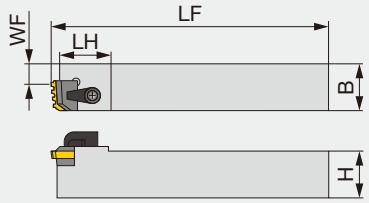
SPARE PARTS

Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

Reference pages: Inserts → E026 - E028, E031, Standard cutting conditions → E050

CLVOR

External threading toolholder, for chaser inserts



Right hand (R) shown.

Designation	WF	LF	LH	H	B	Insert
CLVOR-25M6	16.1	177	32	25	25	CR***
CLVOR-32M6	16.1	177	32	32	32	CR***
CLVOR-40M8	29.8	179	32	40	40	CR-5B75-4E

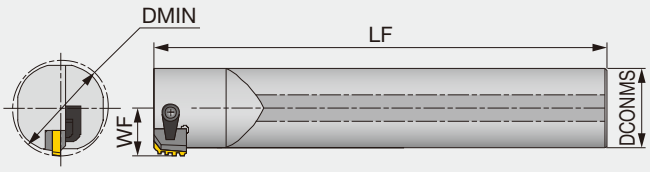
SPARE PARTS

Designation	Shim	Shim screw	Clamp	Clamping screw	Wrench	
CLVOR-25M6	TF1207	SF80	TC-311	STC-4	T-25TORX	5/32HEX
CLVOR-32M6	TF1207	SF85	TC-311	STC-4	T-25TORX	5/32HEX
CLVOR-40M8	TF8132-E	SF60	TC-311	STC-4	T-20TORX	5/32HEX

TUNGTHREAD

SI-CLHOR

Internal threading toolholder, for chaser inserts



Right hand (R) shown.

Designation	DMIN	DCONMS	WF	LF	Insert
SI-CLHOR-40M6	50.8	40	23.16	400	CR-**I

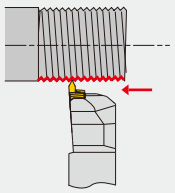
SPARE PARTS

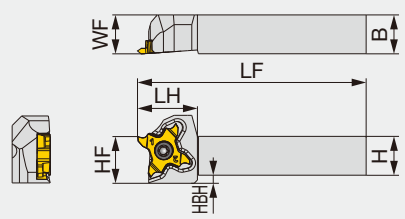
Designation	Clamp	Clamping screw	Wrench
SI-CLHOR-40M6	TC-311	STC-8	5/32HEX

Reference pages: Inserts → E028 - E031, Standard cutting conditions → E050

STCR/L-18

External grooving and threading toolholder





Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	HBH	Insert
STCR/L1010X18	10	10	120	18.5	10	10	4.5	TC*18...
STCR/L1212F18	12	12	85	18.5	12	12	2.5	TC*18...
STCR/L1212X18	12	12	120	18.5	12	12	2.5	TC*18...
STCR/L1616X18	16	16	120	18.5	16	16	-	TC*18...
STCR/L2020H18	20	20	100	18.5	20	20	-	TC*18...
STCR/L2020X18	20	20	120	23	20	25	-	TC*18...
STCR/L2525Z18	25	25	135	23	25	30	-	TC*18...

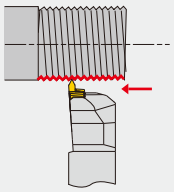
Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).

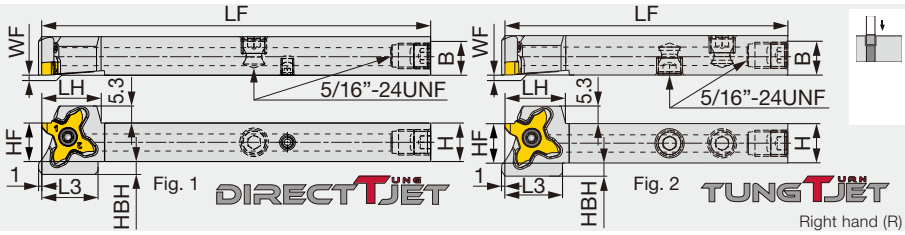
SPARE PARTS

Designation	Clamping screw	Wrench
STCR...	CSTC-4L100DL	T-1008/5
STCL...	CSTC-4L100DR	T-1008/5

TetraMini-Cut STCR/L-18

External grooving and threading toolholder, with high pressure coolant capability





Right hand (R) shown.

Designation	H	B	LF	LH	*L3*	HF	WF	HBH	Fig.	Insert	Torque
STCR/L1212F18-CHP	12	12	85	18.5	17.5	12	0/12	4	2	TC*18...	1.2
STCR/L1212X18-CHP	12	12	120	18.5	17.5	12	0/12	4	1	TC*18...	1.2
STCR/L1616X18-CHP	16	16	120	18.5	-	16	0/16	0	1	TC*18...	1.2

This toolholder can be used with threading and grooving inserts.
Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)

SPARE PARTS

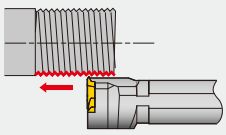
Designation	Clamping screw	Wrench
STCL**18-CHP	CSTC-4L100DR	T-1008/5
STCR**18-CHP	CSTC-4L100DL	T-1008/5

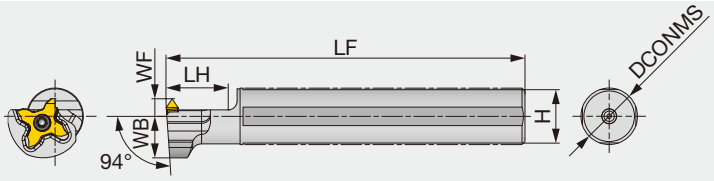
Groove width : 0.33 ~ 3.0 mm
Pitch : 0.8 ~ 3.0 mm

Reference pages: Inserts → E011, Standard cutting conditions → E050

JS-STCL18

External grooving and threading toolholder with round shank





Left hand (L) shown.

Designation	DCONMS	LF	LH	H	WB	WF	Insert
JS14H-STCL18	14	100	20	13	14	6	TC*18R...
JS159F-STCL18	15.875	85	20	15	14	6	TC*18R...
JS16F-STCL18	16	85	20	15	14	6	TC*18R...
JS19G-STCL18	19.05	90	20	18	14	6	TC*18R...
JS19X-STCL18	19.05	120	20	18	14	6	TC*18R...
JS20G-STCL18	20	90	20	19	14	6	TC*18R...
JS20X-STCL18	20	120	20	19	14	6	TC*18R...
JS22X-STCL18	22	120	20	21	12.25	10	TC*18R...
JS25H-STCL18	25	100	20	24	12.25	10	TC*18R...
JS254X-STCL18	25.4	120	20	24	12.25	10	TC*18R...

Note: Use rleft-hand toolholders (L) with right-hand inserts (R).

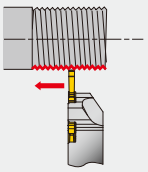
SPARE PARTS

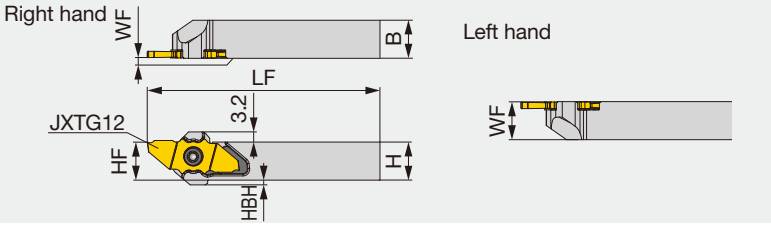



Designation	Clamping screw	Wrench
JS**STCL18	CSTC-4L100DL	T-1008/5

DuoJust-Cut JSXXR/L

Threading and parting toolholder, for Swiss lathes (DuoJust-Cut)





Right hand (R) shown.

Designation	H	B	WF (R/L)	LF*	HF	HBH	Insert
JSXXR/L1010X09	10	10	0.2 / 9.8	118	10	3	JX...
JSXXR/L1212F09	12	12	0.2 / 9.8	83	12	1.5	JX...
JSXXR/L1212X09	12	12	0.2 / 9.8	118	12	1.5	JX...
JSXXR/L1616X09	16	16	0.2 / 9.8	118	16	0	JX...
JSXXR/L2020H09	20	20	0.2 / 9.8	98	20	0	JX...

*This toolholder can be used with threading and grooving inserts. With parting inserts, the dimension of LF will be different depending on the insert shape.
Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)

SPARE PARTS

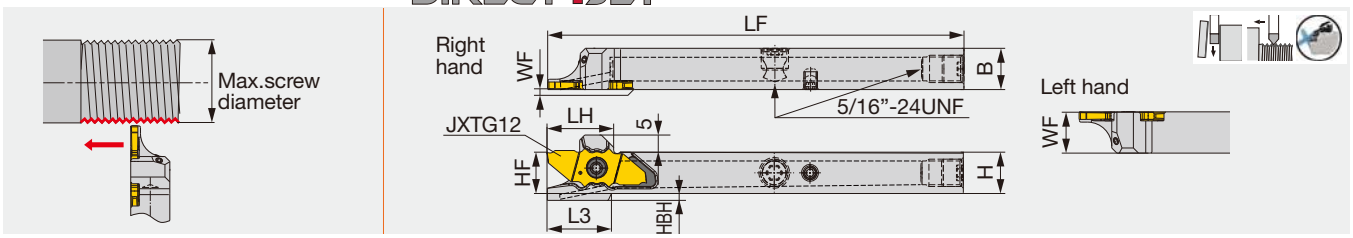



Designation	Clamping screw	Wrench
JSXXR*****	CSTC-4L100DL	T-1008/5
JSXXL*****	CSTC-4L100DR	T-1008/5

Reference pages: Inserts → E011, Standard cutting conditions → E050 - E051

JSXXR/L

Parting and threading toolholder, with high pressure coolant capability



Designation	H	B	WF (R/L)	LF*	HF	HBH	LH*	L3	Insert
JSXXR/L1212X09-CHP	12	12	0.2/11.8	118	12	2	≦ 19.4	18.8	JX**06...,12...,16...
JSXXR/L1616X09-CHP	16	16	0.2/15.8	118	16	2.5	≦ 19.4	18.7	JX**06...,12...,16...

*This toolholder can be used with threading and grooving inserts. With parting inserts, the dimensions of LF and LH will be different depending on the insert shape.
Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)

SPARE PARTS

Designation	Clamping screw	Wrench
JSXXR...	CSTC-4L100DL	T-1008/5
JSXXL...	CSTC-4L100DR	T-1008/5

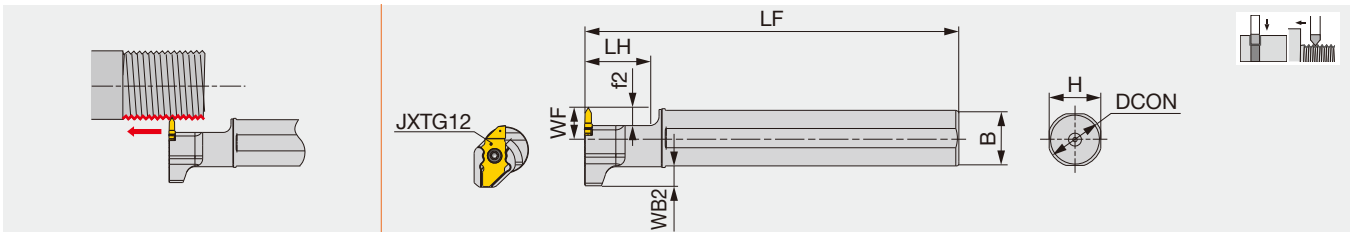
Parting-off widths : 1.0,1.5 mm (Max. parting dia. ø6)
: 1.5,2.0 mm (Max. parting dia. ø12,ø16)
Pitch : 0.2 ~ 1.5 mm

Range of threads machined pitch

Designation	Pitch	Max.screw diameter
JXTG12FR/L-60A-000	0.2 - 0.4	Metric: M26, Unified: 1"
JXTG12FR/L-60B-000	0.2 - 0.4	Metric: M26, Unified: 1"
JXTG12FR/L-60A-005	0.4 -1	Metric: M24, Unified: 15/16"
JXTG12FR/L-60B-005	0.4 -1	Metric: M24, Unified: 15/16"
JXTG12FR/L-60N-010	1 - 1.5	Metric: M22, Unified: 7/8"

DuoJust-Cut JS-SXXL09

External threading toolholder, for 2 corner inserts



Designation	DCON	H	B	WB2	LF	LH	WF**	f2**	Insert
JS19G-SXXL09	19.05	18	18	5.9	90	21	10	6	JX*G06,12*R
JS19X-SXXL09	19.05	18	18	5.9	120	21	10	6	JX*G06,12*R
JS20G-SXXL09	20	19	19	5.4	90	21	10	6	JX*G06,12*R
JS20X-SXXL09	20	19	19	5.4	120	21	10	6	JX*G06,12*R
JS22X-SXXL09	22	21	21	4.4	120	21	10	6	JX*G06,12*R
JS25H-SXXL09	25	24	24	2.9	100	21	10	6	JX*G06,12*R
JS254X-SXXL09	25.4	24	24	2.7	120	21	10	6	JX*G06,12*R

* *This toolholder can be used with threading and parting inserts.
** When using JXPG06 insert, f and f2 will be shortened by 2 mm.

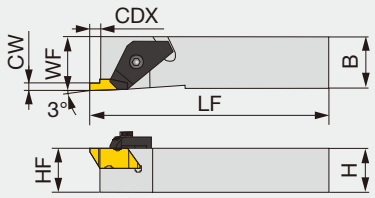
SPARE PARTS

Designation	Clamping screw	Wrench
JS***-SXXL09	CSTC-4L055L	T-1008/5

Reference pages: Inserts → E011, Standard cutting conditions → E051

TUNGT-CLAMP
FLASR/L

External grooving and threading toolholder, for Swiss lathes



Right hand (R) shown.

Designation	CW	CDX	HF	H	B	LF	WF	Insert	Torque
FLASR/L-1616M3	1 - 3	5.31	16	16	16	125	16	FL*-3**R/L...	3

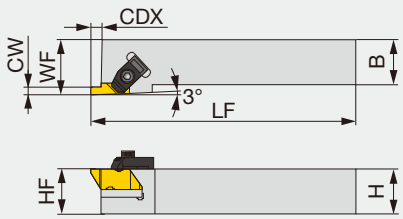
Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLASR-1616M3	TF-184	S-412	5/32HEX
FLASL-1616M3	TF-185	S-412	5/32HEX

TUNGT-CLAMP
FLSR/L

External grooving and threading toolholder



Right hand (R) shown.

Designation	CW	CDX	HF	H	B	LF	WF	Insert	Torque
FLSR/L-2020M3	1 - 3	4.5	20	20	20	125	32	FL*-3**R/L...	3
FLSR/L-2525M3	1 - 3	4.5	25	25	25	150	32	FL*-3**R/L...	3

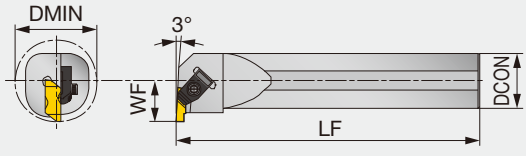
Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLSR-****M3	TF-72	S-412	5/32HEX
FLSL-****M3	TF-73	S-412	5/32HEX

TUNGT-CLAMP
A_M-FLER/L

Internal grooving and threading toolholder



Right hand (R) shown.

Designation	Pitch	DMIN	DCON	LF	WF	Insert
A25M-FLER/L3	2.11 - 5.08	34.9	25	300	17.7	FL*-3**L/R...
A32M-FLER/L3	2.11 - 5.08	44.5	32	350	22.1	FL*-3**L/R...
A40M-FLER3	2.11 - 5.08	50.8	40	350	24.5	FL*-3**L...

SPARE PARTS

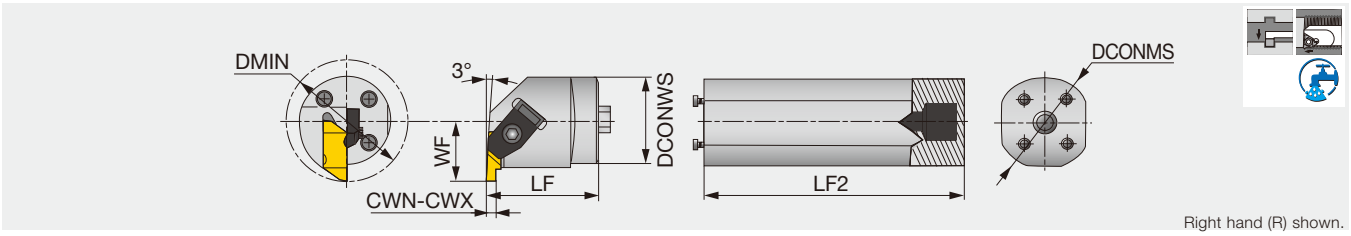
Designation	Clamp	Clamping screw	Wrench
A**M-FLER3	TF-73	S-412	5/32HEX
A**M-FLEL3	TF-72	S-412	5/32HEX

Reference pages: Inserts → E012,
Standard cutting conditions → E050

TUNGT-CLAMP

HS-FLER/L

Head exchangeable internal grooving and threading toolholder



Right hand (R) shown.

Designation	CWN	CWX	DMIN	DCONWS	LF	WF	Insert	Torque
HS40-FLER3W	1	3	56.1	40	40.1	28	FL*-3**L...	3
HS50-FLER3W	1	3	70.1	50	41.9	35	FL*-3**L...	3

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
HS40-FLER3W	TF-73	S-412	5/32HEX
HS50-FLER3W	TF-73	S-412	5/32HEX

Shank

Designation	DCONMS	LF2
S-570-40M-40	40	273
S-570-50M-50	50	366

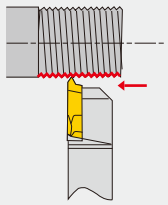
Spare parts

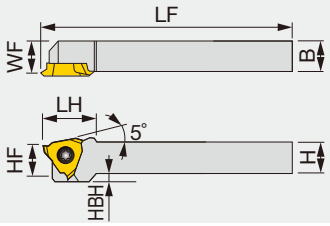
Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

J-SERIES

JSTTR/L

External toolholder for Swiss lathes





Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	HBH	Insert
JSTTR/L1010X3	10	10	120	18.5	10	9.5	2	JTTR/L30...
JSTTR/L1212F3	12	12	85	18.5	12	11.5	-	JTTR/L30...
JSTTR/L1212X3	12	12	120	18.5	12	11.5	-	JTTR/L30...
JSTTR/L1616X3	16	16	120	16.5	16	15.5	-	JTTR/L30...

Recommended clamping torque: 1.2 N·m

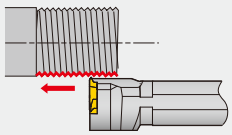
SPARE PARTS

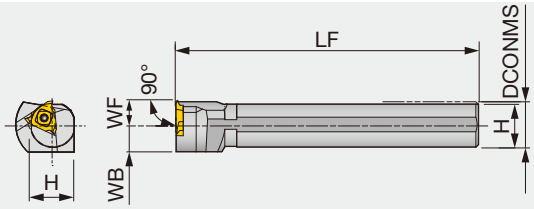
Designation	Clamping screw	Wrench
JSTTR/L...	CSTB-4SD	T-8F

Reference pages: Inserts → E012 - E013, Standard cutting conditions → E050

JS-TTL3

External toolholder for Swiss lathes





Left hand (L) shown.

Designation	DCONMS	WF	LF	H	WB	Insert
JS19K-TTL3	19.05	10	125	18	11.5	JTTR30...
JS20K-TTL3	20	10	125	19	11.5	JTTR30...
JS22K-TTL3	22	10	125	21	11.5	JTTR30...
JS25K-TTL3	25.4	10	125	24	12.7	JTTR30...

Recommended clamping torque: 3.5 N·m

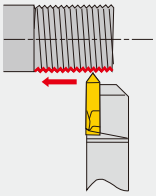
SPARE PARTS

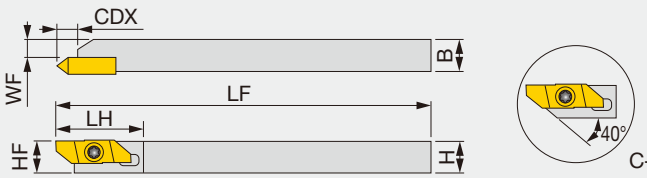



Designation	Clamping screw	Wrench
JS**-TTL3	CSTB-4S	T-15F

JSXBR/L

External threading toolholder for Swiss lathes





Right hand (R) shown.

Designation	H	B	LF	LH	CDX	HF	WF	Insert
JSXBR1010K8-C	10	10	125	29	6.4	10	5.7	JXT*R...
JSXBR1212K8-C	12	12	125	29	6.4	12	7.7	JXT*R...
JSXBR1616K8	16	16	125	29	6.4	16	11.7	JXT*R...
JSXBR2020K8	20	20	125	29	6.4	20	15.7	JXT*R...
JSXBR2525K8	25	25	125	29	6.4	25	20.7	JXT*R...

- Can be wrenched also from the back with a double-head screw.
- This toolholder can be used for JXB back-turning insert and JXT threading insert.

SPARE PARTS



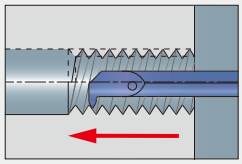


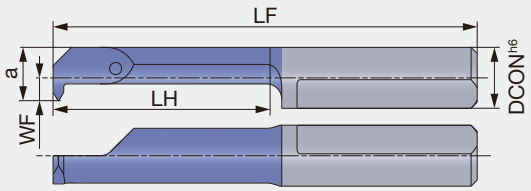
Designation	Clamping screw	Wrench 1	Wrench 2 (Optional parts)
JSXBR...	CSTB-4SD	T-8F	(T-8L)

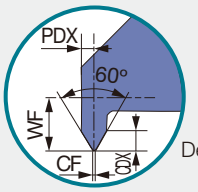
Reference pages: Inserts → E012 - E013

TinyMini-Turn JBIR

Solid boring bar for internal threading







Details of edge

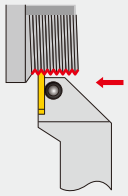
Right hand (R) shown.

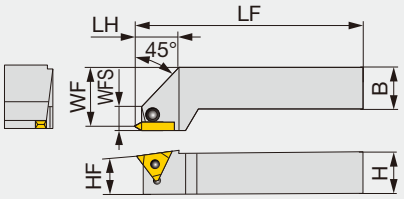
Designation	Grade SH730	Pitch	DMIN	CF $^{0}_{-0.02}$	DCON	WF	a	LF	LH	CDX	PDX
JBIR04140050-D040	●	0.5	4	0.06	4	1.5	3.5	30	14	0.3	0.35
JBIR07140050-D050	●	0.5	5	0.06	7	0.9	4.4	30	14	0.3	0.35
JBIR07140075-D050	●	0.75	5	0.09	7	0.9	4.4	30	14	0.4	0.45
JBIR07140100-D048	●	1.0	4.8	0.12	7	0.9	4.4	30	14	0.6	0.55
JBIR07140100-D060	●	1.0	6	0.12	7	1.8	5.3	30	14	0.6	0.55
JBIR07140125-D060	●	1.25	6	0.15	7	1.8	5.3	30	14	0.7	0.65
JBIR07140150-D060	●	1.5	6	0.18	7	1.8	5.3	30	14	0.8	0.75
JBIR07140150-D070	●	1.5	7	0.18	7	2.8	6.3	30	14	0.8	0.75

● : Line up

TUNGTHREAD
TT-R/LE

TT-type pin-lock external threading toolholder





Right hand (R) shown.

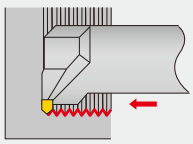
Designation	H	B	LF	LH	HF	WF	WFS	Insert
TT-2525R/LE	25	25	150	25	25	32	15	TTR/L42...

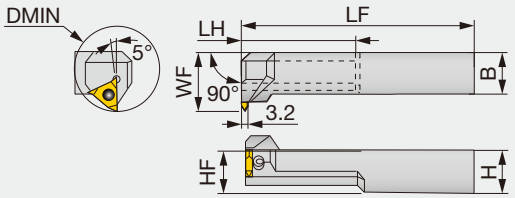
SPARE PARTS

Designation	Clamp	Right-left screw	Wrench
TT-2525R/LE	CP91	DS-6	P-3

TUNGTHREAD
TT-R/LI

TT-type pin-lock internal threading toolholder





Right hand (R) shown.

Designation	DMIN	H	B	LF	LH	HF	WF	Insert
TT-2525RI	50	25	25	200	70	25	35	TTL42...

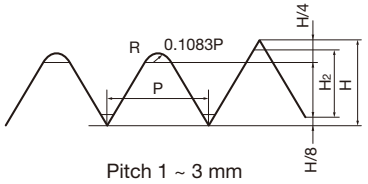
Note: Use left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamp	Right-left screw	Wrench
TT-2525RI	CP91	DS-6	P-3

Reference pages: TinyMini-Turn : Inserts → E012
Standard cuttings → E050
TingThread : Inserts → E013, E015
Standard cuttings → E050

• Relationship between pitch, depth of cut and number of passes for external metric threading

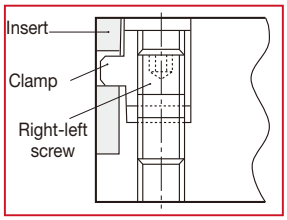


Pitch 1 ~ 3 mm

Note: Maximum machinable pitch is 3 mm.

	P	1	1.25	1.5	1.75	2	2.5	3
	H_2	0.6	0.76	0.92	1.09	1.25	1.57	1.9
	H	0.866	1.083	1.299	1.516	1.732	2.165	2.598
Number of passes	1	0.25	0.3	0.3	0.3	0.35	0.4	0.4
	2	0.15	0.2	0.25	0.25	0.25	0.3	0.35
	3	0.1	0.1	0.15	0.2	0.2	0.25	0.28
	4	0.05	0.06	0.1	0.1	0.16	0.2	0.2
	5	0.05	0.06	0.05	0.1	0.1	0.15	0.2
	6		0.06	0.05	0.07	0.07	0.1	0.13
	7			0.02	0.05	0.05	0.07	0.1
	8				0.02	0.02	0.05	0.1
	9					0.02	0.03	0.05
	10						0.02	0.05
	11							0.02
	12							0.02

Part assembly



Designation system for TT-type insert

Insert

TT R 42 M -005

① Hand	
R	Right
L	Left

② Insert size (mm)	
Inscribed circle	12.7
Thickness	3.2

③ Thread type	
M	60° thread angle
W	55° thread angle

④ Corner radius (mm)	
Blank	0
-005	0.05

Toolholder

TT- 20 20 R E

① Shank height (mm)

② Shank width (mm)

③ Hand	
R	Right
L	Left

④ External or Internal	
E	External
I	Internal

Designation system for ST-type insert

16 I R 175 ISO - B

① Insert size	
Symbol	I. C. dia (mm)
6	-
11	6.35
16	9.525
22	12.7
27	15.875

② External or Internal	
E	External
I	Internal

③ Hand of cut	
R	Right hand
L	Left hand

④ Thread type		
Partial-profile inserts		
A	Pitch: 0.5 ~ 1.5 mm	TPI: 48 ~ 16
AG	Pitch: 0.5 ~ 3 mm	TPI: 48 ~ 8
G	Pitch: 1.75 ~ 3 mm	TPI: 14 ~ 8
N	Pitch: 3.5 ~ 5 mm	TPI: 7 ~ 5
Z	Pitch: 4 ~ 6 mm	TPI: 6 ~ 4
Full-profile inserts		
pitch (mm)×10 or 100 TPI (Thread Per Inch) (Examples) 05: 0.5 mm pitch×10 175: 1.75 mm pitch×100 14: 14 TPI		

⑤ Thread type	
Partial-profile inserts	
60°	60° thread angle
55°	55° thread angle
TR	30° trapezoidal
ACME	29° trapezoidal
Full-profile inserts	
ISO	Metric
UN	Unified
W	Whitworth
PT	Taper pipe
NPT	National taper pipe
NPTF	National taper pipe
RAPI	API round
RD	
BAPI	API buttress
RD	Round (DIN405)
UNJ	UNJ
MJ	

⑥ Chipbreaker	
B	With (Basic selection)
M	With
CB	With
-	Without

Note: Please identify new designation system for internal inserts.
-i.e."N" "I"
(Example) Conventional: 16NR15ISO
New: 16IR15ISO

TUNGTHREAD
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Cutting speed: *Vc* (m/min)			
			AH725	T313V	NS9530	TH10
P	High carbon steel / Alloy steel S45C / C45, SCM440 / 42CrMoS4, etc.	< 200HB	80 - 180	100 - 200	150 - 200	-
		> 200HB	60 - 160	100 - 150	100 - 170	-
M	Stainless steel SUS304 / X5CrNi18-9, etc.	-	50 - 130	70 - 130	-	-
K	Cast irons FC250 / 250, FC300 / 300, etc.	-	-	70 - 150	-	70 - 90
N	Non-ferrous metals	-	-	-	-	100 - 500
S	Heat-resisting alloys Ti-6Al-4V, Inconel718, etc.	-	-	-	-	10 - 40
H	Hard materials	50 ~ 60HRC	-	-	-	10 - 30

TUNGT-CLAMP
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Application	Cutting speed *Vc* (m/min)	Pitch (mm)	Threads per inch (TPI)
P	High carbon steel S45C / C45, etc.	AH725	Threading	80 - 180	Internal 2.11 - 5.08 External 1.27 - 4.23	Internal 5 - 12 External 6- 20
	Alloy steels SCM440 / 42CrMoS4, etc.	AH725	Threading	60 - 160	Internal 2.11 - 5.08 External 1.27 - 4.23	Internal 5 - 12 External 6- 20
M	Stainless steel SUS304 / X5CrNi18-9, etc.	AH725	Threading	50 - 130	Internal 2.11 - 5.08 External 1.27 - 4.23	Internal 5 - 12 External 6- 20

TETRAMINI CUT
STANDARD CUTTING CONDITIONS

TCT18R/L / TCT18FR

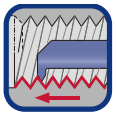
ISO	Workpiece material	Priority	Grade	Cutting speed *Vc* (m/min)	Pitch (mm)	Threads per inch (TPI)
P	Low carbon steels S15C / C15, SS400 / St42-1, etc.	First choice	SH725	60 - 150	0.4 - 2.0	64 - 12
		Fracture resistance	AH725	60 - 150	0.8 - 3.0	32 - 8
	Carbon steels, Alloy steels S55C / C55, SCM440 / 42CrMoS4, etc.	First choice	SH725	60 - 150	0.4 - 2.0	64 - 12
		Fracture resistance	AH725	60 - 150	0.8 - 3.0	32 - 8
	Prehardened steels NAK80, PX5, etc.	First choice	SH725	60 - 150	0.4 - 2.0	64 - 12
		Fracture resistance	AH725	60 - 150	0.8 - 3.0	32 - 8
M	Stainless steel SUS304 / X5CrNi18-9, etc.	First choice	SH725	50 - 80	0.4 - 2.0	64 - 12
		Fracture resistance	AH725	50 - 80	0.8 - 3.0	32 - 8
K	Grey cast irons FC250 / 250, FC300 / 300, etc.	First choice	AH725	50 - 100	0.8 - 3.0	32 - 8
		Sharpness	SH725	50 - 100	0.4 - 2.0	64 - 12
	Ductile cast irons 400-15, 600-3, etc.	First choice	AH725	50 - 100	0.8 - 3.0	32 - 8
		Sharpness	SH725	50 - 100	0.4 - 2.0	64 - 12
S	Titanium alloys Ti-6Al-4V, etc.	First choice	SH725	30 - 100	0.4 - 2.0	64 - 12
		Fracture resistance	AH725	30 - 100	0.8 - 3.0	32 - 8
	Heat-resisting alloys Inconel718, etc.	First choice	SH725	30 - 100	0.4 - 2.0	64 - 12
		Fracture resistance	AH725	30 - 100	0.8 - 3.0	32 - 8

Reference pages: TungThread : Inserts → E010, E013 - E031, Toolholders → E032 - E040
TungT-Clamp : Inserts → E012, Toolholders → E045 - E046
TetraMini-Cut: Inserts → E011, Toolholders → E042 - E043

DUOJUST-CUT STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Pitch (mm)	Threads per inch (TPI)
P	Low carbon steels S15C / C15, SS400 / St42-1, etc.	SH725	50 - 200	0.2 - 1.5	127 - 16
P	Carbon steels, Alloy steels S55C / C55, SCM440 / 42CrMoS4, etc.	SH725	50 - 200	0.2 - 1.5	127 - 16
P	Free cutting steel SUH22, SUH23, etc.	SH725	50 - 200	0.2 - 1.5	127 - 16
M	Stainless steel SUS304 / X5CrNi18-9, etc.	SH725	50 - 200	0.2 - 1.5	127 - 16
N	Aluminium alloys A5056, A6061, etc.	SH725	150 - 200	0.2 - 1.5	127 - 16
N	Copper alloy C2600, C280C, etc.	SH725	100 - 200	0.2 - 1.5	127 - 16
S	Titanium alloys Ti-6Al-4V, etc.	SH725	30 - 80	0.2 - 1.5	127 - 16
S	Heat-resisting alloys Inconel718, etc.	SH725	30 - 80	0.2 - 1.5	127 - 16

TINYMINI TURN STANDARD CUTTING CONDITIONS



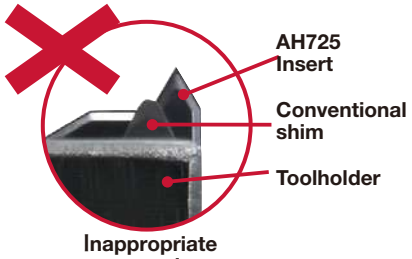
Internal threading

ISO	Workpiece materia	Grade	Cutting speed *Vc* (m/min)	Number of passes Pitch (mm) 0.5	0.75	1	1.25	1.5
P	Low carbon steels S15C / C15, S20C / C20, etc.	SH730	40 - 140	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
P	Carbon steels, Alloy steels S55C / C55, SCM440 / 42CrMoS4, etc.	SH730	40 - 140	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
P	Prehardened steels NAK80, PX5, etc.	SH730	40 - 140	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
M	Stainless steel SUS304 / X5CrNi18-9, SUS316 / X5CrNiMo17-12-2, etc.	SH730	40 - 140	8	10	12	15	18
K	Grey cast irons FC250 / 250, FCD300 / 300, etc.	SH730	30 - 100	7	9	12	14	17
K	Ductile cast irons FC450 / 400-15, FCD600 / 600-3, etc.	SH730	30 - 100	7	9	12	14	17
N	Aluminium alloys, copper alloys Si < 12%	SH730	90 - 200	6	8	10	12	15

Reference pages: DuoJust-Cut : Inserts → E011, Toolholders → E043 - E044
TetraMini-Cut: Toolholders → E048

IMPORTANT - Replacement of shim

AH 725 insert has 2 types of shims according to the chipbreaker geometry. Please find an appropriate shim in the table below. When using a wrong shim, the insert seating may become unstable or the tool life may be shortened.



Inappropriate example

Interchangeable shim (Insert size: 16)

Toolholder screw type	Lead angle	External		Internal	
		① Conventional shim	❶ Standard (New)	② Conventional shim	❷ Standard (New)
Dual clamping methods of screw-on and clamp-on	4°	GXE16-4DT	AE16-4DT	GXN16-4DT	AN16-4DT
	3°	GXE16-3DT	AE16-3DT	GXN16-3DT	AN16-3DT
	2°	GXE16-2DT	AE16-2DT	GXN16-2DT	AN16-2DT
	1° (Standard)	GX16-1DT	A16-1DT	GX16-1DT	A16-1DT
	0°	GXE16-0DT	AE16-0DT	GXN16-0DT	AN16-0DT
	-1°	GXE16-99DT	AE16-99DT	GXN16-99DT	AN16-99DT
	-2°	GXE16-98DT	AE16-98DT	GXN16-98DT	AN16-98DT
Clamp-on	4°	GXE16-4	AE16-4	GXN16-4	AN16-4
	3°	GXE16-3	AE16-3	GXN16-3	AN16-3
	2°	GXE16-2	AE16-2	GXN16-2	AN16-2
	1° (Standard)	GXE16-1	A16-1	GXN16-1	A16-1
	0°	GXE16-0	AE16-0	GXN16-0	AN16-0
	-1°	GXE16-99	AE16-99	GXN16-99	AN16-99
	-2°	GXE16-98	AE16-98	GXN16-98	AN16-98

Shim to be replaced (Insert size: 16)

Thread	External			Internal		
	Designation	Grade	Replacement	Designation	Grade	Replacement
ISO			① Conventional shim → ❶ Standard (New)	16IR15ISO-B	AH725	② Conventional shim → ❷ Standard (New)
				16IR175ISO-B	AH725	
				16IR20ISO-B	AH725	
55°	16ERAG55-B	AH725		16IRAG55-B	AH725	
				16IRG55-B	AH725	
60°	16ERA60-B	AH725		16IRAG60-B	AH725	
				16IRA60-B	AH725	
				16IRG60-B	AH725	
UN				16IR18UN-B	AH725	
				16IR16UN-B	AH725	
				16IR14UN-B	AH725	
W				16IR16W-B	AH725	
				16IR14W-B	AH725	
PT				16IR14PT-B	AH725	
NPT	16ER8NPT-B	AH725		16IR14NPT-B	AH725	
				16IR115NPT-B	AH725	

Reference pages: E010, E014, E016 - E021

Parting, Grooving



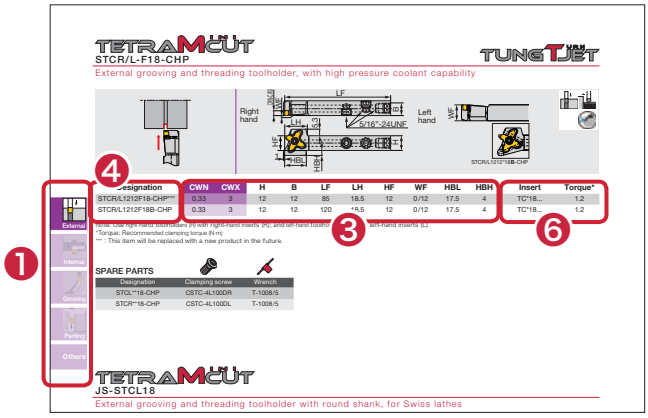
Parting, Grooving - Content structure

- Products are listed by application.
- Each item is listed by product series.
- Internal grooving tools are listed according to the order of the minimum machining diameter (from small to larger).

How to use the page

Method ①

Select the application (❶) at the left end of each page and choose a designation you need (❹) in the dimension table (❸). Applicable inserts are shown in (❻).



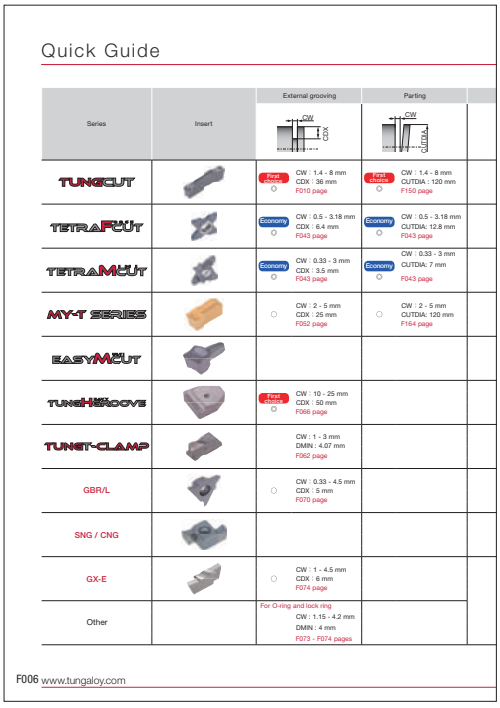
Method ②

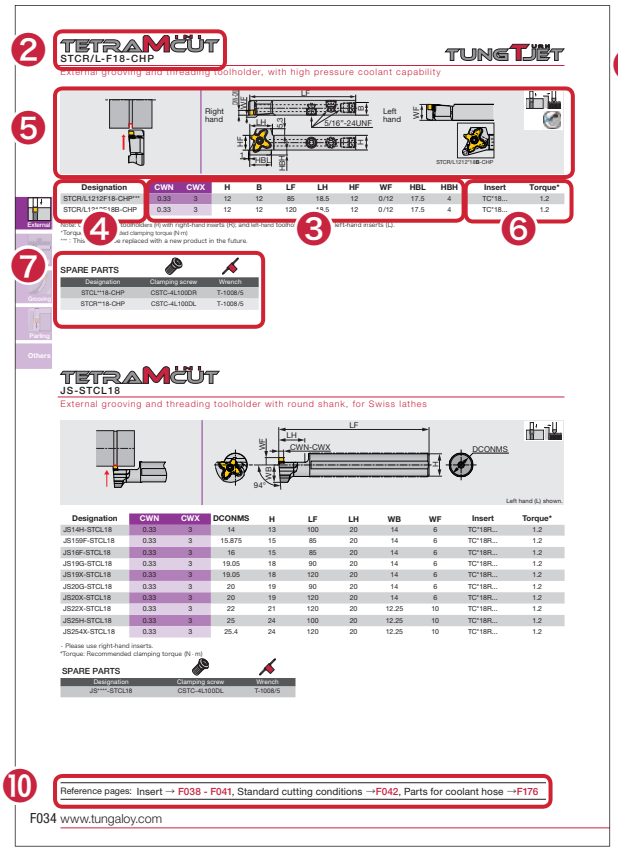
Select the tool series name on F004 – F005 and check the details on the product page.

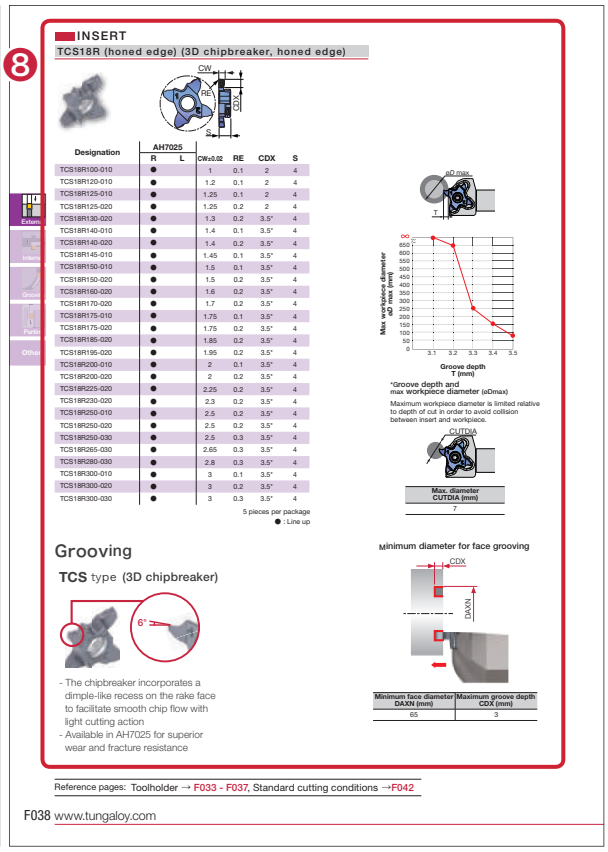


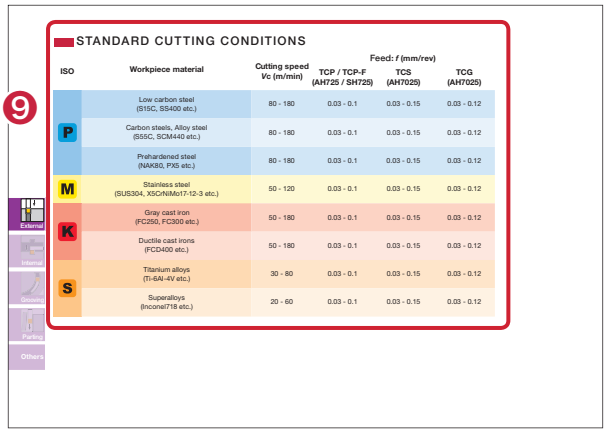
Method ③

Select the tool series or the tool specification from Quick Guide on F006-F007 and see the details on each page.









❶ : Application
❷ : Tool series name
❸ : Dimension table
❹ : Toolholder designation
e.g. right-hand, 12x12 square shank

→ STC**R** **1212** **F18-CHP**

R/L in the designation means the stock either right or left hand respectively.

❺ : Dimension (conforming to ISO13399)
❻ : Applicable insert
❼ : Spare parts
❽ : Insert
❾ : Standard cutting conditions
❿ : Reference pages

When ordering
- Please specify the designation and quantity for toolholders.
  e.g. **CTER2020-4T25 ...** 1
- Please specify the designation and quantity for shank and blade set when ordering both.
  e.g. **CHSR2020-CHP ...** 1, **CAER-3T20-CHP...** 1 (one shank per package, one blade per package)
  * Clamp screw for blade is included.
- Please specify the designation, grade, and quantity for inserts.
  e.g. **DGS3-020 AH7025 ...** 10 (10 inserts per package)
  *You will find a note if the number per package is not 10.

External grooving

F010 page

Max. groove depth: 6.4 mm

Economy TETRAMINICUT F035 page

Economy TETRAFORCECUT F046 page

GBR/L32 F076 page

GBR/L42 F076 page

GX-E F082 page



Max. groove depth: 50 mm

First choice TUNGCUT F010 page

TUNGHEAVYGROOVE F072 page

MY-T SERIES

Flex, CGD, G series , CDT F054 page



For Swiss lathes

Economy TETRAMINICUT F035 page

Economy TETRAFORCECUT F046 page

TUNGCUT F014 page

J-SERIES (JTGR/L) F088 page

TUNGHEAVYGROOVE F072 page



Internal grooving

F096 page

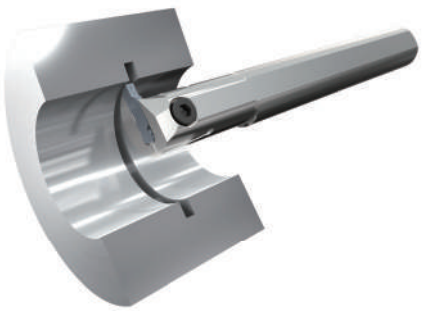
General internal grooving and turning

First choice TUNGCUT F096 page

MY-T SERIES

G series F114 page

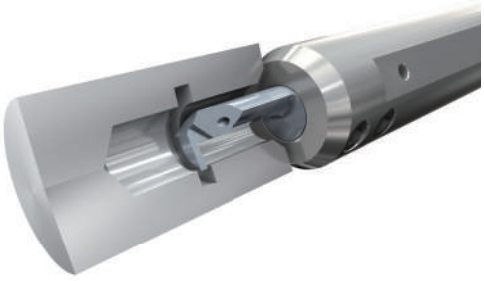
GBR/L32 F124 page



Small-diameter internal grooving

TINYMINITURN G054 page

SNG F127 page



Face grooving

F133 page

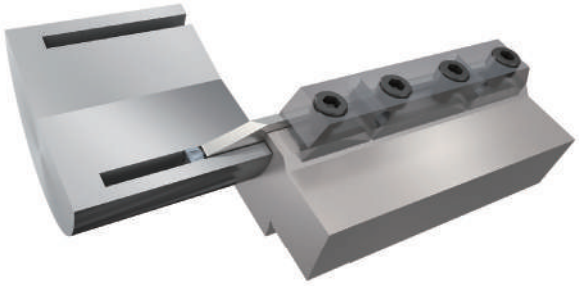
First choice TUNGCUT F137 page

EASYMCUT F133 page

Economy TETRAMINICUT F035 page

MY-T SERIES F158 page

GX-F F166 page



Parting

F168 page

General parting

First choice TUNGCUT F168 page

Economy TETRAFORCECUT F046 page

MY-T SERIES F184 page



For Swiss lathes

First choice DUOJUSTCUT G086 page

TUNGCUT F014 page

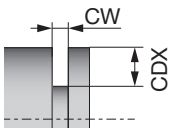
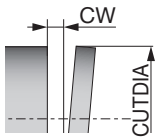
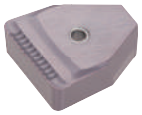
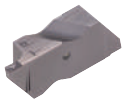
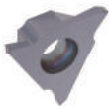
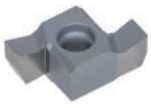
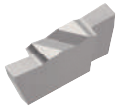
Economy TETRAFORCECUT F046 page

Economy TETRAMINICUT F035 page

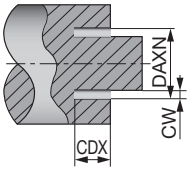
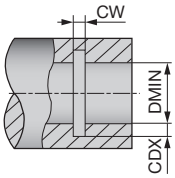
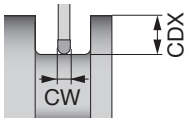
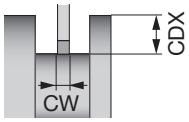
J-SERIES F084 page



Quick Guide

Series	Insert	External grooving	Parting	
				
TUNGCUT		First choice ◎ CW : 1.4 - 8 mm CDX : 36 mm F010 page	First choice ◎ CW : 1.4 - 8 mm CUTDIA : 120 mm F168 page	
TETRAFORCECUT		Economy ◎ CW : 0.5 - 3.18 mm CDX : 6.4 mm F046 page	Economy ◎ CW : 0.5 - 3.18 mm CUTDIA: 12.8 mm F046 page	
TETRAMINICUT		Economy ◎ CW : 0.33 - 3 mm CDX : 3.5 mm F035 page	Economy ◎ CW : 0.33 - 3 mm CUTDIA: 7 mm F035 page	
MY-T SERIES		○ CW : 2 - 5 mm CDX : 25 mm F054 page	○ CW : 2 - 5 mm CUTDIA: 120 mm F184 page	
EASYMULTICUT				
TUNGHEAVYGROOVE		First choice ◎ CW : 10 - 25 mm CDX : 50 mm F072 page		
TUNGT-CLAMP		CW : 1 - 3 mm DMIN : 4.07 mm F068 page		
GBR/L		○ CW : 0.33 - 4.5 mm CDX : 5 mm F076 page		
SNG / CNG				
GX-E		○ CW : 1 - 4.5 mm CDX : 6 mm F082 page		
Other		For O-ring and lock ring CW : 1.15 - 4.2 mm DMIN : 4 mm F080 - F081 pages		

◎ : First choice
○ : Usable

	Face grooving	Internal grooving	Profiling (Full-R)	Turning
				
	First choice ◎ CW : 3 - 6 mm CDX : 25 mm DAXN : 25 mm F137 page	First choice ◎ CW : 2 - 8 mm CDX : 10 mm DMIN : 25 mm F096 page	First choice ◎ CW : 3 - 8 mm CDX : 36 mm F010 page	First choice ◎ CW : 3 - 8 mm CDX : 36 mm F010 page
			Economy ◎ CW : 1.57 - 3 mm CDX : 6.4 mm F046 page	
	○ CW : 0.33 - 3 mm CDX : 3 mm DAXN : 65 mm F035 page			
	○ CW : 3 - 5 mm CDX : 22 mm DAXN : 30 mm F158 page	○ CW : 3 - 5 mm CDX : 6 mm DMIN : 25 mm F114 page	○ CW : 3 - 5 mm CDX : 25 mm F054 page	○ CW : 3 - 5 mm CDX : 25 mm F054 page
	◎ CW : 4 - 6 mm CDX : 65 mm DAXN : 30 mm F133 page			
		CW : 1 - 3 mm CDX : 4.07 mm DMIN : 34.9 mm F120 page		
		◎ CW : 0.33 - 4.5 mm CDX : 2.5 mm DMIN : 35 mm F124 page	◎ CW : 1 - 4 mm CDX : 5 mm F076 page	
		○ CW : 1 - 5 mm CDX : 5 mm DMIN : 8 mm F127 page		
		○ CW : 1 - 4.5 mm CDX : 6 mm DMIN : 55 mm F082 page		
		・CGXR/L CW : 1 - 5 mm DMIN : 20 mm F129 page		

TUNGCUT



Multi-functional grooving tool series with excellent versatility

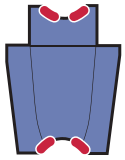
New modular holder system enhances versatility of existing monoblock holder and TungCap (PSC) lines.

High-pressure coolant system improves chip flow and tool life.

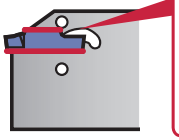
High clamping rigidity

For stable tool life and accuracy

Clamping system



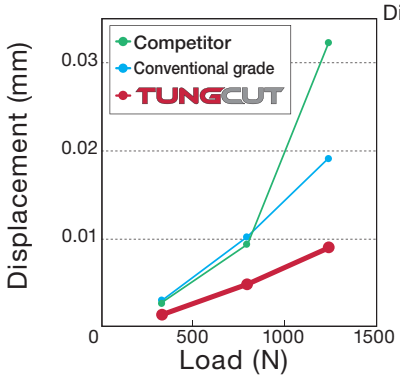
● ***Stable and safe contact areas!***

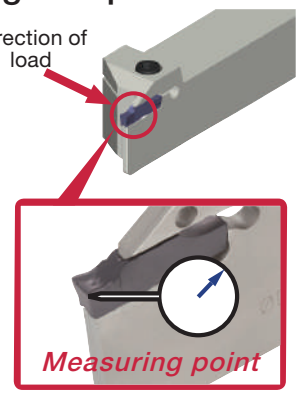




High repeatability and durability due to long pocket!

Minimizes cutting edge displacement





Excellent chip control at low feed rates

P **Mild steel (SUJ2)**

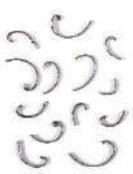
First choice chipbreaker for low carbon (soft)steel.
Excellent chip control at low feed rates.



New

DGL

Workpiece material : SUJ2
Toolholder : CTER2525-3T09
Insert : DGL3-025
Cutting speed : *Vc* = 50, 100 m/min
Groove width : 3 mm

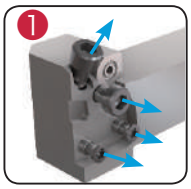
	f = 0.03	*f* = 0.05	*f* = 0.07	*f* = 0.1
Vc = 50				
Vc = 100				

Reference pages: F010, F096, F137, F168

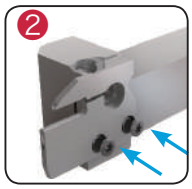
How to install and remove the blade and insert

TUNGMODULAR SYSTEM

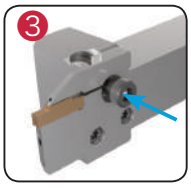
Assembly



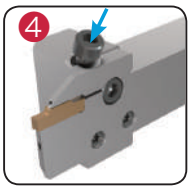
Remove all 4 screws and ensure the O rings are all in place.



Place the blade and tighten 2 bottom clamping screws.



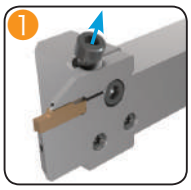
Place the insert in the pocket and tighten the fixing screw in the center.



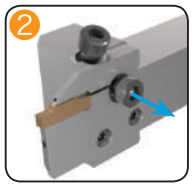
Place the long screw in the angular direction and tighten to clamp the insert.

Please follow the installation order as shown above.
When the screws are tightened in the ❹→❸ order, the insert clamping may be insufficient and unstable.

Disassembly

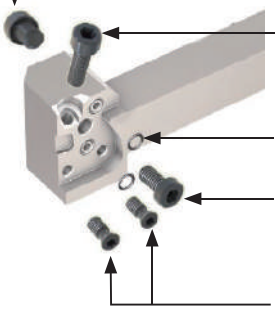


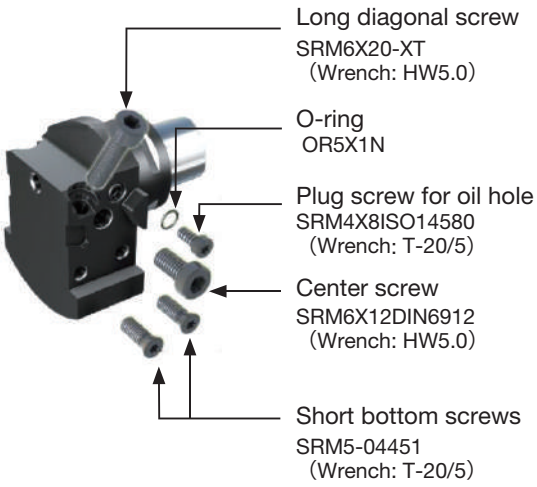
First loosen the long screw in the angular direction.



Loosen the Fixing screw in the center and remove the insert.

Loosing the long screw alone may not release the insert.

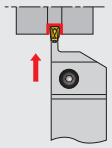


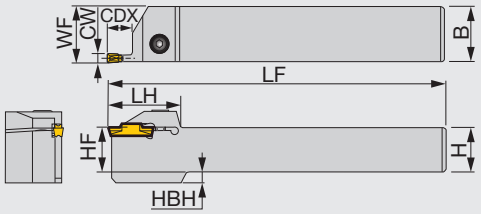


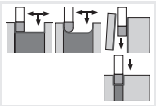
All parts listed here are included in the tool holder.

CTER/L

External grooving, parting and turning toolholder







Insert
DGM, SGM, DGS, SGS, DGG, DTX, DTE, DTR, DTA, SGN, DTM, DGL

Right hand (R) shown.

Designation	CW	Seat size	CDX	H	B	LF	LH	HF	WF (1)	HBH	Torque*
CTER/L1616-2T08	2	2	8	16	16	110	33	16	16.1	4	5
CTER/L2020-2T08	2	2	8	20	20	125	33	20	20.1	-	5
CTER/L2525-2T08	2	2	8	25	25	150	33	25	25.1	-	5
CTER/L1616-2T12	2	2	12	16	16	110	32	16	16.1	4	5
CTER/L2020-2T12	2	2	12	20	20	125	32	20	20.1	-	5
CTER/L2525-2T12	2	2	12	25	25	150	32	25	25.1	-	5
CTER/L1616-2T17	2	2	17	16	16	110	37	16	16.1	4	5
CTER/L2020-2T17	2	2	17	20	20	125	37	20	20.1	-	5
CTER/L2525-2T17	2	2	17	25	25	150	37	25	25.1	-	5
CTER/L1616-3T09	3	3	9	16	16	110	32	16	16.3	4	5
CTER/L2020-3T09	3	3	9	20	20	125	32	20	20.3	-	5
CTER/L2525-3T09	3	3	9	25	25	150	32	25	25.3	-	5
CTER/L2020-3T12	3	3	12	20	20	125	32	20	20.3	-	5
CTER/L2525-3T12	3	3	12	25	25	150	32	25	25.3	-	5
CTER/L1616-3T20	3	3	20	16	16	110	38.5	16	16.3	4	5
CTER/L2020-3T20	3	3	20	20	20	125	38.5	20	20.3	-	5
CTER/L2525-3T20	3	3	20	25	25	150	38.5	25	25.3	-	5
CTER/L2525-3T25	3	3	25	25	25	150	44.5	25	25.3	-	5
CTER/L1616-4T10	4	4	10	16	16	110	32	16	16.5	4	8.5
CTER/L2020-4T10	4	4	10	20	20	125	32	20	20.5	-	8.5
CTER/L2525-4T10	4	4	10	25	25	150	32	25	25.5	-	8.5
CTER/L2020-4T15	4	4	15	20	20	125	33	20	20.5	-	8.5
CTER/L2525-4T15	4	4	15	25	25	150	33	25	25.5	-	8.5
CTER/L1616-4T25	4	4	25	16	16	110	45	16	16.5	4	8.5
CTER/L2020-4T25	4	4	25	20	20	125	45	20	20.5	-	8.5
CTER/L2525-4T25	4	4	25	25	25	150	45	25	25.5	-	8.5
CTER/L3232-4T25	4	4	25	32	32	170	45	32	32.5	-	8.5
CTER/L2020-5T12	5	5	12	20	20	125	37	20	20.6	-	8.5
CTER/L2525-5T12	5	5	12	25	25	150	37	25	25.6	-	8.5
CTER/L2525-5T20	5	5	20	25	25	150	37	25	25.6	-	8.5
CTER/L2525-5T32	5	5	32	25	25	150	56	25	25.6	-	8.5
CTER/L3232-5T32	5	5	32	32	32	170	56	32	32.6	-	8.5
CTER/L2020-6T12	6	6	12	20	20	125	37	20	20.6	-	12
CTER/L2525-6T12	6	6	12	25	25	150	37	25	25.6	7	12
CTER/L2525-6T20	6	6	20	25	25	150	41	25	25.6	-	12
CTER/L2525-6T32	6	6	32	25	25	150	56	25	25.6	7	12
CTER/L3232-6T32	6	6	32	32	32	170	56	32	32.6	-	12
CTER/L2525-8T16	8	8	16	25	25	150	47	25	26.1	7	12
CTER/L2525-8T25	8	8	25	25	25	150	47	25	26.1	7	12
CTER/L3232-8T25	8	8	25	32	32	170	47	32	33.1	-	12
CTER/L2525-8T36	8	8	36	25	25	150	60	25	26.1	7	12
CTER/L3232-8T36	8	8	36	32	32	170	60	32	33.1	-	12

When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert.
(1) "*f*" value is calculated with groove width "WF" shown in the table.
*Torque: Recommended clamping torque (N·m)

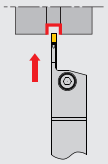
Reference pages: Insert → F021 - F034, Standard cutting conditions → F030

SPARE PARTS

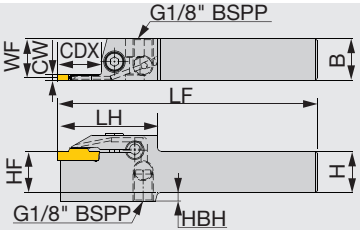


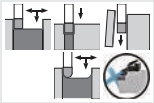

Designation	Clamping screw	Wrench
CTER/L1616-2T08	CM5X0.8X16-A	P-4
CTER/L2020-2T08	CM5X0.8X20-A	P-4
CTER/L2525-2T08	CM5X0.8X25-A	P-4
CTER/L1616-2T12	CM5X0.8X16-A	P-4
CTER/L2020-2T12	CM5X0.8X20-A	P-4
CTER/L2525-2T12	CM5X0.8X25-A	P-4
CTER/L1616-2T17	CM5X0.8X16-A	P-4
CTER/L2020-2T17	CM5X0.8X20-A	P-4
CTER/L2525-2T17	CM5X0.8X25-A	P-4
CTER/L1616-3T09	CM5X0.8X16-A	P-4
CTER/L2020-3T09	CM5X0.8X20-A	P-4
CTER/L2525-3T09	CM5X0.8X25-A	P-4
CTER/L2020-3T12	CM5X0.8X20-A	P-4
CTER/L2525-3T12	CM5X0.8X25-A	P-4
CTER/L1616-3T20	CM5X0.8X16-A	P-4
CTER/L2020-3T20	CM5X0.8X20-A	P-4
CTER/L2525-3T20	CM5X0.8X25-A	P-4
CTER/L2525-3T25	CM5X0.8X25-A	P-4
CTER/L1616-4T10	CM6X1X16-A	P-5
CTER/L2020-4T10	CM6X1X20-A	P-5
CTER/L2525-4T10	CM6X1X25-A	P-5
CTER/L2020-4T15	CM6X1X20-A	P-5
CTER/L2525-4T15	CM6X1X25-A	P-5
CTER/L1616-4T25	CM6X1X16-A	P-5
CTER/L2020-4T25	CM6X1X20-A	P-5
CTER/L2525-4T25	CM6X1X25-A	P-5
CTER/L3232-4T25	CM6X1X25-A	P-5
CTER/L2020-5T12	CM6X1X20-A	P-5
CTER/L2525-5T20	CM6X1X25-A	P-5
CTER/L2525-5T32	CM6X1X25-A	P-5
CTER/L3232-5T32	CM6X1X25-A	P-5
CTER/L2020-6T12	CM8X1.25X20-A	P-6
CTER/L2525-6T12	CM8X1.25X25-A	P-6
CTER/L2525-6T20	CM8X1.25X25-A	P-6
CTER/L2525-6T32	CM8X1.25X25-A	P-6
CTER/L3232-6T32	CM8X1.25X25-A	P-6
CTER/L2525-8T16	CM8X1.25X25-A	P-6
CTER/L2525-8T25	CM8X1.25X25-A	P-6
CTER/L3232-8T25	CM8X1.25X25-A	P-6
CTER/L2525-8T36	CM8X1.25X25-A	P-6
CTER/L3232-8T36	CM8X1.25X25-A	P-6

Mono-block external grooving and parting toolholder, with high pressure coolant capability









Insert
DGS,SGS,DGM,
SGM,DTX,DGE,
DTE,DGG,DTR,SGN,
DTM,DTA,DGL

Right hand (R) shown.

Designation	CW	Seat size	CDX	H	B	LF	LH	HF	WF	HBH	Torque*
CTER/L2020-2T17-CHP	2	2	17	20	20	125	45	20	19.1	4	5.5
CTER/L2525-2T17-CHP	2	2	17	25	25	150	45	25	24.1	-	5.5
CTER/L2020-3T20-CHP	3	3	20	20	20	125	48	20	18.8	4	5.5
CTER/L2525-3T20-CHP	3	3	20	25	25	150	48	25	23.8	-	5.5
CTER/L2525-3T25-CHP	3	3	25	25	25	150	51	25	23.8	-	5.5
CTER/L2525-4T25-CHP	4	4	25	25	25	150	55	25	23.5	-	8
CTER/L2525-5T20-CHP	5	5	20	25	25	150	49	25	23.08	-	8
CTER/L2525-6T20-CHP	6	6	20	25	25	150	52	25	22.58	7	12

When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert.
*Torque: Recommended clamping torque (N·m)

SPARE PARTS



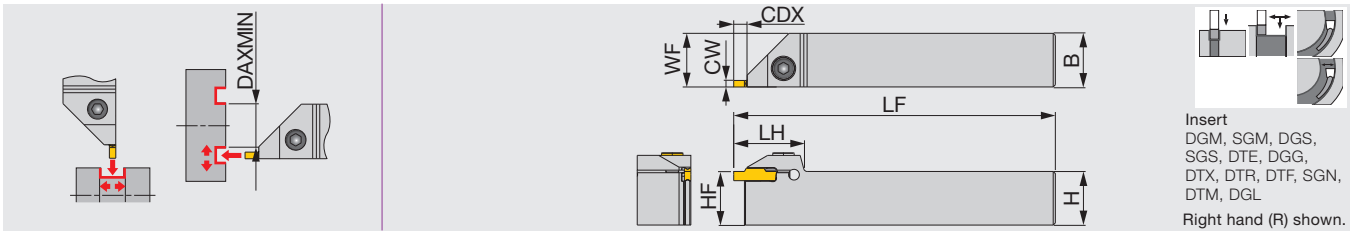


Designation	Clamping screw	Wrench
CTER/L2020-2T17-CHP	CM5x0.8x20-A	P-4
CTER/L2525-2T17-CHP	CM5x0.8x25-A	P-4
CTER/L2020-3T20-CHP	CM5x0.8x20-A	P-4
CTER/L2525-3T20-CHP	CM5x0.8x25-A	P-4
CTER/L2525-3T25-CHP	CM5x0.8x25-A	P-4
CTER/L2525-4T25-CHP	CM6x1x25-A	P-5
CTER/L2525-5T20-CHP	CM6x1x25-A	P-5
CTER/L2525-6T20-CHP	CM8x1.25x25-A	P-6

Reference pages: Insert → F021 - F034, Standard cutting conditions → F030
Parts for coolant hose → F198, Technical Reference → L041

CTEFR/L

External face grooving and turning toolholder



Insert
DGM, SGM, DGS, SGS, DTE, DGG, DTX, DTR, DTF, SGN, DTM, DGL

Right hand (R) shown.

Designation	CW	Seat size	CDX	H	B	LF	LH	HF	WF (1)	Torque*
CTEFR/L2020-4T04	4	2, 3, 4	4.8	20	20	125	33	20	20.5	8.5
CTEFR/L2525-4T04	4	2, 3, 4	4.8	25	25	150	33	25	25.5	8.5
CTEFR/L2020-6T04	6	5, 6	4.8	20	20	125	37	20	20.6	8.5
CTEFR/L2525-6T04	6	5, 6	4.8	25	25	150	37	25	25.6	8.5

(1) "WF" value is calculated with groove width "CW" shown in the table.*Torque: Recommended clamping torque (N·m)

SPARE PARTS

Designation	Clamping screw	Wrench
CTEFR/L2020-4T04	CM6X1X20-A	P-5
CTEFR/L2525-4T04	CM6X1X25-A	P-5
CTEFR/L2020-6T04	CM6X1X20-A	P-5
CTEFR/L2525-6T04	CM6X1X25-A	P-5

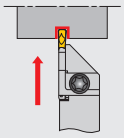
Insert	Groove width CW	Face grooving Min. machining dia. DAXMIN
DGM / DGS / SGN	2	295
DGM / DGS / SGN / DGL	3	92
DGM / DGS / SGN / DGL	4	37
DGM / DGS / DGL	5	60
DGM / DGS / DGL	6	57
DTE / DGG / DTM	3	62
DTE / DGG / DTM	4	42
DTE / DGG / DTM	5	64
DTE / DGG / DTM	6	61

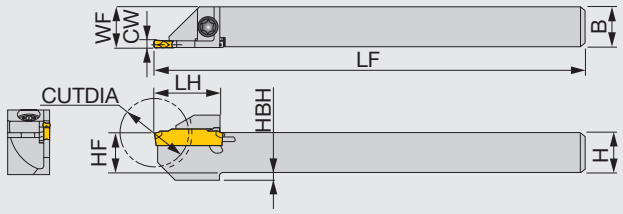
Insert	Groove width CW	Face grooving Min. machining dia. DAXMIN
DTR	3	44
DTR	4	32
DTR	5	48
DTR	6	48
DTX	3	19
DTX	4	20
DTX	5	20
DTX	6	23
DTF	3	19
DTF	4	20

Reference pages: Insert → F021 - F034, Standard cutting conditions → F030

TUNGCUT
JCTER/L

External grooving and parting toolholder, for Swiss lathes







Insert
Seat size 1 = DGS1.4
Seat size 2, 3, = DGM, SGM, DGS, SGS, DGE, DTE, DGG, DGL

Right hand (R) shown.

Designation	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF(1)	HBH	Torque*
JCTER/L1010X1.4T10	1.4	1	20	10	10	120	18	10	10.2	-	3
JCTER1010-1.4T10	1.4	1	20	10	10	125	18	10	10.2	-	3
JCTER/L1212F1.4T12	1.4	1	24	12	12	85	19.5	12	12.2	-	3
JCTER/L1212X1.4T12	1.4	1	24	12	12	120	19.5	12	12.2	-	3
JCTER1212-1.4T12	1.4	1	24	12	12	125	19.5	12	12.2	-	3
JCTER/L1414-1.4T12	1.4	1	24	14	14	125	19.5	14	14.2	-	3
JCTER/L1616X1.4T16	1.4	1	32	16	16	120	24	16	16.2	-	3
JCTER/L1010X2T10	2	2	20	10	10	120	19	10	10.1	2	3
JCTER/L1212F2T12	2	2	24	12	12	85	19	12	12.1	2	3
JCTER/L1212X2T12	2	2	24	12	12	120	19	12	12.1	2	3
JCTER/L1414-2T12	2	2	24	14	14	125	19	14	14.1	-	3
JCTER/L1616X2T16	2	2	32	16	16	120	24	16	16.1	-	3
JCTER/L1212F3T12	3	3	24	12	12	85	19	12	12.3	2	3
JCTER/L1212X3T12	3	3	24	12	12	120	19	12	12.3	2	3
JCTER/L1616X3T16	3	3	32	16	16	120	24	16	16.3	-	3
JCTER/L2020H3T16	3	3	32	20	20	100	24	20	20.3	-	3

(1) "WF" value is calculated with groove width "CW" shown in the table. • CUTDIA: Max. parting diameter
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

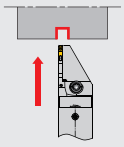


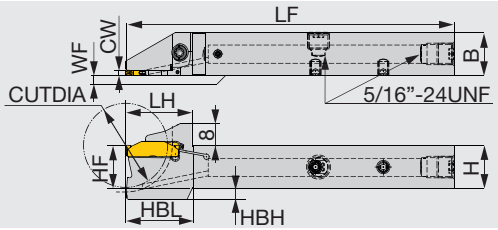

Designation	Clamping screw	Wrench
JCTER/L...	CSHB-4-A	T-15F

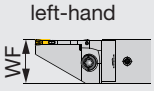
TUNGCUT
JCTER/L-CHP

DIRECT TUNG JET

External grooving and parting toolholder with DirectTungJet connection









Insert
Seat size 2 = DGM, SGM, DGS, SGS, DGE, DGG, SGN

Right hand (R) shown.

Designation	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF (1)	HBH	HBL	Torque*
JCTER/L1212X2T12-CHP	2	2	25	12	12	120	24.7	12	0/12	5	24.7	3
JCTER/L1616X2T12-CHP	2	2	25	16	16	120	24.7	16	0/16	1	24.5	3
JCTER/L1616X2T16-CHP	2	2	32	16	16	120	24.7	16	0/16	4	24.7	3
JCTER/L2020X2T16-CHP	2	2	32	20	20	120	24.7	20	0/20	-	-	3

(1) "WF" value is calculated with groove width "CW" shown in the table. "WF" value depends on the tool hand. With 0/12, WF is 0 for the right hand and 12 for the left hand.
• CUTDIA: Max. parting diameter *Torque: Recommended clamping torque (N·m)

SPARE PARTS







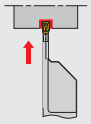

Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JCTER/L...	CSHB-4-A	T-15F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

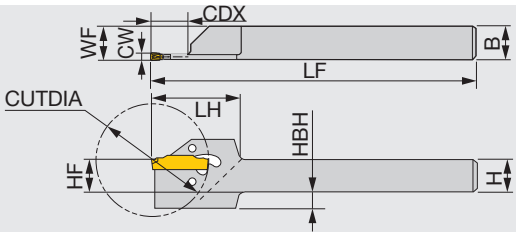
Groove width : 2.0 mm

Reference pages: Insert → F021 - F034, Standard cutting conditions → F030

TUNGCUT
CGER/L

External deep grooving and parting toolholder, for Swiss lathes







Insert
Seat size 1 = DGS1.4-016
Seat size 2, 3, 4, = DGM, SGM, DGS, SGS, SGN, DGG, DTM, DGL

Right hand (R) shown.

Designation	CW	Seat size	CUTDIA(1)	CDX	H	B	LF	LH	HF	WF (2)	HBH
CGER/L2020-1.4T14	1.4	1	29/29	9.7	20	20	125	31	20	20.2	-
CGER/L1212-2T17	2	2	35/35	11.8	12	12	150	31	12	12.1	6
CGER/L1616-2T17	2	2	35/35	11.8	16	16	150	31	16	16.1	2
CGER/L2020-2T17	2	2	35/35	9.8	20	20	125	31	20	20.1	-
CGER/L1212-3T19	3	3	38/40	12	12	12	150	31	12	12.3	6
CGER/L1616-3T19	3	3	38/45	14.9	16	16	150	31	16	16.3	2
CGER/L2020-3T19	3	3	38/45	13.2	20	20	125	31	20	20.3	-
CGER/L2020-4T19	4	4	38/55	20.3	20	20	125	33	20	20.4	-

• Wrench (CRW**) is not included. Please order it separately. Insert is clamped by the elastic deformation of the upper jaw.
(1) DG*/SG* maximum parting diameter will depend on the insert. (2) "WF" value is calculated with groove width "CW" shown in the table.

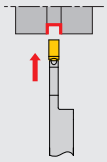
SPARE PARTS

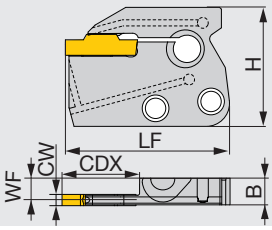
Designation	Wrench (Option)
CGER/L2020-1.4T14	CRW23
CGER/L****-2T17 - 4T19	CRW33

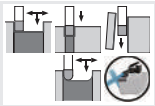
TUNGCUT
CAER/L-CHP

TUNGMODULAR SYSTEM

Modular-type external grooving and parting blade, with high pressure coolant capability







Insert
DGS,SGS,DGM, SGM,DTX,DTE, DGG,DTR,SGN, DTM,DGL

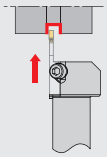
Right hand (R) shown.

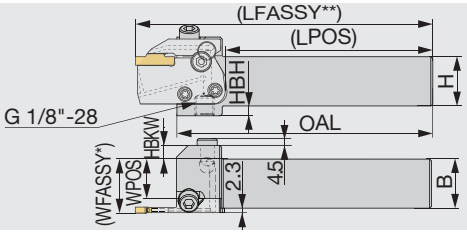
Designation	CW	Seat size	CDX	H	B	LF	WF
CAER/L-2T16-CHP	2	2	16	33	7.2	41.5	6.3
CAER/L-2T20-CHP	2	2	20	33	7.2	45.5	6.3
CAER/L-3T16-CHP	3	3	16	33	7.2	41.5	5.9
CAER/L-3T20-CHP	3	3	20	33	7.2	45.5	6
CAER/L-4T16-CHP	4	4	16	33	7.2	41.5	5.7
CAER/L-4T20-CHP	4	4	20	33	7.2	45.5	5.7
CAER/L-5T20-CHP	5	5	20	33	7.2	46.3	5.3
CAER/L-6T20-CHP	6	6	20	33	7.2	46.3	4.8

When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert.

Reference pages: Insert → F021 - F034, Standard cutting conditions →F030, Technical Reference → L041

Shank for CAER/L-CHP blades with high pressure coolant capability





Right hand (R) shown.

Designation	H	B	OAL	LPOS	WPOS	HBKW	HBH	Blade (Option)	Torque*
CHSR/L2020-CHP	20	20	130	105.5	15.1	12	10	CAER/L-CHP	5
CHSR/L2525-CHP	25	25	130	105.5	20.1	7	5	CAER/L-CHP	5

*WFASSY :Shank (WPOS) + blade (WF)
**LFASSY : Shank (LPOS) + blade (LF)

*Please see the page L041 for the instruction on installing and removing the blade or the insert.
*Torque: Recommended clamping torque (N·m)
Note: Use right-hand blades (R) with right-hand shanks (R); and left-hand blades (L) with left-hand shanks (L).
Applicable for 30 MPa coolant

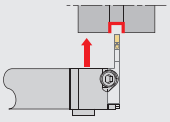
SPARE PARTS

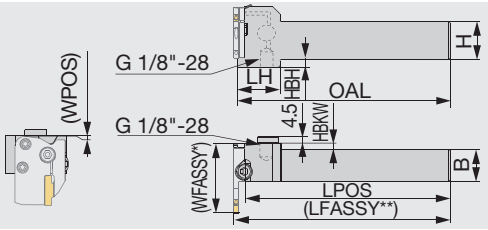
Designation	Clamping screw	Wrench	Clamping screw	Clamping screw	Wrench	O-ring	Plug
CHSR/L...-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N	PLUGG1/8ISO1179

Recommended clamping torque (N·m)

Clamping screw	Torque(N · m)
SRM5-04451	5
SRM6X12DIN6912	8.5
SRM6X20-XT	8.5

Shank for CAER/L-CHP blades with high pressure coolant capability





Right hand (R) with left-hand blade.

Designation	H	B	OAL	LH	LPOS	WPOS	HBKW	HBH	Blade (Option)	Torque*
CHFVR/L2020-CHP	20	20	140	28	135.1	0.5	5	10	CAER/L-CHP	5
CHFVR/L2525-CHP	25	25	140	28	135.1	0.5	0	5	CAER/L-CHP	5

*WFASSY : Shank (WPOS) + blade (LF)
**LFASSY : Shank (LPOS) + blade (WF)
*Torque: Recommended clamping torque (N·m)
Note: Use right-hand blades (R) with left-hand shanks (L); and left-hand blades (L) with right-hand shanks (R).
Applicable for 30 MPa coolant
*Please see the page L041 for the instruction on installing and removing the blade or the insert.

SPARE PARTS

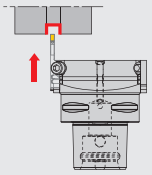
Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHFVR/L...	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N	PLUGG1/8ISO1179

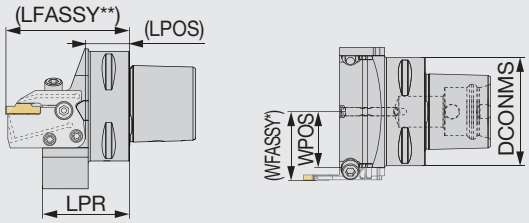
Recommended clamping torque (N·m)

Clamping screw	Torque(N · m)
SRM5-04451	5
SRM6X12DIN6912	8.5
SRM6X20-XT	8.5

Reference pages: Insert → F021 - F034, Standard cutting conditions → F030
Parts for coolant hose → F198, Technical Reference → L041

TungCap shank for CAER/L-CHP blades with high pressure coolant capability





Right-hand (R) blade

Designation	DCONMS	LPR	LPOS	WPOS	Blade (Option)	Torque*
C3CHSN19045-CHP	32	45	17.5	18.5	CAER/L...-CHP	5
C4CHSN21047-CHP	40	46.5	21.5	21	CAER/L...-CHP	5
C5CHSN26047-CHP	50	47	22.5	26	CAER/L...-CHP	5
C6CHSN33050-CHP	63	50	24.5	32.5	CAER/L...-CHP	5

*WFASSY :Shank (WPOS) + blade (WF)
**LFASSY : Shank (LPOS) + blade (LF)

*Torque: Recommended clamping torque (N·m)
Applicable for 30 MPa coolant
*Please see the page L041 for the instruction on installing and removing the blade or the insert.

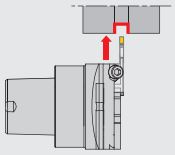
SPARE PARTS

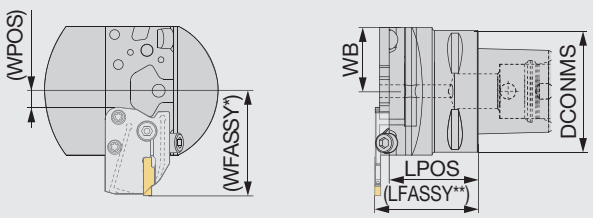
Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CHSN...-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N

Recommended clamping torque (N·m)

Clamping screw	Torque (N · m)
SRM5-04451	5
SRM6X12DIN6912	8.5
SRM6X20-XT	8.5

TungCap shank for CAER/L-CHP blades with high pressure coolant capability





Left-hand (L) blade

Designation	DCONMS	LPOS	WB	WPOS	Blade (Option)	Torque*
C3CHFVN26040-CHP	32	40	26	1.5	CAER/L...-CHP	5
C4CHFVN26046-CHP	40	46	26	1.5	CAER/L...-CHP	5
C5CHFVN26046-CHP	50	46	26	1.5	CAER/L...-CHP	5
C6CHFVN33046-CHP	63	46	33	8.5	CAER/L...-CHP	5

*WFASSY : Shank (WPOS) + blade (LF)
**LFASSY : Shank (LPOS) + blade (WF)

*Torque: Recommended clamping torque (N·m)
Applicable for 30 MPa coolant
*Please see the page L041 for the instruction on installing and removing the blade or the insert.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CHFVN...-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N

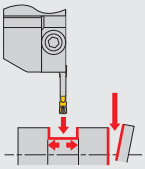
Recommended clamping torque (N·m)

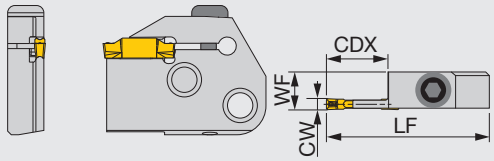
Clamping screw	Torque (N · m)
SRM5-04451	5
SRM6X12DIN6912	8.5
SRM6X20-XT	8.5

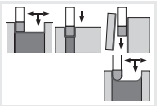
Reference pages: Insert → F021 - F034, Standard cutting conditions →F030, Technical Reference → L041

CAER/L

External grooving, parting, and turning blade







Insert
DGS, SGS, DGM, SGM, DTX, DTE, DGG, DTR, SGN DTM, DGL

Right hand (R) shown.

Designation	CW	Seat size	CDX	LF	WF	Shank	Torque*
CAER/L-3T16	3	3	16	45	10.4	CHFVL/R..., CHSR/L...	5
CAER/L-4T16	4	4	16	45	10.5	CHFVL/R..., CHSR/L...	5
CAER/L-5T20	5	5	20	49	10.5	CHFVL/R..., CHSR/L...	5
CAER/L-6T20	6	6	20	49	10.5	CHFVL/R..., CHSR/L...	5

*Torque: Recommended clamping torque (N·m)
Not compatible with TungModularSystem
When groove depth is larger than insert length - 1.5 mm, please use 1-cornered insert.

SPARE PARTS



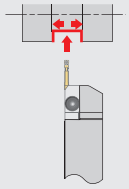


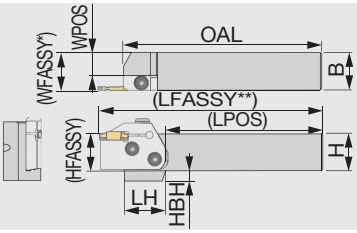
Designation	Clamping screw	Wrench
CAER/L...	BHM6-20-A	P-4

Reference pages: Insert → F021 - F034, Standard cutting conditions → F030

CHSR/L

Shank for CAER/L and CAFR/L blades





Right hand (R) shown.

Designation	H	B	OAL	LPOS	LH	WPOS	HFASSY	HBH	Blade (Option)
CHSR/L2020	20	20	133	125	35	10	20	12	CAER/L...
CHSR/L2525	25	25	133	125	28	15	25	7	CAER/L...
CHSR/L3232	32	32	153	125	-	22	32	-	CAER/L...

*WFASSY :Shank (WPOS) + blade (WF)
**LFASSY : Shank (LPOS) + blade (LF)
Not compatible with TungModularSystem

SPARE PARTS

Designation	Clamping screw	Wrench
CHSR/L...	CSHB-6-A	P-4

Combination of blade and toolholder

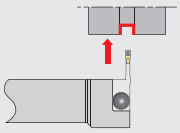
Toolholder	Blade			
	CAER...	CAEL...	CAFR...	CAFL...
CHSR...	●			●
CHSL...		●	●	

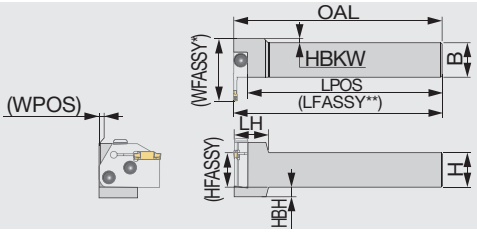
● : Corresponding

TUNGCUT

CHFVR/L

Shank for CAER/L and CAFR/L blades





Right hand (R) with left-hand blade.

Designation	H	B	OAL	LPOS	LH	WPOS	HBKW	HFASSY	HBH	Blade (Option)
CHFVR/L2020	20	20	150	140	25	0	8	20	12	CAEL/R...
CHFVR/L2525	25	25	150	140	25	0	3	25	7	CAEL/R...
CHFVR/L3232	32	32	170	160	25	4	-	32	-	CAEL/R...

*WFASSY : Shank (WPOS) + blade (LF)
**LFASSY : Shank (LPOS) + blade (WF)
Not compatible with TungModularSystem

SPARE PARTS

Designation	Clamping screw	Wrench
CHFVR/L...	CSHB-6-A	P-4

Combination of blade and toolholder

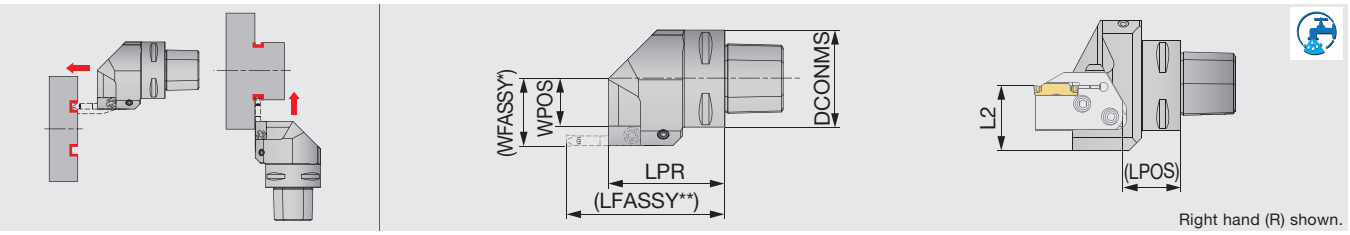
Toolholder	Blade			
	CAER...	CAEL...	CAFR...	CAFL...
CHSR...	●			●
CHSL...		●	●	
CHFVR...		●	●	
CHFVL...	●			●

● : Corresponding

Reference pages: Insert → F021 - F034, Standard cutting conditions → F030

C-CHSR/L

TungCap shank for CAER/L and CAFR/L blades



Right hand (R) shown.

Designation	DCONMS	LPR	LPOS	L2	WPOS	Blade (Option)
C3CHSR/L22050N	32	50	22.1	35	11.5	CAER/L...
C4CHSR/L27050N	40	50	22.1	36	16.5	CAER/L...
C5CHSR/L35060N	50	60	32.1	36	24.5	CAER/L...
C6CHSR/L45065N	63	65	32.1	41	34.5	CAER/L...

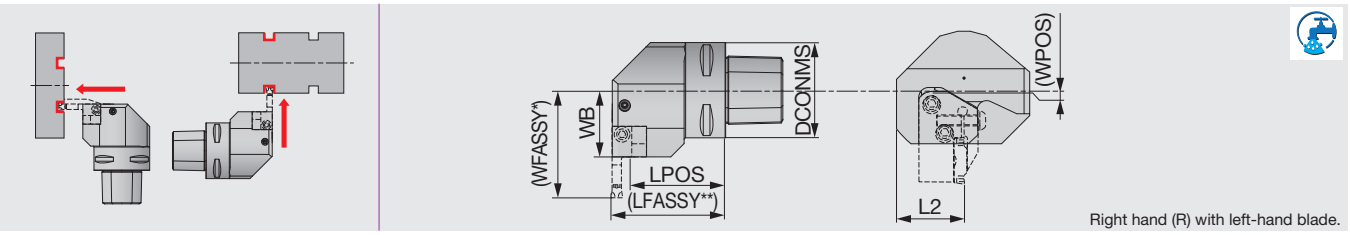
N at the end of the designation means the item for 7 Mpa coolant.
*WFASSY :Shank (WPOS) + blade (WF)
**LFASSY : Shank (LPOS) + blade (LF)
Not compatible with TungModularSystem

SPARE PARTS

Designation	Coolant parts	Plug	Clamping screw	Wrench
C4CHSR/L27050N	SATZ-M8X1-M3	SSHM4-4	CSHB-6-A	P-4
C5CHSR/L35060N	SATZ-M10X1-M5	SSHM4-4	CSHB-6-A	P-4
C6CHSR/L45065N	SATE-M10X1-M5	SSHM4-4	CSHB-6-A	P-4

C-CHFVR/L

TungCap shank for CAER/L and CAFR/L blades



Right hand (R) with left-hand blade.

Designation	DCONMS	LPOS	L2	WB	WPOS	Blade (Option)
C3CHFVR/L22040N	32	32.5	35	22	-5.9	CAER/L...
C4CHFVR/L27050N	40	42.5	36	27	-0.9	CAER/L...
C5CHFVR/L35060N	50	49.5	36	35	7.1	CAER/L...
C6CHFVR/L45065N	63	54.5	41	45	17.1	CAER/L...

*WFASSY : Shank (WPOS) + blade (LF)
**LFASSY : Shank (LPOS) + blade (WF)
N at the end of the designation means the item for 7 Mpa coolant.
Not compatible with TungModularSystem

SPARE PARTS

Designation	Coolant parts	Plug	Clamping screw	Wrench
C4CHFVR/L27050N	SATZ-M8X1-M3	SSHM4-4	CSHB-6-A	P-4
C5CHFVR/L35060N	SATZ-M10X1-M5	SSHM4-4	CSHB-6-A	P-4
C6CHFVR/L45065N	SATZ-M10X1-M5	SSHM4-4	CSHB-6-A	P-4

Combination of blade and toolholder

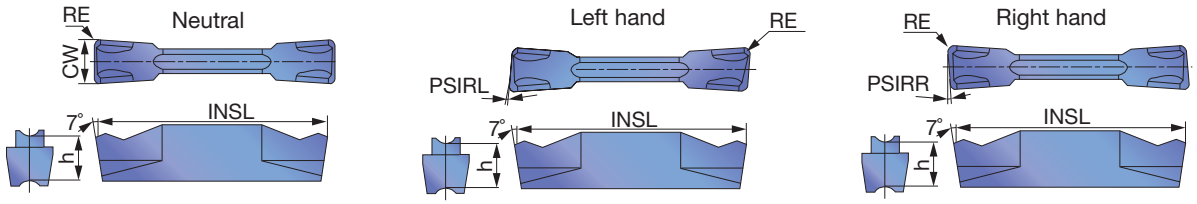
Toolholder	Blade			
	CAER...	CAEL...	CAFR...	CAFL...
C*CHSR...	●			●
C*CHSL...		●	●	
C*CHFVR...		●	●	
C*CHFVL...	●			●

● : Corresponding

Reference pages: Insert → F021 - F034, Standard cutting conditions → F030

DGM

External grooving and parting, 2 corners



P	Steel	★	★	★	☆		☆			★						
M	Stainless	★		★	☆		★									
K	Cast iron	☆		★		☆	☆			☆						
N	Non-ferrous															
S	Superalloys			★	☆	★										
H	Hard materials															

★ : First choice
☆ : Second choice

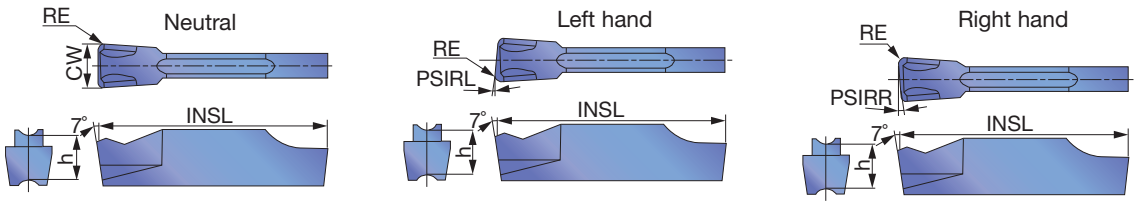
Designation	HAND	CW±0.05	RE	Coated							Cermet					INSL	h	PSIRL	PSIRR
				T9225	T9125	AH7025	AH725	AH905	GH130		NS9530								
DGM2-020	N	2	0.2	●	●	●	●		●		●					20	5	0°	0°
DGM2-020-6R	R	2	0.2			●	●		●							19.8	5	0°	6°
DGM2-020-6L	L	2	0.2			●	●		●							19.8	5	6°	0°
DGM2-020-8R	R	2	0.2			●	●		●							19.8	5	0°	8°
DGM2-020-8L	L	2	0.2			●	●		●							19.8	5	8	0°
DGM2-020-15R	R	2	0.2			●	●		●							19.8	5	0°	15°
DGM2-020-15L	L	2	0.2			●	●		●							19.8	5	15°	0°
DGM2-002-15R	R	2	0.02				●		●							19.35	5	0°	15°
DGM2-002-15L	L	2	0.02				●		●							19.35	5	15°	0°
DGM3-020	N	3	0.2	●	●	●	●	●	●		●					20	5	0°	0°
DGM3-020-6R	R	3	0.2			●	●		●							19.9	5	0°	6°
DGM3-020-6L	L	3	0.2			●	●		●							19.9	5	6°	0°
DGM3-002-6R	R	3	0.02				●		●							19.45	5	0°	6°
DGM3-002-6L	L	3	0.02				●		●							19.45	5	6°	0°
DGM3-020-15R	R	3	0.2			●	●		●							19.9	5	0°	15°
DGM3-020-15L	L	3	0.2			●	●		●							19.9	5	15°	0°
DGM4-030	N	4	0.3	●	●	●	●	●	●		●					20	5	0°	0°
DGM4-030-4R	R	4	0.3			●	●		●							19.8	5	0°	4°
DGM4-030-4L	L	4	0.3			●	●		●							19.8	5	4°	0°
DGM4-030-15R	R	4	0.3			●	●		●							19.8	5	0°	15°
DGM4-030-15L	L	4	0.3			●	●		●							19.8	5	15°	0°
DGM5-030	N	5	0.3	●	●	●	●	●	●		●					25	5.5	0°	0°
DGM5-030-4R	R	5	0.3			●	●		●							24.9	5.5	0°	4°
DGM6-030	N	6	0.3	●	●	●	●	●	●							25	5.5	0°	0°
DGM8-040	N	8	0.4	●	●	●	●		●							30	6.7	0°	0°

●: Line up

Reference pages: Toolholder → F010 - F020, Standard cutting conditions → F030

SGM

External deep grooving and parting, 1corner



P	Steel	★	☆	☆
M	Stainless	★	☆	★
K	Cast iron	★		☆
N	Non-ferrous			
S	Superalloys	★	☆	
H	Hard materials			

★ : First choice
☆ : Second choice

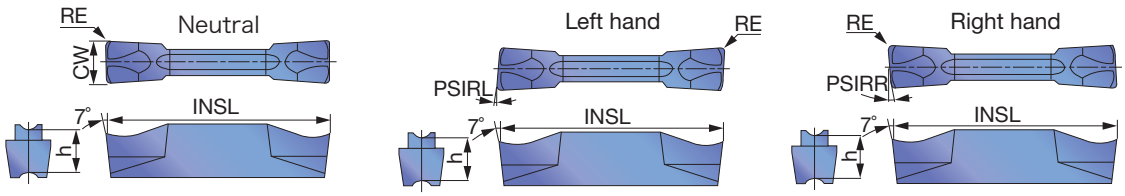
Designation	HAND	CW±0.05	RE	Coated			INSL	h	PSIRL	PSIRR
				AH7025	AH725	GH130				
SGM2-020	N	2	0.2	●	●		20	5	0°	0°
SGM2-020-6R	R	2	0.2	●	●	●	20	5	0°	6°
SGM2-020-6L	L	2	0.2	●	●	●	20	5	6°	0°
SGM3-020	N	3	0.2	●	●	●	20	5	0°	0°
SGM3-020-6R	R	3	0.2	●	●	●	20	5	0°	6°
SGM3-020-6L	L	3	0.2	●	●	●	20	5	6°	0°
SGM3-020-15R	R	3	0.2	●	●	●	20	5	0°	15°
SGM3-020-15L	L	3	0.2	●	●	●	20	5	15°	0°
SGM4-030	N	4	0.3	●	●	●	20	5	0°	0°
SGM4-030-4R	R	4	0.3	●	●	●	20	5	0°	4°
SGM4-030-4L	L	4	0.3	●	●	●	20	5	4°	0°
SGM5-030	N	5	0.3	●	●	●	25	5.5	0°	0°
SGM6-030	N	6	0.3	●	●	●	25	5.5	0°	0°

●: Line up

Reference pages: Toolholder → F010 - F020, Standard cutting conditions → F030

DGS

External grooving and parting, 2 corners



P	Steel	★	★	★	☆	☆			★								
M	Stainless	★		★	☆	★											
K	Cast iron	☆		★		☆			☆								
N	Non-ferrous																
S	Superalloys			★	☆												
H	Hard materials																

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	Coated							Cermet							INSL	h	PSIRL	PSIRR
				T9225	T9125	AH7025	AH725	GH130			NS9530										
DGS1.4-016	N	1.4	0.16			●	●	●										16	4.3	0°	0°
DGS2-020	N	2	0.2	●	●	●	●	●	●		●							20	5	0°	0°
DGS2-020-6R	R	2	0.2			●	●	●										19.95	5	0°	6°
DGS2-020-6L	L	2	0.2			●	●	●										19.95	5	6°	0°
DGS2-002-6R	R	2	0.02				●	●										19.5	5	0°	6°
DGS2-002-6L	L	2	0.02				●	●										19.5	5	6°	0°
DGS2-020-15R	R	2	0.2			●	●	●										19.95	5	0°	15°
DGS2-020-15L	L	2	0.2			●	●	●										19.95	5	15°	0°
DGS2-002-15R	R	2	0.02				●	●										19.5	5	0°	15°
DGS2-002-15L	L	2	0.02				●	●										19.5	5	15°	0°
DGS3-020	N	3	0.2	●	●	●	●	●	●		●							20	5	0°	0°
DGS3-020-6R	R	3	0.2			●	●	●										19.9	5	0°	6°
DGS3-020-6L	L	3	0.2			●	●	●										19.9	5	6°	0°
DGS3-002-6R	R	3	0.02				●	●										19.45	5	0°	6°
DGS3-002-6L	L	3	0.02				●	●										19.45	5	6°	0°
DGS3-020-15R	R	3	0.2			●	●	●										19.9	5	0°	15°
DGS3-020-15L	L	3	0.2			●	●	●										19.9	5	15°	0°
DGS3-002-15R	R	3	0.02				●	●										19.45	5	0°	15°
DGS3-002-15L	L	3	0.02				●	●										19.45	5	15°	0°
DGS4-030	N	4	0.3	●	●	●	●	●	●		●							20	5	0°	0°
DGS4-030-4R	R	4	0.3			●	●	●										19.8	5	0°	4°
DGS4-030-4L	L	4	0.3			●	●	●										19.85	5	4°	0°
DGS5-030	N	5	0.3	●	●	●	●	●	●		●							25	5.5	0°	0°
DGS6-030	N	6	0.3	●	●	●	●	●										25	5.5	0°	0°

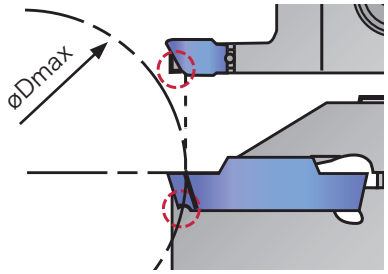
●: Line up

Caution

The tool will interfere with the workpiece when grooving larger diameter than øDmax.

Designation	øDmax (mm)
DGM2-002-15R/L	28
DGM3-002-15R/L	29
DGM4-030-15R/L	30
SGM3-020-15R/L	103

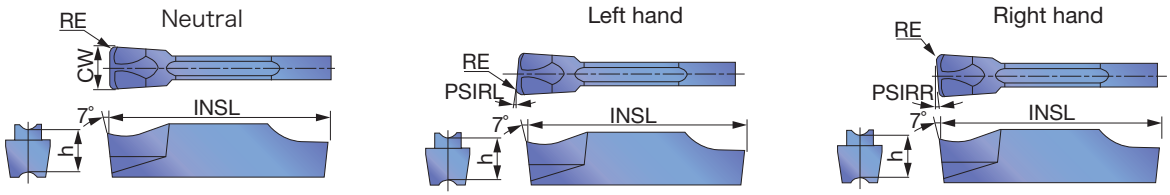
Designation	øDmax (mm)
DGS2-002-15R/L	28
DGS3-002-15R/L	29
SGS3-020-15R/L	103
SGS3-002-15R/L	34



Reference pages: Toolholder → F010 - F020, Standard cutting conditions → F030

SGS

External deep grooving and parting, 1corner



P	Steel	★	☆	☆															
M	Stainless	★	☆	★															
K	Cast iron	★		☆															
N	Non-ferrous																		
S	Superalloys	★	☆																
H	Hard materials																		

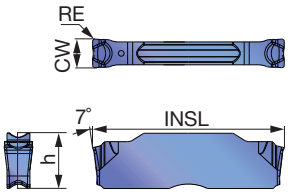
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	Coated										INSL	h	PSIRL	PSIRR
				AH7025	AH725	GH130											
SGS2-020	N	2	0.2	●	●									20	5	0°	0°
SGS2-020-6R	R	2	0.2	●	●	●								20	5	0°	6°
SGS2-020-6L	L	2	0.2	●	●	●								20	5	6°	0°
SGS2-020-15R	R	2	0.2	●	●	●								20	5	0°	15°
SGS2-020-15L	L	2	0.2	●	●	●								20	5	15°	0°
SGS3-020	N	3	0.2	●	●	●								20	5	0°	0°
SGS3-020-6R	R	3	0.2	●	●	●								20	5	0°	6°
SGS3-020-6L	L	3	0.2	●	●	●								20	5	6°	0°
SGS3-002-6R	R	3	0.02		●	●								19.8	5	0°	6°
SGS3-002-6L	L	3	0.02		●	●								19.8	5	6°	0°
SGS3-020-15R	R	3	0.2	●	●	●								20	5	0°	15°
SGS3-020-15L	L	3	0.2	●	●	●								20	5	15°	0°
SGS3-002-15R	R	3	0.02		●	●								19.8	5	0°	15°
SGS3-002-15L	L	3	0.02		●	●								19.8	5	15°	0°
SGS4-030	N	4	0.3	●	●	●								20	5	0°	0°
SGS5-030	N	5	0.3	●	●	●								25	5.5	0°	0°
SGS6-030	N	6	0.3	●	●	●								25	5.5	0°	0°

●: Line up

DGL

External grooving and parting



P	Steel	★																	
M	Stainless	★																	
K	Cast iron	★																	
N	Non-ferrous																		
S	Superalloys	★																	
H	Hard materials																		

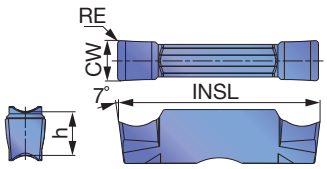
★ : First choice
☆ : Second choice

Designation	CW±0.05	RE	Coated										INSL	h
			AH7025											
DGL3-025	3	0.25	●										20	5
DGL4-030	4	0.3	●										20	5
DGL5-030	5	0.3	●										25	5.5
DGL6-080	6	0.8	●										25	5.5

●: Line up

Reference pages: Toolholder → F010 - F020, Standard cutting conditions → F030

DGG
External grooving (for high precision)



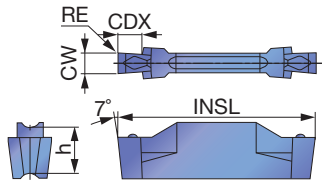
P	Steel	★			★												
M	Stainless	★															
K	Cast iron	★			☆			☆									
N	Non-ferrous							★									
S	Superalloys	★						☆									
H	Hard materials																

★ : First choice
☆ : Second choice

Designation	CW±0.02	RE	Coated	Cermet	Uncoated								INSL	h
			AH7025	NS9530	KS05F									
DGG200-020	2	0.2	●	●									20	5
DGG300-020	3	0.2	●	●	●								20	5
DGG400-040	4	0.4	●	●	●								20	5
DGG500-040	5	0.4	●	●	●								25	5.5
DGG600-040	6	0.4	●	●	●								25	5.5

●: Line up

DGE
External grooving (for high precision)



P	Steel	★	☆	☆			★										
M	Stainless	★	☆	★													
K	Cast iron	★		☆			☆										
N	Non-ferrous																
S	Superalloys	★	☆														
H	Hard materials																

★ : First choice
☆ : Second choice

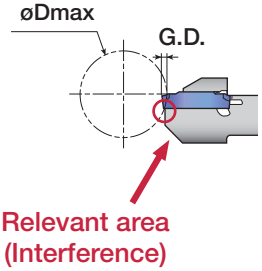
Designation	CW±0.05	RE	Coated				Cermet								CDX	INSL	h
			AH7025	AH725	GH130		NS9530										
DGE100-000	1	0		●	●		●								2.5	20	5
DGE130-000	1.3	0		●	●		●								2.5	20	5
DGE160-010	1.6	0.1	●	●	●		●								2.5	20	5
DGE185-010	1.85	0.1	●	●	●		●								3.5	20	5
DGE215-015	2.15	0.15	●	●	●		●								3.5	20	5

●: Line up

Caution
øDmax is limited as shown in the picture to the right according to the groove depth, G.D. Please refer to the following table.

G.D = Groove depth

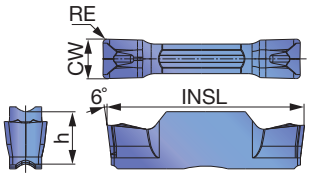
Designation	Max. groove depth (mm)	øDmax (mm)				
		G.D. = 1	G.D. = 1.5	G.D. = 2	G.D. = 2.5	G.D. = 3
DGE100-000	2	∞	18.6	11.5	-	-
DGE130-000						
DGE160-010						
DGE185-010	3				8.8	7
DGE215-015						



Reference pages: Toolholder → F010 - F020, Standard cutting conditions → F030

DTM

External face grooving and turning



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

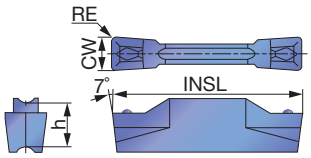
★ : First choice
☆ : Second choice

Designation	CW±0.05	RE	Coated	INSL	h
			AH7025		
DTM3-030	3	0.3	●	20	5
DTM4-040	4	0.4	●	20	5
DTM4-080	4	0.8	●	20	5
DTM5-080	5	0.8	●	25	5.5
DTM6-080	6	0.8	●	25	5.5
DTM8-080	8	0.8	●	30	6.7

●: Line up

DTE

External face grooving and turning (for high precision)



P	Steel	★	★		★	☆	☆			★					
M	Stainless	★			★	☆	★								
K	Cast iron	☆		★	★		☆								
N	Non-ferrous														
S	Superalloys				★	☆									
H	Hard materials														

★ : First choice
☆ : Second choice

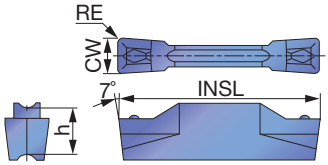
Designation	CW±0.02	RE	Coated							Cermet				INSL	h
			T9225	T9125	T515	AH7025	AH725	GH130		NS9530					
DTE265-015	2.65	0.15	●	●		●	●	●		●				20	5
DTE300-020	3	0.2	●	●		●	●	●		●				20	5
DTE300-040	3	0.4	●	●		●	●	●		●				20	5
DTE315-015	3.15	0.15	●	●		●	●	●		●				20	5
DTE400-040	4	0.4	●	●		●	●	●		●				20	5
DTE400-080	4	0.8	●	●		●	●	●		●				20	5
DTE415-015	4.15	0.15	●	●		●	●	●		●				20	5
DTE478-055	4.78	0.55	●	●		●	●	●		●				25	5.5
DTE500-040	5	0.4	●	●		●	●	●		●				25	5.5
DTE500-080	5	0.8	●	●		●	●	●		●				25	5.5
DTE515-015	5.15	0.15	●	●		●	●	●						25	5.5
DTE600-080	6	0.8	●	●		●	●	●						25	5.5
DTE600-120	6	1.2	●	●		●	●	●						25	5.5
DTE800-080	8	0.8	●	●		●	●	●						30	6.7
DTE800-120	8	1.2	●	●		●	●	●						30	6.7

●: Line up

Reference pages: Toolholder → F010 - F020, Standard cutting conditions → F030

DTE

External face grooving and turning



P	Steel	★	★		★	☆	☆			★					
M	Stainless	★			★	☆	★								
K	Cast iron	☆		★	★		☆								
N	Non-ferrous														
S	Superalloys				★	☆									
H	Hard materials														

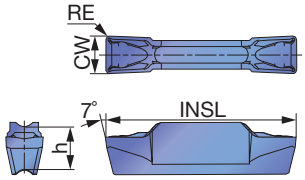
★ : First choice
☆ : Second choice

Designation	CW±0.05	RE	Coated							Cermet						INSL	h
			T9225	T9125	T515	AH7025	AH725	GH130		NS9530							
DTE3-040	3	0.4	●	●	●	●	●	●		●						20	5
DTE4-040	4	0.4	●	●	●	●	●	●		●						20	5
DTE5-040	5	0.4			●	●										25	5.5
DTE6-080	6	0.8			●	●										25	5.5

●: Line up

DTX

External/Internal face grooving and turning



P	Steel	★	★	★	☆	☆			★						
M	Stainless	★		★	☆	★									
K	Cast iron	☆		★		☆			☆						
N	Non-ferrous														
S	Superalloys			★	☆										
H	Hard materials														

★ : First choice
☆ : Second choice

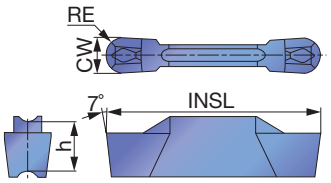
Designation	CW±0.05	RE	Coated						Cermet						INSL	h
			T9225	T9125	AH7025	AH725	GH130		NS9530							
DTX3-030	3	0.3	●	●	●	●	●		●						20	5
DTX4-040	4	0.4	●	●	●	●	●		●						20	5
DTX5-040	5	0.4	●	●	●	●	●		●						25	5.5
DTX6-080	6	0.8			●	●	●								25	5

●: Line up

Reference pages: Toolholder → F010 - F020, Standard cutting conditions → F030

DTR

Profiling and undercutting (for high precision)



P	Steel	★	★	★	☆		☆			★					
M	Stainless	★		★	☆		★								
K	Cast iron	☆		★		☆	☆			☆					
N	Non-ferrous														
S	Superalloys			★	☆	★									
H	Hard materials														

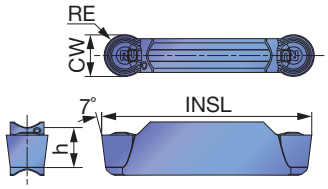
★ : First choice
☆ : Second choice

Designation	CW±0.02	RE	Coated							Cermet					INSL	h
			T9225	T9125	AH7025	AH725	AH905	GH130		NS9530						
DTR300-150	3	1.5	●	●	●	●		●		●					20	5
DTR400-200	4	2	●	●	●	●		●		●					20	5
DTR478-239	4.78	2.39	●	●	●	●		●		●					25	5.5
DTR500-250	5	2.5	●	●	●	●		●		●					25	5.5
DTR600-300	6	3	●	●	●	●		●							25	5.5

●: Line up

DTR

Profiling and undercutting



P	Steel	★	★	★	☆		☆			★					
M	Stainless	★		★	☆		★								
K	Cast iron	☆		★		☆	☆			☆					
N	Non-ferrous														
S	Superalloys			★	☆	★									
H	Hard materials														

★ : First choice
☆ : Second choice

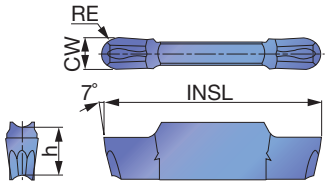
Designation	CW±0.05	RE	Coated							Cermet					INSL	h
			T9225	T9125	AH7025	AH725	AH905	GH130		NS9530						
DTR3-150	3	1.5	●	●	●	●	●	●		●					20	5
DTR4-200	4	2	●	●	●	●	●	●		●					20	5
DTR5-250	5	2.5	●	●	●	●	●	●		●					25	5.5
DTR6-300	6	3	●	●	●	●		●							25	5.5
DTR8-400	8	4	●	●	●	●		●							30	6.7

●: Line up

Reference pages: Toolholder → F010 - F020, Standard cutting conditions → F030

DTIU

Profiling and undercutting (for high precision)



P	Steel	★	☆ ☆
M	Stainless	★	☆ ★
K	Cast iron	★	☆
N	Non-ferrous		
S	Superalloys	★	☆
H	Hard materials		

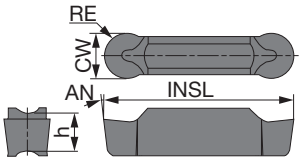
★ : First choice
☆ : Second choice

Designation	CW±0.02	RE	Coated AH7025	Coated AH725	Coated GH130	INSL	h
DTIU300-150	3	1.5	●	●		20	5
DTIU400-200	4	2	●	●	●	20	5
DTIU500-250	5	2.5	●	●	●	25	5.5
DTIU600-300	6	3	●	●	●	25	5.5

●: Line up

DTA

Aluminium wheel machining (for high precision)



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

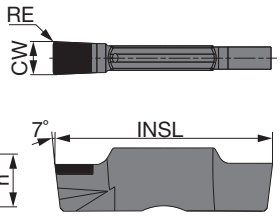
Designation	CW±0.02	RE	Uncoated TH10	INSL	h	AN
DTA600-300	6	3	●	25	5.5	7
DTA800-400	8	4	●	30	6.7	10

●: Line up

Reference pages: Toolholder → F010 - F020, Standard cutting conditions → F030

SGN

External grooving of hardened steel



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	CW±0.025	RE	CBN	INSL	h
			BX360		
SGN200-020	2	0.2	●	20	5
SGN300-020	3	0.2	●	20	5
SGN400-020	4	0.2	●	20	5

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed Vc (m/min)
P	Steels (C45, 34CrMo4, etc.)	< 300 HB	First choice	AH7025, AH725	50 - 180
		< 300 HB	Priority for wear resistance	T9225	80 - 300
		< 300 HB	Priority for wear resistance	T9125	80 - 200
		< 300 HB	Priority for impact resistance	GH130	50 - 120
		< 300 HB	Priority for surface finish	NS9530	80 - 220
M	Stainless steel (X10CrNiS18-9, etc.)	< 200 HB	First choice	AH7025, AH725	50 - 120
		< 200 HB	Priority for impact resistance	GH130	50 - 120
K	Gray cast iron (GG25, 250, etc.)	-	First choice	T515	50 - 180
		-	Priority for impact resistance	GH130	50 - 180
	Ductile cast irons (GGG45, 450-10S, etc.)	-	First choice	T515	50 - 120
		-	Priority for impact resistance	GH130	50 - 120
N	Aluminium alloys (Si < 12%)	-	First choice	TH10	100 - 500
		-	First choice	KS05F	100 - 600
S	Superalloys (Inconel718, etc.)	< HRC 40	First choice	AH7025	20 - 60
		< HRC 40	Priority for wear resistance	AH905	20 - 80
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	First choice	AH905	20 - 80
		< HRC 40	Priority for impact resistance	AH7025, AH725	20 - 80
		< HRC 40	Priority for surface finish	KS05F	20 - 60
H	Hardened steels (34CrMo4, etc.)	> HRC 50	First choice	BX360	80 - 150

*Please see the page **F031 - F033** for feed: f (mm/rev).

Reference pages: Toolholder → **F010 - F020**

External grooving and parting

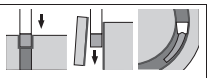
DGM type (2 corners) SGM type (1 corner)

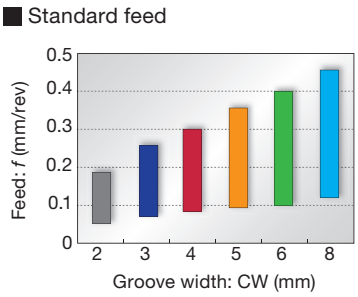


F021, F022 page

1st choice for grooving and parting

Smooth chip evacuation
Well-designed edge with high strength
Handed insert available
CW = 2 - 8 mm





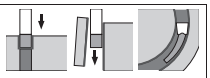
DGS type (2 corners) SGS type (1 corner)

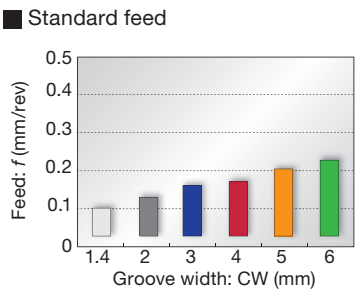


F023, F024 page

Lower cutting force and superior sharpness

Unique-designed edge and chipbreaker
Handed insert available
Handed insert available
CW = 1.4 - 6 mm





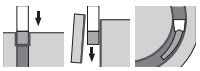
DGL type (2 corners)

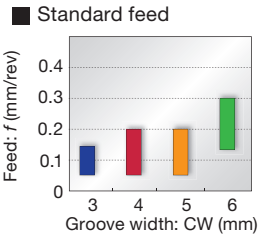


F024 page

1st choice for mild steel

Chipbreaker with excellent chip control at low feed
Chipbreaker
Suitable for mild steel that often gives difficulties in chip control
CW = 3 - 6 mm





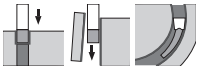
DGG type (2 corners)

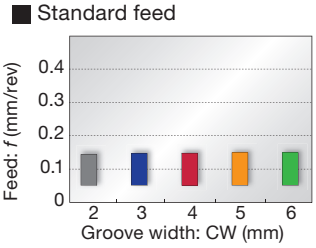


F025 page

For non-ferrous materials and titanium

Chipbreaker with low cutting force
Sharp cutting edge that prevents vibration and delivers fine surface finish
CW = 2 - 6 mm





DGE type (2 corners)

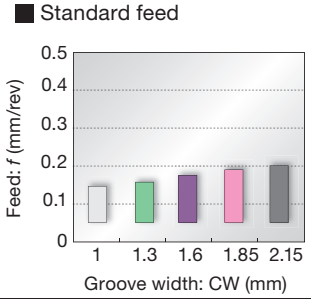


F025 page

For high accurate and shallow groove

Excellent chip control
CW = 1 - 2.15 mm





External grooving and turning

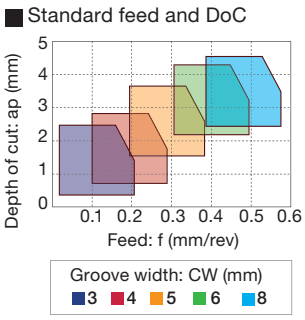
DTM type (2 corners)

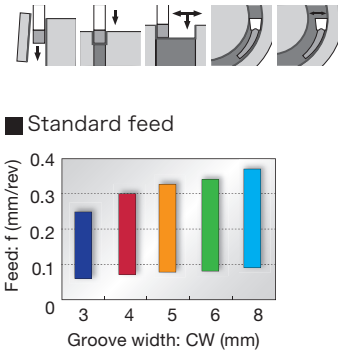


F026 page

General purpose

1st choice for grooving and turning
Suitable for light to medium cutting
Excellent chip control in machining steel, alloy steel, stainless steel, and heat-resistant alloy
CW = 3 - 8 mm





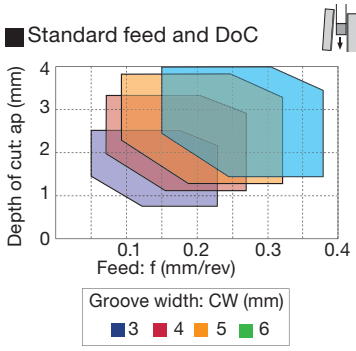
DTX type (2 corners)

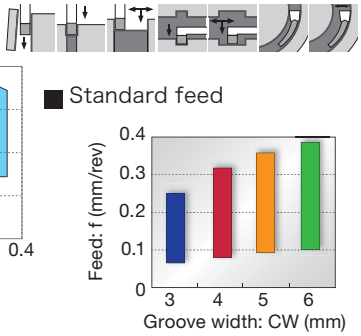


F027 page

Multi-functional type

Well balanced sharpness and strength
Multi-functional insert
Insert
CW = 3 - 6 mm





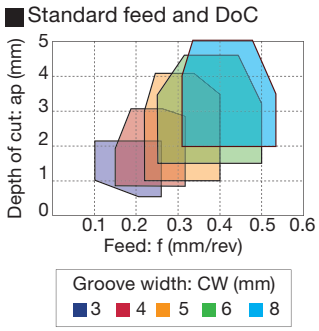
DTE type (2 corners)

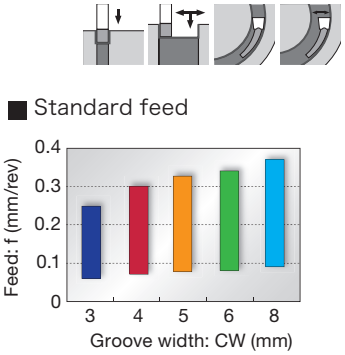


F026, F027 page

General purpose

Unique chipbreaker makes chips shorter
Molded and ground insert available
CW = 3 - 8 mm





Profiling and undercutting

DTR type (2 corners)

Molded



Ground

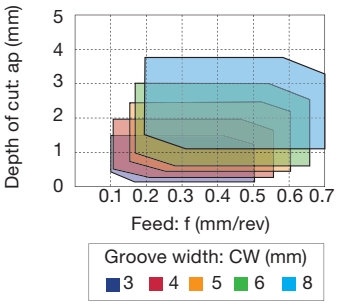


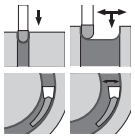
F028 page

Full radius type

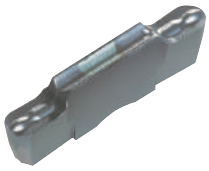
Excellent chip control
Molded and ground inserts available
CW = 3 - 8 mm

Standard feed and DoC





DTIU type (2 corners)

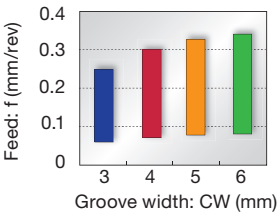


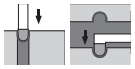
F029 page

Full radius type

Excellent chip control for undercutting
CW = 3 - 6 mm

Standard feed and DoC





Aluminium wheel machining

DTA type (2 corners)

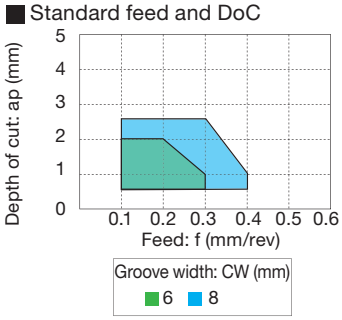


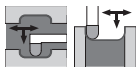
F029 page

Full radius type

Excellent chip control
For aluminium wheel profiling
Ground insert
CW = 6 - 8 mm

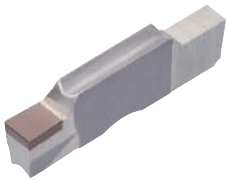
Standard feed and DoC





External grooving of hardened steel

SGN-CBN type (1 corner)

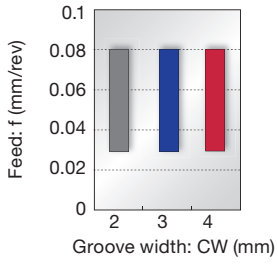


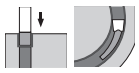
F030 page

For hardened steel cutting

Optimum cutting edge shape for grooving of hardened steels
High tolerance width for finishing
CW = 2 - 4 mm
(CW = ±0.025 mm)

Standard feed





AH7025 Cutting performance

First choice grade for grooving
AH7025 grade: Tungaloy's unique coating technology for drastically improved reliability

Tool life comparison

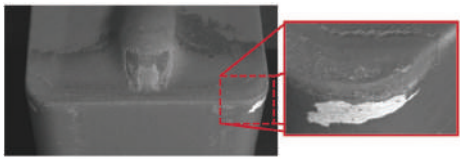
Alloy steel (SCM440 / 42CrMo4) **P**

AH7025



Tool wear after 60 grooves

Conventional grade



Tool wear after 30 grooves

Insert : DTE3-040 AH7025
Cutting speed : *Vc* = 150 m/min
Feed : *f* = 0.17 mm/rev
Groove depth : 17 mm
Machining : External grooving
Coolant : Wet

AH7025 provides stability, while preventing coating from peeling off even after machining twice the number of passes compared to the conventional grade.

→ **The combination of Nano-multi-layered AlTiN Coating with high Al content and tough substrate provides highly efficient machining in various grooving operations.**

Grades

AH7025 P M S

- First choice for various applications
- New PVD coating with high Al content provides excellent adhesion strength
- Improved wear and chipping resistance

AH725 P M S

- Recommended for various applications
- Newly developed coating with well controlled crystal structure and fracture resistance
- Improved adhesion strength

T515 K

- First recommended grade for cast iron
- Excellent wear resistance in high-speed machining

T9225 P

- Suitable for steel machining at high speeds
- New CVD coating and substrate deliver an outstanding balance of wear and chipping resistance
- Balance of wear and chipping resistance

T9125 P

- Suitable for steel machining at high speeds
- Balance of wear and chipping resistance

NS9530 P

- Advanced cermet for finish cutting of steel
- Innovative grade with incredible fracture and high wear resistance

GH130 P M K

- Recommended for interrupted machining
- TiCNO PVD coating layer with high wear resistance
- High hardness wear resistance

AH905 S

- Remarkable for machining of heat resistant alloys
- Exclusive coating layer improves adhesion strength and wear resistance

KS05F N S

- Recommended for non-ferrous materials
- Recommended for non-ferrous materials and titanium

TH10 N

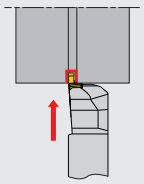
- Recommended for non-ferrous materials

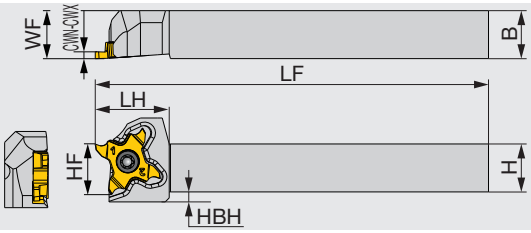
BX360 H

- Suitable for hardened steel machining
- Ideal balance of wear and chipping resistance due to the optimum CBN content and grain size

STCR/L-18

External grooving and threading toolholder





Right hand (R) shown.

Designation	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque*
STCR/L1010X18	0.33	3	10	10	120	18.5	10	10	4.5	TC*18...	1.2
STCR/L1212F18	0.33	3	12	12	85	18.5	12	12	2.5	TC*18...	1.2
STCR/L1212X18	0.33	3	12	12	120	18.5	12	12	2.5	TC*18...	1.2
STCR/L1616X18	0.33	3	16	16	120	18.5	16	16	-	TC*18...	1.2
STCR/L2020H18	0.33	3	20	20	100	18.5	20	20	-	TC*18...	1.2
STCR/L2020X18	0.33	3	20	20	120	23	20	25	-	TC*18...	1.2
STCR/L2525Z18	0.33	3	25	25	135	23	25	30	-	TC*18...	1.2

Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
*Torque: Recommended clamping torque (N·m)

SPARE PARTS



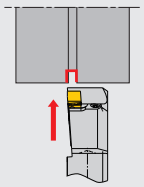


Designation	Clamping screw	Wrench
STCR*****18	CSTC-4L100DL	T-1008/5
STCL*****18	CSTC-4L100DR	T-1008/5

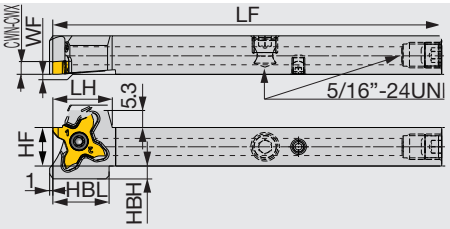
STCR/L-18-CHP

DIRECTTUNGJET

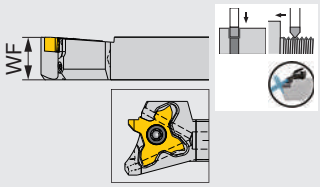
External grooving and threading toolholder with DirectTungJet connection



Right hand



Left hand



STCR/L1212*18**B**-CHP

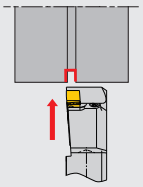
Designation	CWN	CWX	H	B	LF	LH	HF	WF	HBL	HBH	Insert	Torque*
STCR/L1212X18-CHP***(1)	0.33	3	12	12	120	18.5	12	0/12	17.5	4	TC*18...	1.2
STCR/L1212X18B-CHP (1)	0.33	3	12	12	120	18.5	12	0/12	17.5	4	TC*18...	1.2
STCR/L1616X18-CHP (1)	0.33	3	16	16	120	18.5	16	0/16	-	-	TC*18...	1.2

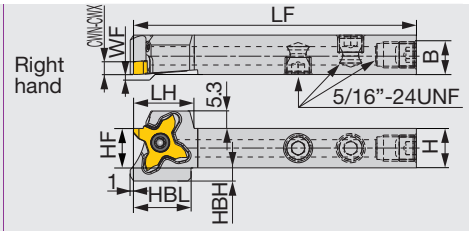
Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
(1) This product can be used with DirectTungJet system.
*Torque: Recommended clamping torque (N·m)
***: This item will be replaced with a new product in the future.

Reference pages: Insert → F040 - F045, Standard cutting conditions → F045

STCR/L-F18-CHP

External grooving and threading toolholder, with high pressure coolant capability





Designation	CWN	CWX	H	B	LF	LH	HF	WF	HBL	HBH	Insert	Torque*
STCR/L1212F18-CHP***	0.33	3	12	12	85	18.5	12	0/12	17.5	4	TC*18...	1.2
STCR/L1212F18B-CHP	0.33	3	12	12	120	18.5	12	0/12	17.5	4	TC*18...	1.2

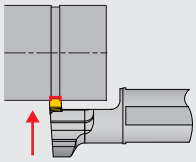
Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
*Torque: Recommended clamping torque (N·m)
*** : This item will be replaced with a new product in the future.

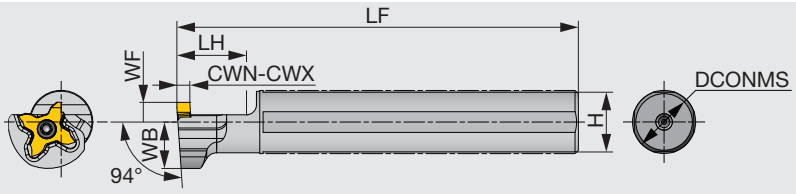
SPARE PARTS

Designation	Clamping screw	Wrench
STCL**18-CHP	CSTC-4L100DR	T-1008/5
STCR**18-CHP	CSTC-4L100DL	T-1008/5

JS-STCL18

External grooving and threading toolholder with round shank, for Swiss lathes





Left hand (L) shown.

Designation	CWN	CWX	DCONMS	H	LF	LH	WB	WF	Insert	Torque*
JS14H-STCL18	0.33	3	14	13	100	20	14	6	TC*18R...	1.2
JS159F-STCL18	0.33	3	15.875	15	85	20	14	6	TC*18R...	1.2
JS16F-STCL18	0.33	3	16	15	85	20	14	6	TC*18R...	1.2
JS19G-STCL18	0.33	3	19.05	18	90	20	14	6	TC*18R...	1.2
JS19X-STCL18	0.33	3	19.05	18	120	20	14	6	TC*18R...	1.2
JS20G-STCL18	0.33	3	20	19	90	20	14	6	TC*18R...	1.2
JS20X-STCL18	0.33	3	20	19	120	20	14	6	TC*18R...	1.2
JS22X-STCL18	0.33	3	22	21	120	20	12.25	10	TC*18R...	1.2
JS25H-STCL18	0.33	3	25	24	100	20	12.25	10	TC*18R...	1.2
JS254X-STCL18	0.33	3	25.4	24	120	20	12.25	10	TC*18R...	1.2

• Please use right-hand inserts.
*Torque: Recommended clamping torque (N·m)

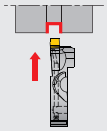
SPARE PARTS

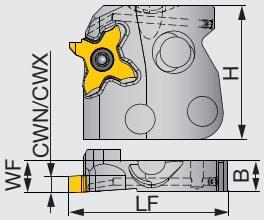
Designation	Clamping screw	Wrench
JS****-STCL18	CSTC-4L100DL	T-1008/5

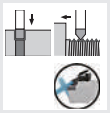
Reference pages: Insert → F040 - F045, Standard cutting conditions → F045, Parts for coolant hose → F198

STCAR/L18-CHP

Modular-type external grooving and parting blade, with high pressure coolant capability







Right hand (R) shown.

Designation	CWN	CWX	H	B	LF	WF	Insert	Torque*
STCAR/L18-CHP	0.33	3	33	7.2	38	7.5	TC*18...	1.2

Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
*Torque: Recommended clamping torque (N·m)

SPARE PARTS



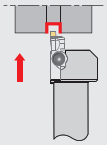


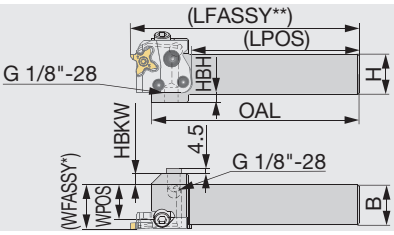
Designation	Clamping screw	Wrench
STCAL18-CHP	CSTC-4L100DR	T-1008/5
STCAR18-CHP	CSTC-4L100DL	T-1008/5

CHSR/L-CHP

TUNGMODULAR SYSTEM

Shank for blades with high pressure coolant capability







Right hand (R) shown.

Designation	H	B	OAL	LPOS	WPOS	HBKW	HBH
CHSR/L2020-CHP	20	20	130	105.5	15.1	12	10
CHSR/L2525-CHP	25	25	130	105.5	20.1	7	5

*WFASSY : shank (WPOS) + blade (WF)
**LFASSY : shank (LPOS) + blade (LF)

* Please see the page L041 for the instruction on installing and removing the blade.
Note: Use right-hand blades (R) with right-hand shanks (R); and left-hand blades (L) with left-hand shanks (L).
• Applicable for 30 MPa coolant

SPARE PARTS















Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHSR/L...-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N	PLUGG1/8ISO1179

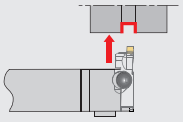
Recommended clamping torque (N·m)

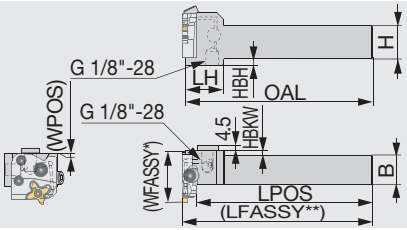
Clamping screw	Torque (N · m)
SRM5-04451	5
SRM6X12DIN6912	8.5
SRM6X20-XT	8.5

Reference pages: Insert → F040 - F045, Standard cutting conditions → F045, Parts for coolant hose → F198

CHFVR/L-CHP

Shank for blades with high pressure coolant capability





Right hand (R) with left-hand blade

Designation	H	B	OAL	LH	LPOS	WPOS	HBKW	HBH
CHFVR/L2020-CHP	20	20	140	28	135.1	0.5	5	10
CHFVR/L2525-CHP	25	25	140	28	135.1	0.5	0	5

*WFASSY : shank (WPOS) + blade (LF)
**LFASSY : shank (LPOS) + blade (WF)
Note: Use left-hand blades (L) with right-hand shanks (R); and right-hand blades (R) with left-hand shanks (L).
• Applicable for 30 MPa coolant
* Please see the page L041 for the instruction on installing and removing the blade.

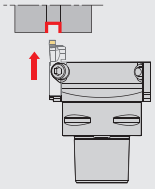
SPARE PARTS

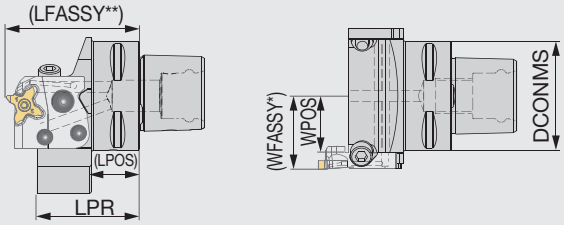


Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHFVR/L...	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N	PLUGG1/8ISO1179

C*CHSN-CHP

TungCap shank for CAER/L-CHP blades with high pressure coolant capability





Right-hand (R) shown.

Designation	DCONMS	LPR	LPOS	WPOS
C3CHSN19045-CHP	32	45	17.5	18.5
C4CHSN21047-CHP	40	46.5	21.5	21
C5CHSN26047-CHP	50	47	22.5	26
C6CHSN33050-CHP	63	50	24.5	32.5

*WFASSY : shank (WPOS) + blade (WF)
**LFASSY : shank (LPOS) + blade (LF)
• Applicable for 30 MPa coolant
* Please see the page L041 for the instruction on installing and removing the blade.

SPARE PARTS



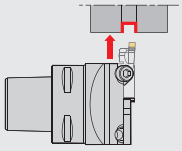
Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CHSN...-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N

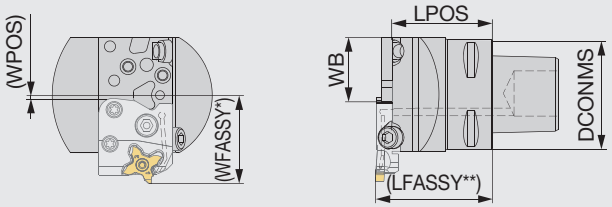
Recommended clamping torque (N·m)

Clamping screw	Torque (N · m)
SRM5-04451	5
SRM6X12DIN6912	8.5
SRM6X20-XT	8.5

Reference pages: Insert → F040 - F045, Standard cutting conditions → F045, Parts for coolant hose → F198

TungCap shank for CAER/L-CHP blades with high pressure coolant capability





Left-hand (L) blade

Designation	DCONMS	LPOS	WB	WPOS
C3CHFVN26040-CHP	32	40	26	1.5
C4CHFVN26046-CHP	40	46	26	1.5
C5CHFVN26046-CHP	50	46	26	1.5
C6CHFVN33046-CHP	63	46	33	8.5

*WFASSY : shank (WPOS) + blade (LF)
**LFASSY : shank (LPOS) + blade (WF)

• Applicable for 30 MPa coolant
* Please see the page L041 for the instruction on installing and removing the blade.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CHFVN...-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N

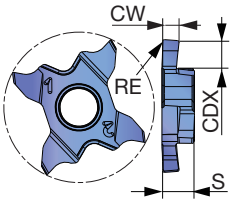
Recommended clamping torque (N·m)

Clamping screw	Torque (N · m)
SRM5-04451	5
SRM6X12DIN6912	8.5
SRM6X20-XT	8.5

Reference pages: Insert → F040 - F045, Standard cutting conditions →F045

TCG18R/L (with edge preparation)





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02	RE	Coated AH7025	CDX	S
TCG18R100-010	R	1	0.1	●	2	4
TCG18L100-010	L	1	0.1	●	2	4
TCG18R120-010	R	1.2	0.1	●	2	4
TCG18L120-010	L	1.2	0.1	●	2	4
TCG18R125-010	R	1.25	0.1	●	2	4
TCG18L125-010	L	1.25	0.1	●	2	4
TCG18R125-020	R	1.25	0.2	●	2	4
TCG18L125-020	L	1.25	0.2	●	2	4
TCG18R130-020	R	1.3	0.2	●	2	4
TCG18L130-020	L	1.3	0.2	●	2	4
TCG18R140-010	R	1.4	0.1	●	3.5	4
TCG18L140-010	L	1.4	0.1	●	3.5	4
TCG18R140-020	R	1.4	0.2	●	3.5	4
TCG18L140-020	L	1.4	0.2	●	3.5	4
TCG18R145-010	R	1.45	0.1	●	3.5	4
TCG18L145-010	L	1.45	0.1	●	3.5	4
TCG18R145-020	R	1.45	0.2	●	3.5	4
TCG18L145-020	L	1.45	0.2	●	3.5	4
TCG18R150-010	R	1.5	0.1	●	3.5	4
TCG18L150-010	L	1.5	0.1	●	3.5	4
TCG18R150-020	R	1.5	0.2	●	3.5	4
TCG18L150-020	L	1.5	0.2	●	3.5	4
TCG18R160-020	R	1.6	0.2	●	3.5	4
TCG18L160-020	L	1.6	0.2	●	3.5	4
TCG18R170-020	R	1.7	0.2	●	3.5	4
TCG18L170-020	L	1.7	0.2	●	3.5	4
TCG18R175-010	R	1.75	0.1	●	3.5	4
TCG18L175-010	L	1.75	0.1	●	3.5	4
TCG18R175-020	R	1.75	0.2	●	3.5	4
TCG18L175-020	L	1.75	0.2	●	3.5	4
TCG18R185-020	R	1.85	0.2	●	3.5	4
TCG18L185-020	L	1.85	0.2	●	3.5	4
TCG18R195-020	R	1.95	0.2	●	3.5	4
TCG18L195-020	L	1.95	0.2	●	3.5	4

Please see the page F045 for precautions of processing.

5 pieces per package
● : Line up

Reference pages: Toolholder → F035 - F039, Standard cutting conditions → F045

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02	RE	Coated	CDX	S
				AH7025		
TCG18R200-010	R	2	0.1	●	3.5	4
TCG18L200-010	L	2	0.1	●	3.5	4
TCG18R200-020	R	2	0.2	●	3.5	4
TCG18L200-020	L	2	0.2	●	3.5	4
TCG18R225-020	R	2.25	0.2	●	3.5	4
TCG18L225-020	L	2.25	0.2	●	3.5	4
TCG18R230-020	R	2.3	0.2	●	3.5	4
TCG18L230-020	L	2.3	0.2	●	3.5	4
TCG18R250-010	R	2.5	0.1	●	3.5	4
TCG18L250-010	L	2.5	0.1	●	3.5	4
TCG18R250-020	R	2.5	0.2	●	3.5	4
TCG18L250-020	L	2.5	0.2	●	3.5	4
TCG18R250-030	R	2.5	0.3	●	3.5	4
TCG18L250-030	L	2.5	0.3	●	3.5	4
TCG18R265-030	R	2.65	0.3	●	3.5	4
TCG18L265-030	L	2.65	0.3	●	3.5	4
TCG18R280-030	R	2.8	0.3	●	3.5	4
TCG18L280-030	L	2.8	0.3	●	3.5	4
TCG18R300-010	R	3	0.1	●	3.5	4
TCG18L300-010	L	3	0.1	●	3.5	4
TCG18R300-020	R	3	0.2	●	3.5	4
TCG18L300-020	L	3	0.2	●	3.5	4
TCG18R300-030	R	3	0.3	●	3.5	4
TCG18L300-030	L	3	0.3	●	3.5	4

Please see the page F045 for precautions of processing.

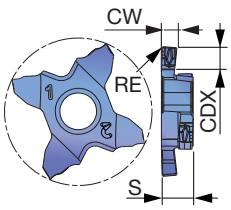
5 pieces per package
● : Line up

Reference pages: Toolholder → F035 - F039, Standard cutting conditions → F045

INSERT

TCS18R (honed edge) (3D chipbreaker, honed edge)





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02	RE	Coated	CDX	S
				AH7025		
TCS18R100-010	R	1	0.1	●	2	4
TCS18R120-010	R	1.2	0.1	●	2	4
TCS18R125-010	R	1.25	0.1	●	2	4
TCS18R125-020	R	1.25	0.2	●	2	4
TCS18R130-020	R	1.3	0.2	●	3.5	4
TCS18R140-010	R	1.4	0.1	●	3.5	4
TCS18R140-020	R	1.4	0.2	●	3.5	4
TCS18R145-010	R	1.45	0.1	●	3.5	4
TCS18R150-010	R	1.5	0.1	●	3.5	4
TCS18R150-020	R	1.5	0.2	●	3.5	4
TCS18R160-020	R	1.6	0.2	●	3.5	4
TCS18R170-020	R	1.7	0.2	●	3.5	4
TCS18R175-010	R	1.75	0.1	●	3.5	4
TCS18R175-020	R	1.75	0.2	●	3.5	4
TCS18R185-020	R	1.85	0.2	●	3.5	4
TCS18R195-020	R	1.95	0.2	●	3.5	4
TCS18R200-010	R	2	0.1	●	3.5	4
TCS18R200-020	R	2	0.2	●	3.5	4
TCS18R225-020	R	2.25	0.2	●	3.5	4
TCS18R230-020	R	2.3	0.2	●	3.5	4
TCS18R250-010	R	2.5	0.2	●	3.5	4
TCS18R250-020	R	2.5	0.2	●	3.5	4
TCS18R250-030	R	2.5	0.3	●	3.5	4
TCS18R265-030	R	2.65	0.3	●	3.5	4
TCS18R280-030	R	2.8	0.3	●	3.5	4
TCS18R300-010	R	3	0.1	●	3.5	4
TCS18R300-020	R	3	0.2	●	3.5	4
TCS18R300-030	R	3	0.3	●	3.5	4

Please see the page F045 for precautions of processing.

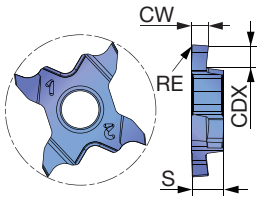
5 pieces per package

● : Line up

Reference pages: Toolholder → F035 - F039, Standard cutting conditions → F045

TCP18R/L (lightly honed edge)





P	Steel	★	★
M	Stainless	★	
K	Cast iron	★	☆
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02	RE	Coated	Cermet	CDX	S
				AH725	NS9530		
TCP18R033-005	R	0.33	0.05	●	●	0.8	4
TCP18L033-005	L	0.33	0.05	●	●	0.8	4
TCP18R043-005	R	0.43	0.05	●	●	1.2	4
TCP18L043-005	L	0.43	0.05	●	●	1.2	4
TCP18R050-005	R	0.50	0.05	●	●	1.2	4
TCP18L050-005	L	0.50	0.05	●	●	1.2	4
TCP18R075-005	R	0.75	0.05	●	●	2	4
TCP18L075-005	L	0.75	0.05	●	●	2	4
TCP18R095-005	R	0.95	0.05	●	●	2	4
TCP18L095-005	L	0.95	0.05	●	●	2	4
TCP18R100-010	R	1	0.1	●	●	2	4
TCP18L100-010	L	1	0.1	●	●	2	4
TCP18R120-010	R	1.2	0.1	●	●	2	4
TCP18L120-010	L	1.2	0.1	●	●	2	4
TCP18R125-010	R	1.25	0.1	●	●	2	4
TCP18L125-010	L	1.25	0.1	●	●	2	4
TCP18R140-010-35	R	1.4	0.1	●		3.5	4
TCP18L140-010-35	L	1.4	0.1	●		3.5	4
TCP18R145-010	R	1.45	0.1	●	●	2	4
TCP18L145-010	L	1.45	0.1	●	●	2	4
TCP18R145-010-35	R	1.45	0.1	●		3.5	4
TCP18L145-010-35	L	1.45	0.1	●		3.5	4
TCP18R150-010	R	1.5	0.1	●	●	2	4
TCP18L150-010	L	1.5	0.1	●	●	2	4
TCP18R150-010-35	R	1.5	0.1	●		3.5	4
TCP18L150-010-35	L	1.5	0.1	●		3.5	4
TCP18R175-010	R	1.75	0.1	●	●	2	4
TCP18L175-010	L	1.75	0.1	●	●	2	4
TCP18R175-010-35	R	1.75	0.1	●		3.5	4
TCP18L175-010-35	L	1.75	0.1	●		3.5	4
TCP18R200-010	R	2	0.1	●	●	2.5	4
TCP18L200-010	L	2	0.1	●	●	2.5	4
TCP18R200-010-35	R	2	0.1	●		3.5	4
TCP18L200-010-35	L	2	0.1	●		3.5	4
TCP18R250-010	R	2.5	0.1	●	●	2.5	4
TCP18L250-010	L	2.5	0.1	●	●	2.5	4
TCP18R250-010-35	R	2.5	0.1	●		3.5	4
TCP18L250-010-35	L	2.5	0.1	●		3.5	4
TCP18R300-010	R	3	0.1	●	●	2.5	4
TCP18L300-010	L	3	0.1	●	●	2.5	4
TCP18R300-010-35	R	3	0.1	●		3.5	4
TCP18L300-010-35	L	3	0.1	●		3.5	4

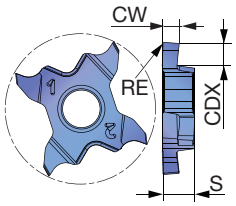
Please see the page F045 for precautions of processing.

5 pieces per package
● : Line up

Reference pages: Toolholder → F035 - F039, Standard cutting conditions → F045

TCP18R/L-F (sharp edge)





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

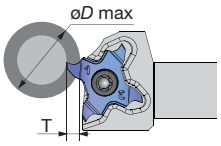
Designation	HAND	CW±0.02	RE	Coated	CDX	S
				SH725		
TCP18R033F-005	R	0.33	0.05	●	0.8	4
TCP18L033F-005	L	0.33	0.05	●	0.8	4
TCP18R043F-005	R	0.43	0.05	●	1.2	4
TCP18L043F-005	L	0.43	0.05	●	1.2	4
TCP18R050F-005	R	0.5	0.05	●	1.2	4
TCP18L050F-005	L	0.5	0.05	●	1.2	4
TCP18R075F-005	R	0.75	0.05	●	2	4
TCP18L075F-005	L	0.75	0.05	●	2	4
TCP18R095F-005	R	0.95	0.05	●	2	4
TCP18L095F-005	L	0.95	0.05	●	2	4
TCP18R100F-005	R	1	0.05	●	2	4
TCP18R100F-010	R	1	0.1	●	2	4
TCP18L100F-010	L	1	0.1	●	2	4
TCP18R120F-005	R	1.2	0.05	●	2	4
TCP18R120F-010	R	1.2	0.1	●	2	4
TCP18L120F-010	L	1.2	0.1	●	2	4
TCP18R125F-005	R	1.25	0.05	●	2	4
TCP18R125F-010	R	1.25	0.1	●	2	4
TCP18L125F-010	L	1.25	0.1	●	2	4
TCP18R140F-010-35	R	1.4	0.1	●	3.5	4
TCP18R145F-005-35	R	1.45	0.05	●	3.5	4
TCP18R145F-010	R	1.45	0.1	●	2	4
TCP18L145F-010	L	1.45	0.1	●	2	4
TCP18R145F-010-35	R	1.45	0.1	●	3.5	4
TCP18L145F-010-35	L	1.45	0.1	●	3.5	4
TCP18R150F-005-35	R	1.5	0.05	●	3.5	4
TCP18R150F-010	R	1.5	0.1	●	2	4
TCP18L150F-010	L	1.5	0.1	●	2	4
TCP18R150F-010-35	R	1.5	0.1	●	3.5	4
TCP18L150F-010-35	L	1.5	0.1	●	3.5	4
TCP18R175F-005-35	R	1.75	0.05	●	3.5	4
TCP18R175F-010	R	1.75	0.1	●	2	4
TCP18L175F-010	L	1.75	0.1	●	2	4
TCP18R175F-010-35	R	1.75	0.1	●	3.5	4
TCP18L175F-010-35	L	1.75	0.1	●	3.5	4
TCP18R200F-005-35	R	2	0.05	●	3.5	4
TCP18R200F-010	R	2	0.1	●	2.5	4
TCP18L200F-010	L	2	0.1	●	2.5	4
TCP18R200F-010-35	R	2	0.1	●	3.5	4
TCP18L200F-010-35	L	2	0.1	●	3.5	4
TCP18R250F-010	R	2.5	0.1	●	2.5	4
TCP18L250F-010	L	2.5	0.1	●	2.5	4
TCP18R250F-010-35	R	2.5	0.1	●	3.5	4
TCP18L250F-010-35	L	2.5	0.1	●	3.5	4
TCP18R300F-010	R	3	0.1	●	2.5	4
TCP18L300F-010	L	3	0.1	●	2.5	4
TCP18R300F-010-35	R	3	0.1	●	3.5	4
TCP18L300F-010-35	L	3	0.1	●	3.5	4

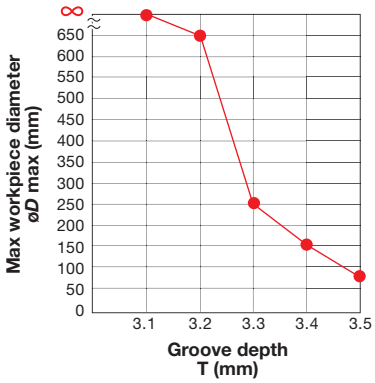
Please see the page F045 for precautions of processing.

Reference pages: Toolholder → F035 - F039, Standard cutting conditions → F045

5 pieces per package
● : Line up

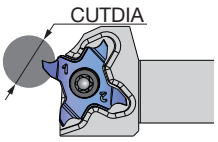
Precautions of processing





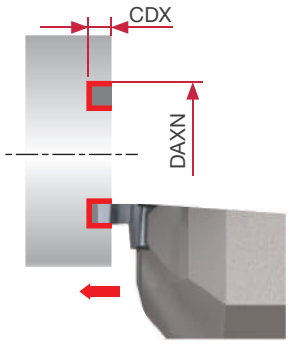
*Groove depth and max workpiece diameter (øDmax)

Maximum workpiece diameter is limited relative to depth of cut in order to avoid collision between insert and workpiece.



max workpiece diameter CUTDIA (mm)
7

Minimum diameter for face grooving



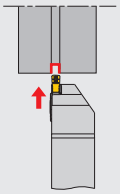
Minimum face diameter DAXN (mm)	Maximum groove depth CDX (mm)
65	3

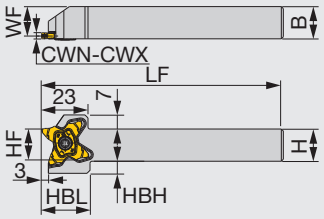
STANDARD CUTTING CONDITIONS

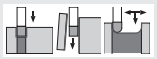
ISO	Workpiece material	Cutting speed *Vc* (m/min)	Feed: *f* (mm/rev) TCP / TCP-F (AH725 / SH725)	TCS (AH7025)	TCG (AH7025)
P	Low carbon steel (S15C, SS400 etc.)	80 - 180	0.03 - 0.1	0.03 - 0.15	0.03 - 0.12
P	Carbon steels, Alloy steel (S55C, SCM440 etc.)	80 - 180	0.03 - 0.1	0.03 - 0.15	0.03 - 0.12
P	Prehardened steel (NAK80, PX5 etc.)	80 - 180	0.03 - 0.1	0.03 - 0.15	0.03 - 0.12
M	Stainless steel (SUS304, X5CrNiMo17-12-3 etc.)	50 - 120	0.03 - 0.1	0.03 - 0.15	0.03 - 0.12
K	Gray cast iron (FC250, FC300 etc.)	50 - 180	0.03 - 0.1	0.03 - 0.15	0.03 - 0.12
K	Ductile cast irons (FCD400 etc.)	50 - 180	0.03 - 0.1	0.03 - 0.15	0.03 - 0.12
S	Titanium alloys (Ti-6Al-4V etc.)	30 - 80	0.03 - 0.1	0.03 - 0.15	0.03 - 0.12
S	Superalloys (Inconel718 etc.)	20 - 60	0.03 - 0.1	0.03 - 0.15	0.03 - 0.12

STCR/L-27

External grooving toolholder







Right hand (R) shown.

Designation	CWN	CWX	H	B	LF	HF	WF	HBH	HBL	Insert	Torque*
STCR/L1010-27	0.5	3.18	10	10	120	10	8.5	9.5	24	TC*27...	2.5
STCR/L1212-27	0.5	3.18	12	12	120	12	10.5	8	24	TC*27...	2.5
STCR/L1616-27	0.5	3.18	16	16	120	16	14.5	6	24	TC*27...	2.5
STCR/L2020-27	0.5	3.18	20	20	120	20	18.5	2	24	TC*27...	2.5
STCR/L2525-27	0.5	3.18	25	25	135	25	23.5	-	-	TC*27...	2.5

*Torque: Recommended clamping torque (N·m)

SPARE PARTS



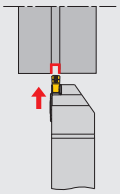


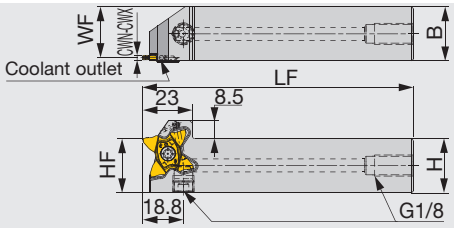
Designation	Screw	Wrench
STCR****-27	SR16-212-01397L	T-2010/5
STCL****-27	SR16-212-01397	T-2010/5

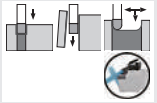
STCR/L-27-CHP

TUNGTJET URN

External grooving toolholder, with high pressure coolant capability







Right hand (R) shown.

Designation	CWN	CWX	H	B	LF	HF	WF	Insert	Torque*
STCR/L2525-27-CHP	0.5	3.18	25	25	125	25	23.5	TC*27...	2.5

*Torque: Recommended clamping torque (N·m)

SPARE PARTS





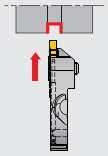
Designation	Screw	Wrench
STCR****-27-CHP	SR16-212-01397L	T-2010/5
STCL****-27-CHP	SR16-212-01397	T-2010/5

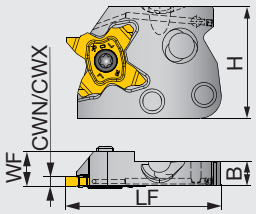
External
Internal
Grooving
Parting
Others

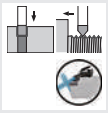
Reference pages: Insert → F050 - F053, Standard cutting conditions → F053, Parts for coolant hose → F198

STCAR/L27-CHP

Modular-type external grooving and parting blade, with high pressure coolant capability







Right hand (R) shown.

Designation	CWN	CWX	H	B	LF	WF	Insert	Torque*
STCAR/L27-CHP	0.5	3.18	33	7.2	46	7.5	TC*27...	2.5

*Torque: Recommended clamping torque (N·m)

SPARE PARTS

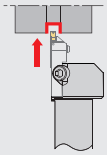


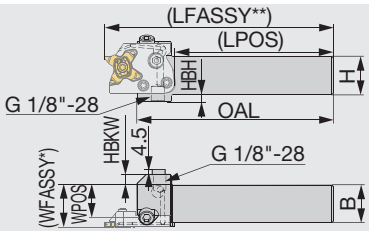


Designation	Clamping screw	Wrench
JS...STCL18	CSTC-4L100DL	T-1008/5

CHSR/L-CHP

Shank for blades with high pressure coolant capability







Right hand (R) shown.

Designation	H	B	OAL	LPOS	WPOS	HBKW	HBH
CHSR/L2020-CHP	20	20	130	105.5	15.1	12	10
CHSR/L2525-CHP	25	25	130	105.5	20.1	7	5

*WFASSY : shank (WPOS) + blade (WF)
**LFASSY : shank (LPOS) + blade (LF)

* Please see the page L041 for the instruction on installing and removing the blade.
Note: Use right-hand blades (R) with right-hand shanks (R); and left-hand blades (L) with left-hand shanks (L).
• Applicable for 30 MPa coolant

SPARE PARTS















Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHSR/L...-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N	PLUGG1/8ISO1179

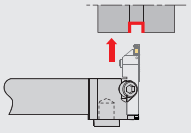
Recommended clamping torque (N·m)

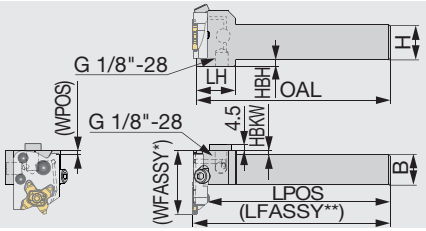
Clamping screw	Torque (N · m)
SRM5-04451	5
SRM6X12DIN6912	8.5
SRM6X20-XT	8.5

Reference pages: Insert → F050 - F053, Standard cutting conditions → F053, Parts for coolant hose → F198

CHFVR/L-CHP

Shank for blades with high pressure coolant capability





Right hand (R)
with left-hand blade.

Designation	H	B	OAL	LPOS	WPOS	LH	HBKW	HBH
CHFVR/L2020-CHP	20	20	140	135.1	0.5	28	5	10
CHFVR/L2525-CHP	25	25	140	135.1	0.5	28	0	5

*WFASSY : shank (WPOS) + blade (LF)
**LFASSY : shank (LPOS) + blade (WF)
Note: Use left-hand blades (L) with right-hand shanks (R); and right-hand blades (R) with left-hand shanks (L).

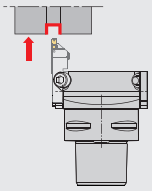
• Applicable for 30 MPa coolant
* Please see the page L041 for the instruction on installing and removing the blade.

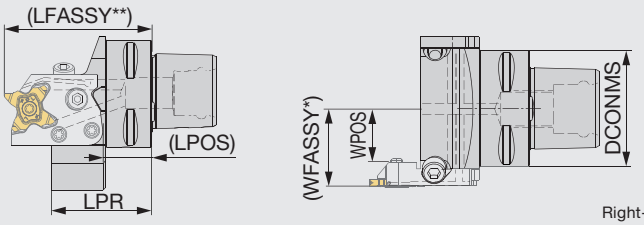
SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHFVR/L...	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N	PLUGG1/8ISO1179

C*CHSN-CHP

TungCap shank for CAER/L-CHP blades with high pressure coolant capability





Right-hand (R) shown.

Designation	DCONMS	LPR	LPOS	WPOS
C3CHSN19045-CHP	32	45	17.5	18.5
C4CHSN21047-CHP	40	46.5	21.5	21
C5CHSN26047-CHP	50	47	22.5	26
C6CHSN33050-CHP	63	50	24.5	32.5

*WFASSY : shank (WPOS) + blade (WF)
**LFASSY : shank (LPOS) + blade (LF)
• Applicable for 30 MPa coolant
* Please see the page L041 for the instruction on installing and removing the blade.

SPARE PARTS

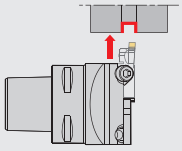
Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CHSN...-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N

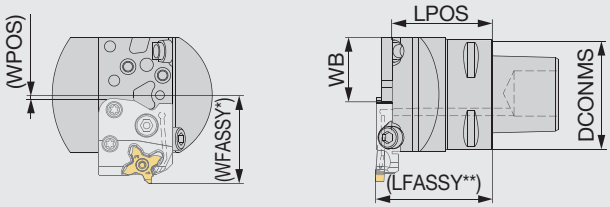
Recommended clamping torque (N·m)

Clamping screw	Torque (N · m)
SRM5-04451	5
SRM6X12DIN6912	8.5
SRM6X20-XT	8.5

Reference pages: Insert → F050 - F053, Standard cutting conditions → F053, Parts for coolant hose → F198

TungCap shank for CAER/L-CHP blades with high pressure coolant capability





Left-hand (L) blade.

Designation	DCONMS	LPOS	WB	WPOS
C3CHFVN26040-CHP	32	40	26	1.5
C4CHFVN26046-CHP	40	46	26	1.5
C5CHFVN26046-CHP	50	46	26	1.5
C6CHFVN33046-CHP	63	46	33	8.5

*WFASSY : shank (WPOS) + blade (LF)
**LFASSY : shank (LPOS) + blade (WF)

• Applicable for 30 MPa coolant
* Please see the page **L041** for the instruction on installing and removing the blade.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CHFVN...-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N

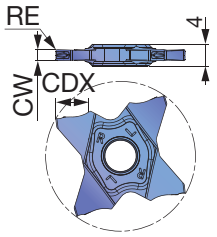
Recommended clamping torque (N·m)

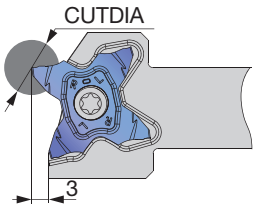
Clamping screw	Torque (N · m)
SRM5-04451	5
SRM6X12DIN6912	8.5
SRM6X20-XT	8.5

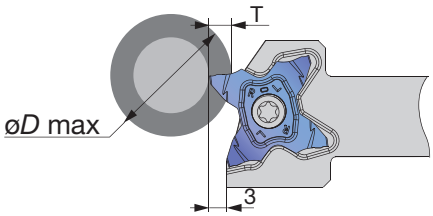
Reference pages: Insert → F050 - F053, Standard cutting conditions → F053

INSERT - FOR GROOVING AND PARTING OFF

TCS27







P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

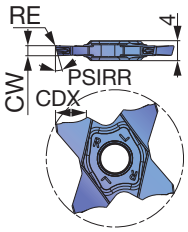
Designation	HAND	CW±0.02	RE	Coated AH725	CDX	CUTDIA	S1	Relation of groove depth (T) and Max. diameter (øD max) T≤1	T≤2	T≤3	T≤3.5	T≤4	T≤4.5	T≤5	T≤5.5	T≤5.7	T≤6	T≤6.2	T≤6.4
TCS27-050-000	0.5	0.02	0	●	1	2	4	∞	-	-	-	-	-	-	-	-	-	-	-
TCS27-050-004	0.5	0.02	0.04	●	2.5	5	4	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-075-010	0.75	0.02	0.1	●	2.5	5	4	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-080-000	0.8	0.02	0	●	1.6	3.2	4	∞	-	-	-	-	-	-	-	-	-	-	-
TCS27-100-006	1	0.02	0.06	●	3.5	7	4	∞	∞	∞	600	-	-	-	-	-	-	-	-
TCS27-100-010	1	0.02	0.1	●	3.5	7	4	∞	∞	∞	600	-	-	-	-	-	-	-	-
TCS27-104-000	1.04	0.02	0	●	2	4	4	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-120-000	1.2	0.02	0	●	2	4	4	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-125-010	1.25	0.02	0.1	●	3.5	7	4	∞	∞	∞	600	-	-	-	-	-	-	-	-
TCS27-125-020	1.25	0.02	0.2	●	3.5	7	4	∞	∞	∞	600	-	-	-	-	-	-	-	-
TCS27-140-000	1.4	0.02	0	●	2	4	4	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-147-000	1.47	0.02	0	●	2.5	5	4	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-150-010	1.5	0.02	0.1	●	5.7	11.4	4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCS27-150-020	1.5	0.02	0.2	●	5.7	11.4	4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCS27-157-015	1.57	0.02	0.15	●	3	6	4	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-170-010	1.7	0.02	0.1	●	3	6	4	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-175-010	1.75	0.02	0.1	●	3	6	4	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-175-020	1.75	0.02	0.2	●	3	6	4	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-178-018	1.78	0.02	0.18	●	3	6	4	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-185-020	1.85	0.02	0.2	●	3	6	4	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-196-015	1.96	0.02	0.15	●	3	6	4	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-200-010	2	0.02	0.1	●	6.4	12.8	4	∞	∞	∞	600	280	180	130	105	85	60	50	30
TCS27-200-020	2	0.02	0.2	●	6.4	12.8	4	∞	∞	∞	600	280	180	130	105	85	60	50	30
TCS27-222-015	2.22	0.02	0.15	●	3.5	7	4	∞	∞	∞	600	-	-	-	-	-	-	-	-
TCS27-230-020	2.3	0.02	0.2	●	3.5	7	4	∞	∞	∞	600	-	-	-	-	-	-	-	-
TCS27-239-015	2.39	0.02	0.15	●	5.7	11.4	4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCS27-247-020	2.47	0.02	0.2	●	5.7	11.4	4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCS27-250-010	2.5	0.02	0.1	●	5.7	11.4	4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCS27-250-030	2.5	0.02	0.3	●	5.7	11.4	4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCS27-270-010	2.7	0.02	0.1	●	6.2	12.4	4	∞	∞	∞	600	280	180	135	105	95	85	78	-
TCS27-287-020	2.87	0.02	0.2	●	6.2	12.4	4	∞	∞	∞	600	280	180	135	105	95	85	78	-
TCS27-300-000	3	0.02	0	●	6.4	12.8	4	∞	∞	∞	600	280	180	135	105	95	85	78	55
TCS27-300-020	3	0.02	0.2	●	6.4	12.8	4	∞	∞	∞	600	280	180	135	105	95	85	78	55
TCS27-300-030	3	0.02	0.3	●	6.4	12.8	4	∞	∞	∞	600	280	180	135	105	95	85	78	55
TCS27-300-040	3	0.02	0.4	●	6.4	12.8	4	∞	∞	∞	600	280	180	135	105	95	85	78	55
TCS27-315-015	3.15	0.02	0.15	●	6.4	12.8	4	∞	∞	∞	600	280	180	135	105	95	85	78	68
TCS27-318-020	3.18	0.02	0.2	●	6.4	12.8	4	∞	∞	∞	600	280	180	135	105	95	85	78	68

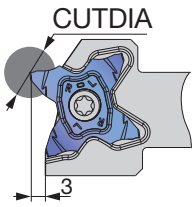
5 pieces per package
● : Line up

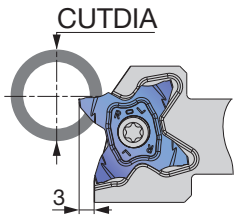
Reference pages: Toolholder → F046 - F049, Standard cutting conditions → F053

INSERT- FOR PARTING OFF

TCS27-R/L







P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

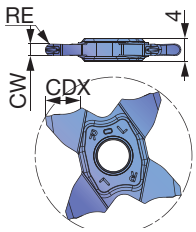
★ : First choice
☆ : Second choice

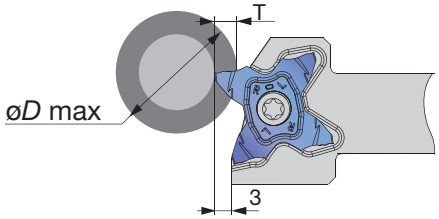
Designation	HAND	CW±0.02	RE	Coated AH725	CDX	PSIRL	PSIRR	Max. parting off dia. CUTDIA Solid bar	Max. parting off dia. CUTDIA Tube
TCS27-100-15R	R	1	0.06	●	3.5	0°	15°	7	600
TCS27-100-15L	L	1	0.06	●	3.5	15°	0°	7	600
TCS27-150-6R	R	1.5	0.06	●	5.7	0°	6°	11.4	35
TCS27-150-6L	L	1.5	0.06	●	5.7	6°	0°	11.4	35
TCS27-150-15R	R	1.5	0.06	●	5.7	0°	15°	11.4	35
TCS27-150-15L	L	1.5	0.06	●	5.7	15°	0°	11.4	35
TCS27-200-6R	R	2	0.1	●	6.4	0°	6°	12.8	30
TCS27-200-6L	L	2	0.1	●	6.4	6°	0°	12.8	30
TCS27-200-15R	R	2	0.1	●	6.4	0°	15°	12.8	30
TCS27-200-15L	L	2	0.1	●	6.4	15°	0°	12.8	30

5 pieces per package
● : Line up

INSERT- FOR GROOVING AND PROFILING

TCS27 (Full R)





P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

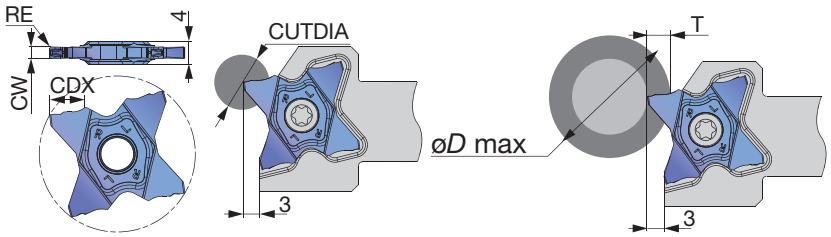
Designation	CW±0.02	RE	Coated AH725	CDX	Relation of groove depth (T) and Max. diameter (øD max) T≤1 T≤2 T≤3	T≤3.5	T≤4	T≤4.5	T≤5	T≤5.5	T≤5.7	T≤6	T≤6.2	T≤6.4
TCS27-157-079	1.57	0.79	●	3	∞	-	-	-	-	-	-	-	-	-
TCS27-200-100	2	1	●	3	∞	-	-	-	-	-	-	-	-	-
TCS27-239-120	2.39	1.2	●	5.7	∞	600	280	180	130	50	35	-	-	-
TCS27-300-150	3	1.5	●	6.4	∞	600	280	180	135	105	95	85	78	55

5 pieces per package
● : Line up

Reference pages: Toolholder → F046 - F049, Standard cutting conditions → F053

INSERT- FOR GROOVING AND PARTING OFF

TCM27



P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials			

★ : First choice
☆ : Second choice

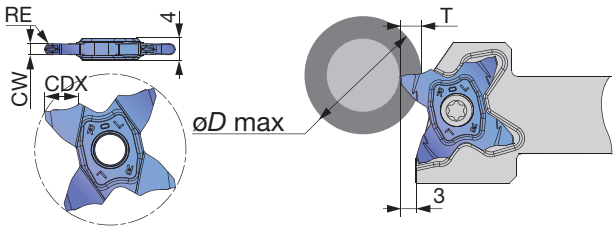
Designation	CW±0.02	RE	Coated	CDX	CUTDIA	S1	Relation of groove depth (T) and Max. diameter (øD max)								
			AH725				T≤1 T≤2 T≤3	T≤3.5	T≤4	T≤4.5	T≤5	T≤5.5	T≤5.7	T≤6	T≤6.2	T≤6.4
TCM27-150-010	1.5	0.1	●	5.7	11.4	4	∞	600	280	180	130	50	35	-	-	-
TCM27-150-020	1.5	0.2	●	5.7	11.4	4	∞	600	280	180	130	50	35	-	-	-
TCM27-157-015	1.57	0.15	●	3	6	4	∞	-	-	-	-	-	-	-	-	-
TCM27-170-010	1.7	0.1	●	3	6	4	∞	-	-	-	-	-	-	-	-	-
TCM27-175-010	1.75	0.1	●	3	6	4	∞	-	-	-	-	-	-	-	-	-
TCM27-175-020	1.75	0.2	●	3	6	4	∞	-	-	-	-	-	-	-	-	-
TCM27-178-018	1.78	0.18	●	3	6	4	∞	-	-	-	-	-	-	-	-	-
TCM27-185-020	1.85	0.2	●	3	6	4	∞	-	-	-	-	-	-	-	-	-
TCM27-196-015	1.96	0.15	●	3	6	4	∞	-	-	-	-	-	-	-	-	-
TCM27-200-010	2	0.1	●	6.4	12.8	4	∞	600	280	180	130	105	85	60	50	30
TCM27-200-020	2	0.2	●	6.4	12.8	4	∞	600	280	180	130	105	85	60	50	30
TCM27-222-015	2.22	0.15	●	3.5	7	4	∞	600	-	-	-	-	-	-	-	-
TCM27-230-020	2.3	0.2	●	3.5	7	4	∞	600	-	-	-	-	-	-	-	-
TCM27-239-015	2.39	0.15	●	5.7	11.4	4	∞	600	280	180	130	50	35	-	-	-
TCM27-247-020	2.47	0.2	●	5.7	11.4	4	∞	600	280	180	130	50	35	-	-	-
TCM27-250-010	2.5	0.1	●	5.7	11.4	4	∞	600	280	180	130	50	35	-	-	-
TCM27-250-030	2.5	0.3	●	5.7	11.4	4	∞	600	280	180	130	50	35	-	-	-
TCM27-270-010	2.7	0.1	●	6.2	12.4	4	∞	600	280	180	135	105	95	85	78	-
TCM27-287-020	2.87	0.2	●	6.2	12.4	4	∞	600	280	180	135	105	95	85	78	-
TCM27-300-000	3	0	●	6.4	12.8	4	∞	600	280	180	135	105	95	85	78	55
TCM27-300-020	3	0.2	●	6.4	12.8	4	∞	600	280	180	135	105	95	85	78	55
TCM27-300-030	3	0.3	●	6.4	12.8	4	∞	600	280	180	135	105	95	85	78	55
TCM27-300-040	3	0.4	●	6.4	12.8	4	∞	600	280	180	135	105	95	85	78	55
TCM27-315-015	3.15	0.15	●	6.4	12.8	4	∞	600	280	180	135	105	95	85	78	68
TCM27-318-020	3.18	0.02	●	6.4	12.8	4	∞	600	280	180	135	105	95	85	78	68

5 pieces per package
● : Line up

Reference pages: Toolholder → F046 - F049, Standard cutting conditions → F053

INSERT - FOR GROOVING AND PROFILING

TCM27 (Full R)



P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials			

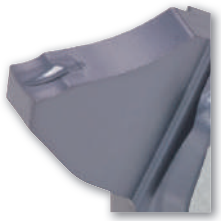
★ : First choice
☆ : Second choice

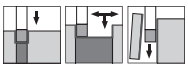
Designation	CW±0.02	RE	Coated AH725		CDX	CUTDIA	S1	Relation of groove depth (T) and Max. diameter (øD max)									
								T≤1 T≤2 T≤3	T≤3.5	T≤4	T≤4.5	T≤5	T≤5.5	T≤5.7	T≤6	T≤6.2	T≤6.4
TCM27-157-079	1.57	0.79	●		3	6	4	∞	-	-	-	-	-	-	-	-	-
TCM27-200-100	2	1	●		3	6	4	∞	600	-	-	-	-	-	-	-	-
TCM27-239-120	2.39	1.2	●		5.7	11.4	4	∞	600	280	180	130	50	35	-	-	-
TCM27-300-150	3	0.02	●		6.4	12.8	4	∞	600	280	180	135	105	95	85	78	55

5 pieces per package
● : Line up

CHIPBREAKER

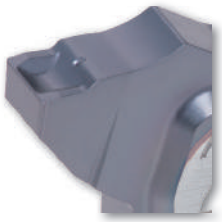
TCS27

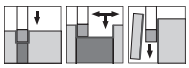




CW = 0.5 mm – 3.18 mm
For general machining Lower cutting force and superior sharpness

TCM27





CW = 1.5 mm – 3.18 mm
For high feed machining Well-designed edge with high strength

STANDARD CUTTING CONDITIONS

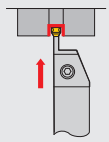
ISO	Workpiece material	Grades	Cutting speed Vc (m/min)	Feed f (mm/rev) Grooving, Parting TCS	Grooving, Parting TCM	Parting (with hand) TCS	Turning (full radius) TCS	Turning (full radius) TCM	Depth of cut for profiling Turning (full radius)
P	Carbon steel S45C / C45, etc.	AH725	100 - 200	0.05 - 0.15	0.05 - 0.25	0.04 - 0.12	0.05 - 0.10	0.05 - 0.15	0.5
P	Alloy steel SCM435 / 34CrMo4, etc.	AH725	50 -180	0.05 - 0.15	0.05 - 0.25	0.04 - 0.12	0.05 - 0.10	0.05 - 0.15	0.5
M	Stainless steel SUS304 / X5CrNi18-9, etc.	AH725	100 - 150	0.05 - 0.15	0.05 - 0.20	0.04 - 0.12	0.05 - 0.10	0.05 - 0.15	0.5
K	Gray cast iron FC250 / 250 / GG25, etc.	AH725	50 - 180	0.05 - 0.15	0.05 - 0.25	0.04 - 0.12	0.05 - 0.10	0.05 - 0.15	0.5
K	Ductile cast irons FCD400 / 400-15 / GGG400, etc.	AH725	50 - 120	0.05 - 0.15	0.05 - 0.20	0.04 - 0.12	0.05 - 0.10	0.05 - 0.15	0.5
S	Titanium alloys Ti-6Al-4V, etc.	AH725	30 - 60	0.05 - 0.15	0.05 - 0.15	0.04 - 0.12	0.05 - 0.10	0.05 - 0.10	0.5
S	Superalloys Inconel718, etc.	AH725	20 - 50	0.05 - 0.15	0.05 - 0.15	0.04 - 0.12	0.05 - 0.10	0.05 - 0.10	0.5

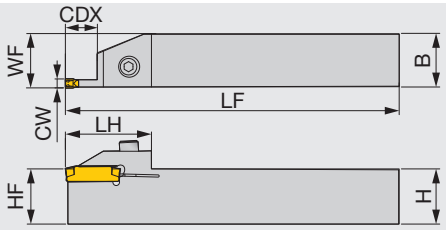
Reference pages: Toolholder → F046 - F053

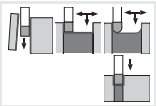
MY-T SERIES

CGWSR/L-W

External grooving, parting and turning toolholder, for 2 corner inserts







Right hand (R) shown.

Designation	CW	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
CGWSR/L1616-W30	3	12	16	16	125	34	16	16.4	WG*30, WGE30R/L	5
CGWSR/L2020-W30	3	12	20	20	150	34	20	20.4	WG*30, WGE30R/L	5
CGWSR/L2525-W30	3	12	25	25	150	34	25	25.4	WG*30, WGE30R/L	5
CGWSR/L2020-W40	4	13	20	20	150	39	20	20.4	WG*40, WGE40R/L	5
CGWSR/L2525-W40	4	13	25	25	150	39	25	25.4	WG*40, WGE40R/L	5
CGWSR/L2020-W50	5	13	20	20	150	39	20	20.4	WG*50, WGE50R/L	5
CGWSR/L2525-W50	5	13	25	25	150	39	25	25.4	WG*50, WGE50R/L	5

*Torque: Recommended clamping torque (N·m)

SPARE PARTS



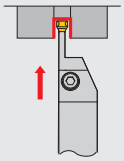


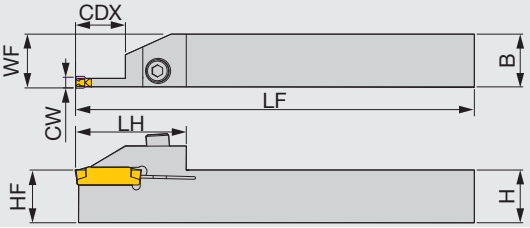
Designation	Clamping screw	Wrench
CGWSR/L****-W...	CHHM5-18	P-4

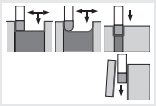
MY-T SERIES

CGWSR/L-W-L

External deep grooving, parting and turning toolholder, for 2 corner inserts







Right hand (R) shown.

Designation	CW	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
CGWSR/L1616-W20-L	2	15	16	16	125	37	16	16.2	WGE20, WGE20R/L	5
CGWSR/L2020-W20-L	2	15	20	20	150	37	20	20.2	WGE20, WGE20R/L	5
CGWSR/L2525-W20-L	2	15	25	25	150	37	25	25.2	WGE20, WGE20R/L	5
CGWSR/L1616-W30-L	3	16.5, 17.5	16	16	125	37	16	16.4	WG*30, WGE30R/L	5
CGWSR/L2020-W30-L	3	16.5, 17.5	20	20	150	37	20	20.4	WG*30, WGE30R/L	5
CGWSR/L2525-W30-L	3	16.5, 17.5	25	25	150	37	25	25.4	WG*30, WGE30R/L	5
CGWSR/L2020-W40-L	4	21, 21.5	20	20	150	42	20	20.4	WG*40, WGE40R/L	5
CGWSR/L2525-W40-L	4	21, 21.5	25	25	150	42	25	25.4	WG*40, WGE40R/L	5
CGWSR/L2020-W50-L	5	21	20	20	150	42	20	20.4	WG*50, WGE50R/L	5
CGWSR/L2525-W50-L	5	21	25	25	150	42	25	25.4	WG*50, WGE50R/L	5

*Torque: Recommended clamping torque (N·m)

SPARE PARTS





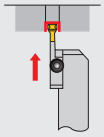
Designation	Clamping screw	Wrench
CGWSR/L****-W**-L	CHHM5-18	P-4

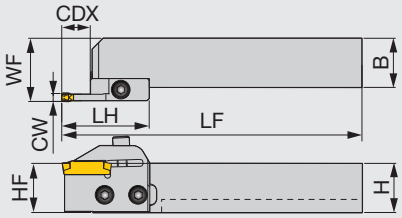
Reference pages: Insert → F058 - F060, Standard cutting conditions → F059

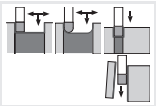
MY-T SERIES

CGWSR/L-WG

External grooving, parting and turning toolholder, for 2 corner inserts







Right hand (R) shown.
Dashed line: 20mm square shank.

Designation	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Blade	Torque*
CGWSR/L2020-W30GR/L	3	12	20	20	150.5	43.5	20	26.9	WG*30, WGE30R/L	CGWSR/L2020	W30GR/L	5
CGWSR/L2525-W30GR/L	3	12	25	25	150.5	43.5	25	31.9	WG*30, WGE30R/L	CGWSR/L2525	W30GR/L	5
CGWSR/L2020-W40GR/L	4	13	20	20	151.5	44.5	20	26.9	WG*40, WGE40R/L	CGWSR/L2020	W40GR/L	5
CGWSR/L2525-W40GR/L	4	13	25	25	151.5	44.5	25	31.9	WG*40, WGE40R/L	CGWSR/L2525	W40GR/L	5
CGWSR/L2020-W50GR/L	5	13	20	20	151.5	44.5	20	26.9	WG*50, WGE50R/L	CGWSR/L2020	W50GR/L	5
CGWSR/L2525-W50GR/L	5	13	25	25	151.5	44.5	25	31.9	WG*50, WGE50R/L	CGWSR/L2525	W50GR/L	5

Note: Use right-hand blades (R) with right-hand shanks (R); and left-hand blades (L) with left-hand shanks (L).
*Torque: Recommended clamping torque (N·m)

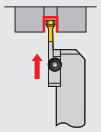
SPARE PARTS

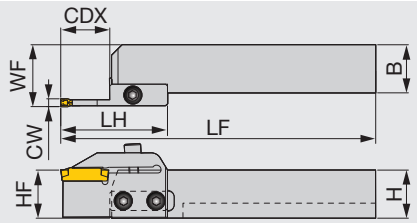
Designation	Clamping screw	Blade screw	Wrench
CGWSR/L****-W**GR/L	CHHM5-18	CSHB-6	P-4

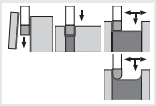
MY-T SERIES

CGWSR/L-WG-L

External deep grooving, parting and turning toolholder, for 2 corner inserts







Right hand (R) shown.
Dashed line: 20mm square shank.

Designation	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Blade	Torque*
CGWSR/L2020-W20GR/L-L	2	15	20	20	153.5	46.5	20	26.7	WGE20, WGE20R/L	CGWSR/L2020	W20GR/L-L	5
CGWSR/L2525-W20R/LR-L	2	15	25	25	153.5	46.5	25	31.7	WGE20, WGE20R/L	CGWSR/L2525	W20GR/L-L	5
CGWSR/L2020-W30GR/L-L	3	16.5 - 17.5	20	20	157.5	50.5	20	26.9	WG*30, WGE30R/L	CGWSR/L2020	W30GR/L-L	5
CGWSR/L2525-W30GR/L-L	3	16.5 - 17.5	25	25	157.5	50.5	25	31.9	WG*30, WGE30R/L	CGWSR/L2525	W30GR/L-L	5
CGWSR/L2020-W40GR/L-L	4	21 - 21.5	20	20	162.5	55.5	20	26.9	WG*40, WGE40R/L	CGWSR/L2020	W40GR/L-L	5
CGWSR/L2525-W40GR/L-L	4	21 - 21.5	25	25	162.5	55.5	25	31.9	WG*40, WGE40R/L	CGWSR/L2525	W40GR/L-L	5
CGWSR/L2020-W50GR/L-L	5	21	20	20	162.5	55.5	20	26.9	WG*50, WGE50R/L	CGWSR/L2020	W50GR/L-L	5
CGWSR/L2525-W50GR/L-L	5	21	25	25	162.5	55.5	25	31.9	WG*50, WGE50R/L	CGWSR/L2525	W50GR/L-L	5

Note: Use right-hand blades (R) with right-hand shanks (R); and left-hand blades (L) with left-hand shanks (L).
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

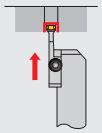
Designation	Clamping screw	Blade screw	Wrench
CGWSR/L****-W**GR/L-L	CHHM5-18	CSHB-6	P-4

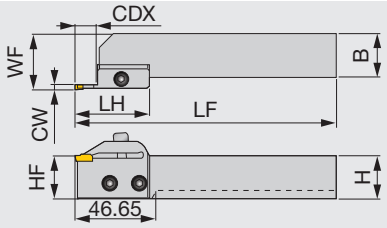
Reference pages: Insert → F058 - F060, Standard cutting conditions → F059

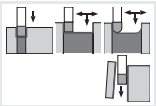
MY-T SERIES

CGWSR/L-G

External grooving, parting and turning toolholder, for 1 corner inserts







Right hand (R) shown.
The dashed line shows
20 mm-square shank tools.

Designation	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Blade	Torque*
CGWSR/L2020-20GR/L	2	12	20	20	150.2	43.15	20	26.8	GE20, GE20-AL	CGWSR/L2020	20GR/L	5
CGWSR/L2525-20GR/L	2	12	25	25	150.2	43.15	25	31.8	GE20, GE20-AL	CGWSR/L2525	20GR/L	5
CGWSR/L2020-30GR/L	3	12	20	20	150.2	43.15	20	27	G*30,GE30R/L,GE30-AL	CGWSR/L2020	30GR/L	5
CGWSR/L2525-30GR/L	3	12	25	25	150.2	43.15	25	32	G*30,GE30R/L,GE30-AL	CGWSR/L2525	30GR/L	5
CGWSR/L2020-40GR/L	4	12	20	20	150.2	43.15	20	27.1	G*40,GE40R/L,GE40-AL	CGWSR/L2020	40GR/L	5
CGWSR/L2525-40GR/L	4	12	25	25	150.2	43.15	25	32.1	G*40,GE40R/L,GE40-AL	CGWSR/L2525	40GR/L	5
CGWSR/L2020-50GR/L	5	12	20	20	150.2	43.15	20	27.2	G*50,GE50R	CGWSR/L2020	50GR	5

Note: For diameter compensation values in traversing, see page F091.
Use right-hand blades (R) with right-hand shanks (R); and left-hand blades (L) with left-hand shanks (L).
*Torque: Recommended clamping torque (N·m)

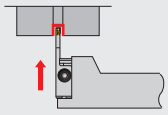
SPARE PARTS

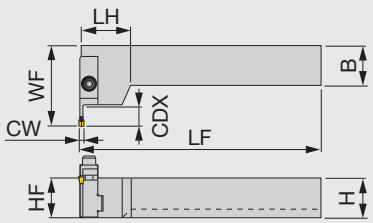
Designation	Clamping screw	Blade screw	Wrench
CGWSR/L****-**GR/L	CHHM5-18	CSHB-6	P-4

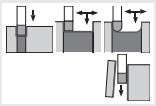
MY-T SERIES

CGWTR/L-G

External grooving, parting and turning toolholder, for 1 corner inserts







Right hand (R) shown.
The dashed line shows
20 mm-square shank tools.

Designation	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Blade	Torque*
CGWTR/L2020-30GL/R	3	12	20	20	150	12.9	20	49.9	G*30,GE30R/L,GE30-AL	CGWTR/L2020	30GL/R	5
CGWTR/L2525-30GL/R	3	12	25	25	150	12.9	25	49.9	G*30,GE30R/L,GE30-AL	CGWTR/L2525	30GL/R	5
CGWTR/L2020-40GL/R	4	12	20	20	150.1	12.9	20	49.9	G*40,GE40R/L,GE40-AL	CGWTR/L2020	40GL/R	5
CGWTR/L2525-40GL/R	4	12	25	25	150.1	12.9	25	49.9	G*40,GE40R/L,GE40-AL	CGWTR/L2525	40GL/R	5
CGWTR/L2020-50GL/R	5	12	20	20	150.2	12.9	20	49.9	G*50,GE50R/L,GE50-AL	CGWTR/L2020	50GL/R	5
CGWTR/L2525-50GL/R	5	12	25	25	150.2	12.9	25	49.9	G*50,GE50R/L,GE50-AL	CGWTR/L2525	50GL/R	5

Note: For diameter compensation values in traversing, see page F091.
Use left-hand blades (L) with right-hand shanks (R); and right-hand blades (R) with left-hand shanks (L).
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

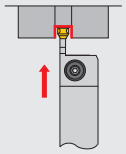
Designation	Clamping screw	Blade screw	Wrench
CGWTR/L****-**GL/R	CHHM5-18	CSHB-6	P-4

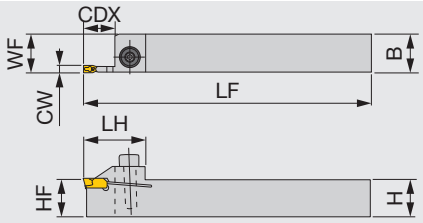
Reference pages: Insert → F062 - F067, Standard cutting conditions → F067

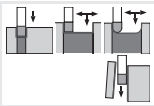
MY-T SERIES

CGSSR/L

External grooving, parting and turning toolholder, for 1 corner inserts







Right hand (R) shown.

Designation	CW	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
CGSSR/L1616-20	2	16	16	16	125	27	16	16.2	GE20, GE20-AL	5
CGSSR/L2020-20	2	16	20	20	150	27	20	20.2	GE20, GE20-AL	5
CGSSR/L2525-20	2	16	25	25	150	27	25	25.2	GE20, GE20-AL	5
CGSSR/L1616-30	3	12	16	16	125	27	16	16.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2020-30	3	12	20	20	150	27	20	20.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2525-30	3	12	25	25	150	27	25	25.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2020-40	4	12	20	20	150	27	20	20.6	G*40,GE40R/L,GE40-AL	5
CGSSR/L2525-40	4	12	25	25	150	27	25	25.6	G*40,GE40R/L,GE40-AL	5
CGSSR/L2020-50	5	12	20	20	150	27	20	20.7	G*50,GE50R/L,GE50-AL	5
CGSSR/L2525-50	5	12	25	25	150	27	25	25.7	G*50,GE50R/L,GE50-AL	5

*Torque: Recommended clamping torque (N·m)

SPARE PARTS



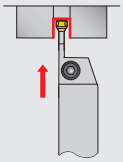


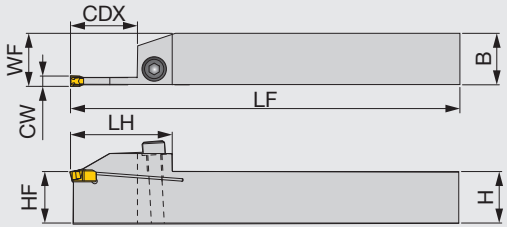
Designation	Clamping screw	Wrench
CGSSR/L...	CHHM5-18	P-4

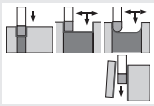
MY-T SERIES

CGSSR/L-D

External grooving, parting and turning toolholder, for 1 corner inserts







Right hand (R) shown.

Designation	CW	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
CGSSR/L1616-30D	3	22	16	16	125	36.2	16	16.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2020-30D	3	22	20	20	150	36.2	20	20.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2525-30D	3	22	25	25	150	36.2	25	25.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2020-40D	4	25	20	20	150	39.5	20	20.6	G*40,GE40R/L,GE40-AL	5
CGSSR/L2525-40D	4	25	25	25	150	39.5	25	25.6	G*40,GE40R/L,GE40-AL	5
CGSSR/L2020-50D	5	25	20	20	150	39.5	20	20.7	G*50,GE50R/L	5
CGSSR/L2525-50D	5	25	25	25	150	39.5	25	25.7	G*50,GE50R/L	5

*Torque: Recommended clamping torque (N·m)

SPARE PARTS



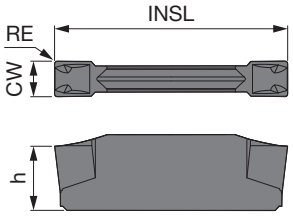


Designation	Clamping screw	Wrench
CGSSR/L****-**D	CHHM5-18	P-4

Reference pages: Insert → F062 - F067, Standard cutting conditions → F067

WGE

For external grooving and parting



P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous															
S	Superalloys			☆												
H	Hard materials															

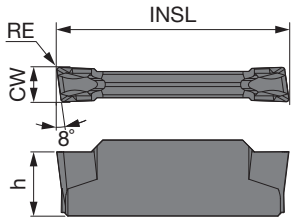
★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.1}_{0}$	RE	Coated						Cermet								INSL	h
				T9225	T9125	AH120	GH730			NS9530									
WGE20	-	2	0.2	●	●	●	●			●								20	4.7
WGE30	-	3	0.2	●	●	●	●			●								20	5.5
WGE40	-	4	0.2	●	●	●	●			●								25	5.7
WGE50	-	5	0.2	●	●	●	●			●								25	5.9

●: Line up

WGE(R/L)

For parting (with hand)



Right hand (R) shown.

P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous															
S	Superalloys			☆												
H	Hard materials															

★ : First choice
☆ : Second choice

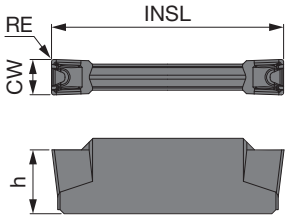
Designation	HAND	$CW^{+0.1}_{0}$	RE	Coated						Cermet								INSL	h
				T9225	T9125	AH120	GH730			NS9530									
WGE20R	R	2	0.2				●											20	4.7
WGE20L	L	2	0.2				●											20	4.7
WGE30R	R	3	0.2			●	●											20	5.5
WGE30L	L	3	0.2				●											20	5.5
WGE40R	R	4	0.2				●											25	5.7
WGE40L	L	4	0.2				●											25	5.7
WGE50R	R	5	0.2				●											25	5.9
WGE50L	L	5	0.2				●											25	5.9

●: Line up

Reference pages: Toolholder → F054 - F055

WGT

For turning (External grooving and parting)



P	Steel	★	☆	★	★			★									
M	Stainless	★		★	★												
K	Cast iron	☆		★	☆			☆									
N	Non-ferrous																
S	Superalloys			☆													
H	Hard materials																

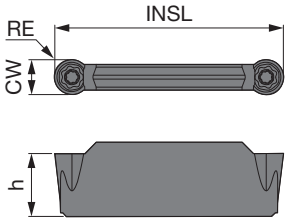
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$	RE	Coated					Cermet						INSL	h
			T9225	T9125	AH120	GH730		NS9530							
WGT30	3	0.4	●	●		●		●						20	5.5
WGT40	4	0.4	●	●		●		●						25	5.7
WGT50	5	0.4	●	●	●	●		●						25	5.9

●: Line up

WGR

For profiling (full radius)



P	Steel	★	☆	★	★			★									
M	Stainless	★		★	★												
K	Cast iron	☆		★	☆			☆									
N	Non-ferrous																
S	Superalloys			☆													
H	Hard materials																

★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$	RE	Coated					Cermet						INSL	h
			T9225	T9125	AH120	GH730		NS9530							
WGR30	3	1.5	●	●	●	●		●						20	5.5
WGR40	4	2	●	●	●	●		●						25	5.7
WGR50	5	2.5			●	●		●						25	5.9

●: Line up

STANDARD CUTTING CONDITIONS

Workpiece material	Recommended grade	Cutting speed V_c (m/min)
Low carbon steels Alloy steels (~ HB150)	T9225	80 ~ 300
	T9125	80 ~ 200
	NS9530	100 ~ 200
	GH730	50 ~ 180
Medium carbon steels Alloy steels (HB150 ~ 250)	T9125	80 ~ 180
	NS9530	80 ~ 180
	GH730	50 ~ 150
High carbon steels Alloy steels (HB250 ~)	T9125	80 ~ 150
	NS9530	80 ~ 150
	GH730	50 ~ 120
Stainless steels	T9125	80 ~ 150
	GH730	50 ~ 120
Grey and ductile cast irons	T9125	80 ~ 200
	GH730	50 ~ 180

Operation	Feed: *f* (mm/rev) Groove width: CW (mm)			
	2	3	4	5
Grooving (WGE□□)	0.06 ~ 0.20	0.06 ~ 0.25	0.07 ~ 0.27	0.07 ~ 0.30
Parting (WGE□□R/L)	0.04 ~ 0.10	0.04 ~ 0.14	0.04 ~ 0.14	0.04 ~ 0.14
Turning (WGT□□)	-	*ap* = 0.5 ~ 1.5 *f* = 0.06 ~ 0.2	*ap* = 0.5 ~ 2.0 *f* = 0.06 ~ 0.25	*ap* = 0.5 ~ 2.5 *f* = 0.06 ~ 0.27
Profiling (WGR□□)	-	*ap* = 0.5 ~ 1.4 *f* = 0.05 ~ 0.25	*ap* = 0.5 ~ 1.5 *f* = 0.05 ~ 0.26	*ap* = 0.5 ~ 1.6 *f* = 0.05 ~ 0.3

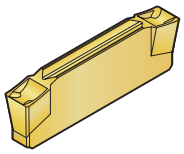
Note: For diameter compensation values in traversing, see page **F091**.

Reference pages: Toolholder → **F054 - F055**

2 corner insert

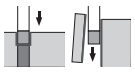
External grooving and parting

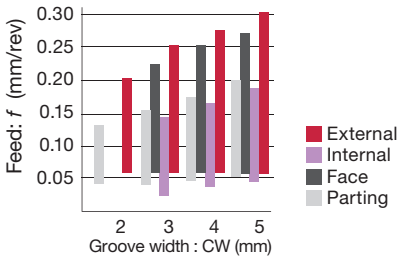
WGE



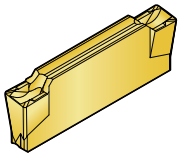
F058 page

1st choice for external grooving and parting
Excellent chip control for grooving
CW = 2 - 5 mm





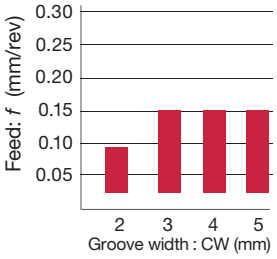
WGE R/L



F058 page

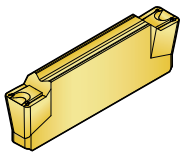
Handed insert
Minimize burr generation when workpiece is cut off
CW = 2 - 5 mm





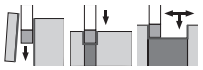
External grooving and turning

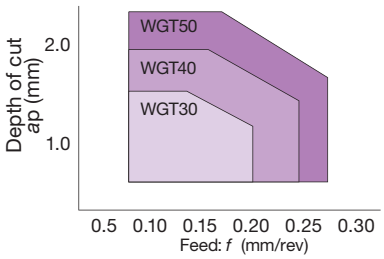
WGT



F059 page

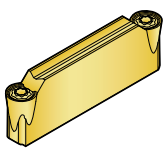
1st choice for turning
1st choice for traversing
Low cutting force and good chip control for traversing
CW = 3 - 5 mm





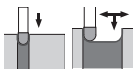
Profiling

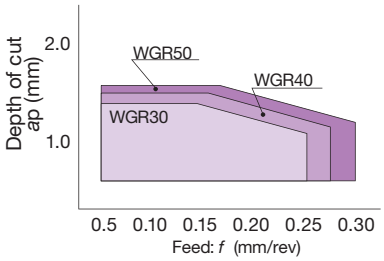
WGR



F059 page

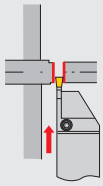
Low cutting force and good chip control for profiling
CW = 3 - 5 mm

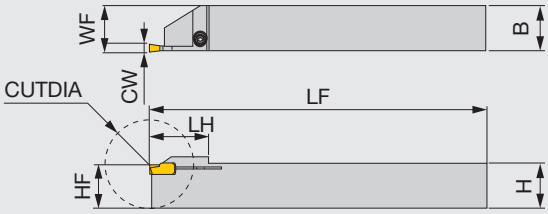




MY-T SERIES
JCGSSR/L

External grooving and parting toolholder, for Swiss lathes





Right hand (R) shown.

Designation	CW	CUTDIA	H	B	LF	LH	HF	WF	Insert	Torque*
JCGSSR/L1010-20	2	20	10	10	125	15	10	10.2	GE20, GE20-AL	2.3
JCGSSR/L1212-20	2	25	12	12	125	19	12	12.2	GE20, GE20-AL	2.3
JCGSSR/L1616-20	2	32	16	16	125	22.5	16	16.2	GE20, GE20-AL	2.3

• CUTDIA: Max. parting diameter
*Torque: Recommended clamping torque (N·m)

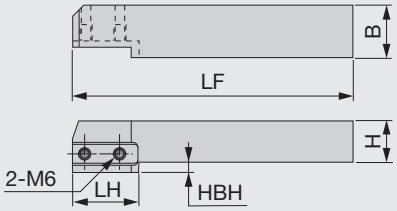
SPARE PARTS




Designation	Clamping screw	Wrench
JCGSSR/L...	CSTB-3	T-9F

MY-T SERIES
CGWSR/L

Shank for CGWSR/L-WG, -WG-L, -G, -CGD, -FL-G/TP, and -#S/D toolholders



Right hand (R) shown.

Designation	H	B	LF	LH	HBH
CGWSR/L2020	20	20	137	32.5	5
CGWSR/L2525	25	25	137	-	-

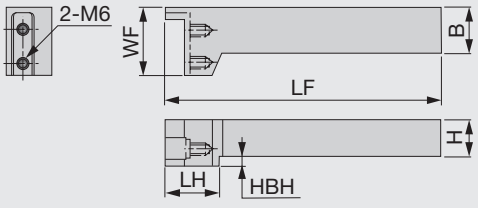
SPARE PARTS



Designation	Blade screw
CGWSR/L...	CSHB-6

MY-T SERIES
CGWTR/L

Shank for CGWSR/L-WG, -WG-L, -G, -CGD, -FL-G/TP, and #S/D toolholders



Right hand (R) shown.

Designation	H	B	LF	LH	WF	HBH
CGWTR/L2020	20	20	150	30.5	37	5
CGWTR/L2525	25	25	150	-	37	-

SPARE PARTS

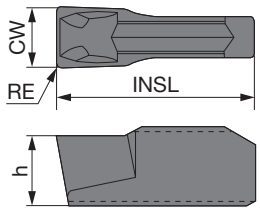


Designation	Blade screw
CGWTR/L...	CSHB-6

Reference pages: Insert → F062 - F067, Standard cutting conditions → F067

GE

For general grooving



P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous										★					
S	Superalloys			☆												
H	Hard materials															

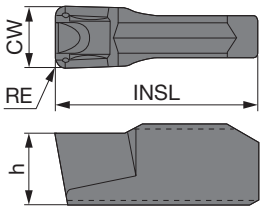
★ : First choice
☆ : Second choice

Designation	HAND	CW$^{+0.1}_{0}$	RE	Coated					Cermet			Uncoated					INSL	h
				T9225	T9125	AH120	GH730			NS9530			KS05F					
GE20	N	2	0.2			●	●			●							10	3.5
GE30	N	3	0.2	●	●	●	●			●							10	3.5
GE40	N	4	0.2	●	●	●	●			●							10	4
GE50	N	5	0.2	●	●	●	●			●							12	4.5

●: Line up

GT

For turning



P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous															
S	Superalloys			☆												
H	Hard materials															

★ : First choice
☆ : Second choice

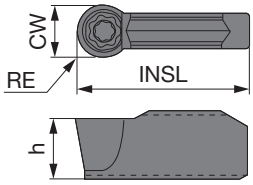
Designation	CW$^{+0.1}_{0}$	RE	Coated					Cermet							INSL	h
			T9225	T9125	AH120	GH730			NS9530							
GT30	3	0.4			●	●			●						10	3.5
GT40	4	0.4			●	●			●						10	4
GT50	5	0.4	●	●	●	●			●						12	4.5

●: Line up

Reference pages: Toolholder → F056 - F057, F061, Standard cutting conditions → F067

GR

For profiling (full radius)



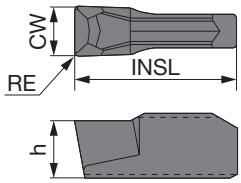
P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous															
S	Superalloys			☆												
H	Hard materials															

★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$	RE	Coated					Cermet							INSL	h
			T9225	T9125	AH120	GH730		NS9530								
GR30	3	1.5			●	●		●							10	3.5
GR40	4	2	●	●	●	●		●							10	4
GR50	5	2.5	●	●	●	●		●							12	4.5

●: Line up

GF



P	Steel	★			★											
M	Stainless	★														
K	Cast iron	☆			☆											
N	Non-ferrous															
S	Superalloys															
H	Hard materials															

★ : First choice
☆ : Second choice

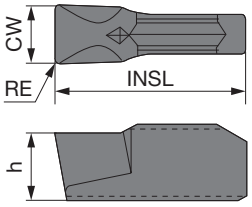
Designation	$CW^{+0.1}_{0}$	RE	Coated			Cermet								INSL	h
			GH730			NS9530									
GF30	3	0.2	●			●								10	3.5
GF40	4	0.2	●			●								10	4
GF50	5	0.2	●			●								12	4.5

●: Line up

Reference pages: Toolholder → F056 - F057, F061, Standard cutting conditions → F067

INSERT

GN



P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

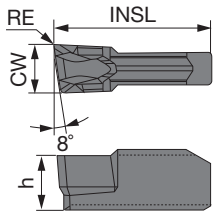
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$	RE	Coated	INSL	h
			GH730		
GN30	3	0.2	●	10	3.5
GN40	4	0.2	●	10	4
GN50	5	0.2	●	12	4.5

●: Line up

GE-R/L

For parting (with hand)



Right hand (R) shown.

P	Steel	★	☆	★	★			★							
M	Stainless	★		★	★										
K	Cast iron	☆		★	☆			☆							
N	Non-ferrous										★				
S	Superalloys			☆											
H	Hard materials														

★ : First choice
☆ : Second choice

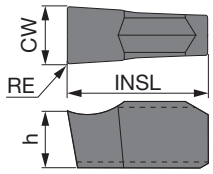
Designation	HAND	$CW^{+0.1}_{0}$	RE	Coated				Cermet		Uncoated			INSL	h
				T9225	T9125	AH120	GH730		NS9530		KS05F			
GE30R	R	3	0.2			●	●						10	3.5
GE30L	L	3	0.2				●						10	3.5
GE40R	R	4	0.2			●	●						10	4
GE40L	L	4	0.2				●						10	4
GE50R	R	5	0.2				●						12	4.5
GE50L	L	5	0.2			●	●						12	4.5

●: Line up

Reference pages: Toolholder → F056 - F057, F061, Standard cutting conditions → F067

GE-AL

For aluminium and non-ferrous metal



P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous										★					
S	Superalloys			☆												
H	Hard materials															

★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.1}_{0}$	RE	Coated					Cermet			Uncoated					INSL	h
				T9225	T9125	AH120	GH730		NS9530			KS05F						
GE20-AL	N	2	0.2														10	3.5
GE30-AL	N	3	0.2									●					10	3.5
GE40-AL	N	4	0.2									●					10	4

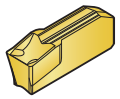
●: Line up

Reference pages: Toolholder → F056 - F057, F061, Standard cutting conditions → F067

1 corner insert

External grooving and parting

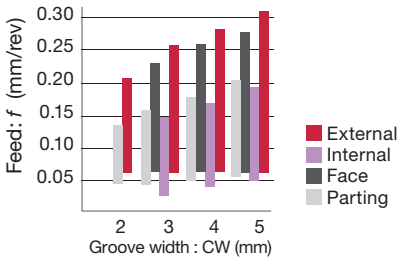
GE

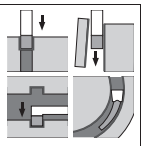


F062 page

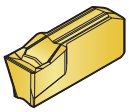
1st choice for face grooving
Excellent chip control for grooving

CW = 2 - 5 mm





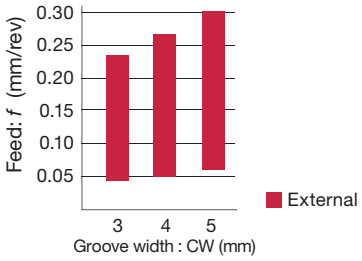
GF

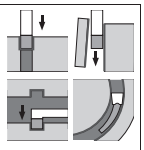


F063 page

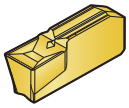
1st choice for face grooving
Low cutting force and good chip control for face grooving

CW = 3 - 5 mm





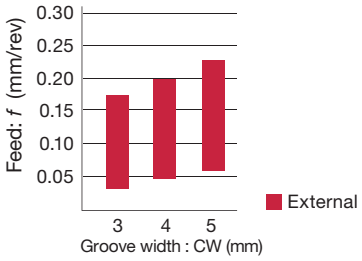
GN

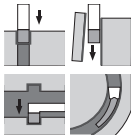


F064 page

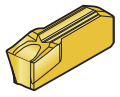
1st choice for internal grooving
Low cutting force and good chip control for internal grooving

CW = 3 - 5 mm





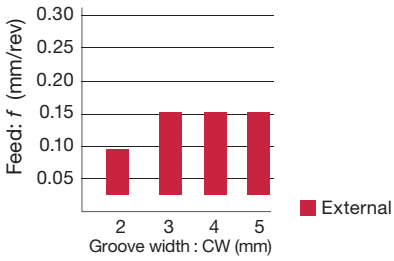
GE R/L



F064 page

Handed insert
Minimize burr generation when work-piece is cut off

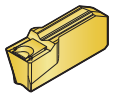
CW = 3 - 5 mm





External grooving and turning

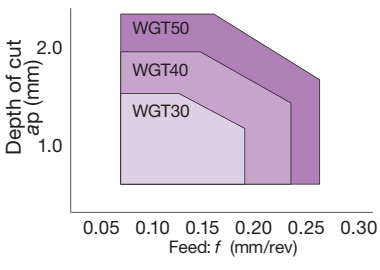
GT

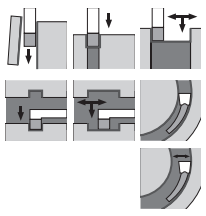


F062 page

1st choice for turning
Low cutting force and good chip control for traversing

CW = 3 - 5 mm

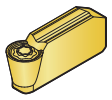




1 corner insert

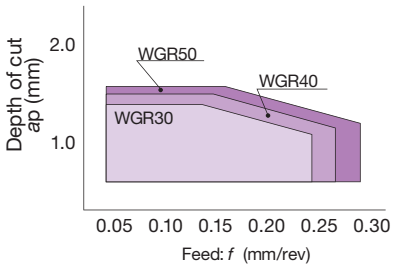
Profiling

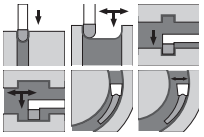
GR



F063 page

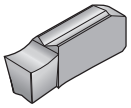
Full radius type
Low cutting force and good chip control for profiling
CW = 3 - 5 mm





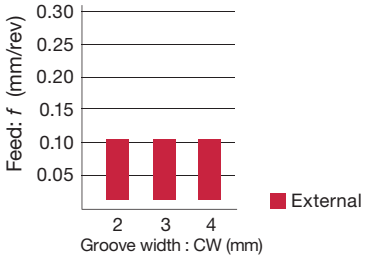
For aluminium and non-ferrous metal

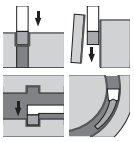
GE-AL



F065 page

Reduce cutting force and welding due to sharp chipbreaker
CW = 2 - 4 mm





STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grades	Cutting speed *Vc* (m/min)
P	Low carbon steel, Alloy steel (~ HB150)	T9225	80 - 300
		T9125	80 - 200
		NS9530	100 - 200
		GH730	50 - 180
	Medium carbon steel, Alloy steel (HB150 ~ 250)	T9125	80 - 180
		NS9530	80 - 180
		GH730	50 - 150
	High carbon steel, Alloy steel (HB250 ~)	T9125	80 - 150
		NS9530	80 - 150
		GH730	50 - 120
M	Stainless steel	T9125	80 - 150
		GH730	50 - 120
K	Grey iron, Ductile cast iron	T9125	80 - 200
		GH730	50 - 180
N	Aluminium alloy, Non-ferrous metal	KS05F	200 - 300

For External

Operation	Feed: *f* (mm/rev) Groove width: CW (mm)			
	2	3	4	5
Grooving (GE**)	0.06 - 0.2	0.06 - 0.25	0.07 - 0.27	0.07 - 0.3
Parting off (GE**R/L)	0.04 - 0.1	0.04 - 0.14	0.04 - 0.14	0.04 - 0.14
Traversing (GT**)	-	Depth of cut *ap* = 0.5 - 1.5 *f* = 0.06 - 0.2	Depth of cut *ap* = 0.5 - 2 *f* = 0.06 - 0.25	Depth of cut *ap* = 0.5 - 2.5 *f* = 0.06 - 0.27
Profi ling (GR**)	-	Depth of cut *ap* = 0.5 - 1.4 *f* = 0.05 - 0.25	Depth of cut *ap* = 0.5 - 1.5 *f* = 0.05 - 0.26	Depth of cut *ap* = 0.5 - 1.6 *f* = 0.05 - 0.3
Grooving for Aluminium alloys (GE**-AL)	0.03 - 0.1	0.03 - 0.1	0.03 - 0.1	-

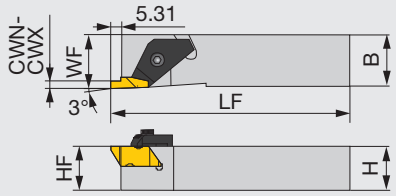
For diameter compensation values in traversing, see page F091.

Reference pages: Toolholder → F056 - F057, F061

TUNGT-CLAMP

FLASR/L

External grooving and threading toolholder, for Swiss lathes



Right hand (R) shown.

Designation	CWN	CWX	HF	H	B	LF	WF	Insert	Torque*
FLASR/L-1616M3	1	3	16	16	16	125	16	FL*-3**R/L...	3

Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
*Torque: Recommended clamping torque (N·m)

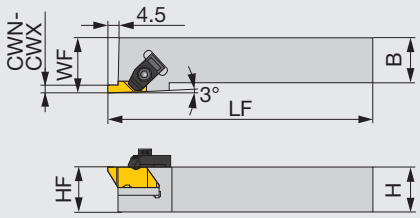
SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLASR-1616M3	TF-184	S-412	5/32HEX
FLASL-1616M3	TF-185	S-412	5/32HEX

TUNGT-CLAMP

FLSR/L

External grooving and threading toolholder, for Swiss lathes



Right hand (R) shown.

Designation	CWN	CWX	HF	H	B	LF	WF	Insert	Torque*
FLSR/L-2020M3	1	3	20	20	20	125	32	FL*-3**R/L...	3
FLSR/L-2525M3	1	3	25	25	25	150	32	FL*-3**R/L...	3

Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLSR-****M3	TF-72	S-412	5/32HEX
FLSL-****M3	TF-73	S-412	5/32HEX

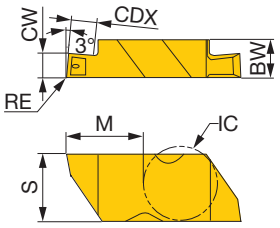
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Application	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	High carbon steel S45C / C45, etc.	AH110	Grooving	100 - 200	0.12 - 0.35
		AH725	Threading	80 - 180	-
	Alloy steel SCM435 / 34CrMo4, etc.	AH110	Grooving	50 - 80	0.12 - 0.3
		AH725	Threading	60 - 160	-
M	Stainless steel SUS304 / X5CrNi18-9, etc.	AH110	Grooving	50 - 150	0.1 - 0.2
		AH725	Threading	50 - 130	-
K	Gray cast iron FC250 / 250 / GG25, etc.	AH110	Grooving	50 - 180	0.1 - 0.25
	Ductile cast iron FCD400 / 40-15 / GGG400, etc.	AH110	Grooving	50 - 120	0.1 - 0.25

Reference pages: Insert → F069

INSERT

FLG-CB (For grooving)



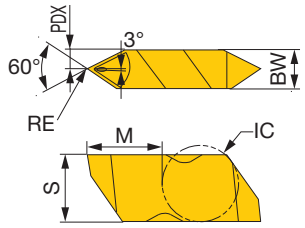
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025	RE	Coated	CDX	BW	S	B
				AH110				
FLG-3M100R-CB	R	1	0.19	●	1.4	4.95	8.74	10.29
FLG-3M100L-CB	L	1	0.19	●	1.4	4.95	8.74	10.29
FLG-3M150R-CB	R	1.5	0.19	●	2.55	4.95	8.74	10.29
FLG-3M150L-CB	L	1.5	0.19	●	2.55	4.95	8.74	10.29
FLG-3M200R-CB	R	2	0.19	●	2.55	4.95	8.74	10.29
FLG-3M200L-CB	L	2	0.19	●	2.55	4.95	8.74	10.29
FLG-3M250R-CB	R	2.5	0.19	●	4.07	4.95	8.74	10.29
FLG-3M250L-CB	L	2.5	0.19	●	4.07	4.95	8.74	10.29
FLG-3M300R-CB	R	3	0.19	●	4.07	4.95	8.74	10.29
FLG-3M300L-CB	L	3	0.19	●	4.07	4.95	8.74	10.29

●: Line up

FLT-CB (For threading)



P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

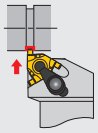
Designation	HAND	RE	Coated	Pitch				IC	PDX	BW	S	M
				Internal		External						
			AH725	TPN	TPX	TPN	TPX					
FLT-3R-HCB	R	0.17	●	2.11	5.08	1.27	4.23	9.53	2.5	4.95	8.74	10.16
FLT-3L-HCB	L	0.17	●	2.11	5.08	1.27	4.23	9.53	2.5	4.95	8.74	10.16
FLT-3RC-HCB	R	0.35	●	4.23	5.08	2.31	4.23	9.53	2.5	4.95	8.74	10.16
FLT-3LC-HCB	L	0.35	●	4.23	5.08	2.31	4.23	9.53	2.5	4.95	8.74	10.16
FLT-3R-CB	R	0.17	●	2.11	3.18	1.27	3.18	9.53	2.5	4.95	8.74	10.16
FLT-3L-CB	L	0.17	●	2.11	3.18	1.27	3.18	9.53	2.5	4.95	8.74	10.16

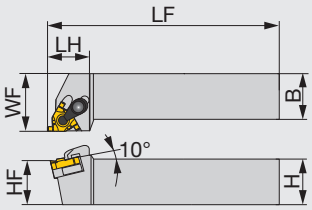
●: Line up

Reference pages: Toolholder → F068

CER/L

Clamp-on external grooving and threading toolholder (alternative clamping of screw-on or clamp-on only for DT type)





Right hand (R) shown.

Designation	CWN	CWX	H	B	LF	LH	HF	WF	Insert	Torque*
CER/L1212H16DT	1	2.25	12	12	100	24	12	16	GTGN16...	3.5
CER/L1616H16DT	1	2.25	16	16	100	24	16	20	GTGN16...	3.5
CER/L2020K16DT	1	2.25	20	20	125	24	20	25	GTGN16...	3.5
CER/L2525M16DT	1	2.25	25	25	150	28	25	32	GTGN16...	3.5
CER3232P16T	1	2.25	32	32	170	32	32	40	GTGN16...	3.5

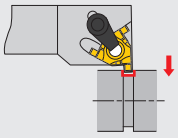
Note: A clamp set consists of a clamp and a clamping screw. A shim set consists of a shim and a shim screw to secure the shim to the shank.
Standard shims can be used on both right- and left-hand toolholders. Please use either of the sides depending on the tool hand. When using grooving inserts, please use shims for grooving.
Shims for grooving inserts are sold separately.
Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
*Torque: Recommended clamping torque (N·m)

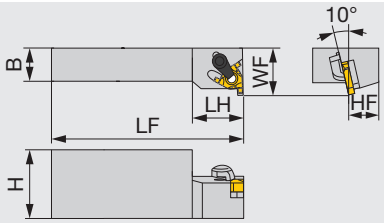
SPARE PARTS

Designation	Clamp set	Clamp screw	Shim screw	*Optional: Shim for grooving	Wrench 1	Wrench 2
CER*****16DT	CSP16	CSTB-3.5ST	DTS5-3.5	G16ER/IL-DT	P-3.5	T-15F
CEL*****16DT	CSP16	CSTB-3.5ST	DTS5-3.5	G16EL/IR-DT	P-3.5	T-15F
CER3232P16T	CSP16	-	-	G16ER/IR-S	-	T-15F

B-CER/L

External threading toolholder, for Swiss lathes





Right hand (R) shown.

Designation	CWN	CWX	H	B	LF	LH	HF	WF	Insert	Torque*
B-CER/L16M16	1	2.25	32	16	150	24	16	22	GTGN16...	3.5

Note: When using grooving inserts, please use shims for grooving. Shims for grooving inserts are sold separately.
Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
*Torque: Recommended clamping torque (N·m)

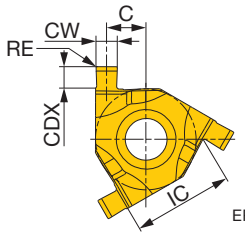
SPARE PARTS

Designation	Clamp set	Clamp screw	Wrench	*Optional: Shim for grooving
B-CER16M16	CSP16	-	T-15F	G16ER/IL-S
B-CEL16M16	CSP16	-	T-15F	G16EL/IR-S

Reference pages: Insert, Standard cutting conditions → F071

INSERT

GTGN16



ER/IL shown.

P	Steel	★
M	Stainless	★
K	Cast iron	
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.03	RE	Coated	Insert size	CDX	IC	C	Shim	
				SH730					Dual-clamp toolholder: screw-on and clamp-on	Clamp-on toolholder
GTGN-16ER/IL100	R	1	0.1	●	16	1.25	9.53	4.22	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR100	L	1	0.1	●	16	1.25	9.53	4.22	G16ER/IL-DT	G16ER/IL-S
GTGN-16ER/IL120	R	1.2	0.1	●	16	1.3	9.53	4.12	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR120	L	1.2	0.1	●	16	1.3	9.53	4.12	G16ER/IL-DT	G16ER/IL-S
GTGN-16ER/IL140	R	1.4	0.1	●	16	1.5	9.53	4.02	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR140	L	1.4	0.1	●	16	1.5	9.53	4.02	G16ER/IL-DT	G16ER/IL-S
GTGN-16ER/IL170	R	1.7	0.1	●	16	1.7	9.53	3.67	G16EL/IR-DT	G16EL/IR-S
GTGN-16EL/IR170	L	1.7	0.1	●	16	1.7	9.53	3.67	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL195	R	1.95	0.1	●	16	1.7	9.53	3.75	G16EL/IR-DT	G16EL/IR-S
GTGN-16EL/IR195	L	1.95	0.1	●	16	1.7	9.53	3.75	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL225	R	2.25	0.1	●	16	1.8	9.53	3.6	G16EL/IR-DT	G16EL/IR-S
GTGN-16EL/IR225	L	2.25	0.1	●	16	1.8	9.53	3.6	G16EL/IR-DT	G16EL/IR-S

Note: GTGN insert can be used for both external and internal machining, but the tool hand is reversed.
Shim for GTGN depends on the toolholder type.

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Steels C45, 42CrMo4, etc.	SH730	50 - 150	0.05 - 0.1
M	Stainless steels X5CrNi18-9, X5CrNiMo17-12-2, etc.	SH730	30 - 150	0.05 - 0.1
S	Heat-resistant alloys, Titanium alloys etc. Ti-6Al-4V, etc.	SH730	30 - 100	0.05 - 0.1

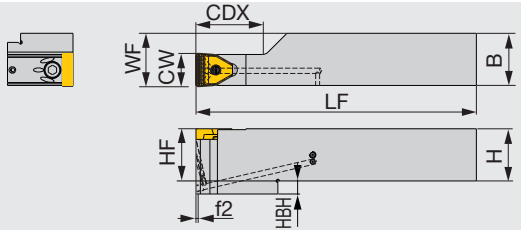
Reference pages: Toolholder → F070

TUNGHEAVY GROOVE

FPGR

Lever-lock external wide grooving toolholder





Designation	CW	CDX	H	B	LF	HF	WF	HBH	f2	Insert (1)	Torque*
FPGR2525M-10T20	10	20	25	25	150	25	25.5	-	0.5	PSG*10...	2.2
FPGR3232P-10T36	10	36	32	32	170	32	32.5	-	0.5	PSG*10...	2.2
FPGR2525M-15T20	15	20	25	25	150	25	25.5	-	0.5	PSG*15...	2.2
FPGR3232P-15T40	15	40	32	32	170	32	32.5	-	0.4	PSG*15...	2.2
FPGR3232P-20T40	20	40	32	32	170	32	32.5	8	0.4	PSG*20...	8.5
FPGR4040R-20T50	20	50	40	40	200	40	40.5	8	0.4	PSG*20...	8.5
FPGR3232P-25T40	25	40	32	32	170	32	32.5	8	0.4	PSG*25...	8.5
FPGR4040R-25T50	25	50	40	40	200	40	40.5	8	0.4	PSG*25...	8.5

(1) Can be used for both wide grooving and wide profile grooving

*Torque: Recommended clamping torque (N·m)

CDX, LF, f2 are dimensions when PSGM insert is attached. When mounting PSGB insert, the dimensions will be 5 mm longer.

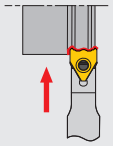
SPARE PARTS

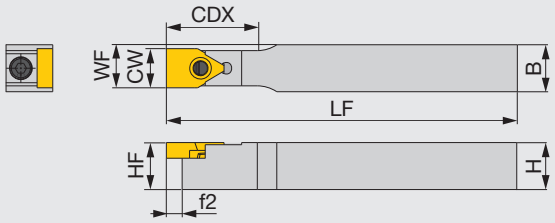
Designation	Lever	Clamping screw	Spring	Wrench
FPGR*****-10T..., 15T...	FCL4	FCS3	BP-5	P-2.5
FPGR*****-20T..., 25T...	FCL8	FCS6	BP-9	P-5

TUNGHEAVY GROOVE

FPGN

Lever-lock external wide profile grooving toolholder





Designation	CW	CDX	H	B	LF	HF	WF	f2	Insert (1)	Torque*
FPGN1212X-10T20	10	20	12	12	120	12	11	0.5	PSG*10...	2.2
FPGN1616X-10T20	10	20	16	16	120	16	13	0.5	PSG*10...	2.2
FPGN2020K-10T20	10	20	20	20	125	20	15	0.5	PSG*10...	2.2
FPGN1616X-15T25	15	25	16	16	120	16	15.5	0.4	PSG*15...	2.2
FPGN2020K-15T25	15	25	20	20	125	20	17.5	0.4	PSG*15...	2.2
FPGN2020K-20T32	20	32	20	20	125	20	20	0.4	PSG*20...	8.5
FPGN2525M-20T32	20	32	25	25	150	25	22.5	0.4	PSG*20...	8.5
FPGN2525M-25T36	25	36	25	25	150	25	25	0.4	PSG*25...	8.5

*PSGB insert blank is available for tailored inserts.

(1) Can be used for both wide grooving and wide profile grooving

*Torque: Recommended clamping torque (N·m)

CDX, LF, f2 are dimensions when PSGM insert is attached. When mounting PSGM insert, the dimensions will be 5 mm shorter.

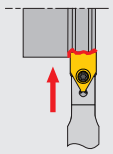
SPARE PARTS

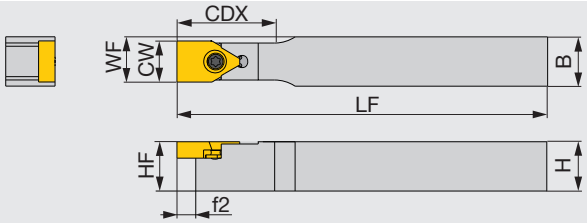
Designation	Lever	Clamping screw	Spring	Wrench
FPGN*****-10T..., 15T...	FCL4	FCS3	BP-5	P-2.5
FPGN*****-20T..., 25T...	FCL8	FCS6	BP-9	P-5

Reference pages: Insert → F073 - F074, Standard cutting conditions →F075

SPGN

Screw-on external wide profile grooving toolholder





Designation	CW	CDX	H	B	LF	HF	WF	f2	INSERT(1)	Torque*
SPGN1212X-10T20	10	25	12	12	125	12	11	5.5	PSGB10	1.3
SPGN1616X-10T20	10	25	16	16	125	16	13	5.5	PSGB10	1.3
SPGN2020K-10T20	10	25	20	20	130	20	15	5.5	PSGB10	1.3
SPGN1616X-15T25	15	30	16	16	125	16	15.5	5.5	PSGB15	3.5
SPGN2020K-15T25	15	30	20	20	130	20	17.5	5.5	PSGB15	3.5
SPGN2020K-20T32	20	37	20	20	130	20	20	5.5	PSGB20	5
SPGN2525M-20T32	20	37	25	25	155	25	22.5	5.5	PSGB20	5
SPGN2525M-25T36	25	41	25	25	155	25	25	5.5	PSGB25	5

*PSGB insert blank is available for tailored inserts.
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

Designation	Clamping screw	Wrench
SPGN*****-10T20	CSTB-3L081	T-8F
SPGN*****-15T25	CSTB-4	T-15F
SPGN*****-20T..., 25T...	CSTB-5	T-20F

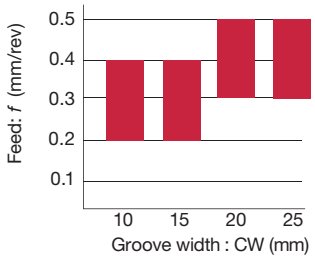
TUNGHEAVY GROOVE - Chipbreaker Guide

PSGM

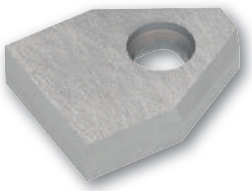


for wide grooving
Improved productivity with excellent chip control and the chipbreaker designed for high feed

CW = 10 - 25 mm



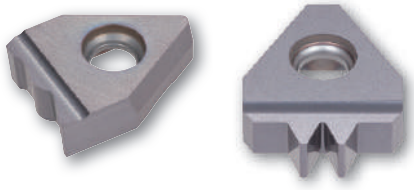
PSGB



Blank for wide profile grooving inserts
Can be prepared for various insert shapes Shortened cutting time and improved productivity with one-pass operations

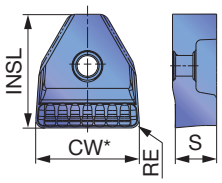
CW = 10 - 25 mm

Specially tailored inserts (example)



Reference pages: Insert → F073 - F074, Standard cutting conditions → F075

PSGM



P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

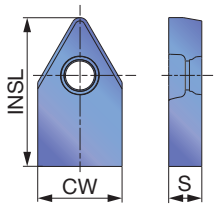
★ : First choice
☆ : Second choice

Designation	CW*	RE	Coated	INSL	S
			AH725		
PSGM10-08	10	0.8	●	11	4
PSGM15-15	15	1.5	●	15	5
PSGM20-20	20	2	●	22	6.5
PSGM25-20	25	2	●	22	6.5

*Tolerance CW ± 0.08 (CW = 10 mm), ± 0.1 (CW ≥ 15 mm)

●: Line up

PSGB



P	Steel	☆	★
M	Stainless		★
K	Cast iron	★	
N	Non-ferrous	★	
S	Superalloys	☆	
H	Hard materials		

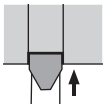
★ : First choice
☆ : Second choice

Designation	CW±0.025	Uncoated		INSL	S
		TH10	UX30		
PSGB10	10.2	●		18	4
PSGB15	15.2	●	●	20	5
PSGB20	20.2	●	●	27	6.5
PSGB25	25.2	●	●	27	6.5

●: Line up

Reference pages: Toolholder → F072 - F073

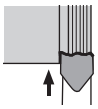
STANDARD CUTTING CONDITIONS



Wide grooving (PSGM insert)

ISO	Workpiece material	Hardness (HB)	Grade	Cutting Speed *Vc* (m/min)
P	Alloy steel (SCM440 / 42CrMo4, etc)	< 300	AH725	50 - 180
	Alloy steel (SCM440 / 42CrMo4, etc)	< 300	UX30	50 - 120

	Groove width: CW (mm)			
	10	15	20	25
Feed: *f* (mm/rev)	0.2 - 0.4	0.2 - 0.4	0.3 - 0.5	0.3 - 0.5

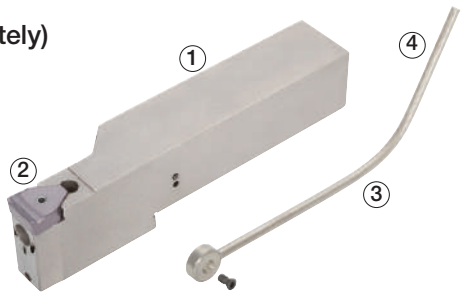


Wide profile grooving (PSGB insert)

ISO	Workpiece material	Hardness (HB)	Grade	Cutting Speed *Vc* (m/min)
P	Carbon steel (S45C / C45, etc)	< 200	UX30	50 - 150
	Alloy steel (SCM440 / 42CrMo4, etc)	< 300	UX30	50 - 120
M	Stainless steel (SUS303 / X10CrNiS18-9, etc)	< 200	UX30	50 - 120
K	Grey cast iron (FC250 / 250, etc)	-	TH10	50 - 150
	Ductile cast irons (FCD450 / 450-10S, etc)	-	TH10	50 - 120
N	Aluminium alloy (Si < 12%, etc)	-	TH10	100 - 500

■ Spare parts for internal coolant supply attachment (Order separately)

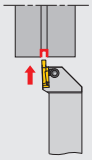
No.	Designatlon	Part Type	Note
①	Body	FPGR...	-
②	INSERT	PSGM...	-
③	Coolant supply attachment	SGCU-341	-
④	connector	Commercial items can be used	G 1/8 thread
			NPT 1/8 thread

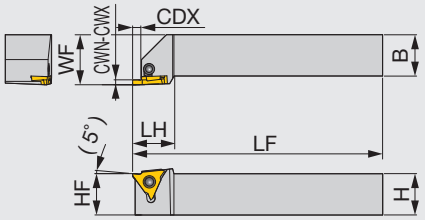


Reference pages: Toolholder → F072 - F073

TGTSR/L

External grooving toolholder, for 3 corner inserts





Right hand (R) shown.

Designation	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Torque*
TGTSR/L2020K16	0.33	2.5	2.5	20	20	125	25	20	25	3
TGTSR/L2525M16	0.33	2.5	2.5	25	25	150	25	25	30	3
TGTSR/L2020K22-1	1	1.45	2	20	20	125	25	20	25	3
TGTSR/L2020K22-2	1.5	2.3	3.5	20	20	125	25	20	25	3
TGTSR/L2020K22-3	2.5	4.5	5	20	20	125	25	20	25	3
TGTSR/L2525M22-1	1	1.45	2	25	25	150	25	25	30	3
TGTSR/L2525M22-2	1.5	2.3	3.5	25	25	150	25	25	30	3
TGTSR/L2525M22-3	2.5	4.5	5	25	25	150	25	25	30	3

Use right-hand toolholders (TGTSR) with right-hand inserts (GBR); and left-hand toolholders (TGTSL) with left-hand inserts (GBL).
*Torque: Recommended clamping torque (N·m)

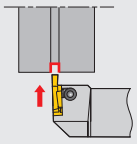
Designation	Insert
TGTSR/L2020K16	GBR/L32...
TGTSR/L2525M16	GBR/L32...
TGTSR/L2020K22-1	GBR/L43125 ~ 145 GBR/L43050R
TGTSR/L2020K22-2	GBR/L43150 ~ 230 GBR/L43075R ~ 100R
TGTSR/L2020K22-3	GBR/L43250 ~ 450 GBR/L43125R ~ 200R
TGTSR/L2525M22-1	GBR/L43125 ~ 145 GBR/L43050R
TGTSR/L2525M22-2	GBR/L43150 ~ 230 GBR/L43075R ~ 100R
TGTSR/L2525M22-3	GBR/L43250 ~ 450 GBR/L43125R ~ 200R

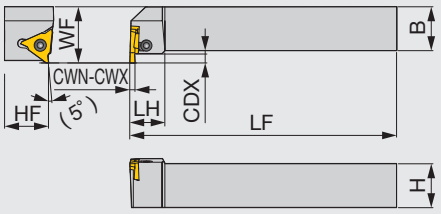
SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
TGTSR/L*****16	CP900	MCS520-2.5	P-2.5
TGTSR/L*****22...	CP910	MCS520-2.5	P-2.5

TGTTR/L

Perpendicular toolholder for external grooving, for 3 corner inserts





Right hand (R) shown.

Designation	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Torque*
TGTTR/L2020K16	0.33	2.5	2.5	20	20	125	20	20	27	3
TGTTR/L2525M16	0.33	2.5	2.5	25	25	150	20	25	32	3
TGTTR/L2020K22-1	1	1.45	2	20	20	125	20	20	27	3
TGTTR/L2020K22-2	1.5	2.3	3.5	20	20	125	20	20	27	3
TGTTR/L2020K22-3	2.5	4.5	5	20	20	125	20	20	27	3
TGTTR/L2525M22-1	1	2.3	2	25	25	150	20	25	32	3
TGTTR/L2525M22-2	1.5	2.3	3.5	25	25	150	20	25	32	3
TGTTR/L2525M22-3	2.5	4.5	5	25	25	150	20	25	32	3

Use right-hand toolholders (TGTTR) with left-hand inserts (GBL); and left-hand toolholders (TGTTL) with right-hand inserts (GBR).
*Torque: Recommended clamping torque (N·m)

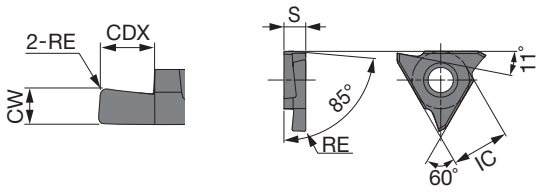
Designation	Insert
TGTTR/L2020K16	GBL/R32...
TGTTR/L2525M16	GBL/R32...
TGTTR/L2020K22-1	GBL/R43125 ~ 145 GBL/R43050R
TGTTR/L2020K22-2	GBL/R43150 ~ 230 GBL/R43075R ~ 100R
TGTTR/L2020K22-3	GBL/R43250 ~ 450 GBL/R43125R ~ 200R
TGTTR/L2525M22-1	GBL/R43125 ~ 145 GBL/R43050R
TGTTR/L2525M22-2	GBL/R43150 ~ 230 GBL/R43075R ~ 100R
TGTTR/L2525M22-3	GBL/R43250 ~ 450 GBL/R43125R ~ 200R

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
TGTTR/L*****16	CP900	MCS520-2.5	P-2.5
TGTTR/L*****22...	CP910	MCS520-2.5	P-2.5

Reference pages: Insert → F077 - F079, Standard cutting conditions → F079

GBR/L32



Right hand (R) shown.

P	Steel	★			★														
M	Stainless	★																	
K	Cast iron	★			☆														
N	Non-ferrous							★											
S	Superalloys	☆						☆											
H	Hard materials																		

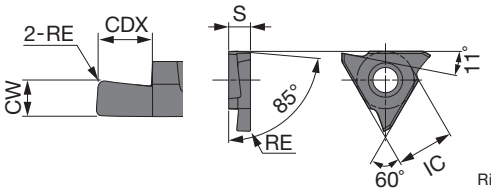
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025	RE	Coated	Cermet	Uncoated						CDX	IC	S
				AH710	NS9530	KS05F								
GBR32033	R	0.33	0.03	●	●							0.8	9.53	3.18
GBL32033	L	0.33	0.03	●		●						0.8	9.53	3.18
GBR32050	R	0.5	0.05	●	●							1.2	9.53	3.18
GBL32050	L	0.5	0.05	●		●						1.2	9.53	3.18
GBR32075	R	0.75	0.05	●	●							2	9.53	3.18
GBL32075	L	0.75	0.05	●	●	●						2	9.53	3.18
GBR32095	R	0.95	0.05	●	●							2	9.53	3.18
GBL32095	L	0.95	0.05	●	●	●						2	9.53	3.18
GBR32100	R	1	0.05	●	●							2	9.53	3.18
GBL32100	L	1	0.05	●	●	●						2	9.53	3.18
GBR32125	R	1.25	0.2	●	●							2	9.53	3.18
GBL32125	L	1.25	0.2	●	●	●						2	9.53	3.18
GBR32145	R	1.45	0.2	●	●							2	9.53	3.18
GBL32145	L	1.45	0.2	●		●						2	9.53	3.18
GBR32150	R	1.5	0.2	●	●							2	9.53	3.18
GBL32150	L	1.5	0.2	●		●						2	9.53	3.18
GBR32200	R	2	0.2	●	●							2.5	9.53	3.18
GBL32200	L	2	0.2	●		●						2.5	9.53	3.18
GBR32250	R	2.5	0.2	●	●							2.5	9.53	3.18
GBL32250	L	2.5	0.2	●		●						2.5	9.53	3.18

●: Line up

Reference pages: Toolholder → F076

GBR/L43



Right hand (R) shown.

P	Steel	★ ★
M	Stainless	★
K	Cast iron	★ ☆
N	Non-ferrous	★
S	Superalloys	☆ ☆
H	Hard materials	

★ : First choice
☆ : Second choice

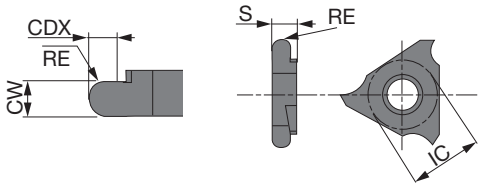
Designation	HAND	CW±0.025	RE	Coated AH710	Cermet NS9530	Uncoated KS05F	CDX	IC	S
GBR43125	R	1.25	0.2	●	●		2	12.7	4.76
GBL43125	L	1.25	0.2	●		●	2	12.7	4.76
GBR43145	R	1.45	0.2	●	●		2	12.7	4.76
GBL43145	L	1.45	0.2	●		●	2	12.7	4.76
GBR43150	R	1.50	0.2	●	●		3.5	12.7	4.76
GBL43150	L	1.50	0.2	●	●	●	3.5	12.7	4.76
GBR43175	R	1.75	0.2	●	●		3.5	12.7	4.76
GBL43175	L	1.75	0.2	●	●	●	3.5	12.7	4.76
GBR43185	R	1.85	0.2	●	●		3.5	12.7	4.76
GBL43185	L	1.85	0.2	●	●	●	3.5	12.7	4.76
GBR43200	R	2	0.2	●	●		3.5	12.7	4.76
GBL43200	L	2	0.2	●	●	●	3.5	12.7	4.76
GBR43230	R	2.3	0.2	●	●		3.5	12.7	4.76
GBL43230	L	2.3	0.2	●	●	●	3.5	12.7	4.76
GBR43250	R	2.5	0.3	●	●		5	12.7	4.76
GBL43250	L	2.5	0.3	●		●	5	12.7	4.76
GBR43265	R	2.65	0.3	●	●		5	12.7	4.76
GBL43265	L	2.65	0.3	●		●	5	12.7	4.76
GBR43280	R	2.8	0.3	●	●		5	12.7	4.76
GBL43280	L	2.8	0.3	●		●	5	12.7	4.76
GBR43300	R	3	0.3	●	●		5	12.7	4.76
GBL43300	L	3	0.3	●		●	5	12.7	4.76
GBR43330	R	3.3	0.3	●	●		5	12.7	4.76
GBL43330	L	3.3	0.3	●		●	5	12.7	4.76
GBR43350	R	3.5	0.3	●	●		5	12.7	4.76
GBL43350	L	3.5	0.3	●		●	5	12.7	4.76
GBR43400	R	4	0.4	●	●		5	12.7	4.76
GBL43400	L	4	0.4	●		●	5	12.7	4.76
GBR43430	R	4.3	0.4	●	●		5	12.7	4.76
GBL43430	L	4.3	0.4	●		●	5	12.7	4.76
GBR43450	R	4.5	0.4	●	●		5	12.7	4.76
GBL43450	L	4.5	0.4	●		●	5	12.7	4.76

●: Line up

Reference pages: Toolholder → F076

INSERT

GBR/L43-R(full radius)



Right hand (R) shown.

		Coated		Cermet		Uncoated		
P	Steel	★		★				
M	Stainless	★						
K	Cast iron	★		☆				
N	Non-ferrous					★		
S	Superalloys	☆				☆		
H	Hard materials							

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025	RE	Coated AH710	Cermet NS9530	Uncoated KS05F	CDX	IC	S
GBR43050R	R	1	0.5	●	●		2	12.7	4.76
GBL43050R	L	1	0.5	●		●	2	12.7	4.76
GBR43075R	R	1.5	0.75	●	●	●	3.5	12.7	4.76
GBL43075R	L	1.5	0.75	●		●	3.5	12.7	4.76
GBR43100R	R	2	1	●	●	●	3.5	12.7	4.76
GBL43100R	L	2	1	●		●	3.5	12.7	4.76
GBR43125R	R	2.5	1.25	●	●	●	5	12.7	4.76
GBL43125R	L	2.5	1.25	●		●	5	12.7	4.76
GBR43150R	R	3	1.5	●	●	●	5	12.7	4.76
GBL43150R	L	3	1.5	●		●	5	12.7	4.76
GBR43200R	R	4	2	●	●	●	5	12.7	4.76
GBL43200R	L	4	2	●		●	5	12.7	4.76

●: Line up

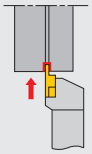
STANDARD CUTTING CONDITIONS

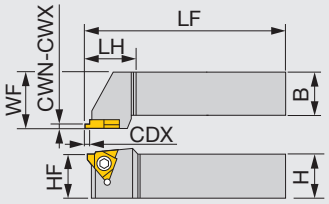
ISO	Workpiece material	Hardness	Grade	Cutting Speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Carbon steels, Alloy steels (JIS S45C, SCM415, etc)	150 - 240HB	NS9530	100 - 200	0.02 - 0.25
		150 - 240HB	AH710	60 - 150	0.05 - 0.25
M	Stainless steel (JIS SUS304, etc)	≦240HB	AH710	60 - 150	0.05 - 0.15
K	Cast irons (JIS FC250, etc)	Tensile strength ≦ 350 N/mm^2	AH710	60 - 150	0.05 - 0.15
N	Non-ferrous metal (Aluminum, etc.)	-	KS05F	200 - 300	0.05 - 0.15

Reference pages: Toolholder → F076

SGTR/L

External grooving toolholder, for 3 corner inserts





Right hand (R) shown.

Designation	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
SGTR1616-3	1.15	2.7	1.5 - 3	16	16	100	20	16	20	GLR/L3...	3.5
SGTR/L2020-3	1.15	2.7	1.5 - 3	20	20	125	20	20	25	GLR/L3...	3.5
SGTR/L2525-3	1.15	2.7	1.5 - 3	25	25	150	20	25	32	GLR/L3...	3.5
SGTR/L2020-4	1.15	4.2	1.5 - 4	20	20	125	30	20	25	GLR/L4...,GOR/L4...	5
SGTR/L2525-4	1.15	4.2	1.5 - 4	25	25	150	30	25	32	GLR/L4...,GOR/L4...	5

*Torque: Recommended clamping torque (N·m)

SPARE PARTS

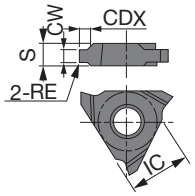




Designation	Clamping screw	Wrench
SGTR/L****-3	CSTB-4	T-15F
SGTR/L****-4	CSTB-5	T-20F

INSERT

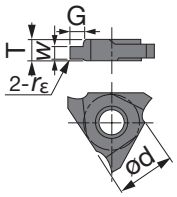
GOR/L (For O-ring)



Right hand (R) shown.

| | | Cermet | | Uncoated | | |

GLR/L (For lock ring)



Right hand (R) shown.

P	Steel	★ ★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

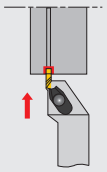
Designation	HAND	CW$^{+0.1}_{+0.05}$	RE	Cermet	Uncoated	G	ød	T
				NS9530	UX30			
GLR3115	R	1.15	0.1	●		1.5	9.53	3.18
GLL3115	L	1.15	0.1	●	●	1.5	9.53	3.18
GLR3135	R	1.35	0.1	●	●	1.5	9.53	3.18
GLL3135	L	1.35	0.1	●	●	1.5	9.53	3.18
GLR3165	R	1.65	0.1	●		2	9.53	3.18
GLR3175	R	1.75	0.1	●	●	2	9.53	3.18
GLL3175	L	1.75	0.1	●	●	2	9.53	3.18
GLR3195	R	1.95	0.1	●	●	2.5	9.53	3.18
GLL3195	L	1.95	0.1	●	●	2.5	9.53	3.18
GLR3220	R	2.2	0.1	●	●	3	9.53	3.18
GLL3220	L	2.2	0.1		●	3	9.53	3.18
GLR3270	R	2.7	0.1	●	●	3	9.53	3.18
GLL3270	L	2.7	0.1		●	3	9.53	3.18
GLR4115	R	1.15	0.1	●	●	1.5	12.7	4.76
GLR4135	R	1.35	0.1	●	●	1.5	12.7	4.76
GLR4165	R	1.65	0.1	●	●	2	12.7	4.76
GLR4175	R	1.75	0.1	●	●	2	12.7	4.76
GLR4190	R	1.9	0.1	●	●	2.5	12.7	4.76
GLR4195	R	1.95	0.1	●		2.5	12.7	4.76
GLR4220	R	2.2	0.1	●	●	3.5	12.7	4.76
GLL4220	L	2.2	0.1		●	3.5	12.7	4.76
GLR4270	R	2.7	0.1	●	●	3.5	12.7	4.76
GLR4320	R	3.2	0.1	●	●	4	12.7	4.76
GLL4320	L	3.2	0.1		●	4	12.7	4.76
GLR4420	R	4.2	0.1	●	●	4	12.7	4.76
GLL4420	L	4.2	0.1		●	4	12.7	4.76

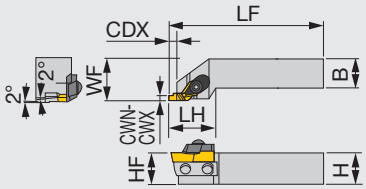
●: Line up

Reference pages: Toolholder → F080

GX-R/LE

External grooving toolholder, for 2 corner inserts





Right hand (R) shown.

Designation	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
GX-2020R/LE	1	4.5	1.5 - 6	20	20	125	40	20	25	XGR/L63...	5
GX-2525R/LE	1	4.5	1.5 - 6	25	25	150	38	25	32	XGR/L63...	5

Use right-hand toolholders (GX-****RE) with right-hand inserts (XGR); and left-hand toolholders (GX-****LE) with left-hand inserts (XGL).
*Torque: Recommended clamping torque (N·m)

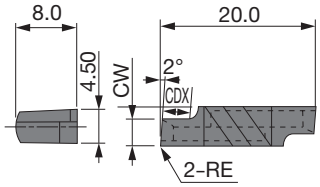
SPARE PARTS

Designation	Clamp set	Clamp screw	Shim	Shim screw	Wrench
GX-2020RE	CP81A	RT-1	SL-6R	BHM4-8	P-4
GX-2020LE	CP81A	RT-1	SL-6L	BHM4-8	P-4
GX-2525RE	CP81A	RT-1	SL-1R	BHM4-8	P-4
GX-2525LE	CP81A	RT-1	SL-1L	BHM4-8	P-4

Note: Max. groove width and max. groove depth will depend on the insert type.

INSERT

XGR/L



Right hand (R) shown.

P	Steel	★				☆	★											
M	Stainless						★											
K	Cast iron	☆				★												
N	Non-ferrous					★												
S	Superalloys					☆												
H	Hard materials																	

★ : First choice
☆ : Second choice

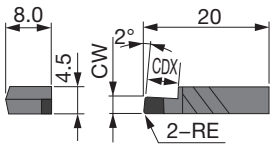
Designation	HAND	CW±0.025	RE	Cermet		Uncoated									CDX
				NS9530		TH10	UX30								
XGR6310-02	R	1	0.2	●											1.5
XGL6310-02	L	1	0.2	●		●	●								1.5
XGR6315-02	R	1.5	0.2	●		●	●								2.3
XGL6315-02	L	1.5	0.2	●		●	●								2.3
XGR6320-02	R	2	0.2	●		●	●								3
XGL6320-02	L	2	0.2	●		●	●								3
XGR6325-02	R	2.5	0.2	●		●	●								3.8
XGL6325-02	L	2.5	0.2	●		●	●								3.8
XGR6330-02	R	3	0.2	●		●	●								4.5
XGL6330-02	L	3	0.2	●		●	●								4.5
XGR6335-02	R	3.5	0.2	●		●	●								5.3
XGL6335-02	L	3.5	0.2	●		●	●								5.3
XGR6340-02	R	4	0.2	●		●	●								6
XGL6340-02	L	4	0.2	●		●	●								6
XGR6345-02	R	4.5	0.2	●		●	●								6
XGL6345-02	L	4.5	0.2	●		●	●								6

Use right-hand toolholders (GX-****RE) with right-hand inserts (XGR...)
left-hand toolholders (GX-****LE) with left-hand inserts (XGL...).

●: Line up

Reference pages: Insert → F082 - F083, Standard cutting conditions →F083

XGR/L-QBN



Right hand (R) shown.

P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	CBN BX360	CDX
XGL6310S-QBN	L	1	0.2	●	1.5
XGR6315S-QBN	R	1.5	0.2	●	2.3
XGL6315S-QBN	L	1.5	0.2	●	2.3
XGR6320S-QBN	R	2	0.2	●	3
XGL6320S-QBN	L	2	0.2	●	3
XGR6325S-QBN	R	2.5	0.2	●	3.8
XGL6325S-QBN	L	2.5	0.2	●	3.8
XGR6330S-QBN	R	3	0.2	●	4.5
XGL6330S-QBN	L	3	0.2	●	4.5
XGR6335S-QBN	R	3.5	0.2	●	5.3
XGL6335S-QBN	L	3.5	0.2	●	5.3
XGR6340S-QBN	R	4	0.2	●	6
XGL6340S-QBN	L	4	0.2	●	6
XGR6345S-QBN	R	4.5	0.2	●	6
XGL6345S-QBN	L	4.5	0.2	●	6

●: Line up

Use right-hand toolholders (GX-****RE) with right-hand inserts (XGR...)
left-hand toolholders (GX-****LE) with left-hand inserts (XGL...).

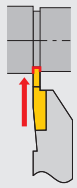
STANDARD CUTTING CONDITIONS

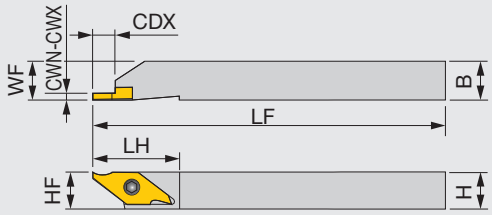
ISO	Workpiece material	Grade	Cutting Speed *Vc* (m/min)	Feed: *f* (mm/rev)		
				W < 2 mm	*W* = 2 ~ 4 mm	*W* > 4 mm
P	Carbon steel	NS9530	80 - 200	0.05 - 0.1	0.08 - 0.2	0.08 - 0.25
		UX30	60 - 150	0.05 - 0.1	0.08 - 0.2	0.08 - 0.25
K	Cast irons , Light alloys	TH10	60 - 150	0.05 - 0.1	0.08 - 0.2	0.08 - 0.25
H	Hardened steels	BX360	50 - 180	0.05 - 0.15	0.05 - 0.15	0.05 - 0.15

Reference pages: Toolholder → F082

JSVGR/L

External grooving toolholder, for Swiss lathes







Right hand (R) shown.

Designation	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
JSVGR/L1010K-C	0.33	2	0.7 - 5.5	10	10	125	23	10	10	JVGR/L...	2.3
JSVGR/L1212K-C	0.33	2	0.7 - 5.5	12	12	125	23	12	12	JVGR/L...	2.3
JSVGR/L1616K	0.33	2	0.7 - 5.5	16	16	125	23	16	16	JVGR/L...	2.3

*Torque: Recommended clamping torque (N·m)

SPARE PARTS

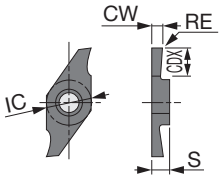




Designation	Clamping screw	Wrench
JSVGR/L...	CSTB-3S	T-9F Option T-9L

INSERT

JVG (with hand, sharp edge)

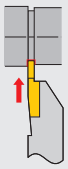


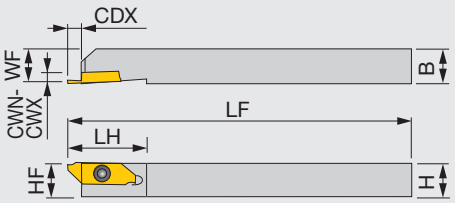
Right hand (R) shown.

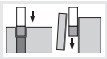
| | | Coated | | | Cermet | | Uncoated | | |

JSXGR/L

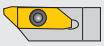
Screw-on toolholder for front turning, reverse turning, and external grooving, for Swiss lathes







Without offset



1010, 1212 Shank

Right hand (R) shown.

Designation	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
JSXGR/L1010K8-C	0.7	2	4.5 - 6	10	10	125	29	10	9.9	JXG...	1.3
JSXGR/L1212K8-C	0.7	2	4.5 - 6	12	12	125	29	12	11.9	JXG...	1.3
JSXGR/L1616K8	0.7	2	4.5 - 6	16	16	125	29	16	15.9	JXG...	1.3
JSXGR/L2020K8	0.7	2	4.5 - 6	20	20	125	29	20	19.9	JXG...	1.3
JSXGR/L2525K8	0.7	2	4.5 - 6	25	25	125	29	25	24.9	JXG...	1.3

Can be wrenched also from the back with a double-head screw.
This toolholder can be used for JXF front-turning insert, JXR reverse-turning insert, and JXG parting and grooving insert.
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

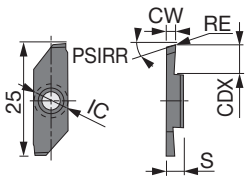




Designation	Clamping screw	Wrench
JSXGR/L...	CSTB-4SD	T-8F

INSERT

JXG (with hand, sharp edge)



Right hand (R) shown.

P	Steel	★				☆																	
M	Stainless	★																					
K	Cast iron					☆																	
N	Non-ferrous					★																	
S	Superalloys					★																	
H	Hard materials																						

★ : First choice
☆ : Second choice

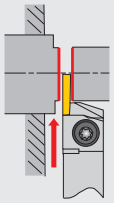
Designation	HAND	CW±0.025	RE	Coated				Uncoated								CDX	IC	PSIRR	S
				J740				TH10											
JXGR8070FA	R	0.7	0	●												4.5	8	15	3.97
JXGL8070FA	L	0.7	0	●				●								4.5	8	15	3.97
JXGR8070FA-005	R	0.7	0.05	●				●								4.5	8	15	3.97
JXGR8100FA	R	1	0	●												6	8	15	3.97
JXGL8100FA	L	1	0	●				●								6	8	15	3.97
JXGR8100FA-005	R	1	0.05	●				●								6	8	15	3.97
JXGR8100FA45	R	1	0	●												4.5	8	15	3.97
JXGR8100FA45-005	R	1	0.05	●				●								4.5	8	15	3.97
JXGR8150FA	R	1.5	0	●												6	8	15	3.97
JXGL8150FA	L	1.5	0	●				●								6	8	15	3.97
JXGR8150FA-005	R	1.5	0.05	●				●								6	8	15	3.97
JXGR8150FA50	R	1.5	0	●												5	8	15	3.97
JXGR8150FA50-005	R	1.5	0.05	●				●								5	8	15	3.97
JXGR8180FA	R	1.8	0	●												6	8	15	3.97
JXGR8180FA-005	R	1.8	0.05	●				●								6	8	15	3.97
JXGR8200FA	R	2	0	●												6	8	15	3.97
JXGL8200FA	L	2	0	●				●								6	8	15	3.97
JXGR8200FA-005	R	2	0.05	●				●								6	8	0	3.97
JXGR8200FN	R	2	0	●												6	8	0	3.97
JXGL8200FN	L	2	0	●				●								6	8	0	3.97
JXGR8200FN-005	R	2	0.05	●				●								6	8	0	3.97

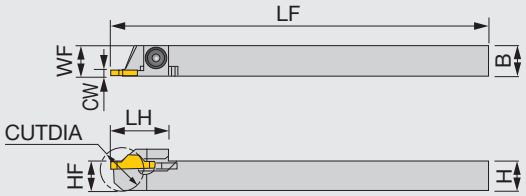
●: Line up

Reference pages: Standard cutting conditions → F091

JCCWSR/L

External grooving and parting toolholder, for Swiss lathes





Right hand (R) shown.

Designation	CW	CUTDIA	H	B	LF	LH	HF	WF	Insert	Torque*
JCCWSR/L1010K2	2	20	10	10	125	19	10	10	JCC*200...	3.5
JCCWSR/L1212K2	2	20	12	12	125	19	12	12	JCC*200...	3.5
JCCWSR/L1616K2	2	20	16	16	125	19	16	16	JCC*200...	3.5
JCCWSR/L2020K2	2	20	20	20	125	19	20	20	JCC*200...	3.5
JCCWSR/L2525K2	2	20	25	25	125	19	25	25	JCC*200...	3.5

*Torque: Recommended clamping torque (N·m)

SPARE PARTS

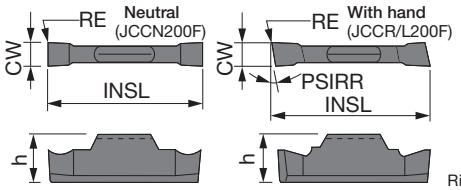




Designation	Clamping screw	Wrench
JCCWSR/L...	CSTB-4S	T-15F

INSERT

JCC (Sharp edge)



Right hand (R) shown.

		Coated	Uncoated
		J740	TH10
P	Steel	★	☆
M	Stainless	★	
K	Cast iron		☆
N	Non-ferrous		★
S	Superalloys		★
H	Hard materials		

★ : First choice
☆ : Second choice

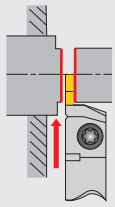
Designation	HAND	CW±0.025	RE	Coated J740	Uncoated TH10	PSIRR	INSL	h
JCCN200F	N	2	0	●		0	15	4.8
JCCN200F-005	N	2	0.05	●	●	0	15	4.8
JCCR200F	R	2	0	●		15°	15	4.8
JCCL200F	L	2	0	●	●	15°	15	4.8
JCCR200F-005	R	2	0.05	●	●	15°	15	4.8
JCCL200F-005	L	2	0.05	●		15°	15	4.8

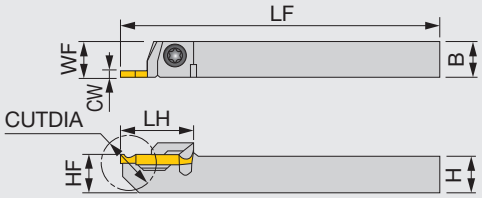
●: Line up

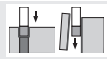
Reference pages: Standard cutting conditions → F091

JCGWSR/L

External grooving and parting toolholder, for Swiss lathes







Right hand (R) shown.

Designation	CW	CUTDIA	H	B	LF	LH	HF	WF	Insert	Torque*
JCGWSR/L1010K2	2	20	10	10	125	20	10	10	JCGN200F...	3.5
JCGWSR/L1212K2	2	20	12	12	125	20	12	12	JCGN200F...	3.5
JCGWSR/L1616K2	2	20	16	16	125	20	16	16	JCGN200F...	3.5

*Torque: Recommended clamping torque (N·m)

SPARE PARTS





Designation	Clamping screw	Wrench
JCGWSR/L...	CSTB-4S	T-15F

INSERT

JCGN (Sharp edge)

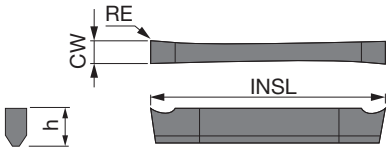


Fig. 1

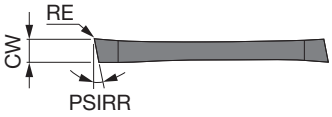


Fig. 2

Right hand (R) shown.

P	Steel	★	☆
M	Stainless	★	
K	Cast iron		☆
N	Non-ferrous		★
S	Superalloys		★
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025	RE	Coated J740	Uncoated TH10	PSIRR	INSL	h	Fig.
JCGN200F	N	2	0.05	●		0°	20	3	1
JCGN200FR	R	2	0.05	●	●	8°	20	3	2
JCGN200FL	L	2	0.05	●	●	8°	20	3	2

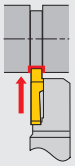
●: Line up

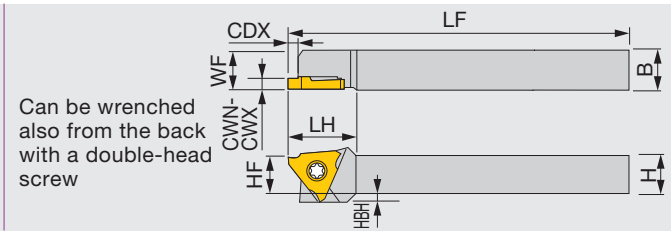
Reference pages: Standard cutting conditions → F091

J-SERIES

JSTGR/L

External grooving toolholder, for Swiss lathes





Can be wrenched also from the back with a double-head screw

Right hand (R) shown.

Designation	CWN	CWX	CDX	H	B	LF	LH	HF	WF	HBH	Insert	Torque*
JSTGR/L1010X3	0.33	3	0.7 - 2.6	10	10	120	18.5	10	10	2	JTGR/L3...	1.2
JSTGR/L1212F3	0.33	3	0.7 - 2.6	12	12	85	18.5	12	12	-	JTGR/L3...	1.2
JSTGR/L1212X3	0.33	3	0.7 - 2.6	12	12	120	18.5	12	12	-	JTGR/L3...	1.2
JSTGR/L1616X3	0.33	3	0.7 - 2.6	16	16	120	18.5	16	16	-	JTGR/L3...	1.2
JSTGL1616K3	0.33	3	0.7 - 2.6	16	16	125	18.5	16	16	-	JTGR/L3...	1.2

*Torque: Recommended clamping torque (N·m)

SPARE PARTS



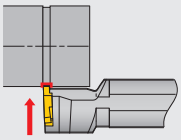


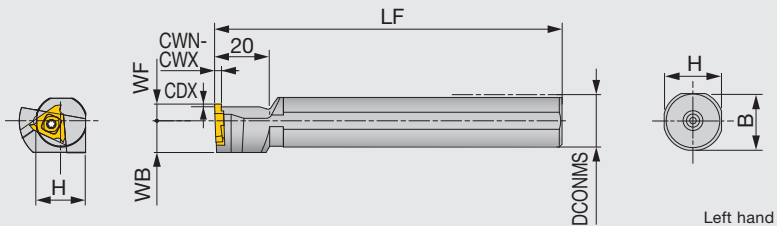
Designation	Clamping screw	Wrench
JSTGR/L...	CSTB-4SD	T-8F

J-SERIES

JS-TGL3

External grooving toolholder, for Swiss lathes





Left hand (L) shown.

Designation	CWN	CWX	CDX	DCONMS	H	B	LF	WF	WB	Insert	Torque*
JS19K-TGL3	0.33	3	0.7 - 2.6	19.05	18	18	125	6	11.5	JTGR3...	3
JS20K-TGL3	0.33	3	0.7 - 2.6	20	19	19	125	6	11.5	JTGR3...	3
JS22K-TGL3	0.33	3	0.7 - 2.6	22	21	21	125	6	11.5	JTGR3...	3
JS25K-TGL3	0.33	3	0.7 - 2.6	25.4	24	24	125	10	12.7	JTGR3...	3

Note: Use left-hand toolholders (L) with right-hand inserts (R).
*Torque: Recommended clamping torque (N·m)

SPARE PARTS



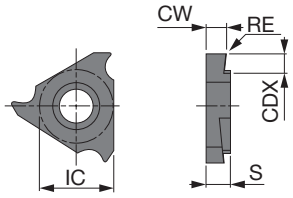


Designation	Clamping screw	Wrench
JS***-TGL3	CSTB-4S	T-15F

Reference pages: Insert → F089 - F090, Standard cutting conditions → F091

INSERT

JTG(Sharp edge)



Right hand (R) shown.

P	Steel	★	★			★			☆										
M	Stainless	★	★																
K	Cast iron					☆			★										
N	Non-ferrous								★										
S	Superalloys								★										
H	Hard materials																		

★ : First choice
☆ : Second choice

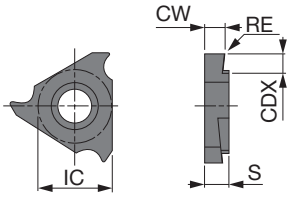
Designation	HAND	CW$^{+0.05}_{0}$	RE	Coated				Cermet				Uncoated				CDX	IC	S
				SH725	J740			NS9530				TH10						
JTGR3033F	R	0.33	0.03	●	●											0.7	9.53	3.18
JTGR3033F-005	R	0.33	0.05	●								●				0.7	9.53	3.18
JTGL3033F	L	0.33	0.03		●											0.7	9.53	3.18
JTGR3043F	R	0.43	0.03		●							●				1.1	9.53	3.18
JTGR3050F	R	0.5	0.03	●	●											1.1	9.53	3.18
JTGR3050F-005	R	0.5	0.05	●				●				●				1.1	9.53	3.18
JTGL3050F	L	0.5	0.03	●	●											1.1	9.53	3.18
JTGL3050F-005	L	0.5	0.05	●								●				1.1	9.53	3.18
JTGR3065F	R	0.65	0.03	●	●											1.9	9.53	3.18
JTGR3065F-010	R	0.65	0.1	●												1.9	9.53	3.18
JTGR3075F	R	0.75	0.03	●	●											1.9	9.53	3.18
JTGR3075F-010	R	0.75	0.1	●				●				●				1.9	9.53	3.18
JTGL3075F	L	0.75	0.03	●	●											1.9	9.53	3.18
JTGL3075F-010	L	0.75	0.1	●				●				●				1.9	9.53	3.18
JTGR3080F	R	0.8	0.03	●	●											1.9	9.53	3.18
JTGR3080F-010	R	0.8	0.1	●												1.9	9.53	3.18
JTGR3085F	R	0.85	0.03	●	●											1.9	9.53	3.18
JTGR3095F	R	0.95	0.03	●	●											1.9	9.53	3.18
JTGR3095F-010	R	0.95	0.1	●				●				●				1.9	9.53	3.18
JTGL3095F	L	0.95	0.03	●	●											1.9	9.53	3.18
JTGL3095F-010	L	0.95	0.1	●								●				1.9	9.53	3.18
JTGR3100F	R	1	0.05	●	●											2.1	9.53	3.18
JTGR3100F-010	R	1	0.1	●				●				●				2.1	9.53	3.18
JTGL3100F	L	1	0.05	●	●											2.1	9.53	3.18
JTGL3100F-010	L	1	0.1	●								●				2.1	9.53	3.18
JTGR3110F	R	1.1	0.05	●	●											2.1	9.53	3.18
JTGR3120F	R	1.2	0.05	●	●											2.1	9.53	3.18
JTGR3120F-010	R	1.2	0.1	●												2.1	9.53	3.18
JTGR3125F	R	1.25	0.05	●	●											2.1	9.53	3.18
JTGR3125F-010	R	1.25	0.1	●				●				●				2.1	9.53	3.18
JTGL3125F	L	1.25	0.05	●	●											2.1	9.53	3.18
JTGL3125F-010	L	1.25	0.1	●								●				2.1	9.53	3.18
JTGR3130F	R	1.3	0.05	●	●											2.1	9.53	3.18
JTGR3140F	R	1.4	0.05	●	●											2.1	9.53	3.18
JTGR3140F-010	R	1.4	0.1	●												2.1	9.53	3.18
JTGR3145F	R	1.45	0.05	●	●											2.1	9.53	3.18
JTGR3145F-010	R	1.45	0.1	●				●				●				2.1	9.53	3.18
JTGL3145F	L	1.45	0.05		●											2.1	9.53	3.18
JTGR3150F	R	1.5	0.05	●	●							●				2.1	9.53	3.18
JTGR3150F-010	R	1.5	0.1	●				●				●				2.1	9.53	3.18
JTGL3150F	L	1.5	0.05	●	●											2.1	9.53	3.18
JTGL3150F-010	L	1.5	0.1	●								●				2.1	9.53	3.18

●: Line up

Reference pages: Toolholder →F088, Standard cutting conditions → F091

INSERT

JTG(Sharp edge)



Right hand (R) shown.

| | | |

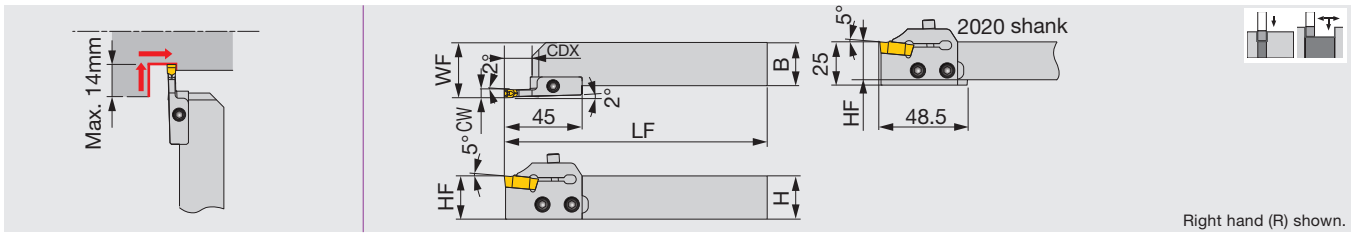
STANDARD CUTTING CONDITIONS (J-Series grooving tool)

ISO	Workpiece material	Grade	Cutting Speed *Vc* (m/min)	Feed *f* (mm/rev)
P	General steels, Free-cutting steels, etc.	J740	10 - 100	0.01 - 0.1
		SH725	50 - 150	0.01 - 0.1
		NS9530	50 - 150	0.01 - 0.1
		J9530	50 - 150	0.01 - 0.1
M	Stainless steels, etc.	J740	10 - 100	0.01 - 0.1
		SH725	50 - 150	0.01 - 0.1
N	Aluminium alloys, copper alloys, etc.	TH10	10 - 200	0.01 - 0.1
S	Difficult-to-cut materials, titanium alloys, etc.	TH10	10 - 30	0.01 - 0.1

MY-T SERIES

CGWSR/L-FLR/L#GP

External grooving and turning toolholder



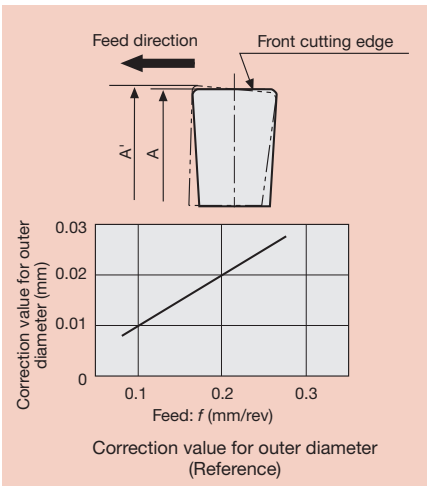
Designation	CW	CDX	H	B	LF	HF	WF	Insert	Shank	blade	Torque
CGWSR/L2020-FLR/L3GP	3	10	20	20	152	20	27	FLEX30R/L	CGWSR/L2020	FLR/L3GP	5
CGWSR/L2525-FLR/L3GP	3	10	25	25	152	25	32	FLEX30R/L	CGWSR/L2525	FLR/L3GP	5
CGWSR/L2020-FLR/L4GP	4	12	20	20	152	20	27	FLEX40R/L	CGWSR/L2020	FLR/L4GP	5
CGWSR/L2525-FLR/L4GP	4	12	25	25	152	25	32	FLEX40R/L	CGWSR/L2525	FLR/L4GP	5
CGWSR/L2020-FLR/L5GP	5	14	20	20	152	20	27	FLEX50R/L	CGWSR/L2020	FLR/L5GP	5
CGWSR/L2525-FLR/L5GP	5	14	25	25	152	25	32	FLEX50R/L	CGWSR/L2525	FLR/L5GP	5

Toolholders are in stock with the designations of: a set of shank and blade; a shank; a blade. Combining the designations of a blade and a shank will make the designation of a set.
Please check the stock and place an order with the designation of a set or a shank+a blade.
Use right-hand toolholders (CGWSR...) with right-hand blade (FLR...); and left-hand toolholders (CGWSL...) with left-hand blade (FLL...).
*Torque: Recommended clamping torque (N·m)

SPARE PARTS



Designation	Clamping screw	Blade screw	Wrench
CGWSR/L****-FLR/L*GP	CHHM5-18	CSHB-6	P-4



Caution

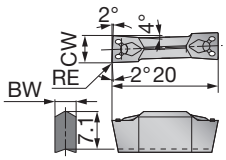
- Flex-Tool has mechanism in which the end cutting edge angle is formed b accepting a cutting force. In external grooving, there is a possibility that if the cutting conditions (feed and depth of cut) are set too high, the programmed diameter will not be achieved. To prevent this problem, it is necessary to perform a compensation in the program by an amount that is equal to the amount A'-A that is shown in the drawing on the right. The values of compensation corresponding to the feeds are also shown in the graph.

The length of blade for 5mm width is shortened 2mm compared from the old type blade. Please notice and read the instruction manual packaged in the box

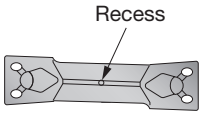
Reference pages: Insert, Standard cutting conditions → F092

INSERT

FLEX(R/L)



Right hand (R) shown.



To distinguish the insert hands, the V-shape surface (top surface) of a left-hand insert has a recess. (not of a right-hand insert)

		Coated				Carbide				Uncoated								
P	Steel	★	☆			★				★								
M	Stainless	★								★								
K	Cast iron	☆				☆												
N	Non-ferrous																	
S	Superalloys																	
H	Hard materials																	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	T9225	T9125			NS9530			UX30							BW
FLEX30R	R	3	0.4					●										2.2
FLEX30L	L	3	0.4					●										2.2
FLEX40R	R	4	0.4					●										3.1
FLEX40L	L	4	0.4					●										3.1
FLEX50R	R	5	0.4	●	●			●										4
FLEX50L	L	5	0.4	●	●			●			●							4

●: Line up

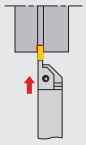
STANDARD CUTTING CONDITIONS

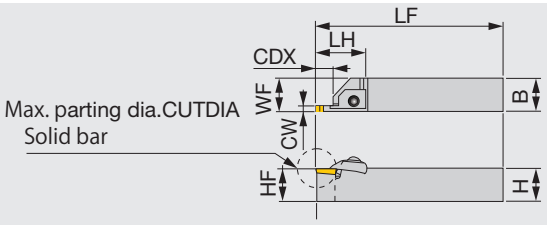
ISO	Workpiece material	Grade	Cutting Speed *Vc* (m/min)	Feed: *f* (mm/rev) Grooving	Turning
P	Carbon steel	T9225	80 - 300	0.05 - 0.25	0.1 - 0.3
		T9125	80 - 200	0.05 - 0.25	0.1 - 0.3
		NS9530	80 - 200	0.05 - 0.25	0.1 - 0.3
		UX30	60 - 150	0.05 - 0.25	0.1 - 0.3

Reference pages: Toolholder →F091

CTWR/L

External grooving and parting toolholder, for 2 corner inserts





Right hand (R) shown.

Designation	CW	CUTDIA	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
CTWR/L2020-3	3	32	14	20	20	150	41	20	20.25	CTD3	5
CTWR/L2525-3	3	32	14	25	25	150	41	25	25.25	CTD3	5
CTWR/L2020-4	4	32	14	20	20	150	41	20	20.25	CTD4	5
CTWR/L2525-4	4	32	14	25	25	150	41	25	25.25	CTD4	5
CTWR/L2525-5	5	42	20	25	25	150	46	25	25.25	CTD5	5

*Torque: Recommended clamping torque (N·m)

SPARE PARTS



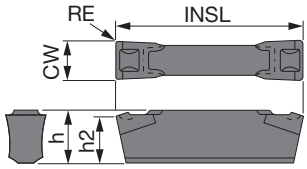




Designation	Clamp	Pin	Clamping screw	Washer	Wrench
CTWR2020-3	CTC-3R	BP-360	CTS-M6	CDW6	P-4
CTWL2020-3	CTC-3L	BP-360	CTS-M6	CDW6	P-4
CTWR2525-3	CTC-3R	BP-360	CTS-M6	CDW6	P-4
CTWL2525-3	CTC-3L	BP-360	CTS-M6	CDW6	P-4
CTWR2020-4	CTC-4R	BP-360	CTS-M6	CDW6	P-4
CTWL2020-4	CTC-4L	BP-360	CTS-M6	CDW6	P-4
CTWR2525-4	CTC-4R	BP-360	CTS-M6	CDW6	P-4
CTWL2525-4	CTC-4L	BP-360	CTS-M6	CDW6	P-4
CTWR2525-5	CTC-5R	BP-360	CTS-M6	CDW6	P-4
CTWL2525-5	CTC-5L	BP-360	CTS-M6	CDW6	P-4

INSERT

CTD



P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	CW±0.1	RE	Coated AH725	INSL	h	h2
CTD3	3	0.2	●	20	4.3	4
CTD4	4	0.2	●	20	5.3	5
CTD5	5	0.2	●	25	6.3	6

●: Line up

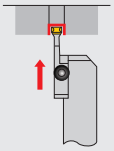
STANDARD CUTTING CONDITIONS

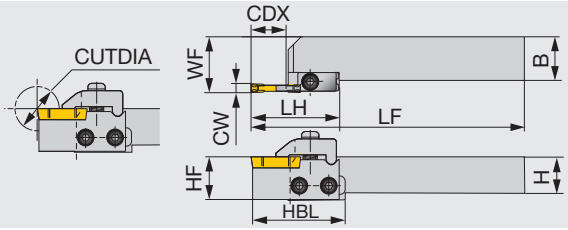
ISO	Workpiece material	Grade	Cutting Speed *Vc* (m/min)	Feed: *f* (mm/rev) Grooving	Parting toolholder
P	Carbon steel	AH725	80 - 180	0.08 - 0.3	0.08 - 0.15
M	Stainless steel	AH725	50 - 120	0.08 - 0.25	0.08 - 0.1

MY-T SERIES

CGWSR/L-CGD

External grooving and parting toolholder





Right hand (R) shown.

Designation	CW	CUTDIA	CDX	H	B	LF	LH	HBL	HF	WF	Insert	Shank	blade	Torque*
CGWSR/L2020-CGDR/L2	2	35	16	20	20	152	45	48.5	20	26.45	CGD200	CGWSR/L2020	CGDR/L2	5
CGWSR/L2525-CGDR/L2	2	35	16	25	25	152	45	-	25	31.45	CGD200	CGWSR/L2525	CGDR/L2	5
CGWSR/L2020-CGDR/L3	3	46	21.6	20	20	157.6	50.6	54.1	20	26.45	CGD300	CGWSR/L2020	CGDR/L3	5
CGWSR/L2525-CGDR/L3	3	46	21.6	25	25	157.6	50.6	-	25	31.45	CGD300	CGWSR/L2525	CGDR/L3	5
CGWSR/L2020-CGDR/L4	4	46	21.6	20	20	157.6	50.6	54.1	20	26.65	CGD400	CGWSR/L2020	CGDR/L4	5
CGWSR/L2525-CGDR/L4	4	46	21.6	25	25	157.6	50.6	-	25	31.65	CGD400	CGWSR/L2525	CGDR/L4	5
CGWSR/L2020-CGDR/L5	5	46	21.6	20	20	157.6	50.6	54.1	20	26.95	CGD500	CGWSR/L2020	CGDR/L5	5
CGWSR/L2525-CGDR/L5	5	46	21.6	25	25	157.6	50.6	-	25	31.95	CGD500	CGWSR/L2525	CGDR/L5	5
CGWSR/L2020-CGDR/L6	6	46	21.6	20	20	157.6	50.6	54.1	20	27.1	CGD600	CGWSR/L2020	CGDR/L6	5
CGWSR/L2525-CGDR/L6	6	46	21.6	25	25	157.6	50.6	-	25	32.1	CGD600	CGWSR/L2525	CGDR/L6	5
CGWSR2525-8	7 / 8	50	21.6	25	25	150	-	-	25	26.35	CGD700, CGD800	-	-	8.5
CGWSR3232-8	7 / 8	50	21.6	32	32	170	-	-	32	33.35	CGD700, CGD800	-	-	8.5

When using a right or left hand blade set, the right hand blade set is used with right hand shank and the left hand blade set is used with left hand shank.
*Torque: Recommended clamping torque (N·m)

SPARE PARTS





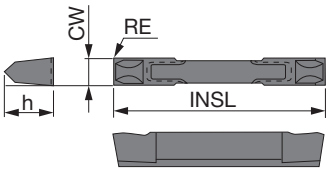



Designation	blade	Clamp	Clamping screw	Blade screw	Spring pin	Spring	Wrench
CGWSR****-CGDR2	TCR2	CCR2	RT-1	CSHB-6	-	BP-9	P-4
CGWSL****-CGDL2	TCL2	CCL2	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-CGDR3	TCR3	CCR3	RT-1	CSHB-6	-	BP-9	P-4
CGWSL****-CGDL3	TCL3	CCL3	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-CGDR4	TCR4	CCR4	RT-1	CSHB-6	-	BP-9	P-4
CGWSL****-CGDL4	TCL4	CCL4	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-CGDR5	TCR5	CCR5	RT-1	CSHB-6	-	BP-9	P-4
CGWSL****-CGDL5	TCL5	CCL5	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-CGDR6	TCR6	CCR6	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-CGDL6	TCL6	CCL6	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-8	-	CCR/L-8	CHHM6-20	-	5X14AW	BP-9	P-5

Reference pages: Insert, Standard cutting conditions →F095

INSERT

CGD



P	Steel	☆			★			★									
M	Stainless	★						★									
K	Cast iron				☆												
N	Non-ferrous																
S	Superalloys																
H	Hard materials																

★ : First choice
☆ : Second choice

Designation	CW±0.025	RE	Coated			Cermet			Uncoated						INSL	h
			GH330			NS9530			UX30							
CGD200	2	0.2	●			●									20	3.25
CGD300	3	0.2	●			●			●						28.6	6.3
CGD400	4	0.2	●			●									28.6	6.3
CGD500	5	0.2	●			●			●						28.6	6.3
CGD600	6	0.2	●			●									28.6	8.5
CGD700	8	0.2	●						●						28.6	8.5
CGD800	8	0.2	●						●						28.6	8.5

●: Line up

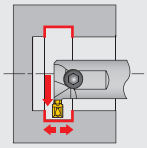
STANDARD CUTTING CONDITIONS

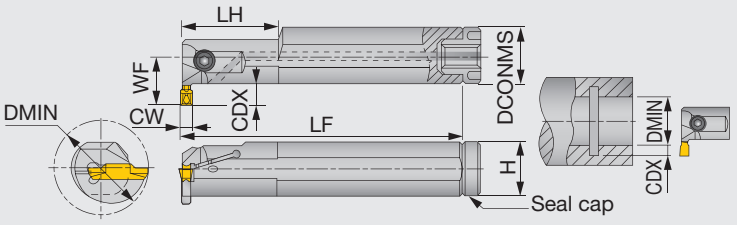
ISO	Workpiece material	Grade	Cutting Speed *Vc* (m/min)	Feed: *f* (mm/rev) Grooving	Parting toolholder
P	Carbon steel	GH330	70 - 180	0.08 - 0.3	0.08 - 0.15
		NS9530	80 - 200	0.08 - 0.3	0.08 - 0.15
		UX30	60 - 150	0.08 - 0.3	0.08 - 0.15

Reference pages: Toolholder → F094

CTIR/L

Internal grooving and turning toolholder





Insert:
Seat size 2:DGIM, DGIS

Right hand (R) shown.

Designation	CW	DMIN	Seat size	CDX	DCONMS	H	LF (1)	LH	WF	Insert	Torque*
CTIR/L16-2T08-D250	2	25	2	8	16	14	125	-	16.5	DGIM..., DGIS...	5
CTIR/L20-2T06-D250	2	25	2	6	20	18	160	40	15.8	DGIM..., DGIS...	5
CTIR/L20-3T06-D250	3	25	3	6	20	18	160	40	15.8	DTI..., DTX...	5
CTIR/L25-3T05-D250	3	25	3	5.1	25	23	200	40	17.5	DTI..., DTX...	5
CTIR/L25-3T08-D320	3	32	3	8	25	23	200	40	21.5	DTI..., DTX...	5
CTIR/L32-3T10-D400	3	40	3	10	32	30	250	60	27	DTI..., DTX...	5
CTIR/L20-4T06-D250	4	25	4	6	20	18	160	40	15.8	DTI..., DTX...	5
CTIR/L25-4T08-D320	4	32	4	8	25	23	200	40	21.5	DTI..., DTX...	5
CTIR/L32-4T04-D310	4	31	4	4	32	30	250	60	20.8	DTI..., DTX...	5
CTIR/L32-4T10-D400	4	40	4	10	32	30	250	60	27	DTI..., DTX...	5
CTIR/L25-5T05-D310	5	31	5	5	25	23	200	60	17.3	DTI..., DTX...	8.5
CTIR/L32-5T10-D400	5	40	5	10	32	30	250	60	27	DTI..., DTX...	8.5
CTIR/L32-6T04-D310	6	31	6	4	32	30	250	60	20.8	DTI..., DTX...	8.5
CTIR/L32-6T10-D400	6	40	6	10	32	30	250	60	27	DTI..., DTX...	8.5
CTIR/L32-8T05-D370	8	37	8	5	32	30	250	60	21.3	DTI..., DTX...	8.5
CTIR/L40-8T05-D420	8	42	8	5.8	40	38	300	65	25.8	DTI..., DTX...	8.5

(1) L1 is calculated with the groove width CW in the above table.
*Torque: Recommended clamping torque (N·m)

SPARE PARTS



Designation	Clamping screw	Wrench	Seal cap	Thread type for connection
CTIR/L16-2T08-D250	CM5X0.8X10-A	P-4	CA-16	M6
CTIR/L20-2T06-D250	CM5X0.8X12-A	P-4	CA-20	M6
CTIR/L20-3T06-D250	CM5X0.8X12-A	P-4	CA-20	M6
CTIR/L25-3T05-D250	CM5X0.8X16-A	P-4	CA-25	R1/8"
CTIR/L25-3T08-D320	CM5X0.8X16-A	P-4	CA-25	R1/8"
CTIR/L32-3T10-D400	CM5X0.8X16-A	P-4	CA-32	R1/8"
CTIR/L20-4T06-D250	CM5X0.8X12-A	P-4	CA-20	M6
CTIR/L25-4T08-D320	CM5X0.8X16-A	P-4	CA-25	R1/8"
CTIR/L32-4T04-D310	CM5X0.8X16-A	P-4	CA-32	R1/8"
CTIR/L32-4T10-D400	CM5X0.8X16-A	P-4	CA-32	R1/8"
CTIR/L25-5T05-D310	CM6X1X16-A	P-5	CA-25	R1/8"
CTIR/L32-5T10-D400	CM6X1X20-A	P-5	CA-32	R1/8"
CTIR/L32-6T04-D310	CM6X1X20-A	P-5	CA-32	R1/8"
CTIR/L32-6T10-D400	CM6X1X20-A	P-5	CA-32	R1/8"
CTIR/L32-8T05-D370	CM6X1X25-A	P-5	CA-32	R1/8"
CTIR/L40-8T05-D420	CM6X1X25-A	P-5	CA-40	R1/8"

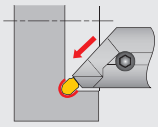
When using the inserts that are not in the above

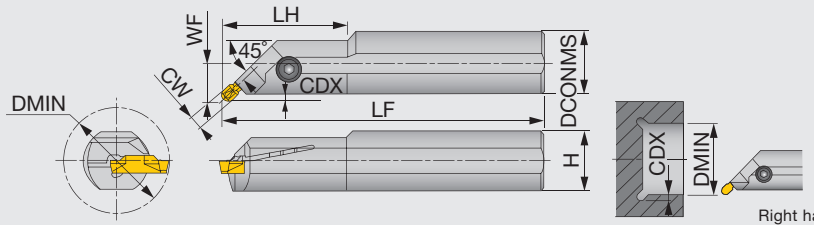
INSERT	Groove width CW	Min. diameter DMIN
DGM / DGS / SGN / DGL / DTM	3	50
DGM / DGS / SGN / DTM / DGL	4	50
DGM / DGS / DTM / DGL	5	60
DGM / DGS / DTM / DGL	6	60
DGM / DGS / DTM	8	70
DTE / DGG	3	40
DTE / DGG	4	40
DTE / DGG	5	50
DTE / DGG	6	50
DTE / DGG	8	62
DTR	3	38
DTR	4	38
DTR	5	43
DTR	6	46
DTR	8	56

External
Internal
Grooving
Parting
Others

Reference pages: Insert → F098 - F113, Standard cutting conditions → F113

TUNGCUT
CGIUR/L
Internal 45° undercutting toolholder





Right hand (R) shown.

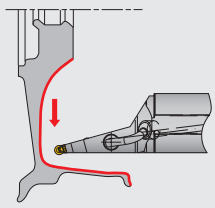
Designation	CW	DMIN	Seat size	CDX	DCONMS	H	LF	LH	WF (1)	Insert	Torque*
CGIUR/L20-3T02-D380	3	38	3	2.8	20	19	160	-	12.8	DTIU...	5
CGIUR/L25-3T02-D380	3	38	3	2.8	25	23	200	40	14.8	DTIU...	5
CGIUR/L20-4T02-D380	4	38	4	2.8	20	19	160	-	12.9	DTIU...	5
CGIUR/L25-4T02-D460	4	46	4	2.8	25	23	200	40	14.9	DTIU...	5
CGIUR/L25-6T02-D460	6	46	5, 6	2.8	25	23	200	-	15.2	DTIU...	8.5

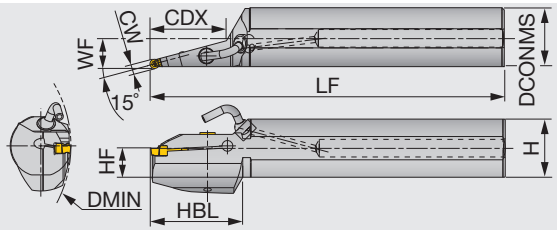
(1) WF is calculated with the groove width CW in the above table.
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

Designation	Clamping screw	Wrench
CGIUR/L20-3T02-D380	CM5X0.8X12-A	P-4
CGIUR/L25-3T02-D380	CM5X0.8X16-A	P-4
CGIUR/L**-4T02-D...	CM5X0.8X16-A	P-4
CGIUR/L25-6T02-D460	CM6X1X25-A	P-5

TUNGCUT
CGIUR/L-15A
Round-shank toolholder for profiling aluminium wheel





Right hand (R) shown.

Designation	CW	DMIN	Seat size	CDX	DCONMS	H	WF	LF	HF	HBL	Insert	Seal cap	Torque*
CGIUR/L40-6T50-D160-15A	6	160	6	50	40	38.5	19.7	320	19	60	DTA...	CA-40	5
CGIUR/L40-8T83-D160-15A	8	160	8	83	40	38.5	20.5	320	19	85	DTA...	CA-40	5
CGIUR/L50-6T85-D200-15A	6	200	6	85	50	48.5	25.2	350	23.5	85	DTA...	-	5
CGIUR/L50-8T85-D200-15A	8	200	8	85	50	48.5	25.9	350	23.5	85	DTA...	-	5

*Torque: Recommended clamping torque (N·m)

SPARE PARTS

Designation	Clamping screw	Wrench	Seal cap
CGIUR/L**-15A	CM6X1X25-A	P-5	CA-40

NOZZLE

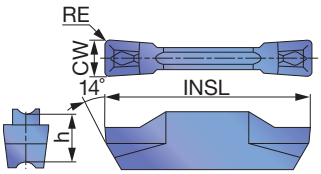
Coolant pipe	Coolant nozzle
PNZ5	CNZ125

Reference pages: Insert → F098 - F113, Standard cutting conditions → F113

INSERT

DTI

Internal grooving and turning (for high precision)



		T9225	T9125	AH7025	AH725	GH130	NS9530
P	Steel	★	☆	★	☆	☆	★
M	Stainless	★		★	☆	★	
K	Cast iron	☆		★		☆	☆
N	Non-ferrous						
S	Superalloys			★	☆		
H	Hard materials						

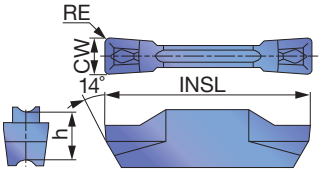
★ : First choice
☆ : Second choice

Designation	CW±0.02	RE	Coated					Cermet	INSL	h
			T9225	T9125	AH7025	AH725	GH130	NS9530		
DTI300-040	3	0.4	●	●	●	●	●	●	20	5
DTI400-040	4	0.4	●	●	●	●	●	●	20	5
DTI400-080	4	0.8	●	●	●	●	●	●	20	5
DTI500-040	5	0.4	●	●	●	●	●	●	25	5.5
DTI500-080	5	0.8	●	●	●	●	●	●	25	5.5
DTI600-080	6	0.8	●	●	●	●	●		25	5.5
DTI600-120	6	1.2	●	●	●	●	●		25	5.5
DTI800-080	8	0.8	●	●	●	●	●		30	6.7
DTI800-120	8	1.2	●	●	●	●	●		30	6.7

●: Line up

DTI

Internal grooving and turning



		T9225	T9125	AH7025	AH725	GH130	NS9530
P	Steel	★	☆	★	☆	☆	★
M	Stainless	★		★	☆	★	
K	Cast iron	☆		★		☆	☆
N	Non-ferrous						
S	Superalloys			★	☆		
H	Hard materials						

★ : First choice
☆ : Second choice

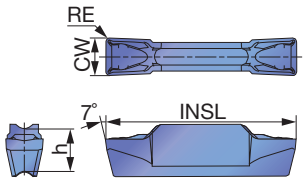
Designation	CW±0.05	RE	Coated					Cermet	INSL	h
			T9225	T9125	AH7025	AH725	GH130	NS9530		
DTI3-040	3	0.4	●	●	●	●	●	●	20	5
DTI4-040	4	0.4	●	●	●	●	●	●	20	5

●: Line up

Reference pages: Toolholder → F096 - F097, Standard cutting conditions → F113

DTX

External/Internal face grooving and turning



P	Steel	★	★	★	☆	☆			★							
M	Stainless	★		★	☆	★										
K	Cast iron	☆		★		☆			☆							
N	Non-ferrous															
S	Superalloys			★	☆											
H	Hard materials															

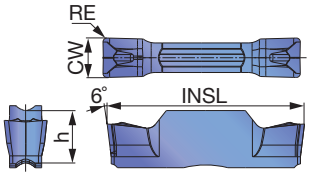
★ : First choice
☆ : Second choice

Designation	CW±0.05	RE	Coated						Cermet						INSL	h
			T9225	T9125	AH7025	AH725	GH130		NS9530							
DTX3-030	3	0.3	●	●	●	●	●		●						20	5
DTX4-040	4	0.4	●	●	●	●	●		●						20	5
DTX5-040	5	0.4	●	●	●	●	●		●						25	5.5
DTX6-080	6	0.8			●	●	●								25	5

●: Line up

DTM

External face grooving and turning



P	Steel	★														
M	Stainless	★														
K	Cast iron	★														
N	Non-ferrous															
S	Superalloys	★														
H	Hard materials															

★ : First choice
☆ : Second choice

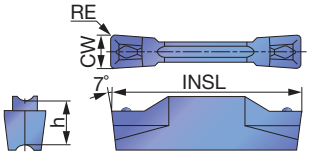
Designation	CW±0.05	RE	Coated												INSL	h
			AH7025													
DTM3-030	3	0.3	●												20	5
DTM4-040	4	0.4	●												20	5
DTM4-080	4	0.8	●												20	5
DTM5-080	5	0.8	●												25	5.5
DTM6-080	6	0.8	●												25	5.5
DTM8-080	8	0.8	●												30	6.7

●: Line up

Reference pages: Toolholder → F096 - F097, Standard cutting conditions → F113

DTE

External face grooving and turning (for high precision)



P	Steel	★	★		★	☆	☆			★						
M	Stainless	★			★	☆	★									
K	Cast iron	☆		★	★		☆									
N	Non-ferrous															
S	Superalloys				★	☆										
H	Hard materials															

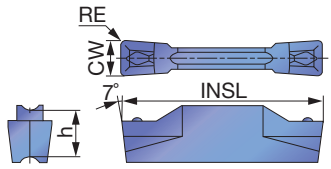
★ : First choice
☆ : Second choice

Designation	CW±0.02	RE	Coated							Cermet						INSL	h
			T9225	T9125	T515	AH7025	AH725	GH130		NS9530							
DTE265-015	2.65	0.15	●	●		●	●	●		●						20	5
DTE300-020	3	0.2	●	●		●	●	●		●						20	5
DTE300-040	3	0.4	●	●		●	●	●		●						20	5
DTE315-015	3.15	0.15	●	●		●	●	●		●						20	5
DTE400-040	4	0.4	●	●		●	●	●		●						20	5
DTE400-080	4	0.8	●	●		●	●	●		●						20	5
DTE415-015	4.15	0.15	●	●		●	●	●		●						20	5
DTE478-055	4.78	0.55	●	●		●	●	●		●						25	5.5
DTE500-040	5	0.4	●	●		●	●	●		●						25	5.5
DTE500-080	5	0.8	●	●		●	●	●		●						25	5.5
DTE515-015	5.15	0.15	●	●		●	●	●								25	5.5
DTE600-080	6	0.8	●	●		●	●	●								25	5.5
DTE600-120	6	1.2	●	●		●	●	●								25	5.5
DTE800-080	8	0.8	●	●		●	●	●								30	6.7
DTE800-120	8	1.2	●	●		●	●	●								30	6.7

●: Line up

DTE

External face grooving and turning



P	Steel	★	★		★	☆	☆			★						
M	Stainless	★			★	☆	★									
K	Cast iron	☆		★	★		☆									
N	Non-ferrous															
S	Superalloys				★	☆										
H	Hard materials															

★ : First choice
☆ : Second choice

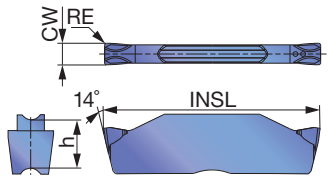
Designation	CW±0.05	RE	Coated							Cermet						INSL	h
			T9225	T9125	T515	AH7025	AH725	GH130		NS9530							
DTE3-040	3	0.4	●	●	●	●	●	●		●						20	5
DTE4-040	4	0.4	●	●	●	●	●	●		●						20	5
DTE5-040	5	0.4			●	●										25	5.5
DTE6-080	6	0.8			●	●										25	5.5

●: Line up

Reference pages: Toolholder → F096 - F097, Standard cutting conditions →F113

DGIM

Small diameter internal grooving



P	Steel	★	☆	★	☆	☆			★							
M	Stainless	★		★	☆	★										
K	Cast iron	☆		★		☆			☆							
N	Non-ferrous															
S	Superalloys			★	☆											
H	Hard materials															

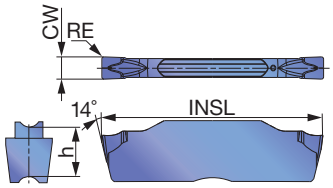
★ : First choice
☆ : Second choice

Designation	CW±0.05	RE	Coated						Cermet						INSL	h
			T9225	T9125	AH7025	AH725	GH130		NS9530							
DGIM2-020	2	0.2	●	●	●	●	●		●						20	5

●: Line up

DGIS

Small diameter internal grooving



P	Steel	★	☆	★	☆	☆			★							
M	Stainless	★		★	☆	★										
K	Cast iron	☆		★		☆			☆							
N	Non-ferrous															
S	Superalloys			★	☆											
H	Hard materials															

★ : First choice
☆ : Second choice

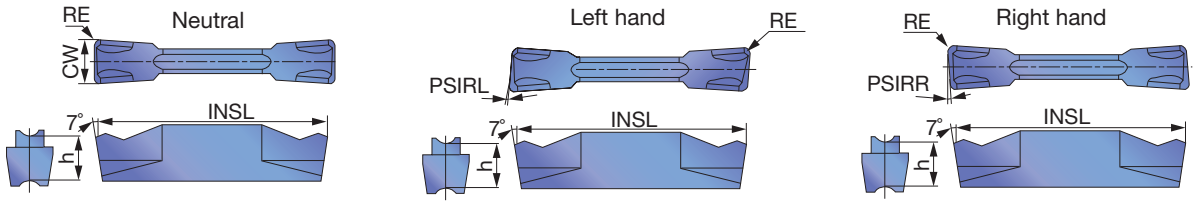
Designation	CW±0.05	RE	Coated						Cermet						INSL	h
			T9225	T9125	AH7025	AH725	GH130		NS9530							
DGIS2-020	2	0.2	●	●	●	●	●		●						20	5

●: Line up

Reference pages: Toolholder → F096 - F097, Standard cutting conditions →F113

DGM

External grooving and parting, 2 corners



P	Steel	★	★	★	☆		☆			★							
M	Stainless	★		★	☆		★										
K	Cast iron	☆		★		☆	☆			☆							
N	Non-ferrous																
S	Superalloys			★	☆	★											
H	Hard materials																

★ : First choice
☆ : Second choice

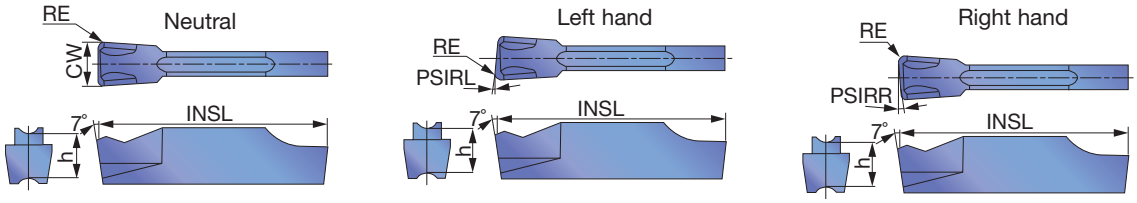
Designation	HAND	CW±0.05	RE	Coated							Cermet					INSL	h	PSIRL	PSIRR
				T9225	T9125	AH7025	AH725	AH905	GH130		NS9530								
DGM2-020	N	2	0.2	●	●	●	●		●		●					20	5	0°	0°
DGM2-020-6R	R	2	0.2			●	●		●							19.8	5	0°	6°
DGM2-020-6L	L	2	0.2			●	●		●							19.8	5	6°	0°
DGM2-020-8R	R	2	0.2			●	●		●							19.8	5	0°	8°
DGM2-020-8L	L	2	0.2			●	●		●							19.8	5	8	0°
DGM2-020-15R	R	2	0.2			●	●		●							19.8	5	0°	15°
DGM2-020-15L	L	2	0.2			●	●		●							19.8	5	15°	0°
DGM2-002-15R	R	2	0.02				●		●							19.35	5	0°	15°
DGM2-002-15L	L	2	0.02				●		●							19.35	5	15°	0°
DGM3-020	N	3	0.2	●	●	●	●	●	●		●					20	5	0°	0°
DGM3-020-6R	R	3	0.2			●	●		●							19.9	5	0°	6°
DGM3-020-6L	L	3	0.2			●	●		●							19.9	5	6°	0°
DGM3-002-6R	R	3	0.02				●		●							19.45	5	0°	6°
DGM3-002-6L	L	3	0.02				●		●							19.45	5	6°	0°
DGM3-020-15R	R	3	0.2			●	●		●							19.9	5	0°	15°
DGM3-020-15L	L	3	0.2			●	●		●							19.9	5	15°	0°
DGM4-030	N	4	0.3	●	●	●	●	●	●		●					20	5	0°	0°
DGM4-030-4R	R	4	0.3			●	●		●							19.8	5	0°	4°
DGM4-030-4L	L	4	0.3			●	●		●							19.8	5	4°	0°
DGM4-030-15R	R	4	0.3			●	●		●							19.8	5	0°	15°
DGM4-030-15L	L	4	0.3			●	●		●							19.8	5	15°	0°
DGM5-030	N	5	0.3	●	●	●	●	●	●		●					25	5.5	0°	0°
DGM5-030-4R	R	5	0.3			●	●		●							24.9	5.5	0°	4°
DGM6-030	N	6	0.3	●	●	●	●	●	●							25	5.5	0°	0°
DGM8-040	N	8	0.4	●	●	●	●		●							30	6.7	0°	0°

●: Line up

Reference pages: Toolholder → F096 - F097, Standard cutting conditions → F113

SGM

External deep grooving and parting, 1corner



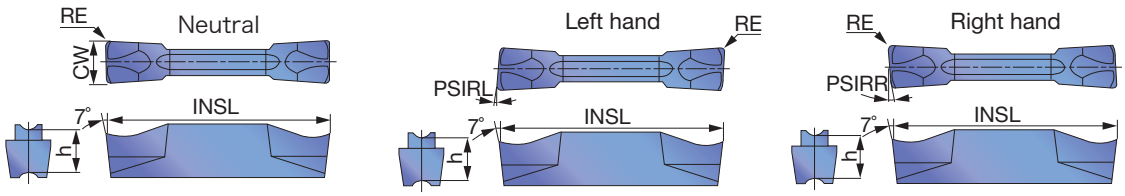
P	Steel	★ ☆ ☆
M	Stainless	★ ☆ ★
K	Cast iron	★ ☆
N	Non-ferrous	
S	Superalloys	★ ☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	Coated			INSL	h	PSIRL	PSIRR
				AH7025	AH725	GH130				
SGM2-020	N	2	0.2	●	●		20	5	0°	0°
SGM2-020-6R	R	2	0.2	●	●	●	20	5	0°	6°
SGM2-020-6L	L	2	0.2	●	●	●	20	5	6°	0°
SGM3-020	N	3	0.2	●	●	●	20	5	0°	0°
SGM3-020-6R	R	3	0.2	●	●	●	20	5	0°	6°
SGM3-020-6L	L	3	0.2	●	●	●	20	5	6°	0°
SGM3-020-15R	R	3	0.2	●	●	●	20	5	0°	15°
SGM3-020-15L	L	3	0.2	●	●	●	20	5	15°	0°
SGM4-030	N	4	0.3	●	●	●	20	5	0°	0°
SGM4-030-4R	R	4	0.3	●	●	●	20	5	0°	4°
SGM4-030-4L	L	4	0.3	●	●	●	20	5	4°	0°
SGM5-030	N	5	0.3	●	●	●	25	5.5	0°	0°
SGM6-030	N	6	0.3	●	●	●	25	5.5	0°	0°

●: Line up

Reference pages: Toolholder → F096 - F097, Standard cutting conditions → F113



P	Steel	★	★	★	☆	☆			★								
M	Stainless	★		★	☆	★											
K	Cast iron	☆		★		☆			☆								
N	Non-ferrous																
S	Superalloys			★	☆												
H	Hard materials																

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	Coated							Cermet							INSL	h	PSIRL	PSIRR
				T9225	T9125	AH7025	AH725	GH130			NS9530										
DGS1.4-016	N	1.4	0.16			●	●	●										16	4.3	0°	0°
DGS2-020	N	2	0.2	●	●	●	●	●	●		●							20	5	0°	0°
DGS2-020-6R	R	2	0.2			●	●	●										19.95	5	0°	6°
DGS2-020-6L	L	2	0.2			●	●	●										19.95	5	6°	0°
DGS2-002-6R	R	2	0.02				●	●										19.5	5	0°	6°
DGS2-002-6L	L	2	0.02				●	●										19.5	5	6°	0°
DGS2-020-15R	R	2	0.2			●	●	●										19.95	5	0°	15°
DGS2-020-15L	L	2	0.2			●	●	●										19.95	5	15°	0°
DGS2-002-15R	R	2	0.02				●	●										19.5	5	0°	15°
DGS2-002-15L	L	2	0.02				●	●										19.5	5	15°	0°
DGS3-020	N	3	0.2	●	●	●	●	●	●		●							20	5	0°	0°
DGS3-020-6R	R	3	0.2			●	●	●										19.9	5	0°	6°
DGS3-020-6L	L	3	0.2			●	●	●										19.9	5	6°	0°
DGS3-002-6R	R	3	0.02				●	●										19.45	5	0°	6°
DGS3-002-6L	L	3	0.02				●	●										19.45	5	6°	0°
DGS3-020-15R	R	3	0.2			●	●	●										19.9	5	0°	15°
DGS3-020-15L	L	3	0.2			●	●	●										19.9	5	15°	0°
DGS3-002-15R	R	3	0.02				●	●										19.45	5	0°	15°
DGS3-002-15L	L	3	0.02				●	●										19.45	5	15°	0°
DGS4-030	N	4	0.3	●	●	●	●	●	●		●							20	5	0°	0°
DGS4-030-4R	R	4	0.3			●	●	●										19.8	5	0°	4°
DGS4-030-4L	L	4	0.3			●	●	●										19.85	5	4°	0°
DGS5-030	N	5	0.3	●	●	●	●	●	●		●							25	5.5	0°	0°
DGS6-030	N	6	0.3	●	●	●	●	●										25	5.5	0°	0°

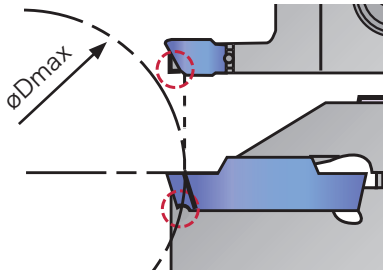
●: Line up

Caution

The tool will interfere with the workpiece when grooving larger diameter than øDmax.

Designation	øDmax (mm)
DGM2-002-15R/L	28
DGM3-002-15R/L	29
DGM4-030-15R/L	30
SGM3-020-15R/L	103

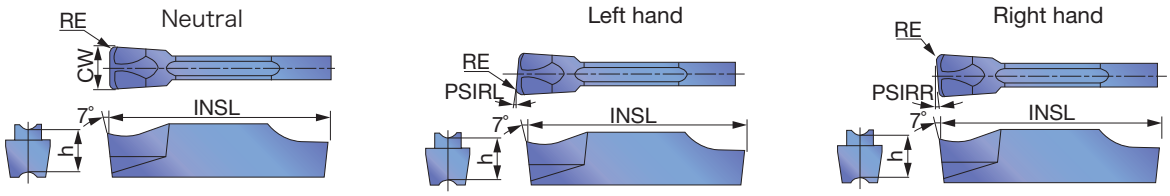
Designation	øDmax (mm)
DGS2-002-15R/L	28
DGS3-002-15R/L	29
SGS3-020-15R/L	103
SGS3-002-15R/L	34



Reference pages: Toolholder → F096 - F097, Standard cutting conditions → F113

SGS

External deep grooving and parting, 1corner



P	Steel	★ ☆ ☆
M	Stainless	★ ☆ ★
K	Cast iron	★ ☆
N	Non-ferrous	
S	Superalloys	★ ☆
H	Hard materials	

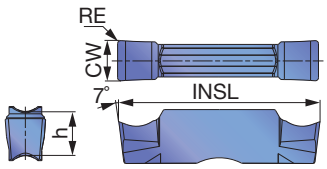
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	Coated AH7025	Coated AH725	Coated GH130	INSL	h	PSIRL	PSIRR
SGS2-020	N	2	0.2	●	●		20	5	0°	0°
SGS2-020-6R	R	2	0.2	●	●	●	20	5	0°	6°
SGS2-020-6L	L	2	0.2	●	●	●	20	5	6°	0°
SGS2-020-15R	R	2	0.2	●	●	●	20	5	0°	15°
SGS2-020-15L	L	2	0.2	●	●	●	20	5	15°	0°
SGS3-020	N	3	0.2	●	●	●	20	5	0°	0°
SGS3-020-6R	R	3	0.2	●	●	●	20	5	0°	6°
SGS3-020-6L	L	3	0.2	●	●	●	20	5	6°	0°
SGS3-002-6R	R	3	0.02		●	●	19.8	5	0°	6°
SGS3-002-6L	L	3	0.02		●	●	19.8	5	6°	0°
SGS3-020-15R	R	3	0.2	●	●	●	20	5	0°	15°
SGS3-020-15L	L	3	0.2	●	●	●	20	5	15°	0°
SGS3-002-15R	R	3	0.02		●	●	19.8	5	0°	15°
SGS3-002-15L	L	3	0.02		●	●	19.8	5	15°	0°
SGS4-030	N	4	0.3	●	●	●	20	5	0°	0°
SGS5-030	N	5	0.3	●	●	●	25	5.5	0°	0°
SGS6-030	N	6	0.3	●	●	●	25	5.5	0°	0°

●: Line up

DGG

External grooving (for high precision)



P	Steel	★ ★
M	Stainless	★
K	Cast iron	★ ☆ ☆
N	Non-ferrous	★
S	Superalloys	★ ☆
H	Hard materials	

★ : First choice
☆ : Second choice

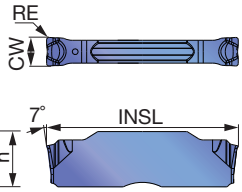
Designation	CW±0.02	RE	Coated AH7025	Cermet NS9530	Uncoated KS05F	INSL	h
DGG200-020	2	0.2	●	●		20	5
DGG300-020	3	0.2	●	●	●	20	5
DGG400-040	4	0.4	●	●	●	20	5
DGG500-040	5	0.4	●	●	●	25	5.5
DGG600-040	6	0.4	●	●	●	25	5.5

●: Line up

Reference pages: Toolholder → F096 - F097, Standard cutting conditions → F113

DGL

External grooving and parting



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

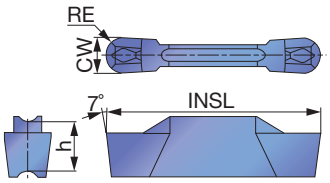
★ : First choice
☆ : Second choice

Designation	CW±0.05	RE	Coated	INSL	h
			AH7025		
DGL3-025	3	0.25	●	20	5
DGL4-030	4	0.3	●	20	5
DGL5-030	5	0.3	●	25	5.5
DGL6-080	6	0.8	●	25	5.5

●: Line up

DTR

Profiling and undercutting (for high precision)



P	Steel	★	★	★	☆		☆			★					
M	Stainless	★		★	☆		★								
K	Cast iron	☆		★		☆	☆			☆					
N	Non-ferrous														
S	Superalloys			★	☆	★									
H	Hard materials														

★ : First choice
☆ : Second choice

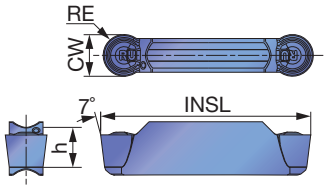
Designation	CW±0.02	RE	Coated							Cermet				INSL	h
			T9225	T9125	AH7025	AH725	AH905	GH130		NS9530					
DTR300-150	3	1.5	●	●	●	●		●		●				20	5
DTR400-200	4	2	●	●	●	●		●		●				20	5
DTR478-239	4.78	2.39	●	●	●	●		●		●				25	5.5
DTR500-250	5	2.5	●	●	●	●		●		●				25	5.5
DTR600-300	6	3	●	●	●	●		●						25	5.5

●: Line up

Reference pages: Toolholder → F096 - F097, Standard cutting conditions → F113

DTR

Profiling and undercutting



P	Steel	★	★	★	☆		☆			★					
M	Stainless	★		★	☆		★								
K	Cast iron	☆		★		☆	☆			☆					
N	Non-ferrous														
S	Superalloys			★	☆	★									
H	Hard materials														

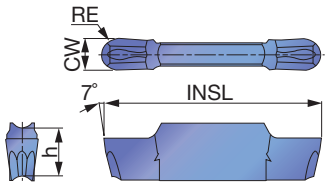
★ : First choice
☆ : Second choice

Designation	CW±0.05	RE	Coated							Cermet						INSL	h
			T9225	T9125	AH7025	AH725	AH905	GH130		NS9530							
DTR3-150	3	1.5	●	●	●	●	●	●		●						20	5
DTR4-200	4	2	●	●	●	●	●	●		●						20	5
DTR5-250	5	2.5	●	●	●	●	●	●		●						25	5.5
DTR6-300	6	3	●	●	●	●		●								25	5.5
DTR8-400	8	4	●	●	●	●		●								30	6.7

●: Line up

DTIU

Profiling and undercutting (for high precision)



P	Steel	★	☆	☆											
M	Stainless	★	☆	★											
K	Cast iron	★		☆											
N	Non-ferrous														
S	Superalloys	★	☆												
H	Hard materials														

★ : First choice
☆ : Second choice

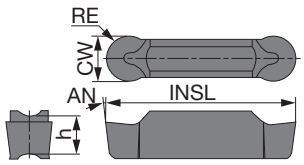
Designation	CW±0.02	RE	Coated													INSL	h
			AH7025	AH725	GH130												
DTIU300-150	3	1.5	●	●												20	5
DTIU400-200	4	2	●	●	●											20	5
DTIU500-250	5	2.5	●	●	●											25	5.5
DTIU600-300	6	3	●	●	●											25	5.5

●: Line up

Reference pages: Toolholder → F096 - F097, Standard cutting conditions → F113

DTA

Aluminium wheel machining (for high precision)



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

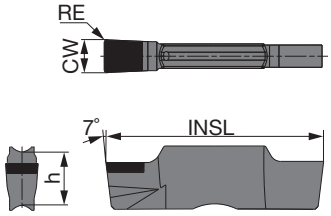
★ : First choice
☆ : Second choice

Designation	CW±0.02	RE	Uncoated	INSL	h	AN
			TH10			
DTA600-300	6	3	●	25	5.5	7
DTA800-400	8	4	●	30	6.7	10

●: Line up

SGN

External grooving of hardened steel



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	CW±0.025	RE	CBN	INSL	h
			BX360		
SGN200-020	2	0.2	●	20	5
SGN300-020	3	0.2	●	20	5
SGN400-020	4	0.2	●	20	5

●: Line up

Reference pages: Toolholder → F096 - F097, Standard cutting conditions → F113

Internal grooving and turning

DTI type (2 corners)

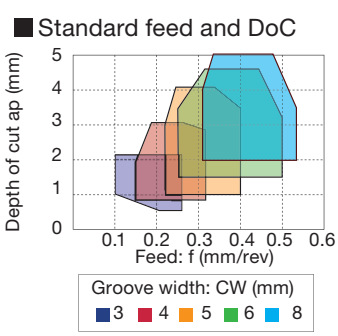
1st choice



F098 page

Internal

Unique chipbreaker
makes chips shorter
Molded and ground
inserts available
CW = 3 - 8 mm



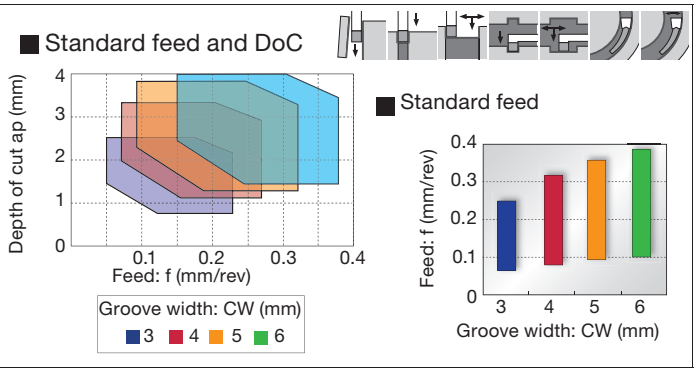
DTX type (2 corners)



F099 page

Multi-functional type

Well balanced sharp-
ness and strength
Multi-functional insert
INSERT
CW = 3 - 6 mm



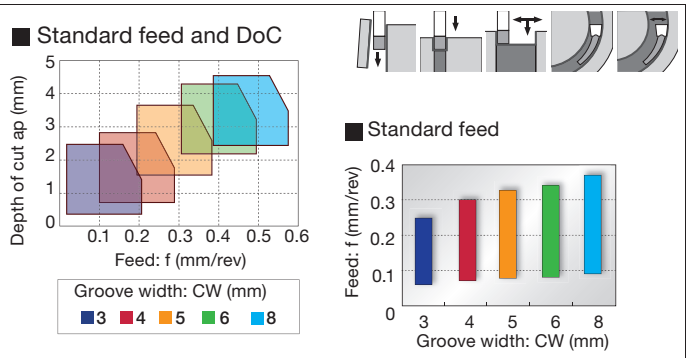
DTM type (2 corners)



F099 page

General purpose

1st choice for grooving and
turning
Suitable for light to medium
cutting
Suitable for light to medium
cutting
Excellent chip control in
machining steel, alloy steel,
stainless steel, and
heat-resistant alloy



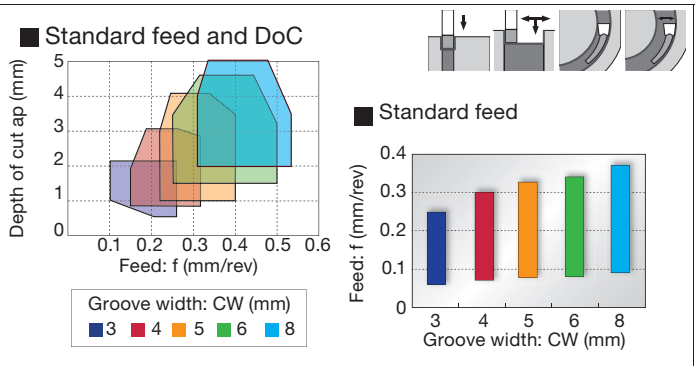
DTE type (2 corners)



F100 page

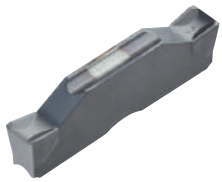
General purpose

Unique chipbreaker
makes chips shorter
Molded and ground in-
serts available
CW = 3 - 8 mm



Small diameter internal grooving

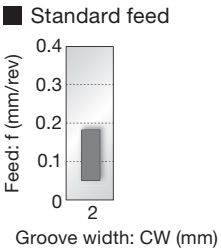
DGIM type (2 corners)



F101 page

2 mm insert width only (For general purpose)

Unique chipbreaker for excellent chip control
Excellent fracture resistance due to optimum land on the cutting edge For general applications on steels & stainless steels
CW = 2 mm





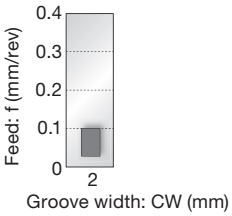
DGIS type (2 corners)



F101 page

2 mm insert width only (Lower cutting force)

Lower cutting force
Excellent fracture resistance due to optimum land on the cutting edge
Applicable for low carbon steels & stainless steels
CW = 2 mm





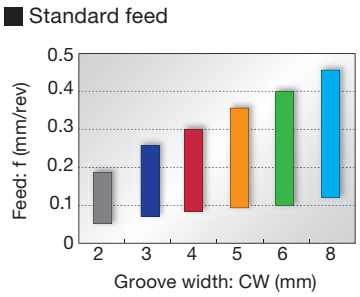
DGM type (2 corners) SGM type (1 corner)

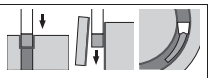


F102, F103 page

1st choice for external grooving and parting

Smooth chip evacuation
Well-designed edge with high strength
Handed insert available
CW = 2 - 8 mm





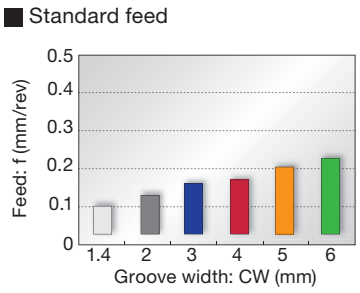
DGS type (2 corners) SGS type (1 corner)

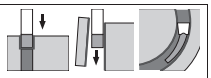


F104, F105 page

Lower cutting force and superior sharpness

Unique-designed edge and chipbreaker
Well-designed edge with high strength
Handed insert available
CW = 1.4 - 6 mm





Small diameter internal grooving

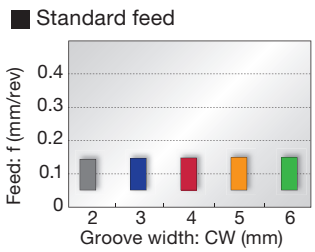
DGG type (2 corners)

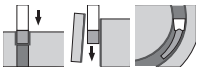


F105 page

For non-ferrous materials and titanium

Chipbreaker with low cutting force
Sharp cutting edge that prevents vibration and delivers fi ne surface fi nish





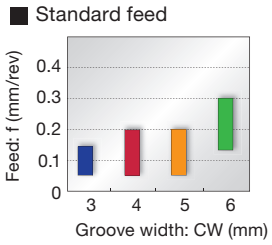
DGL type (2 corners)

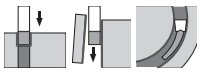


F106 page

1st choice for mild steel

Chipbreaker with excellent chip control at low feed
Chipbreaker
Suitable for mild steel that often gives difficulties in chip control





Profiling and undercutting

DTR type (2 corners)

Molded



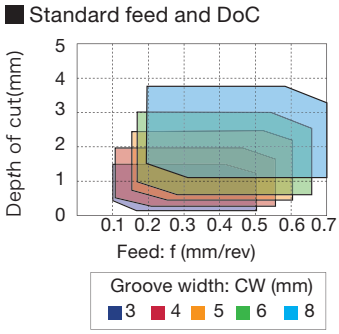
ground

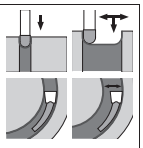


F106, F107 page

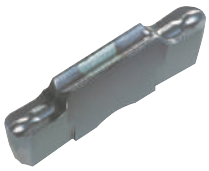
Full radius type

Excellent chip control
Molded and ground inserts available
CW = 3 - 8 mm





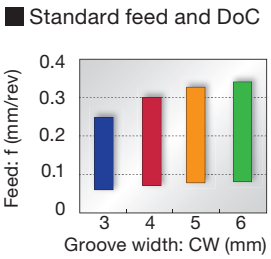
DTIU type (2 corners)

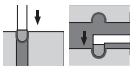


F107 page

Full radius type

Excellent chip control
For undercutting
CW = 3 - 6 mm





Aluminium wheel machining

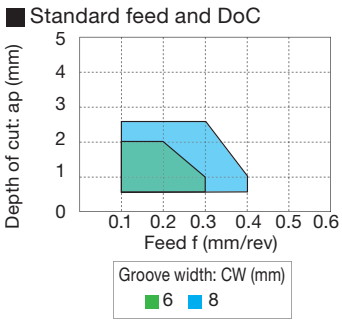
DTA type (2 corners)

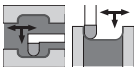


F108 page

Full radius type

Excellent chip control
For aluminium wheel profi ling
Ground inserts
CW = 6 - 8 mm





External grooving of hardened steel

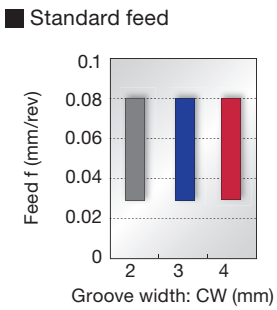
SGN-CBN type (1 corner)

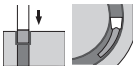


F108 page

Suitable for hardened steel machining

Optimum cutting edge shape for grooving of hardened steels
High tolerance width for finishing
CW = 2 - 4 mm
(Tolerance: ±0.025 mm)





AH7025 performance

First choice for grooving of various materials
AH7025 grade - Tungaloy's unique coating technology for drastically improved reliability

Tool life comparison

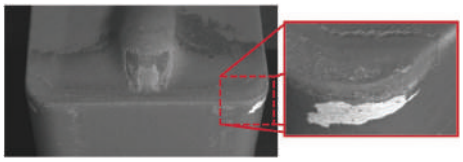
Alloy steel (SCM440) P

AH7025



Tool wear after 60 grooves

Conventional



Tool wear after 30 grooves

INSERT : DTE3-040 AH7025
Cutting Speed : Vc = 150 m/min
Feed : f = 0.17 mm/rev
Groove depth : 17 mm
Product series : External toolholder for grooving
Coolant : Wet

AH7025 provides stability, while preventing coating from peeling off evenafter machining twice the number of passes compared to the conventional grade.

The combination of Nano-multi-layered AlTiN Coating with high Al content and tough substrate provides highly efficient machining in various grooving operations

GRADE

AH7025 P M S

- First choice for various applications
- New PVD coating with high Al content provides excellent adhesion strength
- Improved wear and chipping resistance

AH725 P M S

- General purpose
- Newly developed coating with well controlled crystal structure and fracture resistance
- Improved adhesion strength

T515 K

- First recommended grade
- Exellent wear resistance in high-speed machining

T9225 P

- Suitable for steel machining at high speeds
- New PVD coating with high Al content provides excellent adhesion strength
- Improved wear and chipping resistance

T9125 P

- Suitable for steel machining at high speeds
- Improved wear and chipping resistance

NS9530 P

- Advanced cermet for finish cutting of steel
- Innovative grade with incredible fracture and high wear resistance

GH130 P M K

- Recommended for interrupted machining
- TiCNO PVD coating layer
- High hardness wear resistance

AH905 S

- Remarkable for machining of heat resistant alloys
- Exclusive coating layer improves adhesion strength and wear resistance

KS05F N S

- Non-ferrous metal
- Titanium

TH10 N

- Non-ferrous metal

BX360 H

- For hardened steel cutting
- CBN content and grain size

STANDARD CUTTING CONDITIONS

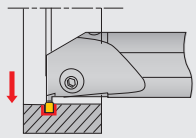
ISO	Workpiece material	Hardness	Priority	Grade	Cutting Speed *Vc* (m/min)
P	Steels (S45C, SCM435 etc)	< 300 HB	1st choice	AH7025, AH725	50 - 180
		< 300 HB	Wear resistance	T9225	80 - 300
		< 300 HB	Wear resistance	T9125	80 - 200
		< 300 HB	Wear resistance	GH130	50 - 120
		< 300 HB	Suface quality	NS9530	80 - 220
M	Stainless steel (SUS303, SUS304 etc)	< 200 HB	1st choice	AH7025, AH725	50 - 120
		< 200 HB	Wear resistance	GH130	50 - 120
K	Grey cast iron (FC250 etc)	-	1st choice	T515	50 - 180
		-	Wear resistance	GH130	50 - 180
	Ductile cast iron (FCD450 etc)	-	1st choice	T515	50 - 120
		-	Wear resistance	GH130	50 - 120
N	Aluminium alloy (Si < 12%)	-	1st choice	TH10	100 - 500
		-	1st choice	KS05F	100 - 600
S	Titanium alloys (Ti-6Al-4V, etc.)	< HRC 40	1st choice	AH7025	20 - 60
		< HRC 40	Wear resistance	AH905	20 - 80
	Titanium alloys (Ti-6Al-4V etc)	< HRC 40	1st choice	AH905	20 - 80
		< HRC 40	Wear resistance	AH7025, AH725	20 - 80
		< HRC 40	Suface quality	KS05F	20 - 60
H	Hardened steels (SCM435, SUJ2 etc)	> HRC 50	1st choice	BX360	80 - 150

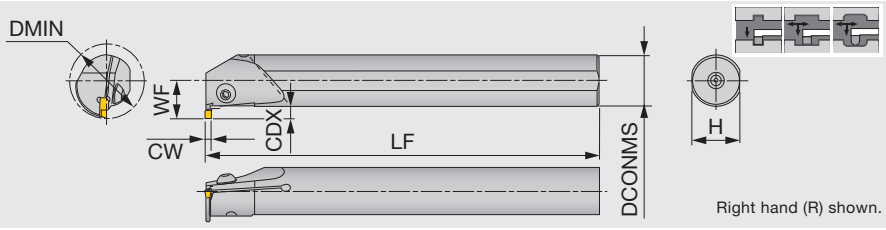
*Please see the page F109 - F112 for feed: *f* (mm/rev).

MY-T SERIES

CGTR/L

Internal grooving and turning toolholder





Right hand (R) shown.

Designation	CW	DMIN	CDX	DCONMS	H	LF	WF	Insert	Torque*
S20Q-CGTR/L30	3	25	3.5	20	18	180	14.5	G*30, GE30-AL	3
S25R-CGTR/L30	3	32	5	25	23	200	18.5	G*30, GE30-AL	3
S25R-CGTR/L40	4	32	5	25	23	200	18.5	G*40, GE40-AL	3
S32S-CGTR/L40	4	40	6	32	30	250	23	G*40, GE40-AL	3
S25R-CGTR/L50	5	32	5	25	23	200	18.5	G*50	3
S32S-CGTR/L50	5	40	6	32	30	250	23	G*50	3

*Torque: Recommended clamping torque (N·m)

SPARE PARTS



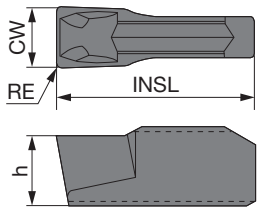

Designation	Clamping screw	Wrench
S***-CGTR/L...	BHM5-14	P-3

Reference pages: Insert →F115 - F119, Standard cutting conditions →F119

INSERT

GE

For general grooving



P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous										★					
S	Superalloys			☆												
H	Hard materials															

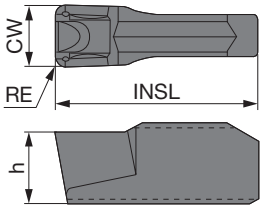
★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.1}_{0}$	RE	Coated				Cermet		Uncoated				INSL	h
				T9225	T9125	AH120	GH730	NS9530		KS05F					
GE20	N	2	0.2			●	●	●						10	3.5
GE30	N	3	0.2	●	●	●	●	●						10	3.5
GE40	N	4	0.2	●	●	●	●	●						10	4
GE50	N	5	0.2	●	●	●	●	●						12	4.5

●: Line up

GT

For turning



P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous															
S	Superalloys			☆												
H	Hard materials															

★ : First choice
☆ : Second choice

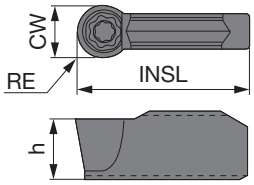
Designation	$CW^{+0.1}_{0}$	RE	Coated				Cermet								INSL	h
			T9225	T9125	AH120	GH730	NS9530									
GT30	3	0.4			●	●	●								10	3.5
GT40	4	0.4			●	●	●								10	4
GT50	5	0.4	●	●	●	●	●								12	4.5

●: Line up

Reference pages: Toolholder → F114, Standard cutting conditions → F119

GR

For profiling (full radius)



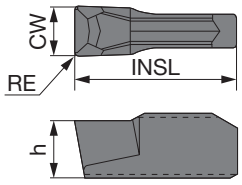
		T9225	T9125	AH120	GH730	NS9530
P	Steel	★	☆	★	★	★
M	Stainless	★		★	★	
K	Cast iron	☆		★	☆	☆
N	Non-ferrous					
S	Superalloys			☆		
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	CW$^{+0.1}_{0}$	RE	Coated				Cermet	INSL	h
			T9225	T9125	AH120	GH730	NS9530		
GR30	3	1.5			●	●	●	10	3.5
GR40	4	2	●	●	●	●	●	10	4
GR50	5	2.5	●	●	●	●	●	12	4.5

●: Line up

GF



		GH730	NS9530
P	Steel	★	★
M	Stainless	★	
K	Cast iron	☆	☆
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

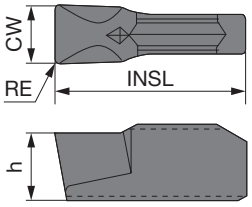
★ : First choice
☆ : Second choice

Designation	CW$^{+0.1}_{0}$	RE	Coated	Cermet	INSL	h
			GH730	NS9530		
GF30	3	0.2	●	●	10	3.5
GF40	4	0.2	●	●	10	4
GF50	5	0.2	●	●	12	4.5

●: Line up

Reference pages: Toolholder → F114, Standard cutting conditions → F119

GN



P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

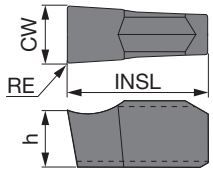
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$	RE	Coated	INSL	h
			GH730		
GN30	3	0.2	●	10	3.5
GN40	4	0.2	●	10	4
GN50	5	0.2	●	12	4.5

●: Line up

GE-AL

For aluminium and non-ferrous metal



P	Steel	★	☆	★	★			★							
M	Stainless	★		★	★										
K	Cast iron	☆		★	☆			☆							
N	Non-ferrous									★					
S	Superalloys			☆											
H	Hard materials														

★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.1}_{0}$	RE	Coated					Cermet		Uncoated				INSL	h
				T9225	T9125	AH120	GH730		NS9530		KS05F					
GE20-AL	N	2	0.2												10	3.5
GE30-AL	N	3	0.2								●				10	3.5
GE40-AL	N	4	0.2								●				10	4

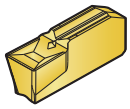
●: Line up

Reference pages: Toolholder → F114, Standard cutting conditions → F119

1 corner insert

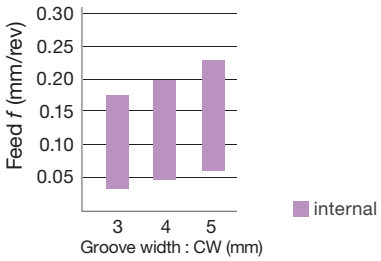
Internal grooving

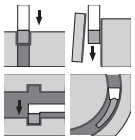
GN



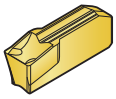
F117 page

1st choice for internal grooving
Low cutting force and good chip control for internal grooving
Low cutting force and good chip
CW = 3 - 5 mm



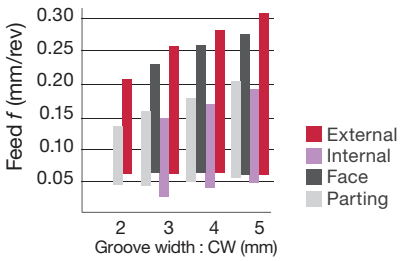


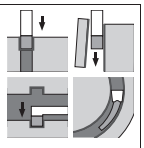
GE



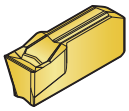
F115 page

1st choice for external grooving and parting
Excellent chip control
CW = 2 - 5 mm



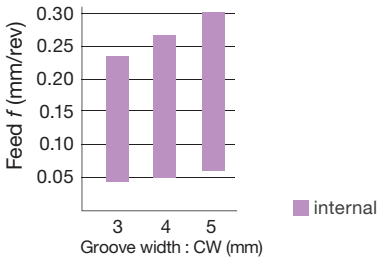


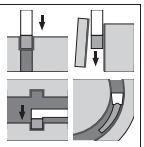
GF



F116 page

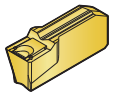
1st choice for face grooving
Low cutting force and good chip control for face grooving
CW = 3 - 5 mm





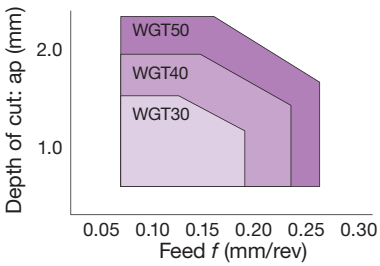
Grooving and turning

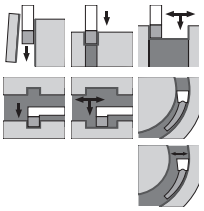
GT



F115 page

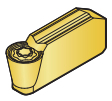
1st choice for traversing
Low cutting force and good chip control for traversing
CW = 3 - 5 mm





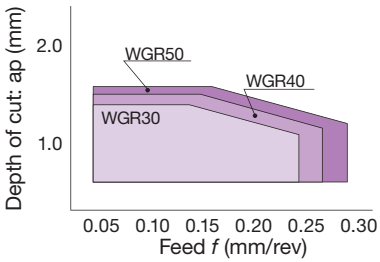
Profiling

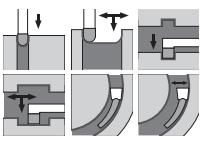
GR



F116 page

Full radius type
Low cutting force and good chip control for profiling
CW = 3 - 5 mm

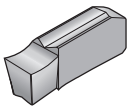




1 corner insert

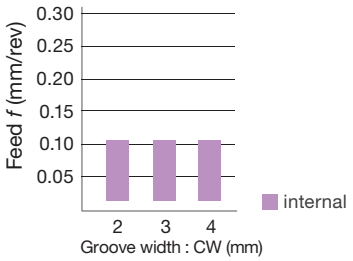
For aluminium and non-ferrius metal

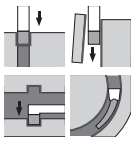
GE-AL



F117 page

Reduce cutting force and welding due to sharp
CW = 2 - 4 mm





STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting Speed Vc (m/min)
P	Low carbon steel, Alloy steel (~ HB150)	T9225	80 - 300
		T9125	80 - 200
		NS9530	100 - 200
		GH730	50 - 180
	Low carbon steel, Alloy steel (HB150 ~ 250)	T9125	80 - 180
		NS9530	80 - 180
		GH730	50 - 150
	High carbon steel, Alloy steel (HB250 ~)	T9125	80 - 150
		NS9530	80 - 150
		GH730	50 - 120
M	Stainless steel	T9125	80 - 150
		GH730	50 - 120
K	Grey iron, Ductile cast iron	T9125	80 - 200
		GH730	50 - 180
N	Aluminium alloy, Non-ferrous metal	KS05F	200 - 300

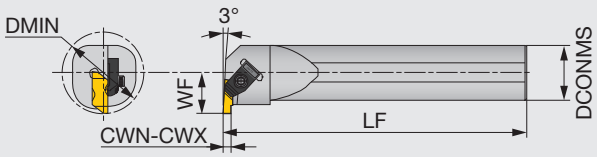
Internal

Operation	Feed: f (mm/rev) Groove width CW(mm)		
	3	4	5
Face grooving (GE**)	0.04 - 0.14	0.05 - 0.15	0.05 - 0.16
Face grooving (GN**)	0.04 - 0.16	0.05 - 0.18	0.05 - 0.2
Face traversing (GT**)	ap = 0.5 - 1.5 f = 0.06 - 0.2	ap = 0.5 - 2 f = 0.06 - 0.25	ap = 0.5 - 2.5 f = 0.06 - 0.27
Face traversing (GR**)	ap = 0.5 - 1.4 f = 0.05 - 0.25	ap = 0.5 - 1.5 f = 0.05 - 0.26	ap = 0.5 - 1.6 f = 0.05 - 0.3
Aluminium alloys (GE**-AL)	0.03 - 0.1	0.03 - 0.1	-

For diameter compensation values in traversing, see page F091.
When vibration occurs in turning, please use the lower limit value in the above table

TUNGT-CLAMP
A_M-FLER/L

Internal grooving and threading toolholder



Right hand (R) shown.

Designation	CWN	CWX	DMIN	DCONMS	LF	WF	Insert	Torque*
A25M-FLER/L3	1	3	34.9	25	300	17.7	FL*-3**L/R...	3
A32M-FLER/L3	1	3	44.45	32	350	22.1	FL*-3**L/R...	3
A40M-FLER3	1	3	50.8	40	350	24.5	FL*-3**L...	3

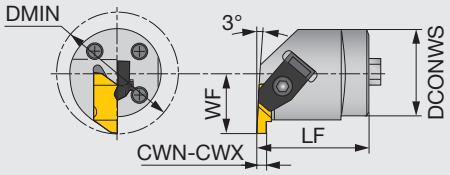
SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
A**M-FLER3	TF-73	S-412	5/32HEX
A**M-FLEL3	TF-72	S-412	5/32HEX

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).
*Torque: Recommended clamping torque (N·m)

TUNGT-CLAMP
HS-FLER/L

Internal grooving and threading head, for S-570 shank



Right hand (R) shown.

Designation	CWN	CWX	DMIN	DCONWS	LF	WF	Insert	Torque*
HS40-FLER3W	1	3	56.1	40	40.1	28	FL*-3**L...	3
HS50-FLER3W	1	3	70.1	50	41.9	35	FL*-3**L...	3

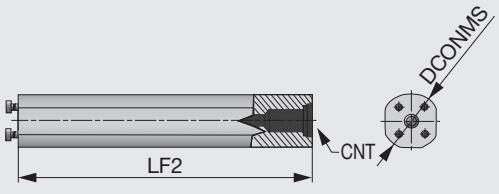
SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
HS40-FLER3W	TF-73	S-412	5/32HEX
HS50-FLER3W	TF-73	S-412	5/32HEX

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).
*Torque: Recommended clamping torque (N·m)

TUNGT-CLAMP
S-570

Steel shank for head exchangeable tools



Designation	DCONMS	LF2	CNT
S-570-40M-40	40	273	1/2-14NPT
S-570-50M-50	50	366	1/2-14NPT

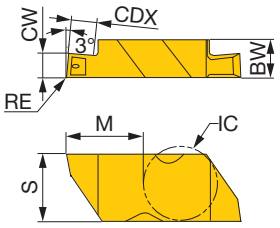
SPARE PARTS

Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4HEX

Reference pages: Insert →F121, Standard cutting conditions → F122

INSERT

FLG-CB (For grooving)



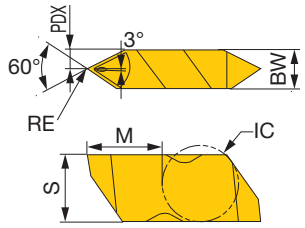
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025	RE	Coated	CDX	BW	S	B
				AH110				
FLG-3M100R-CB	R	1	0.19	●	1.4	4.95	8.74	10.29
FLG-3M100L-CB	L	1	0.19	●	1.4	4.95	8.74	10.29
FLG-3M150R-CB	R	1.5	0.19	●	2.55	4.95	8.74	10.29
FLG-3M150L-CB	L	1.5	0.19	●	2.55	4.95	8.74	10.29
FLG-3M200R-CB	R	2	0.19	●	2.55	4.95	8.74	10.29
FLG-3M200L-CB	L	2	0.19	●	2.55	4.95	8.74	10.29
FLG-3M250R-CB	R	2.5	0.19	●	4.07	4.95	8.74	10.29
FLG-3M250L-CB	L	2.5	0.19	●	4.07	4.95	8.74	10.29
FLG-3M300R-CB	R	3	0.19	●	4.07	4.95	8.74	10.29
FLG-3M300L-CB	L	3	0.19	●	4.07	4.95	8.74	10.29

●: Line up

FLT-CB (For threading)



P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	RE	Coated	Pitch				IC	PDX	BW	S	M
				Internal		External						
			AH725	TPN	TPX	TPN	TPX					
FLT-3R-HCB	R	0.17	●	2.11	5.08	1.27	4.23	9.53	2.5	4.95	8.74	10.16
FLT-3L-HCB	L	0.17	●	2.11	5.08	1.27	4.23	9.53	2.5	4.95	8.74	10.16
FLT-3RC-HCB	R	0.35	●	4.23	5.08	2.31	4.23	9.53	2.5	4.95	8.74	10.16
FLT-3LC-HCB	L	0.35	●	4.23	5.08	2.31	4.23	9.53	2.5	4.95	8.74	10.16
FLT-3R-CB	R	0.17	●	2.11	3.18	1.27	3.18	9.53	2.5	4.95	8.74	10.16
FLT-3L-CB	L	0.17	●	2.11	3.18	1.27	3.18	9.53	2.5	4.95	8.74	10.16

●: Line up

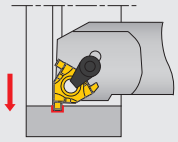
Reference pages: Toolholder → F120, Standard cutting conditions → F122

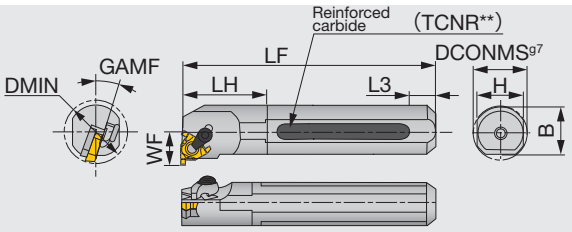
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Application	Cutting Speed *Vc* (m/min)	Feed *f* (mm/rev)
P	High carbon steel (S45C / C45 etc)	AH110	Grooving	100 - 200	0.12 - 0.35
		AH725	threading	80 - 180	-
	Alloy steel (SCM435 / 34CrMo4 etc)	AH110	Grooving	50 - 80	0.12 - 0.3
		AH725	threading	60 - 160	-
M	Stainless steel (SUS304 / X5CrNi18-9 etc)	AH110	Grooving	50 - 150	0.1 - 0.2
		AH725	threading	50 - 130	-
K	Grey cast iron (FC250 / 250 / GG25 etc)	AH110	Grooving	50 - 180	0.1 - 0.25
	Ductile cast iron (FCD400 / 40-15 / GGG400 etc)	AH110	Grooving	50 - 120	0.1 - 0.25

CNR/L

Clamp-on internal threading and grooving toolholder (alternative clamping of screw-on or clamp-on only for DT type)





Right hand (R) shown.

Designation	Material	CWN	CWX	DMIN	DCONMS	H	B	LF	LH	WF	L3	GAMF	Insert	Torque*
TCNR0020R16DT	Reinforced	1	2.25	24	20	18	-	200	30	14	49	15°	GTGN-16...	3.5
TCNR0025S16DT	Reinforced	1	2.25	29	25	23	-	250	38	16.5	64	15°	GTGN-16...	3.5
CNR/L0020P16	Steel	1	2.25	24	20	18	19	170	30	14	-	15°	GTGN-16...	3.5
CNR/L0025R16	Steel	1	2.25	29	25	23	24	200	38	16.5	-	15°	GTGN-16...	3.5
CNR/L0032S16	Steel	1	2.25	37	32	30	31	250	48	20.1	-	15°	GTGN-16...	3.5

Note: A clamp set consists of a clamp and a clamping screw.
A shim set consists of a shim and a shim screw to secure the shim to the shank.
Use right-hand toolholders (T/CNR...) with right-hand inserts (**IR...); and left-hand toolholders (T/CNL...) with left-hand inserts (**IL...).
Standard shims can be used on both right- and left-hand toolholders. Please use either of the sides depending on the tool hand.
When using grooving inserts, please use shims for grooving. Shims for grooving inserts are sold separately.
*Torque: Recommended clamping torque (N·m)

SPARE PARTS





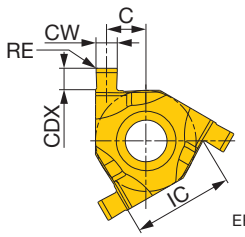



Designation	Clamp set	Clamping screw	Shim screw	Shim (Optional)	Wrench1	Wrench2
TCNR002**16DT	CSP16	CSTB-3.5ST	DTS5-3.5	G16EL/IR-DT	P-3.5	T-15F
CNR00***16	CSP16	-	-	G16EL/IR-S	-	T-15F
CNL00***16	CSP16	-	-	G16ER/IL-S	-	T-15F

Reference pages: Inserts, Standard cutting conditions → F123

INSERT

GTGN16



ER/IL shown.

P	Steel	★								
M	Stainless	★								
K	Cast iron									
N	Non-ferrous									
S	Superalloys	★								
H	Hard materials									

★ : First choice
☆ : Second choice

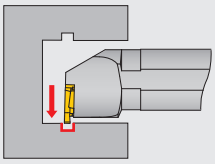
Designation	HAND	CW±0.03	RE	Coated							Insert size	CDX	IC	C	Shim	
				SH730											Dual-clamp toolholder: screw-on and clamp-on	Clamp-on toolholder
GTGN-16ER/IL100	R	1	0.1	●							16	1.25	9.53	4.22	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR100	L	1	0.1	●							16	1.25	9.53	4.22	G16ER/IL-DT	G16ER/IL-S
GTGN-16ER/IL120	R	1.2	0.1	●							16	1.3	9.53	4.12	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR120	L	1.2	0.1	●							16	1.3	9.53	4.12	G16ER/IL-DT	G16ER/IL-S
GTGN-16ER/IL140	R	1.4	0.1	●							16	1.5	9.53	4.02	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR140	L	1.4	0.1	●							16	1.5	9.53	4.02	G16ER/IL-DT	G16ER/IL-S
GTGN-16ER/IL170	R	1.7	0.1	●							16	1.7	9.53	3.67	G16EL/IR-DT	G16EL/IR-S
GTGN-16EL/IR170	L	1.7	0.1	●							16	1.7	9.53	3.67	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL195	R	1.95	0.1	●							16	1.7	9.53	3.75	G16EL/IR-DT	G16EL/IR-S
GTGN-16EL/IR195	L	1.95	0.1	●							16	1.7	9.53	3.75	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL225	R	2.25	0.1	●							16	1.8	9.53	3.6	G16EL/IR-DT	G16EL/IR-S
GTGN-16EL/IR225	L	2.25	0.1	●							16	1.8	9.53	3.6	G16EL/IR-DT	G16EL/IR-S

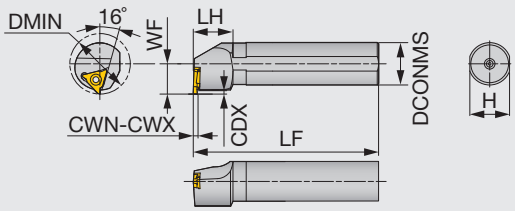
Note: GTGN insert can be used for both external and internal machining, but the tool hand is reversed.
Shim for GTGN depends on the toolholder type.

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting Speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Steels S45C, SCM440 etc (C45, 42CrMo4 etc)	SH730	50 - 150	0.05 - 0.1
M	Stainless steels SUS304, SUS316 etc (X5CrNi18-9, X5CrNiMo17-12-2 etc)	SH730	30 - 150	0.05 - 0.1
S	Heat-resistant alloys, Titanium alloys etc. (Ti-6Al-4V etc)	SH730	30 - 100	0.05 - 0.1





Right hand (R) shown.

Designation	CWN	CWX	DMIN	CDX	DCONMS	H	LF	LH	WF	Insert	Torque*
S25R-SGTR/L16	0.33	2.5	35	2	25	23	200	30	17.5	GBL/R32...	3.5
S32S-SGTR/L22	1.25	4.5	40	2.5	32	30	250	30	23	GBL/R43...	5

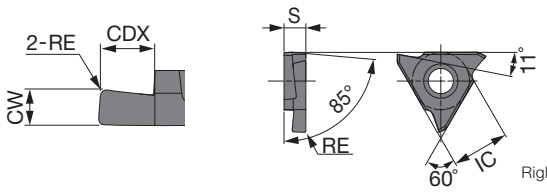
Use right-hand toolholders (SGTR) with left-hand inserts (GBL); and left-hand toolholders (SGTL) with right-hand inserts (GBR).
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

Designation	Clamping screw	Wrench
S25R-SGTR/L16	CSTB-4S	T-15F
S32S-SGTR/L22	CSTB-5S	T-20F

INSERT

GBR/L32

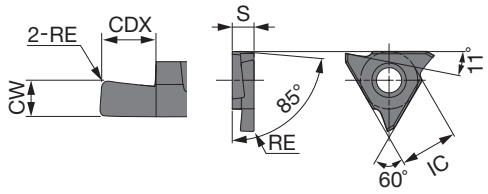


Right hand (R) shown.

| | | Coated | | Cermet | | Uncoated | | |

INSERT

GBR/L43



Right hand (R) shown.

P	Steel	★ ★
M	Stainless	★
K	Cast iron	★ ☆
N	Non-ferrous	★
S	Superalloys	☆ ☆
H	Hard materials	

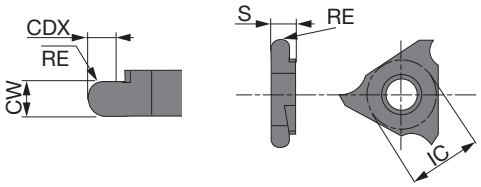
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025	RE	Coated	Cermet	Uncoated	CDX	IC	S
				AH710	NS9530	KS05F			
GBR43125	R	1.25	0.2	●	●		2	12.7	4.76
GBL43125	L	1.25	0.2	●		●	2	12.7	4.76
GBR43145	R	1.45	0.2	●	●		2	12.7	4.76
GBL43145	L	1.45	0.2	●		●	2	12.7	4.76
GBR43150	R	1.50	0.2	●	●		3.5	12.7	4.76
GBL43150	L	1.50	0.2	●	●	●	3.5	12.7	4.76
GBR43175	R	1.75	0.2	●	●		3.5	12.7	4.76
GBL43175	L	1.75	0.2	●	●	●	3.5	12.7	4.76
GBR43185	R	1.85	0.2	●	●		3.5	12.7	4.76
GBL43185	L	1.85	0.2	●	●	●	3.5	12.7	4.76
GBR43200	R	2	0.2	●	●		3.5	12.7	4.76
GBL43200	L	2	0.2	●	●	●	3.5	12.7	4.76
GBR43230	R	2.3	0.2	●	●		3.5	12.7	4.76
GBL43230	L	2.3	0.2	●	●	●	3.5	12.7	4.76
GBR43250	R	2.5	0.3	●	●		5	12.7	4.76
GBL43250	L	2.5	0.3	●		●	5	12.7	4.76
GBR43265	R	2.65	0.3	●	●		5	12.7	4.76
GBL43265	L	2.65	0.3	●		●	5	12.7	4.76
GBR43280	R	2.8	0.3	●	●		5	12.7	4.76
GBL43280	L	2.8	0.3	●		●	5	12.7	4.76
GBR43300	R	3	0.3	●	●		5	12.7	4.76
GBL43300	L	3	0.3	●		●	5	12.7	4.76
GBR43330	R	3.3	0.3	●	●		5	12.7	4.76
GBL43330	L	3.3	0.3	●		●	5	12.7	4.76
GBR43350	R	3.5	0.3	●	●		5	12.7	4.76
GBL43350	L	3.5	0.3	●		●	5	12.7	4.76
GBR43400	R	4	0.4	●	●		5	12.7	4.76
GBL43400	L	4	0.4	●		●	5	12.7	4.76
GBR43430	R	4.3	0.4	●	●		5	12.7	4.76
GBL43430	L	4.3	0.4	●		●	5	12.7	4.76
GBR43450	R	4.5	0.4	●	●		5	12.7	4.76
GBL43450	L	4.5	0.4	●		●	5	12.7	4.76

●: Line up

Reference pages: Toolholder → F124

GBR/L43-R (full radius)



Right hand (R) shown.

		Coated		Cermet		Uncoated	
P	Steel	★		★			
M	Stainless	★					
K	Cast iron	★		☆			
N	Non-ferrous					★	
S	Superalloys	☆				☆	
H	Hard materials						

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025	RE	AH710	NS9530	KS05F	CDX	IC	S
GBR43050R	R	1	0.5	●	●		2	12.7	4.76
GBL43050R	L	1	0.5	●		●	2	12.7	4.76
GBR43075R	R	1.5	0.75	●	●	●	3.5	12.7	4.76
GBL43075R	L	1.5	0.75	●		●	3.5	12.7	4.76
GBR43100R	R	2	1	●	●	●	3.5	12.7	4.76
GBL43100R	L	2	1	●		●	3.5	12.7	4.76
GBR43125R	R	2.5	1.25	●	●	●	5	12.7	4.76
GBL43125R	L	2.5	1.25	●		●	5	12.7	4.76
GBR43150R	R	3	1.5	●	●	●	5	12.7	4.76
GBL43150R	L	3	1.5	●		●	5	12.7	4.76
GBR43200R	R	4	2	●	●	●	5	12.7	4.76
GBL43200R	L	4	2	●		●	5	12.7	4.76

●: Line up

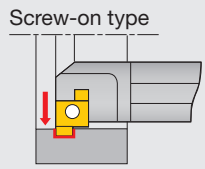
STANDARD CUTTING CONDITIONS

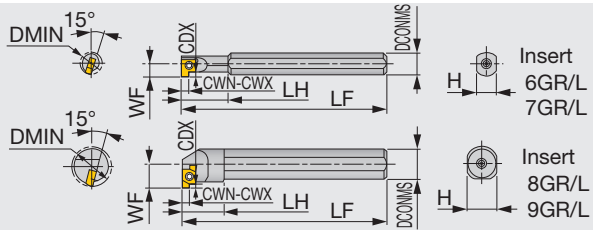
ISO	Workpiece material	Hardness	Grade	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Carbon steels, Alloy steels (JIS S45C, SCM415, etc)	150 - 240HB	NS9530	100 - 200	0.02 - 0.25
		150 - 240HB	AH710	60 - 150	0.05 - 0.25
M	Stainless steels (JIS SUS304, etc)	≤ 240HB	AH710	60 - 150	0.05 - 0.15
K	Cast irons (JIS FC250, etc)	Tensile strength ≤ 350 N/mm^2	AH710	60 - 150	0.05 - 0.15
N	Non-ferrous metals (Aluminium, etc.)	-	KS05F	200 - 300	0.05 - 0.15

Reference pages: Toolholder → F124

SNGR/L

Internal grooving





Right hand (R) shown.

Designation	Material	CWN	CWX	DMIN	CDX	DCONMS	H	LF	LH	WF	Insert	Torque*
SNGR/L08H06	Steel	1	2	8	1.5	8	7	100	18	4.7	6GR/L...	0.7
SNGR/L08H07	Steel	1	2	10	1.5	8	7	100	23	5.8	7GR/L...	1.0
SNGR/L10K07	Steel	1	2	12	1.5	10	9	125	29	6.8	7GR/L...	1.0
SNGR/L10K08	Steel	1.5	3.5	14	2	10	9	125	15	7.6	8GR/L...	1.0
SNGR/L12M08	Steel	1.5	3.5	16	2	12	11	150	18	8.6	8GR/L...	1.0
SNGR/L16Q09	Steel	1.5	3.5	20	3	16	15	180	20	11.6	9GR/L...	1.3
SNGR/L20R09	Steel	1.5	3.5	24	3	20	18	200	25	13.6	9GR/L...	1.3
SNGR/L08K06SC	Uncoated	1	2	8	1.5	8	7	125	28	4.7	6GR/L...	0.7
SNGR/L08K07SC	Uncoated	1	2	10	1.5	8	7	125	35	5.8	7GR/L...	1.0
SNGR/L10M07SC	Uncoated	1	2	12	1.5	10	9	150	45	6.8	7GR/L...	1.0
SNGR/L10M08SC	Uncoated	1.5	3.5	14	2	10	9	150	45	7.6	8GR/L...	1.0
SNGR/L12Q08SC	Uncoated	1.5	3.5	16	2	12	11	180	-	8.6	8GR/L...	1.0
SNGR/L16R09SC	Uncoated	1.5	3.5	20	3	16	15	200	-	11.6	9GR/L...	1.5

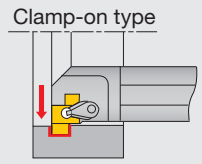
Note: Use right-hand holder (☐NGR ～) with right-hand insert (☐GR ～); and left-hand holder (☐NGL ～) with left-hand insert (☐GL ～).
*Torque: Recommended clamping torque (N·m)

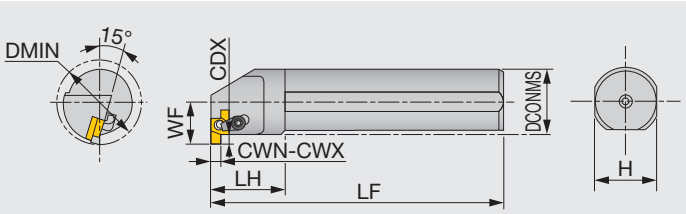
SPARE PARTS

Designation	Clamping screw	Wrench
SNGR/L***06	CSTB-2L040	T-6F
SNGR/L***07	CSTB-2.2S	T-7F
SNGR/L***08	CSTB-2.2	T-7F
SNGR/L***09	CSTB-2.5L080	T-8F
SNGR/L***06SC	CSTB-2L040	T-6F
SNGR/L***07SC	CSTB-2.2S	T-7F
SNGR/L***08SC	CSTB-2.2	T-7F
SNGR/L***09SC	CSTB-2.5L080	T-8F

CNGR/L

Internal grooving





Right hand (R) shown.

Designation	CWN	CWX	DMIN	CDX	DCONMS	H	LF	LH	WF	Insert	Torque*
CNGR/L25S15	2	5	32	5	25	23	250	30	18.1	15GR/L...	7
CNGR/L32T15	2	5	40	5	32	30	300	35	22.1	15GR/L...	7
CNGR/L40U15	2	5	48	5	40	38	350	45	26.1	15GR/L...	7

Note: Use right-hand holder (☐NGR ～) with right-hand insert (☐GR ～); and left-hand holder (☐NGL ～) with left-hand insert (☐GL ～).
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

Designation	Clamp set	Screw	Shim	Wrench
CNGR...	CSP22	DTS5-3.5	SGSR151	T-20F
CNGL...	CSP22	DTS5-3.5	SGSL151	T-20F

Optional parts for CNG type toolholder

When using as a screw-on type, please use the parts below.

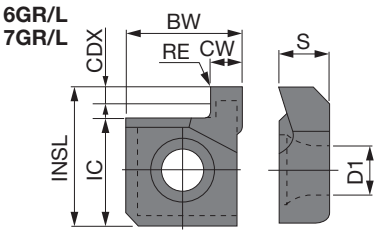


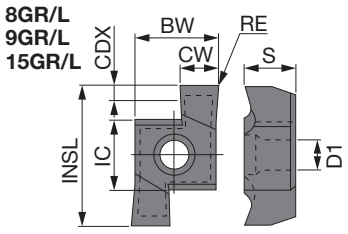
Designation	Clamping screw	Wrench
CNGR/L...	CSTB-3.5L	T-15F

Reference pages: Inserts → F128, Standard cutting conditions → F129

INSERT

**GR/L





Right hand (R) shown.

		Coated		Uncoated	
P	Steel	★			★
M	Stainless				★
K	Cast iron	☆		★	
N	Non-ferrous			★	
S	Superalloys			☆	
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025	RE	Coated NS9530	Uncoated TH10	Uncoated UX30	CDX	BW	S	IC	INSL	D1
6GR100	R	1	0.2	●			1.5	5.6	2.34	4.76	6.44	2.3
6GL100	L	1	0.2		●	●	1.5	5.6	2.34	4.76	6.44	2.3
6GR150	R	1.5	0.2	●		●	1.5	5.6	2.34	4.76	6.44	2.3
6GL150	L	1.5	0.2		●	●	1.5	5.6	2.34	4.76	6.44	2.3
6GR200	R	2	0.2	●	●	●	1.5	5.6	2.34	4.76	6.44	2.3
6GL200	L	2	0.2		●	●	1.5	5.6	2.34	4.76	6.44	2.3
7GR100	R	1	0.2	●	●	●	1.5	5.6	3.08	5.56	7.36	2.58
7GR150	R	1.5	0.2	●	●	●	1.5	5.6	3.08	5.56	7.36	2.58
7GR200	R	2	0.2	●	●	●	1.5	5.6	3.08	5.56	7.36	2.58
7GL200	L	2	0.2		●	●	1.5	5.6	3.08	5.56	7.36	2.58
8GR150	R	1.5	0.2	●	●	●	2	6.2	3.87	5.56	10.16	2.58
8GR200	R	2	0.2	●	●	●	2	6.2	3.87	5.56	10.16	2.58
8GL200	L	2	0.2		●	●	2	6.2	3.87	5.56	10.16	2.58
8GR250	R	2.5	0.2	●	●		2	6.2	3.87	5.56	10.16	2.58
8GL250	L	2.5	0.2		●	●	2	6.2	3.87	5.56	10.16	2.58
8GR300	R	3	0.2	●	●	●	2	6.2	3.87	5.56	10.16	2.58
8GL300	L	3	0.2		●	●	2	6.2	3.87	5.56	10.16	2.58
8GR350	R	3.5	0.2		●	●	2	6.2	3.87	5.56	10.16	2.58
9GR150	R	1.5	0.2	●	●	●	2	7.7	4.66	6.35	12.95	2.86
9GL150	L	1.5	0.2	●	●	●	2	7.7	4.66	6.35	12.95	2.86
9GR200	R	2	0.2	●		●	3	7.7	4.66	6.35	12.95	2.86
9GL200	L	2	0.2	●	●	●	3	7.7	4.66	6.35	12.95	2.86
9GR250	R	2.5	0.2	●	●	●	3	7.7	4.66	6.35	12.95	2.86
9GL250	L	2.5	0.2	●	●	●	3	7.7	4.66	6.35	12.95	2.86
9GR300	R	3	0.2	●		●	3	7.7	4.66	6.35	12.95	2.86
9GL300	L	3	0.2	●	●	●	3	7.7	4.66	6.35	12.95	2.86
9GR350	R	3.5	0.2	●	●	●	3	7.7	4.66	6.35	12.95	2.86
9GL350	L	3.5	0.2	●	●	●	3	7.7	4.66	6.35	12.95	2.86
15GR200	R	2	0.2	●		●	3	10.8	5.1	9.2	20.8	4.8
15GR250	R	2.5	0.2	●	●	●	3	10.8	5.1	9.2	20.8	4.8
15GR300	R	3	0.2	●	●	●	3	10.8	5.1	9.2	20.8	4.8
15GL300	L	3	0.2		●	●	3	10.8	5.1	9.2	20.8	4.8
15GR350	R	3.5	0.2	●		●	3	10.8	5.1	9.2	20.8	4.8
15GR400	R	4	0.2	●	●	●	4	10.8	5.1	9.2	20.8	4.8
15GR450	R	4.5	0.2		●	●	4	10.8	5.1	9.2	20.8	4.8
15GL450	L	4.5	0.2		●	●	4	10.8	5.1	9.2	20.8	4.8
15GR500	R	5	0.2		●	●	5	10.8	5.1	9.2	20.8	4.8

Note: Use right-hand holder (□NGR ～) with right-hand insert (□GR ～); and left-hand holder (□NGL ～) with left-hand insert (□GL ～).

●: Line up

Reference pages: Toolholder → F127, Standard cutting conditions → F129

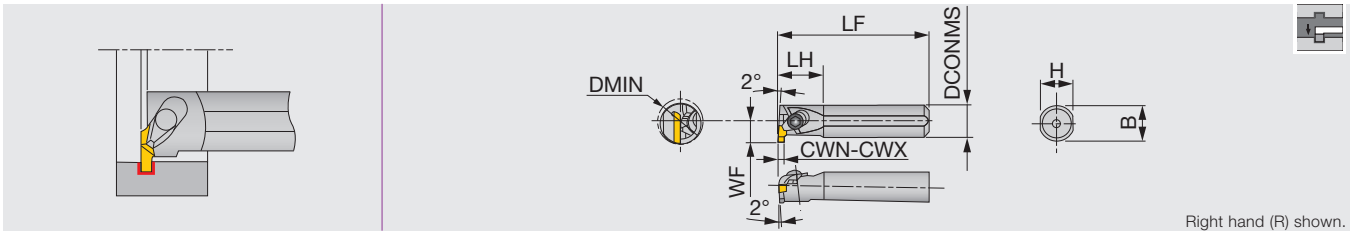
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Medium carbon steels	NS9530	80 - 200	0.05 - 0.08
		UX30	60 - 150	0.05 - 0.08
K	Cast irons, Light alloys	TH10	60 - 150	0.05 - 0.08

Note: • Please use the above values as a guide for selecting cutting conditions.
• The values will vary for machining the diameter close to the minimum value or with long overhang of the toolholder. In that case, please reduce the above values to approximately half
• To help chip evacuation, please use water-soluble coolant. The coolant should sufficiently reach the cutting point. When coolant cannot be used, please reduce the above values (both speed and feed) to less than half.

CGXR/L

Internal grooving



Right hand (R) shown.

Designation	Material	CWN	CWX	DMIN	CDX	DCONMS	H	B	LF	LH	WF	Insert	Torque*
CGXR/L0016	Steel	1	3	20	3	16	15	15.5	150	24	11.3	GIR/L52...	2.2
CGXR/L0020	Steel	1	3	24	3	20	18	19	180	30	13.3	GIR/L52...	2.2
CGXR/L0025	Steel	1	5	32	5.3	25	23	24	200	38	18	GIR/L63...	5
CGXR/L0032	Steel	1	5	40	5.3	32	30	31	250	48	23	GIR/L63...	5
CGXR/L0040	Steel	1	5	48	5.3	40	37	38.5	300	60	27	GIR/L63...	5
CGXR/L16SC	Uncoated	1	3	20	3	16	15	-	200	24	11.3	GIR/L52...	2.2

Note: Use right-hand holder (CGXR) with right-hand insart (GIR); and left-hand holder (L) with left-hand insart (GIL).
*Torque: Recommended clamping torque (N·m)

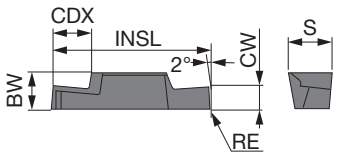
SPARE PARTS

Designation	Clamp set	Wrench1	Wrench2
CGXR/L0016/20	CSW-0	-	P-2.5T
CGXR/L0025/32/40	CSW-2	P-4	-
CGXR/L16SC	CSW-0	-	P-2.5T

Reference pages: Inserts, Standard cutting conditions → F130

INSERT

GIR/L



Right hand (R) shown.

		NS9530	TH10
P	Steel	★	☆
M	Stainless		☆
K	Cast iron	☆	★
N	Non-ferrous		★
S	Superalloys		☆
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	Coated	Uncoated	CDX	INSL	BW	S
				NS9530	TH10				
GIR5210-02	R	1	0.2	●		1.5	15	3.5	4.4
GIL5210-02	L	1	0.2	●	●	1.5	15	3.5	4.4
GIR5215-02	R	1.5	0.2	●	●	2.3	15	3.5	4.4
GIL5215-02	L	1.5	0.2	●	●	2.3	15	3.5	4.4
GIR5220-02	R	2	0.2	●	●	3	15	3.5	4.4
GIL5220-02	L	2	0.2	●	●	3	15	3.5	4.4
GIR5225-02	R	2.5	0.2	●	●	3	15	3.5	4.4
GIL5225-02	L	2.5	0.2		●	3	15	3.5	4.4
GIR5230-02	R	3	0.2	●	●	3	15	3.5	4.4
GIL5230-02	L	3	0.2		●	3	15	3.5	4.4
GIR6310-02	R	1	0.2	●	●	1.5	24	5.5	6.4
GIL6310-02	L	1	0.2		●	1.5	24	5.5	6.4
GIR6315-02	R	1.5	0.2	●	●	2.3	24	5.5	6.4
GIL6315-02	L	1.5	0.2	●	●	2.3	24	5.5	6.4
GIR6320-02	R	2	0.2	●	●	3	24	5.5	6.4
GIL6320-02	L	2	0.2	●	●	3	24	5.5	6.4
GIR6325-02	R	2.5	0.2	●	●	3.8	24	5.5	6.4
GIL6325-02	L	2.5	0.2	●	●	3.8	24	5.5	6.4
GIR6330-02	R	3	0.2	●	●	4.5	24	5.5	6.4
GIL6330-02	L	3	0.2	●	●	4.5	24	5.5	6.4
GIR6335-02	R	3.5	0.2	●	●	5.3	24	5.5	6.4
GIL6335-02	L	3.5	0.2	●	●	5.3	24	5.5	6.4
GIR6340-02	R	4	0.2	●	●	5.3	24	5.5	6.4
GIL6340-02	L	4	0.2	●	●	5.3	24	5.5	6.4
GIR6345-02	R	4.5	0.2	●	●	5.3	24	5.5	6.4
GIL6345-02	L	4.5	0.2		●	5.3	24	5.5	6.4
GIR6350-02	R	5	0.2	●	●	5.3	24	5.5	6.4
GIL6350-02	L	5	0.2		●	5.3	24	5.5	6.4

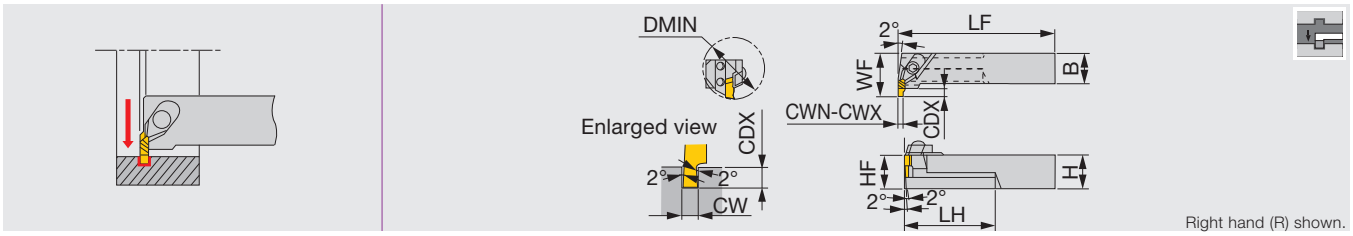
● : Line up

Use right-hand toolholders (CGXR～) with right-hand inserts (GIR); and left-hand toolholders (GX-****LI) with left-hand inserts (XGR).

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)		
				W < 2 mm	*W* = 2 ~ 4 mm	*W* > 4 mm
P	Carbon steels	NS9530	80 - 150	0.05 - 0.1	0.08 - 0.15	0.08 - 0.2
K	Cast irons, Light alloys	TH10	60 - 150	0.05 - 0.1	0.08 - 0.15	0.08 - 0.2

Reference pages: Toolholder → F129



Right hand (R) shown.

Designation	CWN	CWX	DMIN	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
GX-2525R/LI	1	4.5	55	1.5 - 6	25	25	200	70	25	35	XGL/R63...	5

Use right-hand toolholders (GX-****RI) with left-hand inserts (XGL); and left-hand toolholders (GX-****LI) with right-hand inserts (XGR).
*Torque: Recommended clamping torque (N·m)

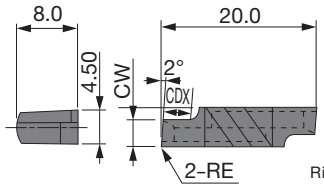
SPARE PARTS

Designation	Clamp set	Clamp screw	Shim	Shim screw	Wrench
GX-2525RI	CP81B	RT-1	SL-2R	BHM3-8	P-4
GX-2525LI	CP81B	RT-1	SL-2L	BHM3-8	P-4

Note: Max. groove width and max. groove depth will depend on the insert type.

INSERT

XGR/L



Right hand (R) shown.

P	Steel	★			☆	★											
M	Stainless					★											
K	Cast iron	☆			★												
N	Non-ferrous				★												
S	Superalloys				☆												
H	Hard materials																

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025	RE	Cermet	Uncoated									CDX
				NS9530			TH10	UX30						
XGR6310-02	R	1	0.2	●										1.5
XGL6310-02	L	1	0.2	●			●	●						1.5
XGR6315-02	R	1.5	0.2	●			●	●						2.3
XGL6315-02	L	1.5	0.2	●			●	●						2.3
XGR6320-02	R	2	0.2	●			●	●						3
XGL6320-02	L	2	0.2	●			●	●						3
XGR6325-02	R	2.5	0.2	●			●	●						3.8
XGL6325-02	L	2.5	0.2	●			●	●						3.8
XGR6330-02	R	3	0.2	●			●	●						4.5
XGL6330-02	L	3	0.2	●			●	●						4.5
XGR6335-02	R	3.5	0.2	●			●	●						5.3
XGL6335-02	L	3.5	0.2	●			●	●						5.3
XGR6340-02	R	4	0.2	●			●	●						6
XGL6340-02	L	4	0.2	●			●	●						6
XGR6345-02	R	4.5	0.2	●			●	●						6
XGL6345-02	L	4.5	0.2	●			●	●						6

Use right-hand toolholders (GX-****RE) with right-hand inserts (XGR...)
left-hand toolholders (GX-****LE) with left-hand inserts (XGL...).

●: Line up

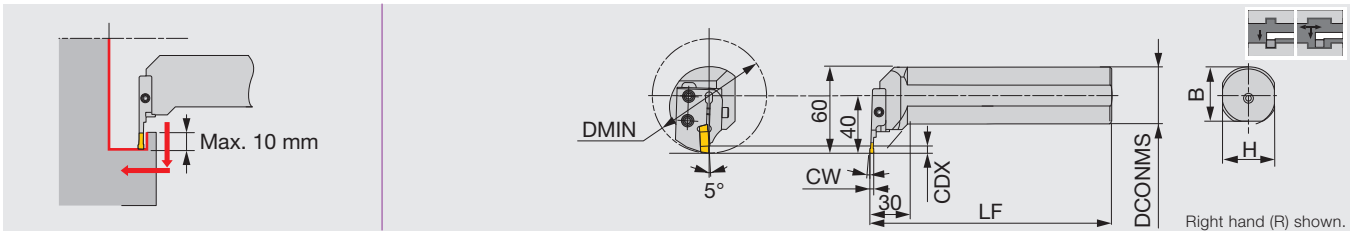
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)		
				W < 2 mm	*W* = 2 ~ 4 mm	*W* > 4 mm
P	Carbon steels	NS9530	80 - 200	0.05 - 0.1	0.08 - 0.2	0.08 - 0.25
		UX30	60 - 150	0.05 - 0.1	0.08 - 0.2	0.08 - 0.25
K	Cast irons, Light alloys	TH10	60 - 150	0.05 - 0.1	0.08 - 0.2	0.08 - 0.25
H	Hardened steel	BX360	50 - 180	0.05 - 0.15	0.05 - 0.15	0.05 - 0.15

MY-T SERIES

CGWTR/L0040-FLL/R3NP

Internal grooving and turning toolholder



Designation	CW	DMIN	CDX	DCONMS	LF	H	B	Insert	Shank	Blade	Torque*
CGWTR/L0040-FLL/R3NP	3	80	10	40	180	37.5	37	FLEX30L/R	CGWTR/L0040	FLL/R3NP	5

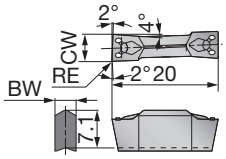
Please place an order with the designation of a set or a shank+a blade
Note: Use right-hand blades (CCWTR) with left-hand shanks (FLL3NP); and left-hand blades (CGWTL) with right-hand shanks (FLR3NP).
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

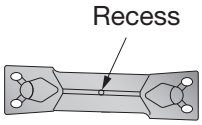
Designation	Clamping screw	Blade screw	Wrench
CGWTR/L0040-FLL/R3NP	CHHM5-18	CSHB-6	P-4

INSERT

FLEX(R/L)



Right hand (R) shown.



To distinguish the insert hands, the V-shape surface (top surface) of a left-hand insert has a recess. (not of a right-hand insert)

P	Steel	★	☆			★			★						
M	Stainless	★							★						
K	Cast iron	☆				☆									
N	Non-ferrous														
S	Superalloys														
H	Hard materials														

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	Coated				Carbide			Uncoated							BW
				T9225	T9125			NS9530			UX30							
FLEX30R	R	3	0.4					●										2.2
FLEX30L	L	3	0.4					●										2.2
FLEX40R	R	4	0.4					●										3.1
FLEX40L	L	4	0.4					●										3.1
FLEX50R	R	5	0.4	●	●			●										4
FLEX50L	L	5	0.4	●	●			●			●							4

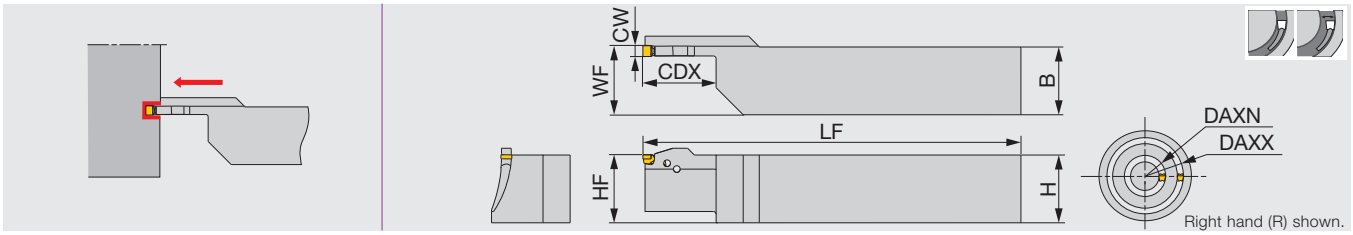
●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed: *f* (mm/rev) Grooving	Feed: *f* (mm/rev) Turning
P	Carbon steels	T9225	80 - 300	0.05 - 0.25	0.1 - 0.3
		T9125	80 - 200	0.05 - 0.25	0.1 - 0.3
		NS9530	80 - 200	0.05 - 0.25	0.1 - 0.3
		UX30	60 - 150	0.05 - 0.25	0.1 - 0.3

ETFR/L

Face grooving and turning toolholder



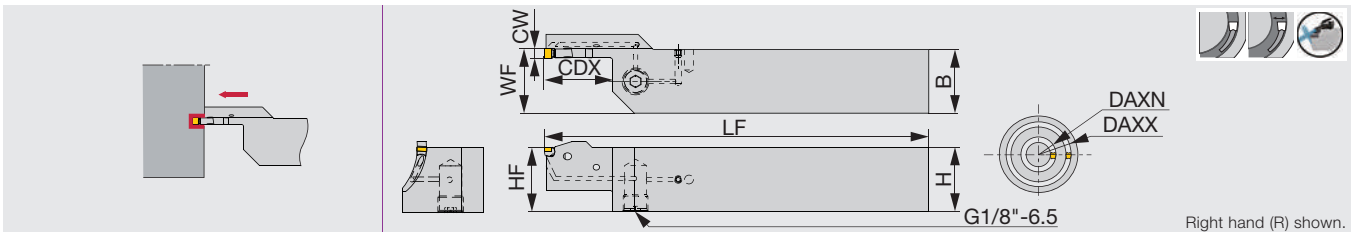
Designation	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert
ETFR/L2020-4T15-030035	4	30	35	15	20	20	125	20	20.5	E**4...
ETFR/L2525-4T15-030035	4	30	35	15	25	25	150	25	25.5	E**4...
ETFR/L2020-4T22-035045	4	35	45	22	20	20.	125	20	20.5	E**4...
ETFR/L2525-4T22-035045	4	35	45	22	25	25	150	25	25.5	E**4...
ETFR/L2020-4T25-045055	4	45	55	25	20	20	125	20	20.5	E**4...
ETFR/L2525-4T25-045055	4	45	55	25	25	25	150	25	25.5	E**4...
ETFR/L2020-4T25-055075	4	55	75	25	20	20	125	20	20.5	E**4...
ETFR/L2525-4T25-055075	4	55	75	25	25	25	150	25	25.5	E**4...
ETFR/L2020-4T25-075120	4	75	120	25	20	20.	125	20	20.5	E**4...
ETFR/L2525-4T25-075120	4	75	120	25	25	25	150	25	25.5	E**4...
ETFR/L2525-4T25-120200	4	120	200	25	25	25	150	25	25.5	E**4...
ETFR/L2525-4T25-200500	4	200	500	25	25	25	150	25	25.5	E**4...
ETFR/L2525-5T25-035045	5	35	45	25	25	25	150	25	25.5	ETX5...
ETFR/L2525-5T25-045055	5	45	55	25	25	25	150	25	25.5	ETX5...
ETFR/L2525-5T25-055075	5	55	75	25	25	25	150	25	25.5	ETX5...
ETFR/L2525-5T32-075120	5	75	120	32	25	25	150	25	25.5	ETX5...
ETFR/L2525-5T32-120200	5	120	200	32	25	25	150	25	25.5	ETX5...
ETFR/L2525-5T32-200500	5	200	500	32	25	25	150	25	25.5	ETX5...
ETFR/L2525-6T25-040055	6	40	55	25	25	25	150	25	25.5	ETX6...
ETFR/L2525-6T25-055075	6	55	75	25	25	25	150	25	25.5	ETX6...
ETFR/L2525-6T32-075120	6	75	120	32	25	25	150	25	25.5	ETX6...
ETFR/L2525-6T32-120200	6	120	200	32	25	25	150	25	25.5	ETX6...
ETFR/L2525-6T32-200500	6	200	500	32	25	25	150	25	25.5	ETX6...

SPARE PARTS

Designation	Wrench (Optional)
ETFR/L...	ECW-456EF

ETFR-CHP

Face grooving and turning toolholder, with high pressure coolant capability



Designation	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert
ETFR2525-4T15-030035-CHP	4	30	35	15	25	25	150	25	25.5	E**4...
ETFR2525-4T22-035045-CHP	4	35	45	22	25	25	150	25	25.5	E**4...
ETFR2525-4T25-045055-CHP	4	45	55	25	25	25	150	25	25.5	E**4...
ETFR2525-4T25-055075-CHP	4	55	75	25	25	25	150	25	25.5	E**4...
ETFR2525-4T25-075120-CHP	4	75	120	25	25	25	150	25	25.5	E**4...
ETFR2525-4T25-120200-CHP	4	120	200	25	25	25	150	25	25.5	E**4...
ETFR2525-4T25-200500-CHP	4	200	500	25	25	25	150	25	25.5	E**4...

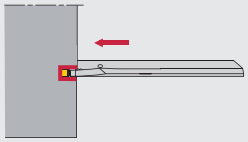
SPARE PARTS

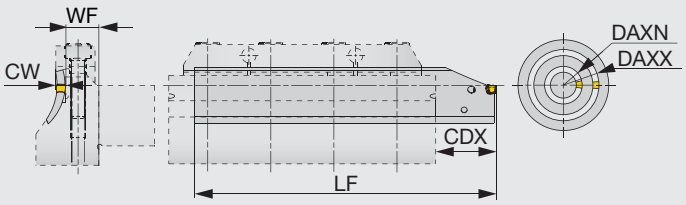
Designation	Wrench (Optional)
ETFR****-CHP	ECW-456EF

Reference pages: Inserts, Standard cutting conditions → F135 - F136
Parts for coolant hose → F198

EFPR/L

Face grooving blade





Right hand (R) shown.

Designation	CW	DAXN	DAXX	WF	LF	Min. CDX	Max. CDX	Insert
EFPR/L-4-030035	4	30	35	13.6	125	18	50	E**4...
EFPR-4-035045	4	35	45	13.6	125	18	50	E**4...
EFPR-4-045055	4	45	55	13.6	125	18	50	E**4...
EFPR-4-055075	4	55	75	13.6	125	18	50	E**4...
EFPR-4-075120	4	75	120	13.6	140	18	65	E**4...
EFPR-4-120200	4	120	200	13.6	140	18	65	E**4...
EFPR-4-200500	4	200	500	13.6	140	18	65	E**4...
EFPR-5-035045	5	35	45	13.6	125	19	50	ETX5...
EFPR-5-045055	5	45	55	13.6	125	19	50	ETX5...
EFPR-5-055075	5	55	75	13.6	125	19	50	ETX5...
EFPR-5-075120	5	75	120	13.6	140	19	65	ETX5...
EFPR-5-120200	5	120	200	13.6	140	19	65	ETX5...
EFPR-5-200500	5	200	500	13.6	140	19	65	ETX5...
EFPR-6-045055	6	45	55	13.6	125	20	50	ETX6...
EFPR-6-055075	6	55	75	13.6	125	20	50	ETX6...
EFPR-6-075120	6	75	120	13.6	140	20	65	ETX6...
EFPR-6-120200	6	120	200	13.6	140	20	65	ETX6...
EFPR/L-6-200500	6	200	500	13.6	140	20	65	ETX6...

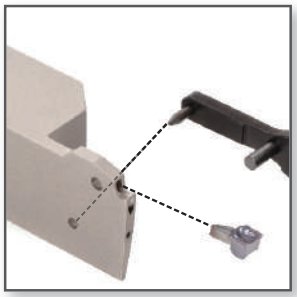
SPARE PARTS

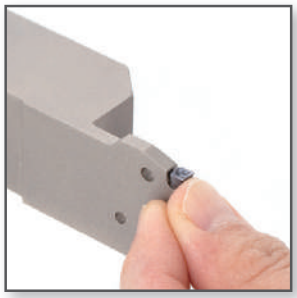


Designation	Wrench (Optional)
EFPR/L...	ECW-456I

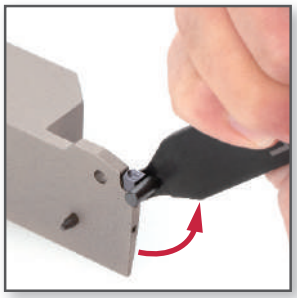
Procedure to clamp and unclanp insert

1. Put the insert in the Unclamp pocket

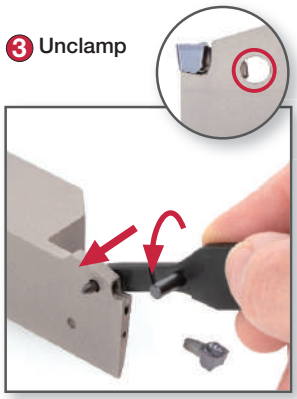




2. Turn the wrench Push the insert into the pocket to clamp



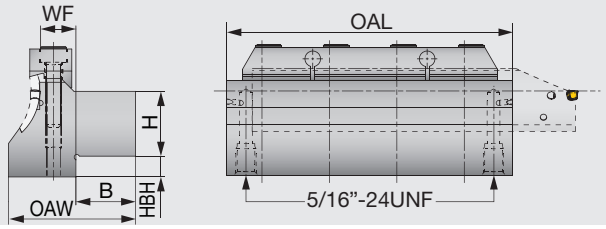
3. Unclamp



Reference pages: Inserts, Standard cutting conditions → F135 - F136

CTBU-CHP for EFPR/L

Tool block for EFP blades with high pressure coolant capability



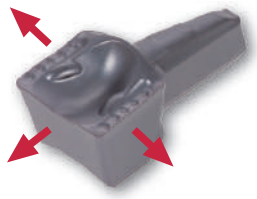
Designation	CW	DAXN	H	B	HBH	OAW	OAL	Blade
CTBU25-030-4-CHP	4	30	25	23	8	49	110	EFPR/L-4-030035
CTBU25-035-4/5-CHP	4, 5	35	25	23	8	49	110	EFPR-4/5-035045
CTBU25-045-4/5-CHP	4, 5	45	25	23	8	49	110	EFPR-4/5-045055
CTBU25-055-4/5-CHP	4, 5	55	25	23	8	47	110	EFPR-4/5-055075
CTBU25-075-4/5-CHP	4, 5	75	25	23	8	45	110	EFPR-4/5-075120
CTBU25-120-4/5-CHP	4, 5	120	25	23	8	44	110	EFPR-4/5-120200
CTBU25-200-4/5-CHP	4, 5	200	25	23	8	41.5	110	EFPR-4/5-200500
CTBU25-045-6-CHP	6	45	25	23	8	51	110	EFPR-6-045055
CTBU25-055-6-CHP	6	55	25	23	8	49	110	EFPR-6-055075
CTBU25-075-6-CHP	6	75	25	23	8	47	110	EFPR-6-075120
CTBU25-120-6-CHP	6	120	25	23	8	46	110	EFPR-6-120200
CTBU25-200-6-CHP	6	200	25	23	8	43.5	110	EFPR/L-6-200500

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
CTBU25-***-***-CHP	CT-110	CM6X30-S	P-5

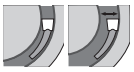
EASYMCUT ULTI - Chipbreaker Guide

ETX type

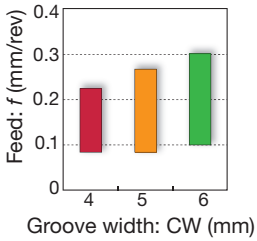


Multi-functional insert grooving and turning Suitable for light to medium cutting Well-balanced sharpness and strength

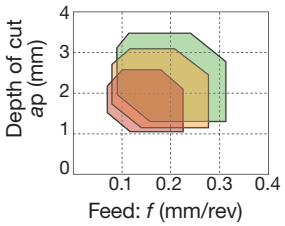
CW = 4 - 6 mm



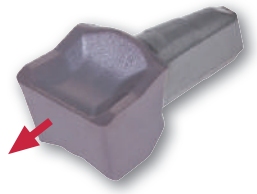
■ Standard feed



■ Standard feed and depth of cut for turning



EGM type

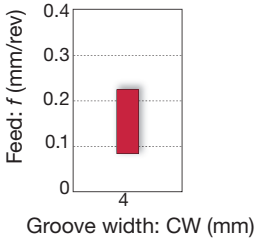


1st choice for parting
High strength
Well-designed edge

CW = 4 mm



■ Standard feed

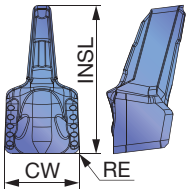


Reference pages: Inserts, Standard cutting conditions → F135 - F136
Parts for coolant hose → F198

INSERT

ETX





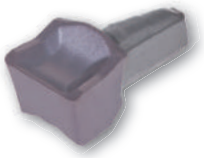
P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

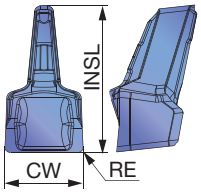
★ : First choice
☆ : Second choice

Designation	CW±0.05	RE	Coated AH725	INSL
ETX4-040	4	0.4	●	8
ETX5-040	5	0.4	●	10
ETX6-040	6	0.4	●	12

● : Line up

EGM





P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	CW±0.05	RE	Coated AH725	INSL
EGM4-030	4	0.3	●	8

● : Line up

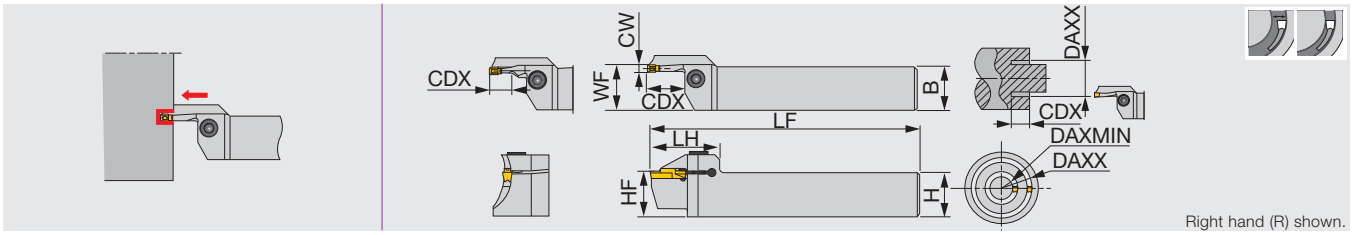
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Grade	Chipbreaker	Cutting speed *Vc* (m/min)
P	Low carbon steel (S45C, S15C, S20C etc)	- 300 HB	AH725	ETX	80 - 180
		- 300 HB	AH725	EGM	80 - 180
	Carbon steel, Alloy steel (S55C, SCM440 etc)	- 300 HB	AH725	ETX	80 - 180
		- 300 HB	AH725	EGM	80 - 180
	Prehardened steel (NAK80, PX5 etc)	- 300 HB	AH725	ETX	80 - 180
		- 300 HB	AH725	EGM	80 - 180
M	Stainless steels (SUS303, SUS316 etc)	-	AH725	ETX	50 - 120
		-	AH725	EGM	50 - 120

Reference pages: Holder → F133 - F135

CTFR/L

Face grooving and turning toolholder



Designation	CW	DAXMIN	DAXX	Seat size	CDX	H	B	LF	LH	HF	WF (1)	Torque*
CTFR/L2525-3T10-024035	3	24	35	3	10	25	25	150	38	25	25.5	5
CTFR/L2525-3T10-029040	3	29	40	3	10	25	25	150	38	25	25.5	5
CTFR/L2525-3T10-034050	3	34	50	3	10	25	25	150	38	25	25.5	5
CTFR/L2525-3T15-044070	3	44	70	3	15	25	25	150	38	25	25.5	5
CTFR/L2525-3T15-064100	3	64	100	3	15	25	25	150	38	25	25.5	5
CTFR/L2525-4T10-022036	4	22	36	4	10	25	25	150	39	25	25.6	5
CTFR/L2525-4T20-028042	4	28	42	4	20	25	25	150	39	25	25.6	5
CTFR/L2525-4T20-034050	4	34	50	4	20	25	25	150	39	25	25.6	5
CTFR/L2525-4T20-042070	4	42	70	4	20	25	25	150	39	25	25.6	5
CTFR/L2525-4T20-062120	4	62	120	4	20	25	25	150	39	25	25.6	5
CTFR/L2525-4T20-112200	4	112	200	4	20	25	25	150	39	25	25.6	5
CTFR/L2525-5T25-050080	5	50	80	5	25	25	25	150	49	25	25.6	12
CTFR/L2525-5T25-070110	5	70	110	5	25	25	25	150	49	25	25.6	12
CTFR/L2525-5T25-100150	5	100	150	5	25	25	25	150	49	25	25.6	12
CTFR/L2525-5T25-140200	5	140	200	5	25	25	25	150	49	25	25.6	12
CTFR/L2525-6T25-048070	6	48	70	6	25	25	25	150	49	25	25.6	12
CTFR/L2525-6T25-058100	6	58	100	6	25	25	25	150	49	25	25.6	12
CTFR/L2525-6T25-088180	6	88	180	6	25	25	25	150	49	25	25.6	12
CTFR/L2525-6T25-168400	6	168	400	6	25	25	25	150	49	25	25.6	12

When depth is deeper than (insert length - 1.5 mm), 1 corner type is recommended.
Max. groove depth will be 15 mm with DTF insert.
(1)WF is calculated with the groove width (CW) in the above table.
*Torque:Recommended torque (N·m)

SPARE PARTS

Designation	Clamping screw	Wrench
CTFR/L2525-3T - 4T...	CM6X1X25-A	P-5
CTFR/L2525-5T - 6T...	CM8X1.25X25-A	P-6

INSERT

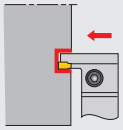
Designation	Seat size	Insert
CTFR/L2525-3T10-024035	3	DTF, DTX
CTFR/L2525-3T10-029040	3	DTF, DTX
CTFR/L2525-3T10-034050	3	DTF, DTX
CTFR/L2525-3T15-044070	3	DTF, DTX, DTR, DTE, DGG, DTM
CTFR/L2525-3T15-064100	3	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DGL, DTM
CTFR/L2525-4T10-022036	4	DTF, DTX
CTFR/L2525-4T20-028042	4	DTF, DTX, DTR
CTFR/L2525-4T20-034050	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL
CTFR/L2525-4T20-042070	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DTM, DGL
CTFR/L2525-4T20-062120	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DTM, DGL
CTFR/L2525-4T20-112200	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DTM, DGL
CTFR/L2525-5T25-...	5	DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL
CTFR/L2525-6T25-...	6	DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL

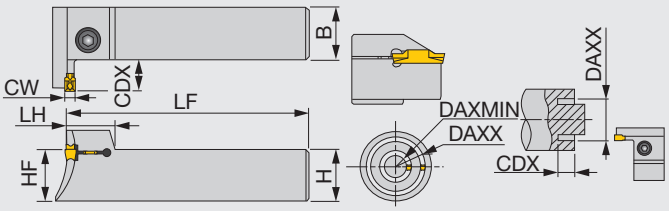
Insert	Groove width CW	face grooving Min. machining dia. DAXMIN
DGM / DGS / SGN / DGL	3	92
DGM / DGS / SGN / DGL	4	37
DGM / DGS / DGL	5	60
DGM / DGS / DGL	6	57
DTE / DGG / DTM	3	62
DTE / DGG / DTM	4	42
DTE / DGG / DTM	5	64
DTE / DGG / DTM	6	61
DTR	3	44
DTR	4	32
DTR	5	48
DTR	6	48
DTX	3	19
DTX	4	20
DTX	5	20
DTX	6	23
DTF	3	19
DTF	4	20

Reference pages: Inserts → F143 - F156
Standard cutting conditions → F157

CTFVR/L

Perpendicular toolholder for face grooving and turning





Right hand (R) shown.

Designation	CW	DAXMIN	DAXX	Seat size	CDX	H	B	LF	LH	HF	Torque*
CTFVR/L2525-3T10-024035	3	24	35	3	10	25	25	150	18	25	5
CTFVR/L2525-3T10-029040	3	29	40	3	10	25	25	150	18	25	5
CTFVR/L2525-3T10-034050	3	34	50	3	10	25	25	150	18	25	5
CTFVR/L2525-3T15-044060	3	44	60	3	15	25	25	150	18	25	5
CTFVR/L2525-3T15-054085	3	54	85	3	15	25	25	150	18	25	5
CTFVR/L2525-4T12-022040	4	22	40	4	12	25	25	150	18.5	25	8.5
CTFVR/L2525-4T15-032050	4	32	50	4	15	25	25	150	18.5	25	8.5
CTFVR/L2525-4T15-042060	4	42	60	4	15	25	25	150	18.5	25	8.5
CTFVR/L2525-4T15-052085	4	52	85	4	15	25	25	150	18.5	25	8.5
CTFVR/L2525-5T20-050080	5	50	80	5	20	25	25	150	22	25	12
CTFVR/L2525-5T20-070110	5	70	110	5	20	25	25	150	22	25	12
CTFVR/L2525-5T20-100150	5	100	150	5	20	25	25	150	22	25	12
CTFVR/L2525-5T20-140200	5	140	200	5	20	25	25	150	22	25	12
CTFVR/L2525-6T20-048085	6	48	85	6	20	25	25	150	22	25	12
CTFVR/L2525-6T20-073150	6	73	150	6	20	25	25	150	22	25	12
CTFVR/L2525-6T20-138250	6	138	250	6	20	25	25	150	22	25	12

When depth is deeper than (insert length - 1.5 mm), 1 corner type is recommended
Max. groove depth will be 15 mm with DTF insert.
*Torque:Recommended torque (N·m)

SPARE PARTS





Designation	Clamping screw	Wrench
CTFVR/L2525-3T...	CM5X0.8X25-A	P-4
CTFVR/L2525-4T...	CM6X1X25-A	P-5
CTFVR/L2525-5T..., 6T...	CM8X1.25X25-A	P-6

INSERT

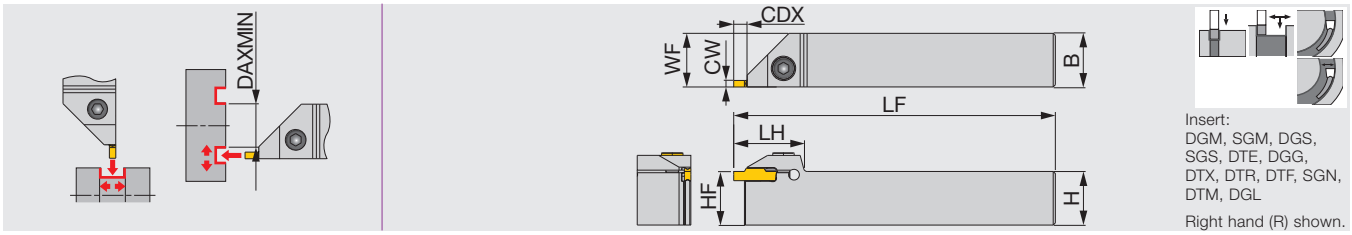
Designation	Seat size	Insert
CTFVR/L2525-3T10-024035	3	DTF, DTX
CTFVR/L2525-3T10-029040	3	DTF, DTX
CTFVR/L2525-3T10-034050	3	DTF, DTX, DTR
CTFVR/L2525-3T15-044060	3	DTF, DTX, DTE, DTR
CTFVR/L2525-3T15-054085	3	DTF, DTX, DTE, DGG, DTR, DTM
CTFVR/L2525-4T12-022040	4	DTF, DTX, DTR
CTFVR/L2525-4T15-032050	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL
CTFVR/L2525-4T15-042060	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DTM, DGL
CTFVR/L2525-4T15-052085	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DTM, DGL
CTFVR/L2525-5T20-...	5	DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL
CTFVR/L2525-6T20-...	6	DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL

Insert	Groove width CW	face grooving Min. machining dia. DAXMIN
DGM / DGS / SGN / DGL	3	92
DGM / DGS / SGN / DGL	4	37
DGM / DGS / DGL	5	60
DGM / DGS / DGL	6	57
DTE / DGG / DTM	3	62
DTE / DGG / DTM	4	42
DTE / DGG / DTM	5	64
DTE / DGG / DTM	6	61
DTR	3	44
DTR	4	32
DTR	5	48
DTR	6	48
DTX	3	19
DTX	4	20
DTX	5	20
DTX	6	23
DTF	3	19
DTF	4	20

Reference pages: Inserts → F143 - F156
Standard cutting conditions → F157

CTEFR/L

External face grooving and turning toolholder



Insert:
DGM, SGM, DGS, SGS, DTE, DGG, DTX, DTR, DTF, SGN, DTM, DGL

Right hand (R) shown.

Designation	CW	Seat size	CDX	H	B	LF	LH	HF	WF (1)	Torque*
CTEFR/L2020-4T04	4	2, 3, 4	4.8	20	20	125	33	20	20.5	8.5
CTEFR/L2525-4T04	4	2, 3, 4	4.8	25	25	150	33	25	25.5	8.5
CTEFR/L2020-6T04	6	5, 6	4.8	20	20	125	37	20	20.6	8.5
CTEFR/L2525-6T04	6	5, 6	4.8	25	25	150	37	25	25.6	8.5

(1)"WF" value is calculated with groove idth "CW" shown in the table. *Torque: Recommended clamping torque (N·m)

SPARE PARTS

Designation	Clamping screw	Wrench
CTEFR/L2020-4T04	CM6X1X20-A	P-5
CTEFR/L2525-4T04	CM6X1X25-A	P-5
CTEFR/L2020-6T04	CM6X1X20-A	P-5
CTEFR/L2525-6T04	CM6X1X25-A	P-5

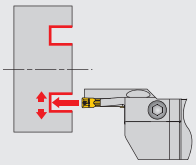
Insert	Groove width CW	face grooving Min. machining dia. DAXMIN
DGM / DGS / SGN	2	295
DGM / DGS / SGN / DGL	3	92
DGM / DGS / SGN / DGL	4	37
DGM / DGS / DGL	5	60
DGM / DGS / DGL	6	57
DTE / DGG / DTM	3	62
DTE / DGG / DTM	4	42
DTE / DGG / DTM	5	64
DTE / DGG / DTM	6	61

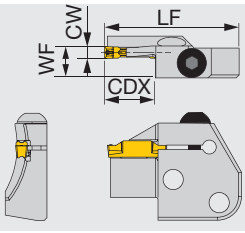
Insert	Groove width CW	face grooving Min. machining dia. DAXMIN
DTR	3	44
DTR	4	32
DTR	5	48
DTR	6	48
DTX	3	19
DTX	4	20
DTX	5	20
DTX	6	23
DTF	3	19
DTF	4	20

Reference pages: Inserts → F143 - F156
Standard cutting conditions → F157

CAFR/L

Face grooving and turning blade







Insert:
CAFR/L-3T12-040055:DTF
Seat size[e] [3](2)-6:[DTF](3),
DTE, DGG, DTX, DGS,
DGM, DTR, DTM, DGL
Shank:
CHFVR/L, CHSR/L
Right hand (R) shown.

Designation	CW	DAXMIN	DAXX	Seat size	CDX	LF	WF (1)	Torque*
CAFR/L-3T12-040055	3	40	55	3	12	45	10.4	5
CAFR/L-3T12-055075	3	55	75	3	12	45	10.4	5
CAFR/L-3T12-075100	3	75	100	3	12	45	10.4	5
CAFR/L-3T12-100140	3	100	140	3	12	45	10.4	5
CAFR/L-3T12-140200	3	140	200	3	12	45	10.4	5
CAFR/L-4T16-050070	4	50	70	4	16	45	10.5	5
CAFR/L-4T16-070100	4	70	100	4	16	45	10.5	5
CAFR/L-4T16-100150	4	100	150	4	16	45	10.5	5
CAFR/L-4T16-150250	4	150	250	4	16	45	10.5	5
CAFR/L-5T20-055080	5	55	80	5	20	49	10.5	5
CAFR/L-5T20-080120	5	80	120	5	20	49	10.5	5
CAFR/L-5T20-120180	5	120	180	5	20	49	10.5	5
CAFR/L-5T20-180300	5	180	300	5	20	49	10.5	5
CAFR/L-5T20-300000	5	300	∞	5	20	49	10.5	5
CAFR/L-6T25-060090	6	60	90	6	25	55	10.5	5
CAFR/L-6T25-090150	6	90	150	6	25	55	10.5	5
CAFR/L-6T25-150250	6	150	250	6	25	55	10.5	5
CAFR/L-6T25-250400	6	250	400	6	25	55	10.5	5

When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert.
Max. groove depth will be 15 mm with DTF insert.
Not compatible with TungModularSystem
(1)WF is calculated with the groove width (CW) in the above table.
(2) Not applicable to CAFR/L-3T12-040055
(3) Seat sizes of DTF are only 3 and 4.
*Torque: Recommended clamping torque (N·m)

SPARE PARTS





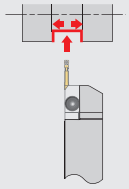
Designation	Clamping screw	Wrench
CAFR/L...	BHM6-20-A	P-4

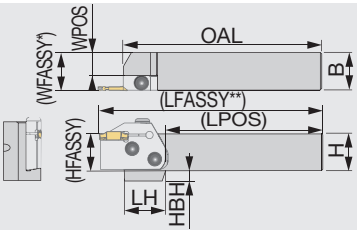
Insert	Groove width CW	face grooving Min. machining dia. DAXMIN
DGM / DGS / SGN / DGL	3	92
DGM / DGS / SGN / DGL	4	37
DGM / DGS / DGL	5	60
DGM / DGS / DGL	6	57
DTE / DGG / DTM	3	62
DTE / DGG / DTM	4	42
DTE / DGG / DTM	5	64
DTE / DGG / DTM	6	61
DTR	3	44
DTR	4	32
DTR	5	48
DTR	6	48
DTX	3	19
DTX	4	20
DTX	5	20
DTX	6	23
DTF	3	19
DTF	4	20

Reference pages: Inserts → F143 - F156
Standard cutting conditions → F157

TUNGCUT CHSR/L

Shank for CAER/L & CAFR/L blades





Right hand (R) shown.

Designation	H	B	OAL	LPOS	LH	WPOS	HFASSY	HBH	Blade (option)
CHSR/L2020	20	20	133	105	35	10	20	12	CAFL/R...
CHSR/L2525	25	25	133	105	28	15	25	7	CAFL/R...
CHSR/L3232	32	32	153	105	28	22	32	-	CAFL/R...

*WFASSY : shank (WPOS) + blade (WF)
**LFASSY : shank (LPOS) + blade (LF)

Not compatible with TungModularSystem

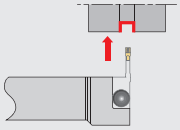
SPARE PARTS

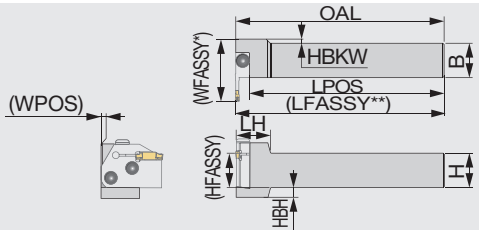



Designation	Clamping screw	Wrench
CHSR/L...	CSHB-6-A	P-4

TUNGCUT CHFVR/L

Shank for CAER/L & CAFR/L blades





Right hand (R)
with left-hand blade

Designation	H	B	OAL	LPOS	LH	HFASSY	WPOS	HBKW	HBH	Blade (option)
CHFVR/L2020	20	20	150	140	25	20	0	8	12	CAFR/L...
CHFVR/L2525	25	25	150	140	25	25	0	3	7	CAFR/L...
CHFVR/L3232	32	32	170	160	25	32	4	-	-	CAFR/L...

*WFASSY : shank (WPOS) + blade (LF)
**LFASSY : shank (LPOS) + blade (WF)

Not compatible with TungModularSystem

SPARE PARTS




Designation	Clamping screw	Wrench
CHFVR/L...	CSHB-6-A	P-4

Combination of blade and toolholder

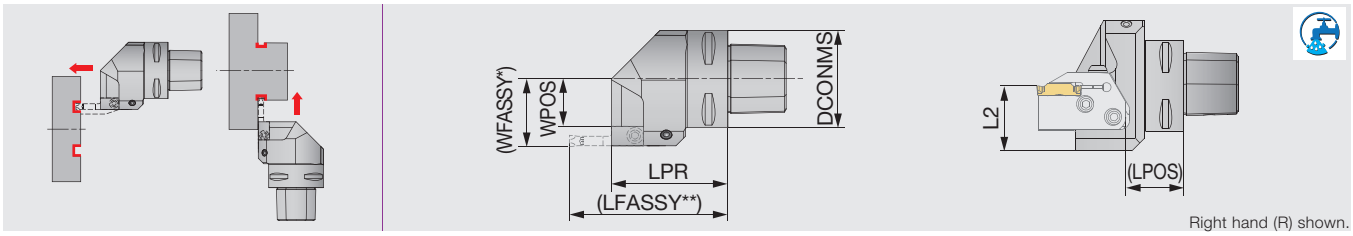
Holder	Blade			
	CAER...	CAEL...	CAFR...	CAFL...
CHSR...	●			●
CHSL...		●	●	
CHFVR...		●	●	
CHFVL...	●			●

● : Corresponding

Reference pages: Inserts → F143 - F156
Standard cutting conditions → F157

C-CHSR/L

TungCap shank for CAER/L and CAFR/L blades



Right hand (R) shown.

Designation	DCONMS	LPR	LPOS	L2	WPOS	Blade (option)
C3CHSR/L22050N	32	50	22.1	35	11.5	CAEL/R..., CAFR/L...
C4CHSR/L27050N	40	50	22.1	36	16.5	CAEL/R..., CAFR/L...
C5CHSR/L35060N	50	60	32.1	36	24.5	CAEL/R..., CAFR/L...
C6CHSR/L45065N	63	65	32.1	41	34.5	CAEL/R..., CAFR/L...

*WFASSY : shank (WPOS) + blade (WF)
**LFASSY : shank (LPOS) + blade (LF)

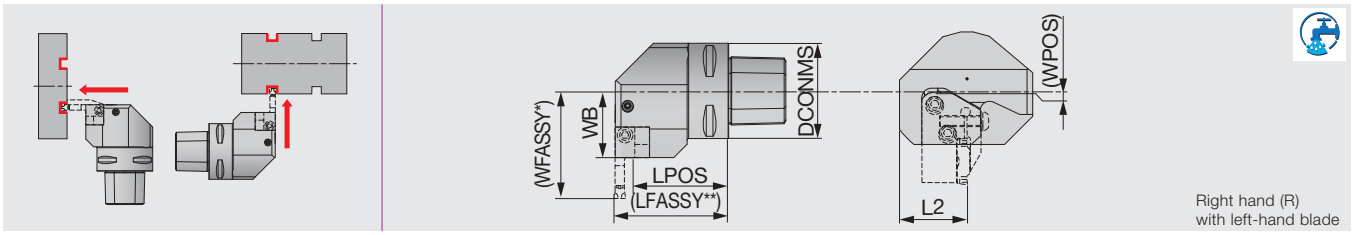
N at the end of the designation means the item for 7 Mpa coolant.
Not compatible with TungModularSystem

SPARE PARTS

Designation	Coolant parts	Clamping screw	Wrench
C3CHSR/L22050N	SATZ-M8X1-M3	CSHB-6-A	P-4
C4CHSR/L27050N	SATZ-M8X1-M3	CSHB-6-A	P-4
C5CHSR/L35060N	SATZ-M10X1-M5	CSHB-6-A	P-4
C6CHSR/L45065N	SATE-M10X1-M5	CSHB-6-A	P-4

C-CHFVR/L

TungCap shank for CAER/L and CAFR/L blades



Right hand (R)
with left-hand blade

Designation	DCONMS	LPOS	L2	WB	WPOS	Blade (option)
C3CHFVR/L22040N	32	32.5	35	22	-5.9	CAEL/R..., CAFR/L...
C4CHFVR/L27050N	40	42.5	36	27	-0.9	CAEL/R..., CAFR/L...
C5CHFVR/L35060N	50	49.5	36	35	7.1	CAEL/R..., CAFR/L...
C6CHFVR/L45065N	63	54.5	41	45	17.1	CAEL/R..., CAFR/L...

*WFASSY : shank (WPOS) + blade (LF)
**LFASSY : shank (LPOS) + blade (WF)

N at the end of the designation means the item for 7 Mpa coolant.
Not compatible with TungModularSystem

SPARE PARTS

Designation	Coolant parts	Clamping screw	Wrench
C3CHFVR/L22040N	SATZ-M8X1-M3	CSHB-6-A	P-4
C4CHFVR/L27050N	SATZ-M8X1-M3	CSHB-6-A	P-4
C5CHFVR/L35060N	SATZ-M10X1-M5	CSHB-6-A	P-4
C6CHFVR/L45065N	SATZ-M10X1-M5	CSHB-6-A	P-4

Combination of blade and toolholder

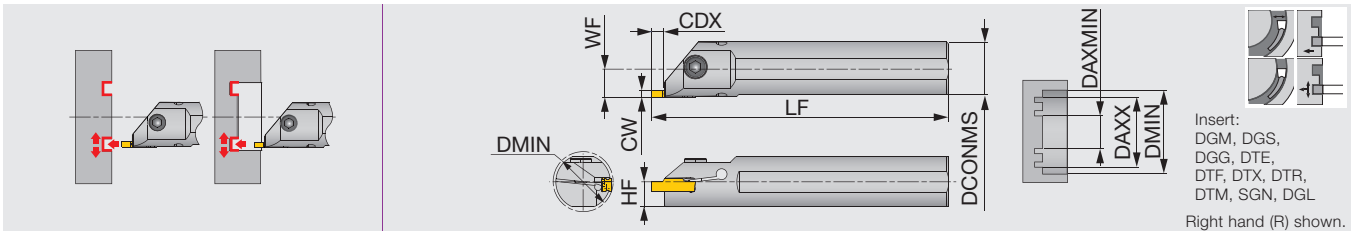
Holder	Blade			
	CAER...	CAEL...	CAFR...	CAFL...
C*CHSR...	●			●
C*CHSL...		●	●	
C*CHFVR...		●	●	
C*CHFVL...	●			●

● : Corresponding

Reference pages: Inserts → F143 - F156
Standard cutting conditions → F157

CTIFR/L

External/Internal face grooving and turning toolholder



Designation	CW	Seat size	CDX	DCONMS	LF(1)	HF	WF(1)	Torque*
CTIFR/L25-4T05-D270	4	3, 4	5.5	25	200	11.5	13.3	5
CTIFR/L32-4T05-D340	4	3, 4	5.5	32	250	15	16.8	5
CTIFR/L25-5T05-D270	6	5, 6	5.5	25	200	11.5	13.3	5
CTIFR/L32-5T05-D340	6	5, 6	5.5	32	250	15	16.8	5

(1) f is calculated with the groove width W in the above table.
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

Designation	Clamping screw	Wrench	Seal cap
CTIFR/L25-4T05-D270	CM6X1X16-A	P-5	CA-25
CTIFR/L32-4T05-D340	CM6X1X20-A	P-5	CA-32
CTIFR/L25-5T05-D270	CM6X1X16-A	P-5	CA-25
CTIFR/L32-5T05-D340	CM6X1X20-A	P-5	CA-32

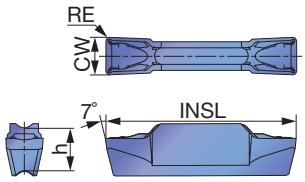
Seat size	Min. machining dia	
	DCONMS = 25 mm	DCONMS = 32 mm
3	26.3	33.3
4	26.8	33.8
5	26.3	33.3
6	26.8	33.8

Seat size	DAXMIN				DAXX
	DGM, DGS, SGN, DGL	DTE, DGG, DTM	DTF, DTX	DTR	
3	92	62	19	44	∞
4	37	42	20	32	∞
5	60	64	20	48	∞
6	57	61	23	48	∞

INSERT

DTX

External/Internal face grooving and turning



P	Steel	★	★	★	☆	☆			★						
M	Stainless	★		★	☆	★									
K	Cast iron	☆		★		☆			☆						
N	Non-ferrous														
S	Superalloys			★	☆										
H	Hard materials														

★ : First choice
☆ : Second choice

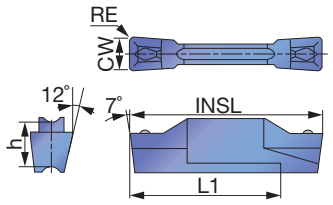
Designation	CW±0.05	RE	Coated						Cermet						INSL	h
			T9225	T9125	AH7025	AH725	GH130		NS9530							
DTX3-030	3	0.3	●	●	●	●	●		●						20	5
DTX4-040	4	0.4	●	●	●	●	●		●						20	5
DTX5-040	5	0.4	●	●	●	●	●		●						25	5.5
DTX6-080	6	0.8			●	●	●								25	5

●: Line up

Reference pages: Inserts → F143 - F156
Standard cutting conditions → F157

DTF

Face grooving and turning



Right hand (R) shown.

P	Steel	★	☆	★	☆	☆			★								
M	Stainless	★		★	☆	★											
K	Cast iron	☆		★		☆			☆								
N	Non-ferrous																
S	Superalloys			★	☆												
H	Hard materials																

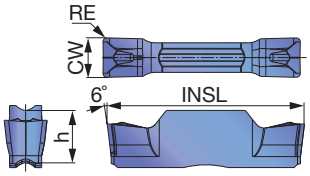
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	Coated						Cermet						INSL	h	L1
				T9225	T9125	AH7025	AH725	GH130		NS9530								
DTF3-040-R	R	3	0.4	●	●	●	●	●		●						20	5	16
DTF3-040-L	L	3	0.4	●	●	●	●	●		●						20	5	16
DTF4-040-R	R	4	0.4	●	●	●	●	●		●						20	5	16
DTF4-040-L	L	4	0.4	●	●	●	●	●		●						20	5	16

●: Line up

DTM

External face grooving and turning



P	Steel	★															
M	Stainless	★															
K	Cast iron	★															
N	Non-ferrous																
S	Superalloys	★															
H	Hard materials																

★ : First choice
☆ : Second choice

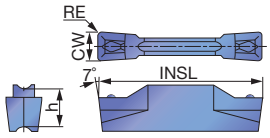
Designation	CW±0.05	RE	Coated													INSL	h
			AH7025														
DTM3-030	3	0.3	●													20	5
DTM4-040	4	0.4	●													20	5
DTM4-080	4	0.8	●													20	5
DTM5-080	5	0.8	●													25	5.5
DTM6-080	6	0.8	●													25	5.5
DTM8-080	8	0.8	●													30	6.7

●: Line up

Reference pages: Toolholder → F137 - F143
Standard cutting conditions → F157

DTE

External face grooving and turning (for high precision)



P	Steel	★	★		★	☆	☆			★						
M	Stainless	★			★	☆	★									
K	Cast iron	☆		★	★		☆									
N	Non-ferrous															
S	Superalloys				★	☆										
H	Hard materials															

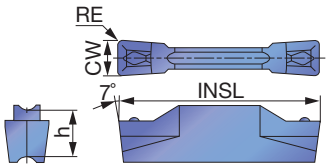
★ : First choice
☆ : Second choice

Designation	CW±0.02	RE	Coated							Cermet						INSL	h
			T9225	T9125	T515	AH7025	AH725	GH130		NS9530							
DTE265-015	2.65	0.15	●	●		●	●	●		●						20	5
DTE300-020	3	0.2	●	●		●	●	●		●						20	5
DTE300-040	3	0.4	●	●		●	●	●		●						20	5
DTE315-015	3.15	0.15	●	●		●	●	●		●						20	5
DTE400-040	4	0.4	●	●		●	●	●		●						20	5
DTE400-080	4	0.8	●	●		●	●	●		●						20	5
DTE415-015	4.15	0.15	●	●		●	●	●		●						20	5
DTE478-055	4.78	0.55	●	●		●	●	●		●						25	5.5
DTE500-040	5	0.4	●	●		●	●	●		●						25	5.5
DTE500-080	5	0.8	●	●		●	●	●		●						25	5.5
DTE515-015	5.15	0.15	●	●		●	●	●								25	5.5
DTE600-080	6	0.8	●	●		●	●	●								25	5.5
DTE600-120	6	1.2	●	●		●	●	●								25	5.5
DTE800-080	8	0.8	●	●		●	●	●								30	6.7
DTE800-120	8	1.2	●	●		●	●	●								30	6.7

●: Line up

DTE

External face grooving and turning



P	Steel	★	★		★	☆	☆			★						
M	Stainless	★			★	☆	★									
K	Cast iron	☆		★	★		☆									
N	Non-ferrous															
S	Superalloys				★	☆										
H	Hard materials															

★ : First choice
☆ : Second choice

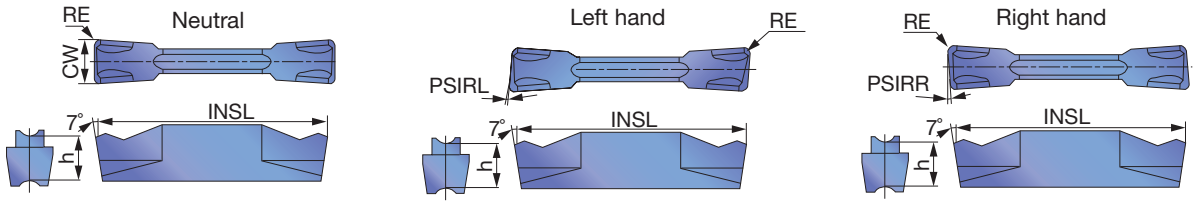
Designation	CW±0.05	RE	Coated							Cermet						INSL	h
			T9225	T9125	T515	AH7025	AH725	GH130		NS9530							
DTE3-040	3	0.4	●	●	●	●	●	●		●						20	5
DTE4-040	4	0.4	●	●	●	●	●	●		●						20	5
DTE5-040	5	0.4			●	●										25	5.5
DTE6-080	6	0.8			●	●										25	5.5

●: Line up

Reference pages: Toolholder → F137 - F143
Standard cutting conditions → F157

DGM

External grooving and parting, 2 corners



		T9225	T9125	AH7025	AH725	AH905	GH130	NS9530
P	Steel	★	★	★	☆		☆	★
M	Stainless	★		★	☆		★	
K	Cast iron	☆		★		☆	☆	☆
N	Non-ferrous							
S	Superalloys			★	☆	★		
H	Hard materials							

★ : First choice
☆ : Second choice

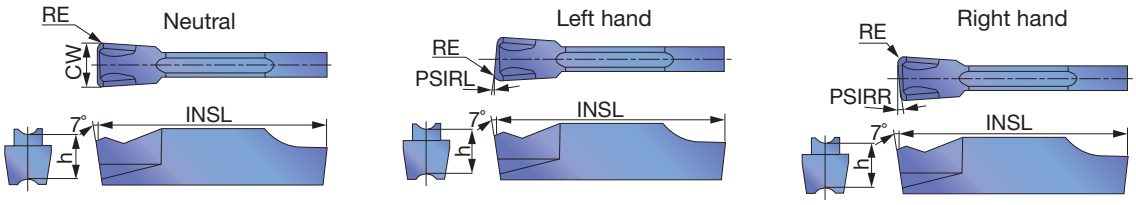
Designation	HAND	CW±0.05	RE	Coated						Cermet	INSL	h	PSIRL	PSIRR
				T9225	T9125	AH7025	AH725	AH905	GH130	NS9530				
DGM2-020	N	2	0.2	●	●	●	●		●	●	20	5	0°	0°
DGM2-020-6R	R	2	0.2			●	●		●		19.8	5	0°	6°
DGM2-020-6L	L	2	0.2			●	●		●		19.8	5	6°	0°
DGM2-020-8R	R	2	0.2			●	●		●		19.8	5	0°	8°
DGM2-020-8L	L	2	0.2			●	●		●		19.8	5	8	0°
DGM2-020-15R	R	2	0.2			●	●		●		19.8	5	0°	15°
DGM2-020-15L	L	2	0.2			●	●		●		19.8	5	15°	0°
DGM2-002-15R	R	2	0.02				●		●		19.35	5	0°	15°
DGM2-002-15L	L	2	0.02				●		●		19.35	5	15°	0°
DGM3-020	N	3	0.2	●	●	●	●	●	●	●	20	5	0°	0°
DGM3-020-6R	R	3	0.2			●	●		●		19.9	5	0°	6°
DGM3-020-6L	L	3	0.2			●	●		●		19.9	5	6°	0°
DGM3-002-6R	R	3	0.02				●		●		19.45	5	0°	6°
DGM3-002-6L	L	3	0.02				●		●		19.45	5	6°	0°
DGM3-020-15R	R	3	0.2			●	●		●		19.9	5	0°	15°
DGM3-020-15L	L	3	0.2			●	●		●		19.9	5	15°	0°
DGM4-030	N	4	0.3	●	●	●	●	●	●	●	20	5	0°	0°
DGM4-030-4R	R	4	0.3			●	●		●		19.8	5	0°	4°
DGM4-030-4L	L	4	0.3			●	●		●		19.8	5	4°	0°
DGM4-030-15R	R	4	0.3			●	●		●		19.8	5	0°	15°
DGM4-030-15L	L	4	0.3			●	●		●		19.8	5	15°	0°
DGM5-030	N	5	0.3	●	●	●	●	●	●	●	25	5.5	0°	0°
DGM5-030-4R	R	5	0.3			●	●		●		24.9	5.5	0°	4°
DGM6-030	N	6	0.3	●	●	●	●	●	●		25	5.5	0°	0°
DGM8-040	N	8	0.4	●	●	●	●		●		30	6.7	0°	0°

●: Line up

Reference pages: Toolholder → F137 - F143
Standard cutting conditions → F157

SGM

External deep grooving and parting, 1 corner



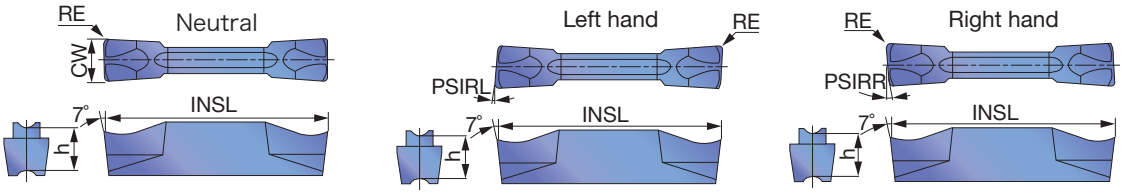
P	Steel	★ ☆ ☆
M	Stainless	★ ☆ ★
K	Cast iron	★ ☆
N	Non-ferrous	
S	Superalloys	★ ☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	Coated			INSL	h	PSIRL	PSIRR
				AH7025	AH725	GH130				
SGM2-020	N	2	0.2	●	●		20	5	0°	0°
SGM2-020-6R	R	2	0.2	●	●	●	20	5	0°	6°
SGM2-020-6L	L	2	0.2	●	●	●	20	5	6°	0°
SGM3-020	N	3	0.2	●	●	●	20	5	0°	0°
SGM3-020-6R	R	3	0.2	●	●	●	20	5	0°	6°
SGM3-020-6L	L	3	0.2	●	●	●	20	5	6°	0°
SGM3-020-15R	R	3	0.2	●	●	●	20	5	0°	15°
SGM3-020-15L	L	3	0.2	●	●	●	20	5	15°	0°
SGM4-030	N	4	0.3	●	●	●	20	5	0°	0°
SGM4-030-4R	R	4	0.3	●	●	●	20	5	0°	4°
SGM4-030-4L	L	4	0.3	●	●	●	20	5	4°	0°
SGM5-030	N	5	0.3	●	●	●	25	5.5	0°	0°
SGM6-030	N	6	0.3	●	●	●	25	5.5	0°	0°

●: Line up

Reference pages: Toolholder → F137 - F143
Standard cutting conditions → F157



P	Steel	★	★	★	☆	☆			★								
M	Stainless	★		★	☆	★											
K	Cast iron	☆		★		☆			☆								
N	Non-ferrous																
S	Superalloys			★	☆												
H	Hard materials																

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	Coated							Cermet						INSL	h	PSIRL	PSIRR
				T9225	T9125	AH7025	AH725	GH130			NS9530									
DGS1.4-016	N	1.4	0.16			●	●	●									16	4.3	0°	0°
DGS2-020	N	2	0.2	●	●	●	●	●	●		●						20	5	0°	0°
DGS2-020-6R	R	2	0.2			●	●	●									19.95	5	0°	6°
DGS2-020-6L	L	2	0.2			●	●	●									19.95	5	6°	0°
DGS2-002-6R	R	2	0.02				●	●									19.5	5	0°	6°
DGS2-002-6L	L	2	0.02				●	●									19.5	5	6°	0°
DGS2-020-15R	R	2	0.2			●	●	●									19.95	5	0°	15°
DGS2-020-15L	L	2	0.2			●	●	●									19.95	5	15°	0°
DGS2-002-15R	R	2	0.02				●	●									19.5	5	0°	15°
DGS2-002-15L	L	2	0.02				●	●									19.5	5	15°	0°
DGS3-020	N	3	0.2	●	●	●	●	●	●		●						20	5	0°	0°
DGS3-020-6R	R	3	0.2			●	●	●									19.9	5	0°	6°
DGS3-020-6L	L	3	0.2			●	●	●									19.9	5	6°	0°
DGS3-002-6R	R	3	0.02				●	●									19.45	5	0°	6°
DGS3-002-6L	L	3	0.02				●	●									19.45	5	6°	0°
DGS3-020-15R	R	3	0.2			●	●	●									19.9	5	0°	15°
DGS3-020-15L	L	3	0.2			●	●	●									19.9	5	15°	0°
DGS3-002-15R	R	3	0.02				●	●									19.45	5	0°	15°
DGS3-002-15L	L	3	0.02				●	●									19.45	5	15°	0°
DGS4-030	N	4	0.3	●	●	●	●	●	●		●						20	5	0°	0°
DGS4-030-4R	R	4	0.3			●	●	●									19.8	5	0°	4°
DGS4-030-4L	L	4	0.3			●	●	●									19.85	5	4°	0°
DGS5-030	N	5	0.3	●	●	●	●	●	●		●						25	5.5	0°	0°
DGS6-030	N	6	0.3	●	●	●	●	●									25	5.5	0°	0°

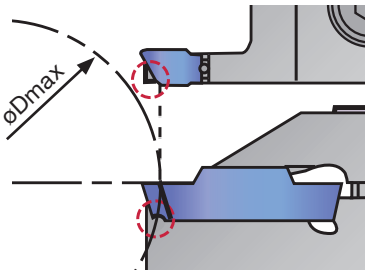
●: Line up

Caution

The tool will interfere with the workpiece when grooving

Designation	øDmax (mm)
DGM2-002-15R/L	28
DGM3-002-15R/L	29
DGM4-030-15R/L	30
SGM3-020-15R/L	103

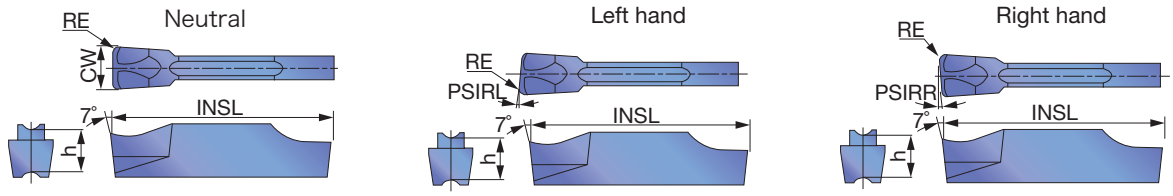
Designation	øDmax (mm)
DGS2-002-15R/L	28
DGS3-002-15R/L	29
SGS3-020-15R/L	103
SGS3-002-15R/L	34



Reference pages: Toolholder → F137 - F143
Standard cutting conditions → F157

SGS

External deep grooving and parting, 1 corner



P	Steel	★ ☆ ☆
M	Stainless	★ ☆ ★
K	Cast iron	★ ☆
N	Non-ferrous	
S	Superalloys	★ ☆
H	Hard materials	

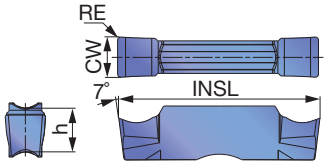
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	Coated			INSL	h	PSIRL	PSIRR
				AH7025	AH725	GH130				
SGS2-020	N	2	0.2	●	●		20	5	0°	0°
SGS2-020-6R	R	2	0.2	●	●	●	20	5	0°	6°
SGS2-020-6L	L	2	0.2	●	●	●	20	5	6°	0°
SGS2-020-15R	R	2	0.2	●	●	●	20	5	0°	15°
SGS2-020-15L	L	2	0.2	●	●	●	20	5	15°	0°
SGS3-020	N	3	0.2	●	●	●	20	5	0°	0°
SGS3-020-6R	R	3	0.2	●	●	●	20	5	0°	6°
SGS3-020-6L	L	3	0.2	●	●	●	20	5	6°	0°
SGS3-002-6R	R	3	0.02		●	●	19.8	5	0°	6°
SGS3-002-6L	L	3	0.02		●	●	19.8	5	6°	0°
SGS3-020-15R	R	3	0.2	●	●	●	20	5	0°	15°
SGS3-020-15L	L	3	0.2	●	●	●	20	5	15°	0°
SGS3-002-15R	R	3	0.02		●	●	19.8	5	0°	15°
SGS3-002-15L	L	3	0.02		●	●	19.8	5	15°	0°
SGS4-030	N	4	0.3	●	●	●	20	5	0°	0°
SGS5-030	N	5	0.3	●	●	●	25	5.5	0°	0°
SGS6-030	N	6	0.3	●	●	●	25	5.5	0°	0°

●: Line up

DGG

External grooving (for high precision)



P	Steel	★ ★
M	Stainless	★
K	Cast iron	★ ☆ ☆
N	Non-ferrous	★
S	Superalloys	★ ☆
H	Hard materials	

★ : First choice
☆ : Second choice

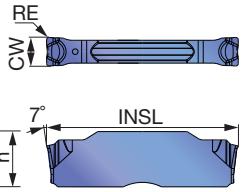
Designation	CW±0.02	RE	Coated	Cermet	Uncoated	INSL	h
			AH7025	NS9530	KS05F		
DGG200-020	2	0.2	●	●		20	5
DGG300-020	3	0.2	●	●	●	20	5
DGG400-040	4	0.4	●	●	●	20	5
DGG500-040	5	0.4	●	●	●	25	5.5
DGG600-040	6	0.4	●	●	●	25	5.5

●: Line up

Reference pages: Toolholder → F137 - F143
Standard cutting conditions → F157

DGL

External grooving and parting



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

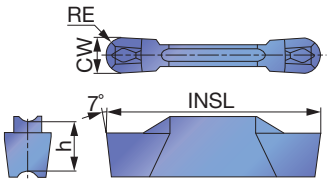
★ : First choice
☆ : Second choice

Designation	CW±0.05	RE	Coated	INSL	h
			AH7025		
DGL3-025	3	0.25	●	20	5
DGL4-030	4	0.3	●	20	5
DGL5-030	5	0.3	●	25	5.5
DGL6-080	6	0.8	●	25	5.5

●: Line up

DTR

Profiling and undercutting (for high precision)



P	Steel	★	★	★	☆		☆			★						
M	Stainless	★		★	☆		★									
K	Cast iron	☆		★		☆	☆			☆						
N	Non-ferrous															
S	Superalloys			★	☆	★										
H	Hard materials															

★ : First choice
☆ : Second choice

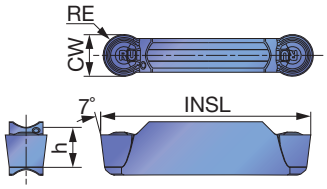
Designation	CW±0.02	RE	Coated							Cermet					INSL	h
			T9225	T9125	AH7025	AH725	AH905	GH130		NS9530						
DTR300-150	3	1.5	●	●	●	●		●		●					20	5
DTR400-200	4	2	●	●	●	●		●		●					20	5
DTR478-239	4.78	2.39	●	●	●	●		●		●					25	5.5
DTR500-250	5	2.5	●	●	●	●		●		●					25	5.5
DTR600-300	6	3	●	●	●	●		●							25	5.5

●: Line up

Reference pages: Toolholder → F137 - F143
Standard cutting conditions → F157

DTR

Profiling and undercutting



P	Steel	★	★	★	☆		☆			★					
M	Stainless	★		★	☆		★								
K	Cast iron	☆		★		☆	☆			☆					
N	Non-ferrous														
S	Superalloys			★	☆	★									
H	Hard materials														

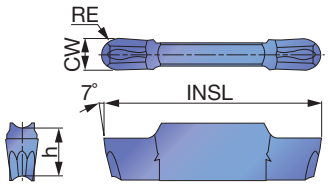
★ : First choice
☆ : Second choice

Designation	CW±0.05	RE	Coated							Cermet						INSL	h
			T9225	T9125	AH7025	AH725	AH905	GH130		NS9530							
DTR3-150	3	1.5	●	●	●	●	●	●		●						20	5
DTR4-200	4	2	●	●	●	●	●	●		●						20	5
DTR5-250	5	2.5	●	●	●	●	●	●		●						25	5.5
DTR6-300	6	3	●	●	●	●		●								25	5.5
DTR8-400	8	4	●	●	●	●		●								30	6.7

●: Line up

DTIU

Profiling and undercutting (for high precision)



P	Steel	★	☆	☆											
M	Stainless	★	☆	★											
K	Cast iron	★		☆											
N	Non-ferrous														
S	Superalloys	★	☆												
H	Hard materials														

★ : First choice
☆ : Second choice

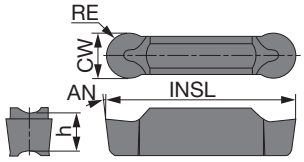
Designation	CW±0.02	RE	Coated													INSL	h
			AH7025	AH725	GH130												
DTIU300-150	3	1.5	●	●												20	5
DTIU400-200	4	2	●	●	●											20	5
DTIU500-250	5	2.5	●	●	●											25	5.5
DTIU600-300	6	3	●	●	●											25	5.5

●: Line up

Reference pages: Toolholder → F137 - F143
Standard cutting conditions → F157

DTA

Aluminium wheel machining (for high precision)



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

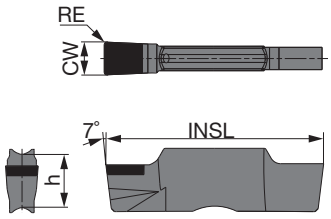
★ : First choice
☆ : Second choice

Designation	CW±0.02	RE	Uncoated	INSL	h	AN
			TH10			
DTA600-300	6	3	●	25	5.5	7
DTA800-400	8	4	●	30	6.7	10

●: Line up

SGN

External grooving of hardened steel



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	CW±0.025	RE	CBN	INSL	h
			BX360		
SGN200-020	2	0.2	●	20	5
SGN300-020	3	0.2	●	20	5
SGN400-020	4	0.2	●	20	5

●: Line up

Reference pages: Toolholder → F137 - F143
Standard cutting conditions → F157

Face grooving and turning

DTX type (2 corners)

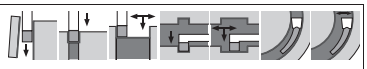


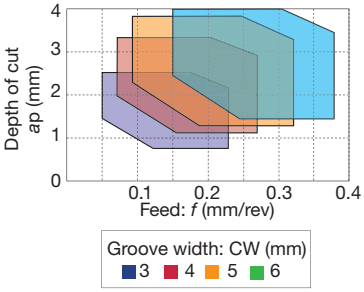
F143 page

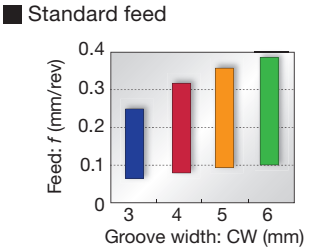
Multi-functional type

Well balanced sharpness and strength
Molded and ground insert available
Insert

CW = 3 - 6 mm







DTF type (2 corners)

First choice



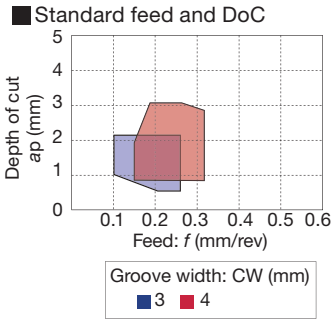
F144 page

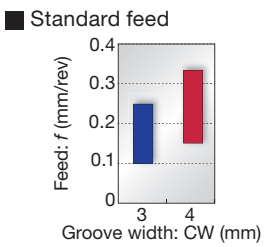
1st choice for face grooving

Unique chipbreaker makes chips shorter
Molded and ground insert available

CW = 3 - 4 mm







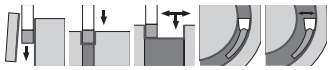
DTM type (2 corners)

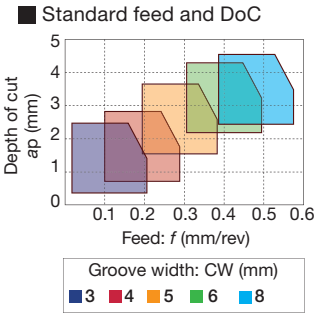


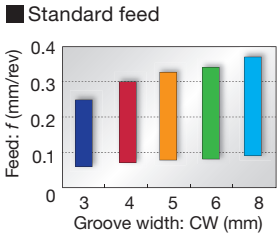
F144 page

For general purpose

1st choice for grooving and turning
Suitable for light to medium cutting
Grooving and turning Suitable for light to medium cutting
Excellent chip control in machining steel, alloy steel, stainless steel, and heat-resistant alloy







DTE type (2 corners)



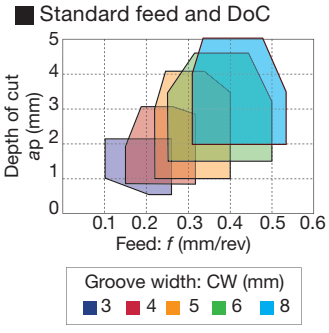
F145 page

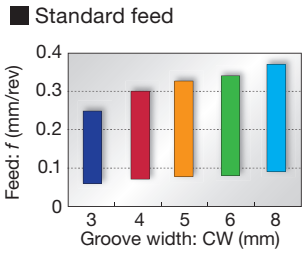
For general purpose

Unique chipbreaker makes chips shorter
Molded and ground inserts available

CW = 3 - 8 mm

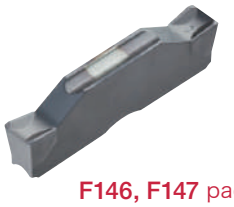






Grooving

DGM type (2 corners) SGM type (1 corner)

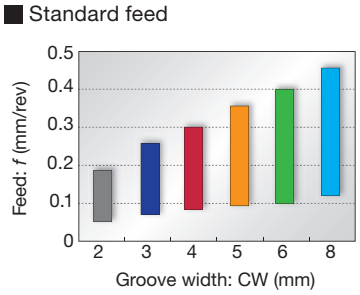


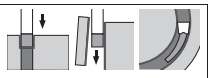
F146, F147 page

1st choice for external grooving and parting

Smooth chip evacuation
Well-designed edge with high strength
Handed insert available

CW = 2 - 8 mm





DGS type (2 corners) SGS type (1 corner)

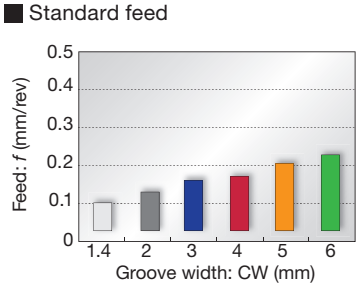


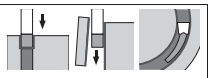
F148, F149 page

Lower cutting force and superior sharpness

Unique-designed edge and chipbreaker
Handed insert available
Handed insert available

CW = 1.4 - 6 mm





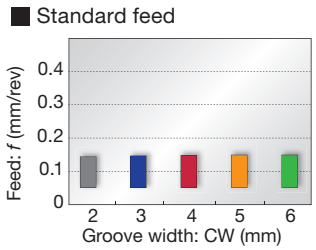
DGG type (2 corners)

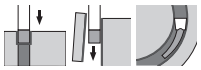


F149 page

For non-ferrous materials and titanium

Chipbreaker with low cutting force
Sharp cutting edge that prevents vibration and delivers fine surface finish





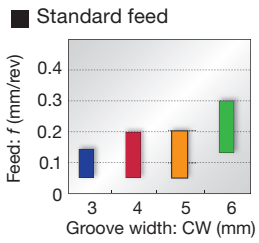
DGL type (2 corners)

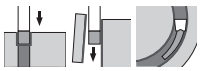


F150 page

1st choice for mild steel

Chipbreaker with excellent chip control at low feed
Chipbreaker
Suitable for mild steel that often gives difficulties in chip control





Profiling and undercutting

DTR type (2 corners)

Molded



Ground



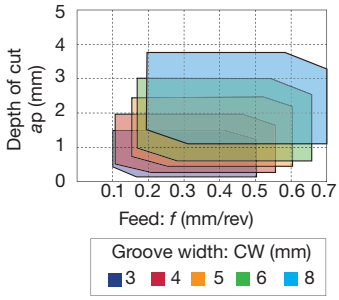
F150, F151 page

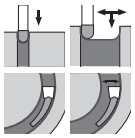
Full radius type

Excellent chip control
Molded and ground inserts available

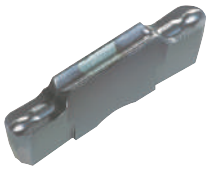
CW = 3 - 8 mm

Standard feed and DoC





DTIU type (2 corners)



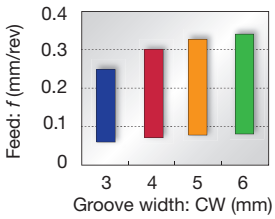
F151 page

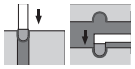
Full radius type

Excellent chip control

CW = 3 - 6 mm

Standard feed and DoC





Aluminium wheel machining

DTA type (2 corners)



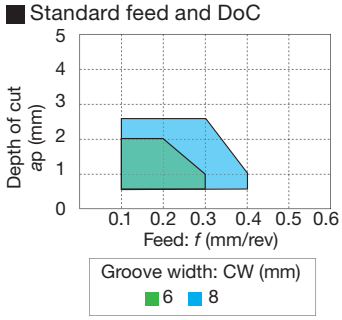
F152 page

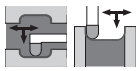
Full radius type

Excellent chip control
For aluminium wheel profiling
Ground insert

CW = 6 - 8 mm

Standard feed and DoC





External grooving of hardened steel

SGN-CBN type (1 corner)



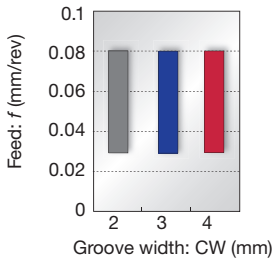
F152 page

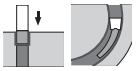
For hardened steel cutting

Optimum cutting edge shape for grooving of hardened steels
High tolerance width for finishing

CW = 2 - 4 mm
(Tolerance: ±0.025 mm)

Standard feed





AH7025 Cutting performance

First choice grade for grooving application
New AH7025 grade - Drastically improved reliability with world's first coating technology

Tool life comparison in grooving

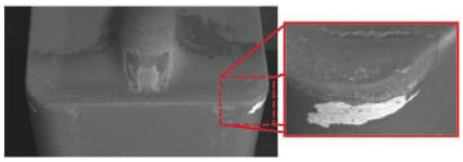
Alloy steel (SCM440) **P**

AH7025



No. of grooving: 60 pcs

Conventional grade



No. of grooving: 30 pcs

Insert : DTE3-040 AH7025
Cutting speed : V_c = 150 m/min
Feed : f = 0.17 mm/rev
Groove depth : 17 mm
Machining : External grooving
Coolant : Wet

Allows stable machining without peeling off, evenafter twice the cutting time versus the conventional grade.
→ The combination of Nano-multi-layered AlTiN Coating with high Al content and tough substrate provides highly efficient machining in various grooving operations

Grade

AH7025 P M S

- First recommended grade for general purpose
- New PVD coating with high Al content provides excellent adhesion strength
- Improved wear and chipping resistance

AH725 P M S

- General purpose
- Newly developed coating with well controlled rystal structure and fracture resistance
- Improved adhesion strength

T515 K

- First recommended grade for cast iron
- Exellent wear resistance in high-speed machining

T9225 P

- Suitable for steel machining at high speed
- New CVD coating and substrate deliver an outstanding balance
- Balance of wear and chipping resistance

T9125 P

- Suitable for steel machining at high speed
- Balance of wear and chipping resistance

NS9530 P

- Advanced cermet for finish cutting
- Innovative grade with incredible fracture and high wear resistance

GH130 P M K

- Recommended for interrupted machining
- TiCNO PVD coating layer with high wear resistance
- High hardness

AH905 S

- Remarkable for machining of heat resistant alloy
- Exclusive coating layer improves adhesion strength and wear resistance

KS05F N S

- Recommended for non-ferrous materials
- For titanium

TH10 N

- Recommended for non-ferrous materials

BX360 H

- Suitable for hardened steel machining
- Ideal balance of wear and chipping resistance due to the optimum CBN content and grain size

STANDARD CUTTING CONDITIONS

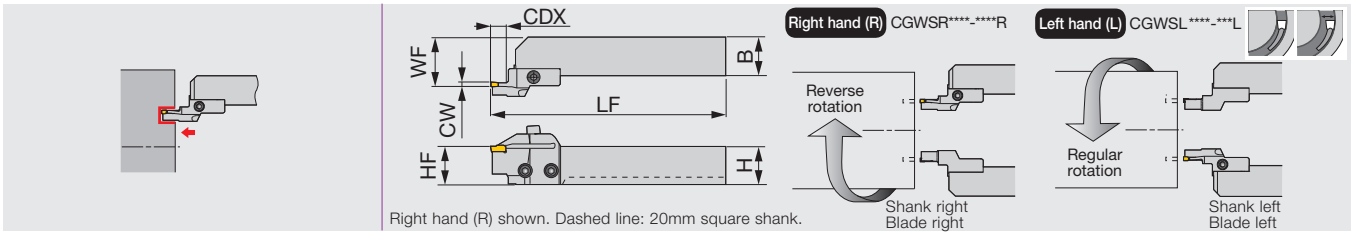
ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (m/min)
P	Steel (S45C, SCM435, etc.)	< 300 HB	1st choice	AH7025, AH725	50 - 180
		< 300 HB	Wear resistance	T9225	80 - 300
		< 300 HB	Wear resistance	T9125	80 - 200
		< 300 HB	Fracture resistance	GH130	50 - 120
		< 300 HB	Suface quality	NS9530	80 - 220
M	Stainless steels (SUS303, SUS304, etc.)	< 200 HB	1st choice	AH7025, AH725	50 - 120
		< 200 HB	Fracture resistance	GH130	50 - 120
K	Grey cast irons (FC250, etc.)	-	1st choice	T515	50 - 180
		-	Fracture resistance	GH130	50 - 180
	Ductile cast irons (FCD450, etc.)	-	1st choice	T515	50 - 120
		-	Fracture resistance	GH130	50 - 120
N	Aluminium alloys (Si < 12%)	-	1st choice	TH10	100 - 500
		-	1st choice	KS05F	100 - 600
S	Superalloys (Inconel 718, etc.)	< HRC 40	1st choice	AH7025	20 - 60
		< HRC 40	Wear resistance	AH905	20 - 80
	Titanium alloys (Ti-6Al-4V, etc.)	< HRC 40	1st choice	AH905	20 - 80
		< HRC 40	Fracture resistance	AH7025, AH725	20 - 80
		< HRC 40	Suface quality	KS05F	20 - 60
H	Hardened steel (SCM435, SUJ2, etc.)	> HRC 50	1st choice	BX360	80 - 150

*Please see the page **F153 - F155** for feed: *f* (mm/rev).

MY-T SERIES

#S/D##R/L+CGWSR/L

Blade for face grooving and turning toolholders (CGWSR/L-#S/D, CGWTR/L-#S/D)



Right hand (R) shown. Dashed line: 20mm square shank.

Designation	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert	Shank	Torque*
30S3040R/L	3	30	40	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
30S4050R/L	3	40	50	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
30S5065R/L	3	50	65	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
30S6590R/L	3	65	90	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
30S90150R/L	3	90	150	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
30S150500R/L	3	150	500	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
40S3545R/L	4	35	45	14	20/25	20/25	152.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40S4555R/L	4	45	55	14	20/25	20/25	152.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40S5580R/L	4	55	80	14	20/25	20/25	152.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40S80140R/L	4	80	140	14	20/25	20/25	152.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40S140500R/L	4	140	500	14	20/25	20/25	152.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40D3545R/L	4	35	45	22	20/25	20/25	160.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40D4555R/L	4	45	55	22	20/25	20/25	160.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40D5580R/L	4	55	80	22	20/25	20/25	160.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40D80140R/L	4	80	140	22	20/25	20/25	160.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40D140500R/L	4	140	500	22	20/25	20/25	160.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
50S3545R/L	5	35	45	14	20/25	20/25	152.5	20/25	27/32	G*50	CGWSR/L...	5
50S4555R/L	5	45	55	14	20/25	20/25	152.5	20/25	27/32	G*50	CGWSR/L...	5
50S5575R/L	5	55	75	14	20/25	20/25	152.5	20/25	27/32	G*50	CGWSR/L...	5
50S75130R/L	5	75	130	14	20/25	20/25	152.5	20/25	27/32	G*50	CGWSR/L...	5
50S130500R/L	5	130	500	14	20/25	20/25	152.5	20/25	27/32	G*50	CGWSR/L...	5
50D3545R/L	5	35	45	22	20/25	20/25	160.5	20/25	27/32	G*50	CGWSR/L...	5
50D4555R/L	5	45	55	22	20/25	20/25	160.5	20/25	27/32	G*50	CGWSR/L...	5
50D5575R/L	5	55	75	22	20/25	20/25	160.5	20/25	27/32	G*50	CGWSR/L...	5
50D75130R/L	5	75	130	22	20/25	20/25	160.5	20/25	27/32	G*50	CGWSR/L...	5
50D130500R/L	5	130	500	22	20/25	20/25	160.5	20/25	27/32	G*50	CGWSR/L...	5

Toolholders are in stock with the designations of: a set of shank and blade; a shank; a blade. Combining the designations of a blade and a shank will make the designation of a set. Please check the stock and place an order with the designation of a set or a shank+a blade.
Note: Use right-hand blades (CGWSR～) with right-hand shanks ～(R); and left-hand blades (CGWSL～) with left-hand shanks (～L).
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

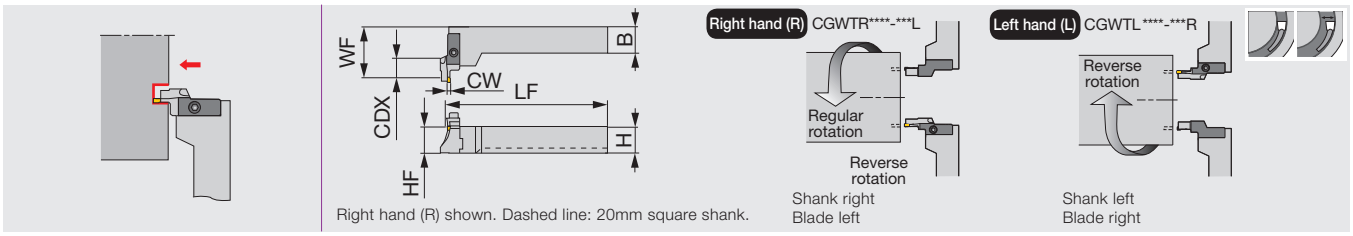
Designation	Clamping screw	Blade screw	Wrench
30S...	CHHM5-18	CSHB-6	P-4
40D...	CM5X0.8X16	CSHB-6	P-4
50S...	CHHM5-18	CSHB-6	P-4
50D...	CM5X0.8X16	CSHB-6	P-4

Reference pages: Inserts → F161 - F165
Standard cutting conditions → F165

MY-T SERIES

#S/D##R/L+CGWTR/L

Blade for face grooving and turning toolholders (CGWSR/L-#S/D, CGWTR/L-#S/D)



Right hand (R) shown. Dashed line: 20mm square shank.

Shank right
Blade left

Shank left
Blade right

Designation	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert	Shank	Torque*
30S3040R/L	3	30	40	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
30S4050R/L	3	40	50	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
30S5065R/L	3	50	65	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
30S6590R/L	3	65	90	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
30S90150R/L	3	90	150	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
30S150500R/L	3	150	500	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
40S3545R/L	4	35	45	14	20/25	20/25	150	20/25	52.25	G*40, GE40-AL	CGWTL/R...	5
40S4555R/L	4	45	55	14	20/25	20/25	150	20/25	52.25	G*40, GE40-AL	CGWTL/R...	5
40S5580R/L	4	55	80	14	20/25	20/25	150	20/25	52.25	G*40, GE40-AL	CGWTL/R...	5
40S80140R/L	4	80	140	14	20/25	20/25	150	20/25	52.25	G*40, GE40-AL	CGWTL/R...	5
40S140500R/L	4	140	500	14	20/25	20/25	150	20/25	52.25	G*40, GE40-AL	CGWTL/R...	5
40D3545R/L	4	35	45	22	20/25	20/25	150	20/25	60.25	G*40, GE40-AL	CGWTL/R...	5
40D4555R/L	4	45	55	22	20/25	20/25	150	20/25	60.25	G*40, GE40-AL	CGWTL/R...	5
40D5580R/L	4	55	80	22	20/25	20/25	150	20/25	60.25	G*40, GE40-AL	CGWTL/R...	5
40D80140R/L	4	80	140	22	20/25	20/25	150	20/25	60.25	G*40, GE40-AL	CGWTL/R...	5
40D140500R/L	4	140	500	22	20/25	20/25	150	20/25	60.25	G*40, GE40-AL	CGWTL/R...	5
50S3545R/L	5	35	45	14	20/25	20/25	150	20/25	52.25	G*50	CGWTL/R...	5
50S4555R/L	5	45	55	14	20/25	20/25	150	20/25	52.25	G*50	CGWTL/R...	5
50S5575R/L	5	55	75	14	20/25	20/25	150	20/25	52.25	G*50	CGWTL/R...	5
50S75130R/L	5	75	130	14	20/25	20/25	150	20/25	52.25	G*50	CGWTL/R...	5
50S130500R/L	5	130	500	14	20/25	20/25	150	20/25	52.25	G*50	CGWTL/R...	5
50D3545R/L	5	35	45	22	20/25	20/25	150	20/25	60.25	G*50	CGWTL/R...	5
50D4555R/L	5	45	55	22	20/25	20/25	150	20/25	60.25	G*50	CGWTL/R...	5
50D5575R/L	5	55	75	22	20/25	20/25	150	20/25	60.25	G*50	CGWTL/R...	5
50D75130R/L	5	75	130	22	20/25	20/25	150	20/25	60.25	G*50	CGWTL/R...	5
50D130500R/L	5	130	500	22	20/25	20/25	150	20/25	60.25	G*50	CGWTL/R...	5

Toolholders are in stock with the designations of: a set of shank and blade; a shank; a blade. Combining the designations of a blade and a shank will make the designation of a set.
Please check the stock and place an order with the designation of a set or a shank+a blade.
Use right-hand shanks (CGWTR～) with left-hand blades (～R); and left-hand shanks (CGWTL～) with right-hand blades (～L).
*Torque: Recommended clamping torque (N·m)

SPARE PARTS





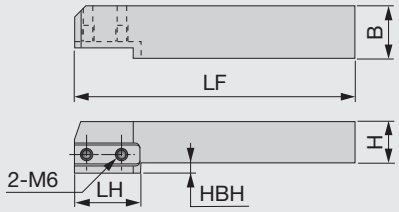
Designation	Clamping screw	Blade screw	Wrench
30S...	CHHM5-18	CSHB-6	P-4
40D...	CM5X0.8X16	CSHB-6	P-4
50S...	CHHM5-18	CSHB-6	P-4
50D...	CM5X0.8X16	CSHB-6	P-4

Reference pages: Inserts → F161 - F165
Standard cutting conditions → F165

MY-T SERIES

CGWSR/L

Shank for CGWSR/L-WG, -WG-L, -G, -CGD, -FL-G/TP, and -#S/D toolholders



Right hand (R) shown.

Designation	H	B	LF	LH	HBH
CGWSR/L2020	20	20	137	32.5	5
CGWSR/L2525	25	25	137	-	-

SPARE PARTS

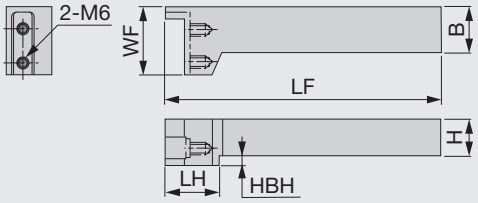


Designation	Blade screw
CGWSR/L...	CSHB-6

MY-T SERIES

CGWTR/L

Shank for CGWSR/L-WG, -WG-L, -G, -CGD, -FL-G/TP, and #S/D toolholders



Right hand (R) shown.

Designation	H	B	LF	LH	WF	HBH
CGWTR/L2020	20	20	150	30.5	37	5
CGWTR/L2525	25	25	150	-	37	-

SPARE PARTS



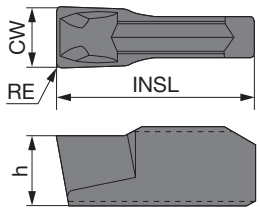
Designation	Blade screw
CGWTR/L...	CSHB-6

Reference pages: Inserts → F161 - F165
Standard cutting conditions → F165

INSERT

GE

For general grooving



P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous										★					
S	Superalloys			☆												
H	Hard materials															

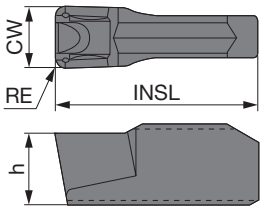
★ : First choice
☆ : Second choice

Designation	HAND	CW$^{+0.1}_{0}$	RE	Coated					Cermet		Uncoated				INSL	h
				T9225	T9125	AH120	GH730		NS9530		KS05F					
GE20	N	2	0.2			●	●		●						10	3.5
GE30	N	3	0.2	●	●	●	●		●						10	3.5
GE40	N	4	0.2	●	●	●	●		●						10	4
GE50	N	5	0.2	●	●	●	●		●						12	4.5

●: Line up

GT

For turning



P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous															
S	Superalloys			☆												
H	Hard materials															

★ : First choice
☆ : Second choice

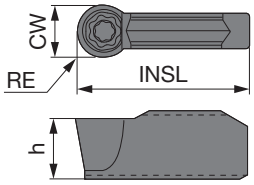
Designation	CW$^{+0.1}_{0}$	RE	Coated					Cermet							INSL	h
			T9225	T9125	AH120	GH730		NS9530								
GT30	3	0.4			●	●		●							10	3.5
GT40	4	0.4			●	●		●							10	4
GT50	5	0.4	●	●	●	●		●							12	4.5

●: Line up

Reference pages: Toolholder → F158 - F160, Standard cutting conditions → F165

GR

For profiling (full radius)



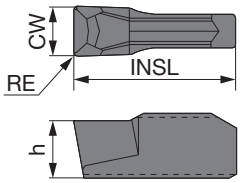
P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous															
S	Superalloys			☆												
H	Hard materials															

★ : First choice
☆ : Second choice

Designation	CW$^{+0.1}_{0}$	RE	Coated					Cermet						INSL	h
			T9225	T9125	AH120	GH730		NS9530							
GR30	3	1.5			●	●		●						10	3.5
GR40	4	2	●	●	●	●		●						10	4
GR50	5	2.5	●	●	●	●		●						12	4.5

●: Line up

GF



P	Steel	★			★											
M	Stainless	★														
K	Cast iron	☆			☆											
N	Non-ferrous															
S	Superalloys															
H	Hard materials															

★ : First choice
☆ : Second choice

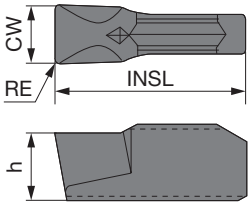
Designation	CW$^{+0.1}_{0}$	RE	Coated			Cermet								INSL	h
			GH730			NS9530									
GF30	3	0.2	●			●								10	3.5
GF40	4	0.2	●			●								10	4
GF50	5	0.2	●			●								12	4.5

●: Line up

External
Internal
Grooving
Parting
Others

Reference pages: Toolholder → F158 - F160, Standard cutting conditions → F165

GN



P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

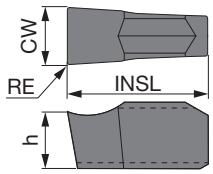
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$	RE	Coated	INSL	h
			GH730		
GN30	3	0.2	●	10	3.5
GN40	4	0.2	●	10	4
GN50	5	0.2	●	12	4.5

●: Line up

GE-AL

For aluminium and non-ferrous metal



P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous										★					
S	Superalloys			☆												
H	Hard materials															

★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.1}_{0}$	RE	Coated				Cermet			Uncoated					INSL	h
				T9225	T9125	AH120	GH730			NS9530			KS05F				
GE20-AL	N	2	0.2													10	3.5
GE30-AL	N	3	0.2										●			10	3.5
GE40-AL	N	4	0.2										●			10	4

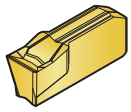
●: Line up

Reference pages: Toolholder → F158 - F160, Standard cutting conditions → F165

1 corner insert

Face grooving

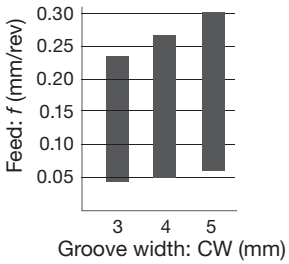
GF

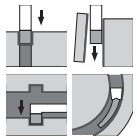


F162 page

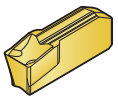
1st choice for face grooving
Low cutting force and good chip control for face grooving

CW = 3 - 5 mm





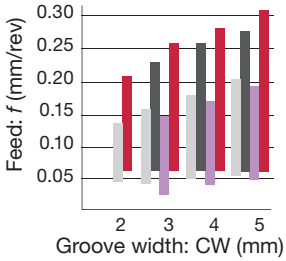
GE

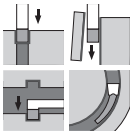


F161 page

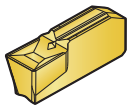
1st choice for external grooving and parting
Excellent chip control for grooving

CW = 2 - 5 mm





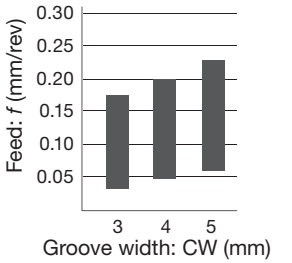
GN

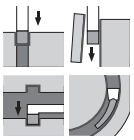


F163 page

1st choice for internal grooving
Low cutting force and good chip control
Good chip control

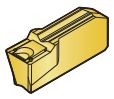
CW = 3 - 5 mm





External grooving and turning

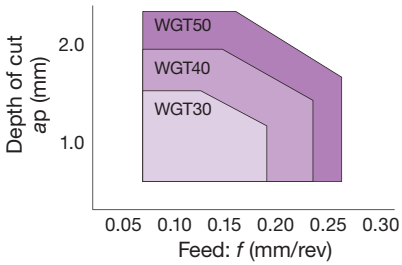
GT

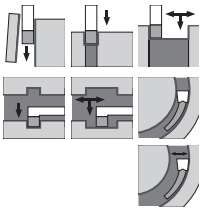


F161 page

1st choice for turning
Low cutting force and good chip control for traversing

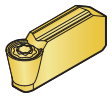
CW = 3 - 5 mm





For profiling

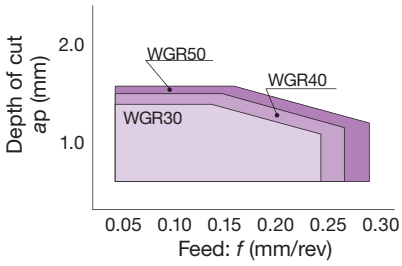
GR

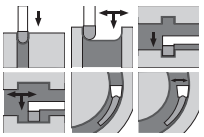


F162 page

Full radius type
Low cutting force and good chip control for profiling

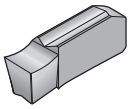
CW = 3 - 5 mm





For aluminium and non-ferrous metal

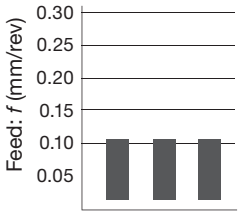
GE-AL

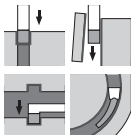


F163 page

Reduce cutting force and welding due to sharp chipbreaker

CW = 2 - 4 mm





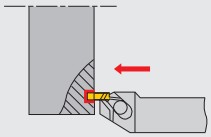
STANDARD CUTTING CONDITIONS

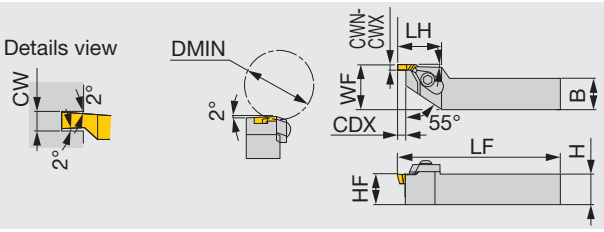
ISO	Workpiece material	Grade	Cutting speed Vc (m/min)
P	Low carbon steel (~ HB150)	T9225	80 - 300
		T9125	80 - 200
		NS9530	100 - 200
		GH730	50 - 180
	Medium carbon steel, Alloy steel (HB150 ~ 250)	T9125	80 - 180
		NS9530	80 - 180
		GH730	50 - 150
	High carbon steel, Alloy steel (HB250 ~)	T9125	80 - 150
		NS9530	80 - 150
		GH730	50 - 120
M	Stainless steels	T9125	80 - 150
		GH730	50 - 120
K	Grey iron, Ductile cast iron	T9125	80 - 200
		GH730	50 - 180
N	Aluminium alloy, Non-ferrous metal	KS05F	200 - 300

1st choice for face grooving

Operation	Feed: *f* (mm/rev) Groove width		
	3	4	5
Face grooving (GE**)	0.06 - 0.22	0.06 - 0.24	0.07 - 0.26
Face grooving (GF**)	0.04 - 0.25	0.05 ~ 0.26	0.05 - 0.30
Traversing (GT**)	Depth of cut *a*p = 0.5 - 1.5 *f* = 0.06 - 0.2	Depth of cut *a*p = 0.5 - 2 *f* = 0.06 - 0.25	Depth of cut *a*p = 0.5 - 2.5 *f* = 0.06 - 0.27
Traversing (GR**)	Depth of cut *a*p = 0.5 - 1.4 *f* = 0.05 - 0.25	Depth of cut *a*p = 0.5 - 1.5 *f* = 0.05 - 0.26	Depth of cut *a*p = 0.5 - 1.6 *f* = 0.05 - 0.3
Grooving for Aluminium alloys (GE**-AL)	0.03 - 0.1	0.03 - 0.1	-

For diameter compensation values in traversing, F091 page
When vibration occurs in turning, please use the lower limit value in the above table.





Right hand (R) shown.

Designation	CWN	CWX	DMIN	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
GX-2525R/LF	1	4.5	55	1.5 - 6	25	25	150	35	25	32	XNL/R63...	5

Use right-hand toolholders (GX-...RF) with left-hand inserts (XNL); and left-hand toolholders (GX-...LF)) with right-hand inserts (GBR).
*Torque: Recommended clamping torque (N·m)

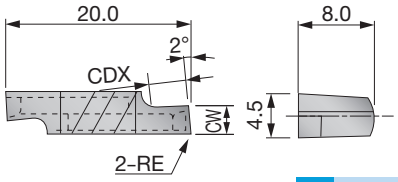
SPARE PARTS



Designation	Clamp set	Clamping screw	Shim	Shim screw	Wrench
GX-2525RF	CP81A	RT-1	SL-3R	BHM4-8	P-4
GX-2525LF	CP81A	RT-1	SL-3L	BHM4-8	P-4

INSERT

XNR/L



Left hand (L) shown.

P	Steel	★			★													
M	Stainless																	
K	Cast iron	☆			☆													
N	Non-ferrous																	
S	Superalloys																	
H	Hard materials																	

★ : First choice
☆ : Second choice

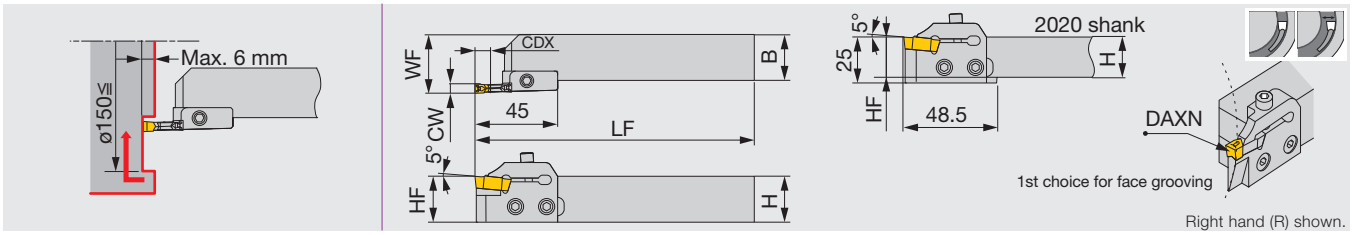
Designation	HAND	CW±0.05	RE	Cermet NS9530	Carbide TH10	CDX
XNR6310-02	R	1	0.2	●	●	1.5
XNL6310-02	L	1	0.2	●	●	1.5
XNR6315-02	R	1.5	0.2	●	●	2.3
XNL6315-02	L	1.5	0.2	●	●	2.3
XNR6320-02	R	2	0.2	●	●	3
XNL6320-02	L	2	0.2	●	●	3
XNR6325-02	R	2.5	0.2	●	●	3.8
XNL6325-02	L	2.5	0.2	●	●	3.8
XNR6330-02	R	3	0.2	●	●	4.5
XNL6330-02	L	3	0.2	●	●	4.5
XNR6335-02	R	3.5	0.2	●	●	5.3
XNL6335-02	L	3.5	0.2	●	●	5.3
XNR6340-02	R	4	0.2	●	●	6
XNL6340-02	L	4	0.2	●	●	6
XNR6345-02	R	4.5	0.2	●	●	6
XNL6345-02	L	4.5	0.2	●	●	6

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed: *f* (mm/rev)		
				CW < 2 mm	CW = 2 ~ 4 mm	CW > 4 mm
P	carbon steels	NS9530	80 - 200	0.05 - 0.1	0.08 - 0.2	0.08 - 0.25
K	Cast irons, Light alloys	TH10	60 - 150	0.05 - 0.1	0.08 - 0.2	0.08 - 0.25

MY-T SERIES
CGWSR/L-FLR/L5TP
Face grooving and turning toolholder



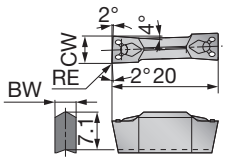
Designation	CW	DAXN	CDX	H	B	LF	HF	WF	Insert	Shank	Blade	Torque*
CGWSR/L2020-FLR/L5TP	5	150	6	20	20	152	20	27	FLEX50R/L	CGWSR/L2020	FLR/L5TP	5
CGWSR/L2525-FLR/L5TP	5	150	6	25	25	152	25	32	FLEX50R/L	CGWSR/L2525	FLR/L5TP	5

Toolholders are in stock with the designations of: a set of shank and blade; a shank; a blade. Combining the designations of a blade and a shank will make the designation of a set.
Please check the stock and place an order with the designation of a set or a shank+a blade.
Note: Use right-hand blades (CCWSR...) with right-hand shanks (FLR5TP); and left-hand blades (CGWSL...) with left-hand shanks (FLL5TP).
*Torque: Recommended clamping torque (N·m)

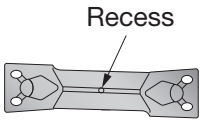
SPARE PARTS

Designation	Clamping screw	Blade screw	Wrench
CGWSR/L****-FLR/L5TP	CHHM5-18	CSHB-6	P-4

INSERT
FLEX(R/L)



Right hand (R) shown.



To distinguish the insert hands, the V-shape surface (top surface) of a left-hand insert has a recess. (not of a right-hand insert)

P	Steel	★	☆			★			★							
M	Stainless	★							★							
K	Cast iron	☆				☆										
N	Non-ferrous															
S	Superalloys															
H	Hard materials															

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	Coated				Carbide			Uncoated							BW
				T9225	T9125			NS9530			UX30							
FLEX30R	R	3	0.4					●										2.2
FLEX30L	L	3	0.4					●										2.2
FLEX40R	R	4	0.4					●										3.1
FLEX40L	L	4	0.4					●										3.1
FLEX50R	R	5	0.4	●	●			●										4
FLEX50L	L	5	0.4	●	●			●			●							4

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed: *f* (mm/rev) Grooving	Feed: *f* (mm/rev) Turning
P	carbon steels	T9225	80 - 300	0.05 - 0.25	0.1 - 0.3
		T9125	80 - 200	0.05 - 0.25	0.1 - 0.3
		NS9530	80 - 200	0.05 - 0.25	0.1 - 0.3
		UX30	60 - 150	0.05 - 0.25	0.1 - 0.3

External deep grooving and parting blade

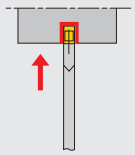


Fig.1

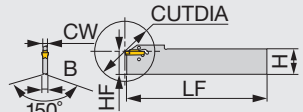


Fig.2

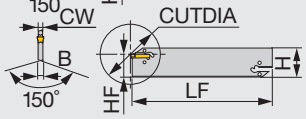
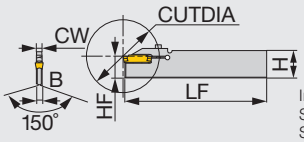


Fig.3





Insert:
Seat size 1:DGS1.4-016
Seat size 2-6:SGM, SGS, DGM, DGS, DTX, DGG
Seat size 8:DGM8-040

Designation	CW	Seat size	CUTDIA	H	B	LF	HF	Fig.	Torque*
CGP26-1.4S	1.4	1	26	26	1	150	21.4	1	-
CGP32-1.4D	1.4	1	26	32	1	150	24.8	2	-
CGP26-2S	2	2	40	26	1.8	150	21.4	1	-
CGP32-2D	2	2	50	32	1.8	150	24.8	2	-
CGP26-3S	3	3	50	26	2.4	150	21.4	1	-
CGP32-3D	3	3	100	32	2.4	150	24.8	2	-
CGP26-4S	4	4	80	26	3.2	150	21.4	1	-
CGP32-4D	4	4	100	32	3.2	150	24.9	2	-
CGP45-4D	4	4	120	45	3.2	150	38.1	2	-
CGP32-5D	5	5	120	32	4	150	24.9	2	-
CGP32-6D	6	6	120	32	5.2	150	24.9	2	-
CGP32-8S-CL	8	8	80	32	6.2	150	24.9	3	3

When depth is deeper than (insert length - 1.5mm), 1 corner type is recommended.
• CUTDIA Max. parting dia
*Torque: Recommended clamping torque (N·m)

SPARE PARTS



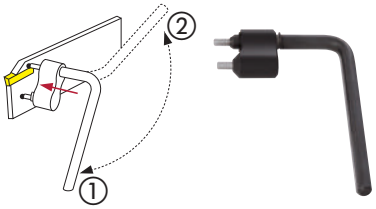


Designation	Clamping screw	Wrench	Wrench (Optional)
CGP**-1.4*	-	-	CRW23
CGP**-2/3/4/5/6	-	-	CRW33
CGP32-8S-CL	CM4X0.7X20-M0-A	P-3	-

Caution

Newly developed clamp

Insert is clamped by the elastic deformation of upper jaw.
Low clamping stress increases the stability and tool life.

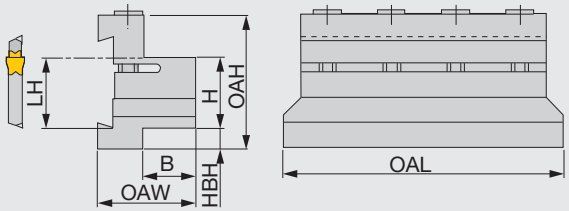


①→②: unclamp
②→①: clamp

Reference pages: Inserts → F170 - F182
Standard cutting conditions → F183
Tool block → F169

TUNGCUT
CTBF

Tool block for CGP blades (fixed clamp)



Right hand (R) shown.

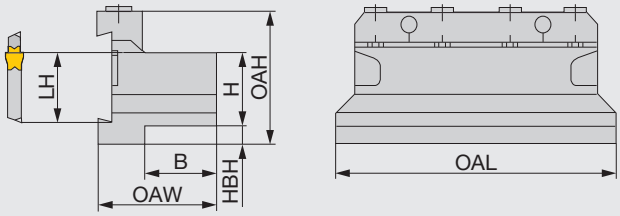
Designation	H	B	OAL	LH	HBH	OAH	OAW	Blade (Optional)
CTBF25-45	25	22	110	38.1	25	66	40	CGP45...
CTBF32-45	32	28	120	38.1	18	66	45	CGP45...

SPARE PARTS

Designation	Clamping screw	Wrench
CTBF...	CM6X1.0X40-A	P-5

TUNGCUT
CTBU

Tool block for CGP and EGP blades



Right hand (R) shown.

Designation	H	B	OAL	LH	HBH	OAH	OAW	Blade (Optional)
CTBU20-26	20	21	86	21.4	9	43	38	CGP26...
CTBU25-26	25	23	110	21.4	5	45	43	CGP26...
CTBU20-32	20	19	100	24.8	13	50	38	CGP32...
CTBU25-32	25	23	110	24.8	8	50	42	CGP32...
CTBU32-32	32	29	110	24.8	5	54	48	CGP32...

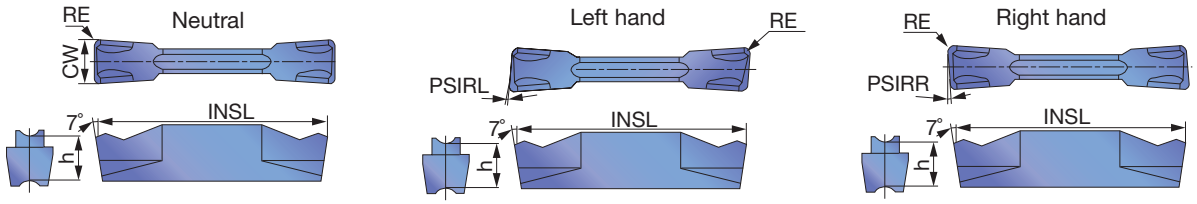
SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
CTBU20-26	CT-86	CM6X30-S	P-5
CTBU25-26	CT-105	CM6X30-S	P-5
CTBU20-32	CT-100	CM6X30-S	P-5
CTBU25-32	CT-110	CM6X30-S	P-5
CTBU32-32	CT-110	CM6X30-S	P-5

Reference pages: Blade → F168

DGM

External grooving and parting, 2 corners



P	Steel	★	★	★	☆		☆			★							
M	Stainless	★		★	☆		★										
K	Cast iron	☆		★		☆	☆			☆							
N	Non-ferrous																
S	Superalloys			★	☆	★											
H	Hard materials																

★ : First choice
☆ : Second choice

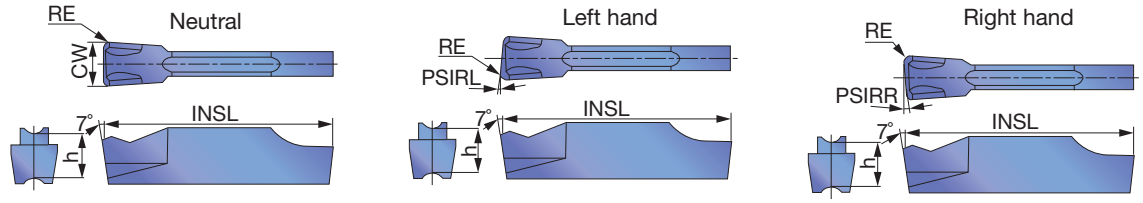
Designation	HAND	CW±0.05	RE	Coated							Cermet					INSL	h	PSIRL	PSIRR
				T9225	T9125	AH7025	AH725	AH905	GH130		NS9530								
DGM2-020	N	2	0.2	●	●	●	●		●		●					20	5	0°	0°
DGM2-020-6R	R	2	0.2			●	●		●							19.8	5	0°	6°
DGM2-020-6L	L	2	0.2			●	●		●							19.8	5	6°	0°
DGM2-020-8R	R	2	0.2			●	●		●							19.8	5	0°	8°
DGM2-020-8L	L	2	0.2			●	●		●							19.8	5	8	0°
DGM2-020-15R	R	2	0.2			●	●		●							19.8	5	0°	15°
DGM2-020-15L	L	2	0.2			●	●		●							19.8	5	15°	0°
DGM2-002-15R	R	2	0.02				●		●							19.35	5	0°	15°
DGM2-002-15L	L	2	0.02				●		●							19.35	5	15°	0°
DGM3-020	N	3	0.2	●	●	●	●	●	●		●					20	5	0°	0°
DGM3-020-6R	R	3	0.2			●	●		●							19.9	5	0°	6°
DGM3-020-6L	L	3	0.2			●	●		●							19.9	5	6°	0°
DGM3-002-6R	R	3	0.02				●		●							19.45	5	0°	6°
DGM3-002-6L	L	3	0.02				●		●							19.45	5	6°	0°
DGM3-020-15R	R	3	0.2			●	●		●							19.9	5	0°	15°
DGM3-020-15L	L	3	0.2			●	●		●							19.9	5	15°	0°
DGM4-030	N	4	0.3	●	●	●	●	●	●		●					20	5	0°	0°
DGM4-030-4R	R	4	0.3			●	●		●							19.8	5	0°	4°
DGM4-030-4L	L	4	0.3			●	●		●							19.8	5	4°	0°
DGM4-030-15R	R	4	0.3			●	●		●							19.8	5	0°	15°
DGM4-030-15L	L	4	0.3			●	●		●							19.8	5	15°	0°
DGM5-030	N	5	0.3	●	●	●	●	●	●		●					25	5.5	0°	0°
DGM5-030-4R	R	5	0.3			●	●		●							24.9	5.5	0°	4°
DGM6-030	N	6	0.3	●	●	●	●	●	●							25	5.5	0°	0°
DGM8-040	N	8	0.4	●	●	●	●		●							30	6.7	0°	0°

●: Line up

Reference pages: Toolholder → F168 - F169
Standard cutting conditions → F183

SGM

External deep grooving and parting, 1 corner



P	Steel	★ ☆ ☆
M	Stainless	★ ☆ ★
K	Cast iron	★ ☆
N	Non-ferrous	
S	Superalloys	★ ☆
H	Hard materials	

★ : First choice
☆ : Second choice

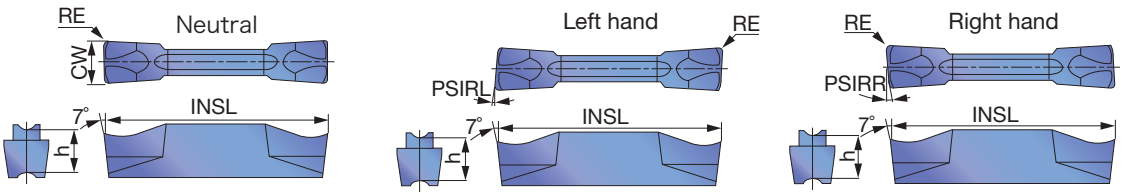
Designation	HAND	CW±0.05	RE	Coated			INSL	h	PSIRL	PSIRR
				AH7025	AH725	GH130				
SGM2-020	N	2	0.2	●	●		20	5	0°	0°
SGM2-020-6R	R	2	0.2	●	●	●	20	5	0°	6°
SGM2-020-6L	L	2	0.2	●	●	●	20	5	6°	0°
SGM3-020	N	3	0.2	●	●	●	20	5	0°	0°
SGM3-020-6R	R	3	0.2	●	●	●	20	5	0°	6°
SGM3-020-6L	L	3	0.2	●	●	●	20	5	6°	0°
SGM3-020-15R	R	3	0.2	●	●	●	20	5	0°	15°
SGM3-020-15L	L	3	0.2	●	●	●	20	5	15°	0°
SGM4-030	N	4	0.3	●	●	●	20	5	0°	0°
SGM4-030-4R	R	4	0.3	●	●	●	20	5	0°	4°
SGM4-030-4L	L	4	0.3	●	●	●	20	5	4°	0°
SGM5-030	N	5	0.3	●	●	●	25	5.5	0°	0°
SGM6-030	N	6	0.3	●	●	●	25	5.5	0°	0°

●: Line up

Reference pages: Toolholder → F168 - F169
Standard cutting conditions → F183

DGS

External grooving and parting, 2 corners



		T9225	T9125	AH7025	AH725	GH130		NS9530
P	Steel	★	★	★	☆	☆		★
M	Stainless	★		★	☆	★		
K	Cast iron	☆		★		☆		☆
N	Non-ferrous							
S	Superalloys			★	☆			
H	Hard materials							

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	Coated						Cermet							INSL	h	PSIRL	PSIRR
				T9225	T9125	AH7025	AH725	GH130		NS9530										
DGS1.4-016	N	1.4	0.16			●	●	●									16	4.3	0°	0°
DGS2-020	N	2	0.2	●	●	●	●	●	●	●							20	5	0°	0°
DGS2-020-6R	R	2	0.2			●	●	●									19.95	5	0°	6°
DGS2-020-6L	L	2	0.2			●	●	●									19.95	5	6°	0°
DGS2-002-6R	R	2	0.02				●	●									19.5	5	0°	6°
DGS2-002-6L	L	2	0.02				●	●									19.5	5	6°	0°
DGS2-020-15R	R	2	0.2			●	●	●									19.95	5	0°	15°
DGS2-020-15L	L	2	0.2			●	●	●									19.95	5	15°	0°
DGS2-002-15R	R	2	0.02				●	●									19.5	5	0°	15°
DGS2-002-15L	L	2	0.02				●	●									19.5	5	15°	0°
DGS3-020	N	3	0.2	●	●	●	●	●	●	●							20	5	0°	0°
DGS3-020-6R	R	3	0.2			●	●	●									19.9	5	0°	6°
DGS3-020-6L	L	3	0.2			●	●	●									19.9	5	6°	0°
DGS3-002-6R	R	3	0.02				●	●									19.45	5	0°	6°
DGS3-002-6L	L	3	0.02				●	●									19.45	5	6°	0°
DGS3-020-15R	R	3	0.2			●	●	●									19.9	5	0°	15°
DGS3-020-15L	L	3	0.2			●	●	●									19.9	5	15°	0°
DGS3-002-15R	R	3	0.02				●	●									19.45	5	0°	15°
DGS3-002-15L	L	3	0.02				●	●									19.45	5	15°	0°
DGS4-030	N	4	0.3	●	●	●	●	●	●	●							20	5	0°	0°
DGS4-030-4R	R	4	0.3			●	●	●									19.8	5	0°	4°
DGS4-030-4L	L	4	0.3			●	●	●									19.85	5	4°	0°
DGS5-030	N	5	0.3	●	●	●	●	●	●	●							25	5.5	0°	0°
DGS6-030	N	6	0.3	●	●	●	●	●									25	5.5	0°	0°

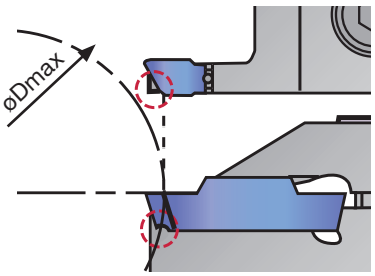
●: Line up

Caution

The tool will interfere with the workpiece when grooving

Designation	øDmax (mm)
DGM2-002-15R/L	28
DGM3-002-15R/L	29
DGM4-030-15R/L	30
SGM3-020-15R/L	103

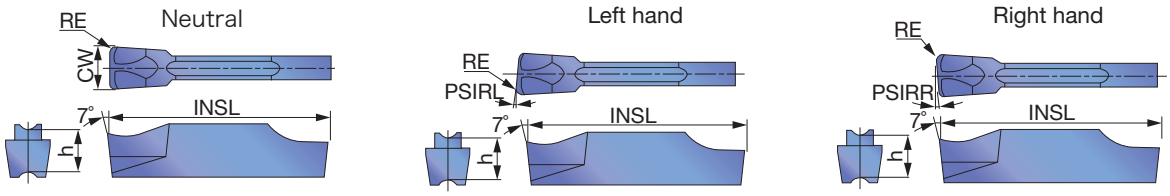
Designation	øDmax (mm)
DGS2-002-15R/L	28
DGS3-002-15R/L	29
SGS3-020-15R/L	103
SGS3-002-15R/L	34



Reference pages: Toolholder → F168 - F169
Standard cutting conditions → F183

SGS

External deep grooving and parting, 1 corner



P	Steel	★ ☆ ☆
M	Stainless	★ ☆ ★
K	Cast iron	★ ☆
N	Non-ferrous	
S	Superalloys	★ ☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05	RE	Coated AH7025	Coated AH725	Coated GH130	INSL	h	PSIRL	PSIRR
SGS2-020	N	2	0.2	●	●		20	5	0°	0°
SGS2-020-6R	R	2	0.2	●	●	●	20	5	0°	6°
SGS2-020-6L	L	2	0.2	●	●	●	20	5	6°	0°
SGS2-020-15R	R	2	0.2	●	●	●	20	5	0°	15°
SGS2-020-15L	L	2	0.2	●	●	●	20	5	15°	0°
SGS3-020	N	3	0.2	●	●	●	20	5	0°	0°
SGS3-020-6R	R	3	0.2	●	●	●	20	5	0°	6°
SGS3-020-6L	L	3	0.2	●	●	●	20	5	6°	0°
SGS3-002-6R	R	3	0.02		●	●	19.8	5	0°	6°
SGS3-002-6L	L	3	0.02		●	●	19.8	5	6°	0°
SGS3-020-15R	R	3	0.2	●	●	●	20	5	0°	15°
SGS3-020-15L	L	3	0.2	●	●	●	20	5	15°	0°
SGS3-002-15R	R	3	0.02		●	●	19.8	5	0°	15°
SGS3-002-15L	L	3	0.02		●	●	19.8	5	15°	0°
SGS4-030	N	4	0.3	●	●	●	20	5	0°	0°
SGS5-030	N	5	0.3	●	●	●	25	5.5	0°	0°
SGS6-030	N	6	0.3	●	●	●	25	5.5	0°	0°

●: Line up

DGG

External face grooving (for high precision)

P	Steel	★	★	
M	Stainless	★		
K	Cast iron	★	☆	☆
N	Non-ferrous			★
S	Superalloys	★		☆
H	Hard materials			

★ : First choice
☆ : Second choice

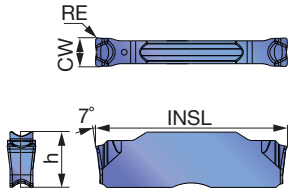
Designation	CW±0.02	RE	Coated AH7025	Cermet NS9530	Uncoated KS05F	INSL	h
DGG200-020	2	0.2	●	●		20	5
DGG300-020	3	0.2	●	●	●	20	5
DGG400-040	4	0.4	●	●	●	20	5
DGG500-040	5	0.4	●	●	●	25	5.5
DGG600-040	6	0.4	●	●	●	25	5.5

●: Line up

Reference pages: Toolholder → F168 - F169
Standard cutting conditions → F183

DGL

External grooving and parting



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

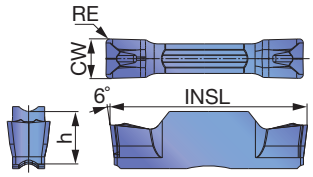
★ : First choice
☆ : Second choice

Designation	CW±0.05	RE	Coated AH7025	INSL	h
DGL3-025	3	0.25	●	20	5
DGL4-030	4	0.3	●	20	5
DGL5-030	5	0.3	●	25	5.5
DGL6-080	6	0.8	●	25	5.5

●: Line up

DTM

External/Internal face grooving and turning



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

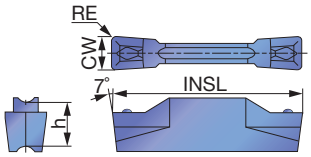
Designation	CW±0.05	RE	Coated AH7025	INSL	h
DTM3-030	3	0.3	●	20	5
DTM4-040	4	0.4	●	20	5
DTM4-080	4	0.8	●	20	5
DTM5-080	5	0.8	●	25	5.5
DTM6-080	6	0.8	●	25	5.5
DTM8-080	8	0.8	●	30	6.7

●: Line up

Reference pages: Toolholder → F168 - F169
Standard cutting conditions → F183

DTE

External face grooving and turning (for high precision)



P	Steel	★	★		★	☆	☆			★						
M	Stainless	★			★	☆	★									
K	Cast iron	☆		★	★		☆									
N	Non-ferrous															
S	Superalloys				★	☆										
H	Hard materials															

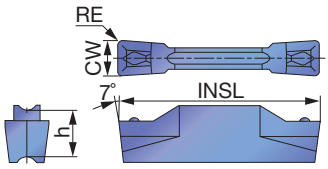
★ : First choice
☆ : Second choice

Designation	CW±0.02	RE	Coated							Cermet						INSL	h
			T9225	T9125	T515	AH7025	AH725	GH130		NS9530							
DTE265-015	2.65	0.15	●	●		●	●	●		●						20	5
DTE300-020	3	0.2	●	●		●	●	●		●						20	5
DTE300-040	3	0.4	●	●		●	●	●		●						20	5
DTE315-015	3.15	0.15	●	●		●	●	●		●						20	5
DTE400-040	4	0.4	●	●		●	●	●		●						20	5
DTE400-080	4	0.8	●	●		●	●	●		●						20	5
DTE415-015	4.15	0.15	●	●		●	●	●		●						20	5
DTE478-055	4.78	0.55	●	●		●	●	●		●						25	5.5
DTE500-040	5	0.4	●	●		●	●	●		●						25	5.5
DTE500-080	5	0.8	●	●		●	●	●		●						25	5.5
DTE515-015	5.15	0.15	●	●		●	●	●								25	5.5
DTE600-080	6	0.8	●	●		●	●	●								25	5.5
DTE600-120	6	1.2	●	●		●	●	●								25	5.5
DTE800-080	8	0.8	●	●		●	●	●								30	6.7
DTE800-120	8	1.2	●	●		●	●	●								30	6.7

●: Line up

DTE

External face grooving and turning



P	Steel	★	★		★	☆	☆			★						
M	Stainless	★			★	☆	★									
K	Cast iron	☆		★	★		☆									
N	Non-ferrous															
S	Superalloys				★	☆										
H	Hard materials															

★ : First choice
☆ : Second choice

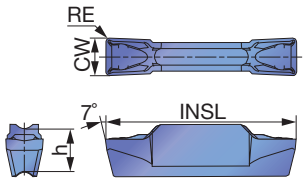
Designation	CW±0.05	RE	Coated							Cermet						INSL	h
			T9225	T9125	T515	AH7025	AH725	GH130		NS9530							
DTE3-040	3	0.4	●	●	●	●	●	●		●						20	5
DTE4-040	4	0.4	●	●	●	●	●	●		●						20	5
DTE5-040	5	0.4			●	●										25	5.5
DTE6-080	6	0.8			●	●										25	5.5

●: Line up

Reference pages: Toolholder → F168 - F169
Standard cutting conditions → F183

DTX

External/Internal face grooving and turning



		T9225	T9125	AH7025	AH725	GH130	NS9530
P	Steel	★	★	★	☆	☆	★
M	Stainless	★		★	☆	★	
K	Cast iron	☆		★		☆	☆
N	Non-ferrous						
S	Superalloys			★	☆		
H	Hard materials						

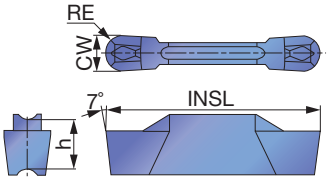
★ : First choice
☆ : Second choice

Designation	CW±0.05	RE	Coated					Cermet	INSL	h
			T9225	T9125	AH7025	AH725	GH130	NS9530		
DTX3-030	3	0.3	●	●	●	●	●	●	20	5
DTX4-040	4	0.4	●	●	●	●	●	●	20	5
DTX5-040	5	0.4	●	●	●	●	●	●	25	5.5
DTX6-080	6	0.8			●	●	●		25	5

●: Line up

DTR

Profiling and undercutting (for high precision)



		T9225	T9125	AH7025	AH725	AH905	GH130	NS9530
P	Steel	★	★	★	☆		☆	★
M	Stainless	★		★	☆		★	
K	Cast iron	☆		★		☆	☆	☆
N	Non-ferrous							
S	Superalloys			★	☆	★		
H	Hard materials							

★ : First choice
☆ : Second choice

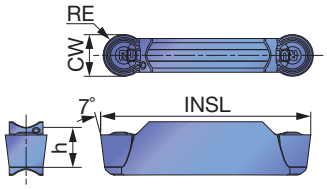
Designation	CW±0.02	RE	Coated						Cermet	INSL	h
			T9225	T9125	AH7025	AH725	AH905	GH130	NS9530		
DTR300-150	3	1.5	●	●	●	●		●	●	20	5
DTR400-200	4	2	●	●	●	●		●	●	20	5
DTR478-239	4.78	2.39	●	●	●	●		●	●	25	5.5
DTR500-250	5	2.5	●	●	●	●		●	●	25	5.5
DTR600-300	6	3	●	●	●	●		●		25	5.5

●: Line up

Reference pages: Toolholder → F168 - F169
Standard cutting conditions → F183

DTR

Profiling and undercutting



P	Steel	★ ★ ★ ☆ ☆ ★
M	Stainless	★ ★ ☆ ★
K	Cast iron	☆ ★ ☆ ☆ ★
N	Non-ferrous	
S	Superalloys	★ ☆ ★
H	Hard materials	

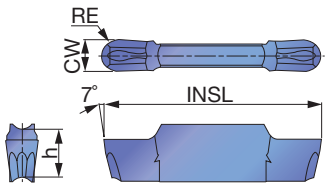
★ : First choice
☆ : Second choice

Designation	CW±0.05	RE	Coated						Cermet						INSL	h
			T9225	T9125	AH7025	AH725	AH905	GH130	NS9530							
DTR3-150	3	1.5	●	●	●	●	●	●	●						20	5
DTR4-200	4	2	●	●	●	●	●	●	●						20	5
DTR5-250	5	2.5	●	●	●	●	●	●	●						25	5.5
DTR6-300	6	3	●	●	●	●		●							25	5.5
DTR8-400	8	4	●	●	●	●		●							30	6.7

●: Line up

DTIU

Profiling and undercutting (for high precision)



P	Steel	★ ☆ ☆
M	Stainless	★ ☆ ★
K	Cast iron	★ ☆
N	Non-ferrous	
S	Superalloys	★ ☆
H	Hard materials	

★ : First choice
☆ : Second choice

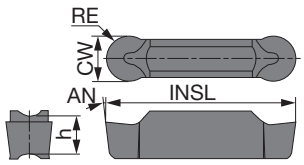
Designation	CW±0.02	RE	Coated												INSL	h
			AH7025	AH725	GH130											
DTIU300-150	3	1.5	●	●											20	5
DTIU400-200	4	2	●	●	●										20	5
DTIU500-250	5	2.5	●	●	●										25	5.5
DTIU600-300	6	3	●	●	●										25	5.5

●: Line up

Reference pages: Toolholder → F168 - F169
Standard cutting conditions → F183

DTA

Aluminium wheel machining (for high precision)



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

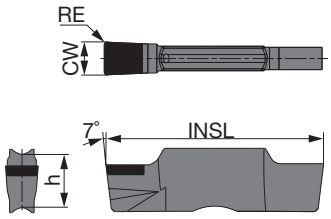
★ : First choice
☆ : Second choice

Designation	CW±0.02	RE	Uncoated	INSL	h	AN
			TH10			
DTA600-300	6	3	●	25	5.5	7
DTA800-400	8	4	●	30	6.7	10

●: Line up

SGN

External grooving of hardened steel



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★ : First choice
☆ : Second choice

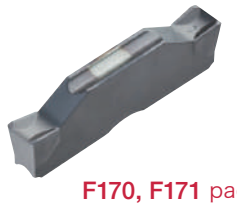
Designation	CW±0.025	RE	CBN	INSL	h
			BX360		
SGN200-020	2	0.2	●	20	5
SGN300-020	3	0.2	●	20	5
SGN400-020	4	0.2	●	20	5

●: Line up

Reference pages: Toolholder → F168 - F169
Standard cutting conditions → F183

External grooving and parting

DGM type (2 corners) SGM type (1 corner)

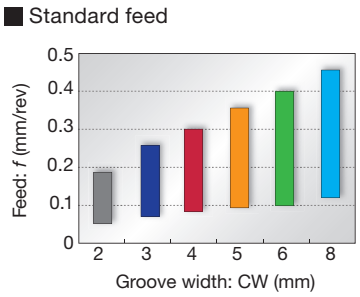


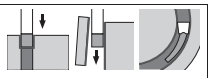
F170, F171 page

1st choice for external grooving and parting

Smooth chip evacuation
Well-designed edge with high strength
Handed insert available

CW = 2 - 8 mm





DGS type (2 corners) SGS type (1 corner)

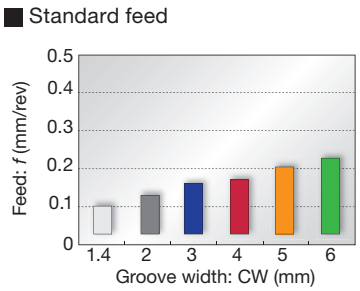


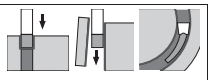
F172, F173 page

Lower cutting force and superior sharpness

Unique-designed edge and chipbreaker
Handed insert available
Handed insert available

CW = 1.4 - 6 mm





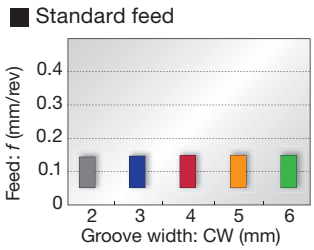
DGG type (2 corners)

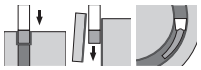


F173 page

For non-ferrous materials and titanium

Chipbreaker with low cutting force
Sharp cutting edge that prevents vibration and delivers fine surface finish





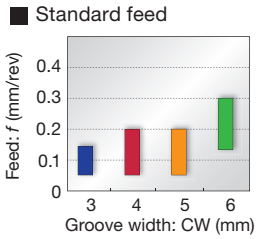
DGL type (2 corners)

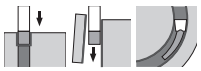


F174 page

1st choice for mild steel

Chipbreaker with excellent chip control at low feed
Chipbreaker
Suitable for mild steel that often gives difficulties in chip control





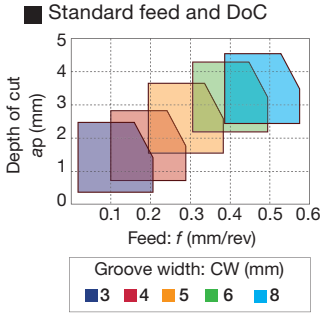
DTM type (2 corners)

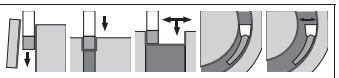


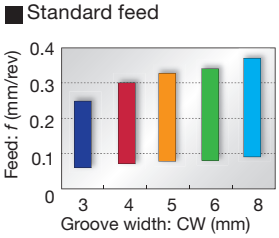
F174 page

For general purpose

1st choice for grooving and turning
Suitable for light to medium cutting
Grooving and turning
Suitable for light to medium cutting
Excellent chip control in machining steel, alloy steel, stainless steel, and heat-resistant alloy







DTE type (2 corners)

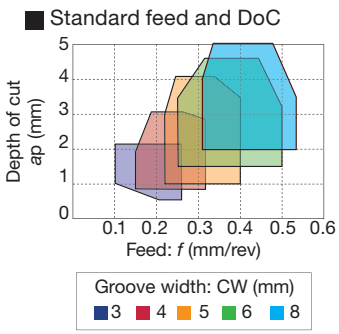


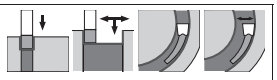
F175 page

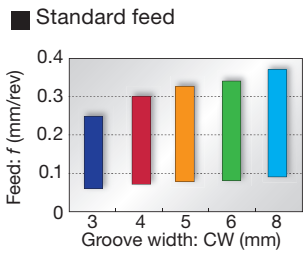
For general purpose

Unique chipbreaker makes chips shorter
Molded and ground inserts available

CW = 3 - 8 mm







DTX type (2 corners)

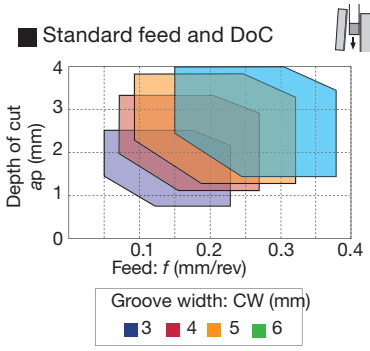


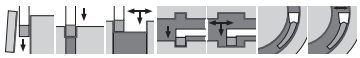
F176 page

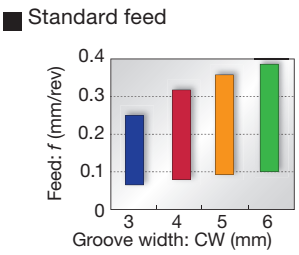
Multi-functional type

Well balanced sharpness and strength
Molded and ground insert available
Insert

CW = 3 - 6 mm







Profiling and undercutting

DTR type (2 corners)

Molded



Ground

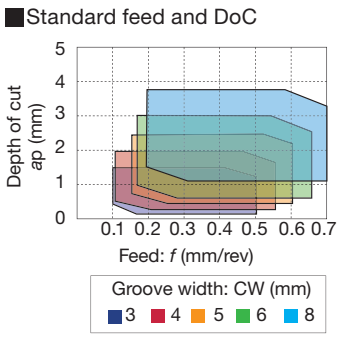


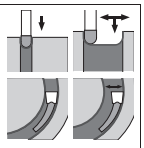
F176, F177 page

Full radius type

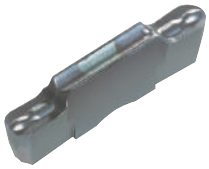
Excellent chip control
Molded and ground inserts available

CW = 3 - 8 mm





DTIU type (2 corners)

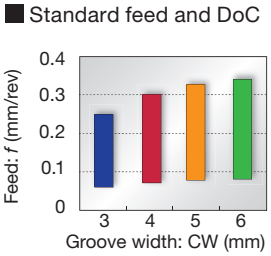


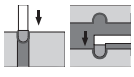
F177 page

Full radius type

Excellent chip control

CW = 3 - 6 mm





Aluminium wheel machining

DTA type (2 corners)

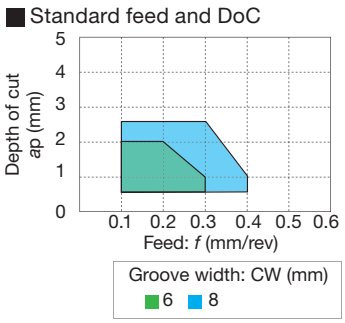


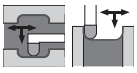
F178 page

Full radius type

Excellent chip control
For aluminium wheel profiling
Ground insert

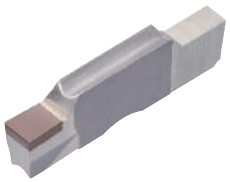
CW = 6 - 8 mm





External grooving of hardened steel

SGN-CBN type (1 corner)

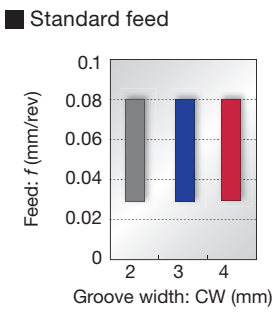


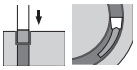
F178 page

For hardened steel cutting

Optimum cutting edge shape for grooving of hardened steels
High tolerance width for finishing

CW = 2 - 4 mm
(Tolerance: ±0.025 mm)





AH7025 Cutting performance

First choice grade for grooving application
New AH7025 grade - Drastically improved reliability with world's first coating technology

Tool life comparison in grooving

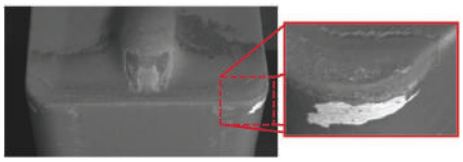
Alloy steel (SCM440) **P**

AH7025



No. of grooving: 60 pcs

Conventional grade



No. of grooving: 30 pcs

Insert : DTE3-040 AH7025
Cutting speed : V_c = 150 m/min
Feed : f = 0.17 mm/rev
Groove depth : 17 mm
Machining : External grooving
Coolant : Wet

Allows stable machining without peeling off, evenafter twice the cutting time versus the conventional grade.
→ The combination of Nano-multi-layered AlTiN Coating with high Al content and tough substrate provides highly efficient machining in various grooving operations

Grade

AH7025 P M S

- First recommended grade for general purpose
- New PVD coating with high Al content provides excellent adhesion strength
- Improved wear and chipping resistance

AH725 P M S

- General purpose
- Newly developed coating with well controlled rystal structure and fracture resistance
- Improved adhesion strength

T515 K

- First recommended grade for cast iron
- Exellent wear resistance in high-speed machining

T9225 P

- Suitable for steel machining at high speed
- New CVD coating and substrate deliver an outstanding balance
- Balance of wear and chipping resistance

T9125 P

- Suitable for steel machining at high speed
- Balance of wear and chipping resistance

NS9530 P

- Advanced cermet for finish cutting
- Innovative grade with incredible fracture and high wear resistance

GH130 P M K

- Recommended for interrupted machining
- TiCNO PVD coating layer with high wear resistance
- High hardness

AH905 S

- Remarkable for machining of heat resistant alloy
- Exclusive coating layer improves adhesion strength and wear resistance

KS05F N S

- Recommended for non-ferrous materials
- For titanium

TH10 N

- Recommended for non-ferrous materials

BX360 H

- Suitable for hardened steel machining
- Ideal balance of wear and chipping resistance due to the optimum CBN content and grain size

STANDARD CUTTING CONDITIONS

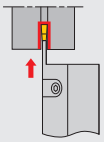
ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (m/min)
P	Steel (S45C, SCM435, etc.)	< 300 HB	1st choice	AH7025, AH725	50 - 180
		< 300 HB	Wear resistance	T9225	80 - 300
		< 300 HB	Wear resistance	T9125	80 - 200
		< 300 HB	Fracture resistance	GH130	50 - 120
		< 300 HB	Suface quality	NS9530	80 - 220
M	Stainless steels (SUS303, SUS304, etc.)	< 200 HB	1st choice	AH7025, AH725	50 - 120
		< 200 HB	Fracture resistance	GH130	50 - 120
K	Grey cast irons (FC250, etc.)	-	1st choice	T515	50 - 180
		-	Fracture resistance	GH130	50 - 180
	Ductile cast irons (FCD450, etc.)	-	1st choice	T515	50 - 120
		-	Fracture resistance	GH130	50 - 120
N	Aluminium alloys (Si < 12%)	-	1st choice	TH10	100 - 500
		-	1st choice	KS05F	100 - 600
S	Superalloys (Inconel 718, etc.)	< HRC 40	1st choice	AH7025	20 - 60
		< HRC 40	Wear resistance	AH905	20 - 80
	Titanium alloys (Ti-6Al-4V, etc.)	< HRC 40	1st choice	AH905	20 - 80
		< HRC 40	Fracture resistance	AH7025, AH725	20 - 80
		< HRC 40	Suface quality	KS05F	20 - 60
H	Hardened steel (SCM435, SUJ2, etc.)	> HRC 50	1st choice	BX360	80 - 150

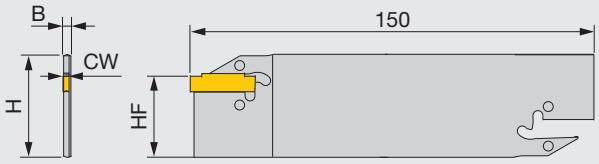
*Please see the page **F179 - F181** for feed: *f* (mm/rev).

MY-T SERIES

CCH-W

External grooving and parting blade, for 2 corner inserts





Designation	CW	CUTDIA	H	B	HF	Insert
CCH32-W20	2	33	32	1.6	24.6	WGE20, WGE20R/L
CCH32-W30	3	33	32	2.2	24.6	WG*30, WGE30R/L
CCH32-W40	4	42	32	3.2	24.5	WG*40, WGE40R/L
CCH32-W50	5	42	32	4.2	24.3	WG*50, WGE50R/L

SPARE PARTS

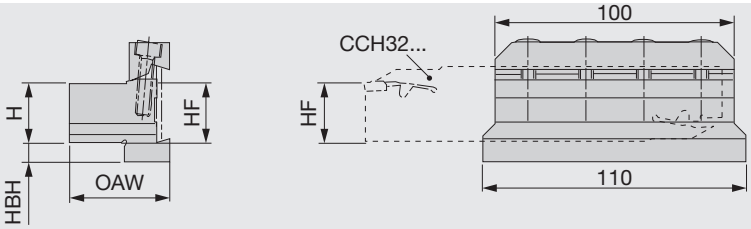


Designation	Wrench (Optional)
CCH32-W...	CRW33

MY-T SERIES

CCBS-32

Tool block for CCH blade



Designation	H	HF	HBH	OAW	Blade
CCBS20-32	20	20	13	38	CCH32...
CCBS25-32	25	25	8	42	CCH32...
CCBS32-32	32	32	5	42	CCH32...

SPARE PARTS



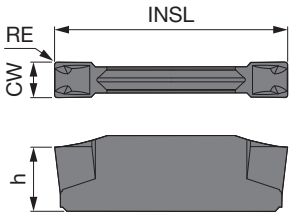


Designation	Clamp	Screw	Wrench
CCBS**-32	CC-32	CM6X25	P-5

Reference pages: Inserts → F185 - F187
Standard cutting conditions → F186

WGE

For external grooving and parting



P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous															
S	Superalloys			☆												
H	Hard materials															

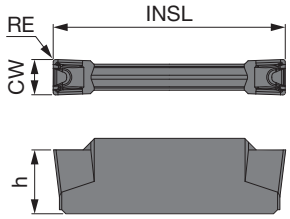
★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.1}_{0}$	RE	Coated						Cermet								INSL	h
				T9225	T9125	AH120	GH730			NS9530									
WGE20	-	2	0.2	●	●	●	●			●								20	4.7
WGE30	-	3	0.2	●	●	●	●			●								20	5.5
WGE40	-	4	0.2	●	●	●	●			●								25	5.7
WGE50	-	5	0.2	●	●	●	●			●								25	5.9

●: Line up

WGT

For turning (External grooving and parting)



P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous															
S	Superalloys			☆												
H	Hard materials															

★ : First choice
☆ : Second choice

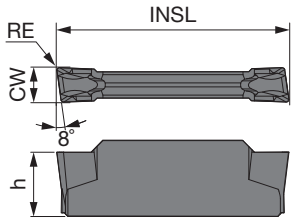
Designation	$CW^{+0.1}_{0}$	RE	Coated						Cermet								INSL	h
			T9225	T9125	AH120	GH730			NS9530									
WGT30	3	0.4	●	●		●			●								20	5.5
WGT40	4	0.4	●	●		●			●								25	5.7
WGT50	5	0.4	●	●	●	●			●								25	5.9

●: Line up

Reference pages: Toolholder → F184

WGE(R/L)

For parting (with hand)



Right hand (R) shown.

P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous															
S	Superalloys			☆												
H	Hard materials															

★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.1}_{0}$	RE	Coated						Cermet								INSL	h
				T9225	T9125	AH120	GH730			NS9530									
WGE20R	R	2	0.2				●											20	4.7
WGE20L	L	2	0.2				●											20	4.7
WGE30R	R	3	0.2			●	●											20	5.5
WGE30L	L	3	0.2				●											20	5.5
WGE40R	R	4	0.2				●											25	5.7
WGE40L	L	4	0.2				●											25	5.7
WGE50R	R	5	0.2				●											25	5.9
WGE50L	L	5	0.2				●											25	5.9

●: Line up

STANDARD CUTTING CONDITIONS

Workpiece material	Insert Grade	Cutting speed *Vc* (m/min)
Low carbon steel (HB150 ~)	**T9225**	80 ~ 300
	T9125	80 ~ 200
	NS9530	100 ~ 200
	GH730	50 ~ 180
Medium carbon steel, Alloy steel (HB150 ~ 250)	**T9125**	80 ~ 180
	NS9530	80 ~ 180
	GH730	50 ~ 150
High carbon steel, Alloy steel (HB250 ~)	**T9125**	80 ~ 150
	NS9530	80 ~ 150
	GH730	50 ~ 120
Stainless steels	**T9125**	80 ~ 150
	GH730	50 ~ 120
Cast iron Ductile cast irons	**T9125**	80 ~ 200
	GH730	50 ~ 180

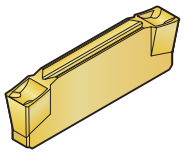
Operation	Feed: *f* (mm/rev) Groove width: CW (mm)			
	2	3	4	5
Grooving (WGE□□)	0.06 ~ 0.20	0.06 ~ 0.25	0.07 ~ 0.27	0.07 ~ 0.30
External grooving (WGE□□R/L)	0.04 ~ 0.10	0.04 ~ 0.14	0.04 ~ 0.14	0.04 ~ 0.14
Turning (WGT□□)	-	*ap* = 0.5 ~ 1.5 *f* = 0.06 ~ 0.2	*ap* = 0.5 ~ 2.0 *f* = 0.06 ~ 0.25	*ap* = 0.5 ~ 2.5 *f* = 0.06 ~ 0.27

Reference pages: Toolholder → F184

2 corner insert

External grooving

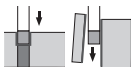
WGE

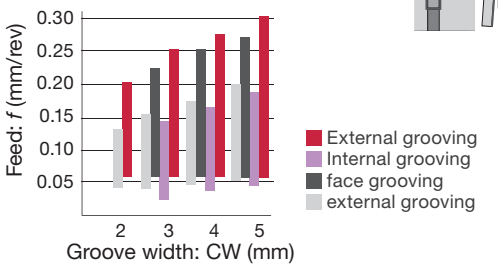


F185 page

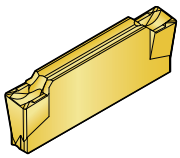
1st choice for external grooving and parting
Excellent chip control for grooving

CW = 2 - 5 mm





WGE R/L

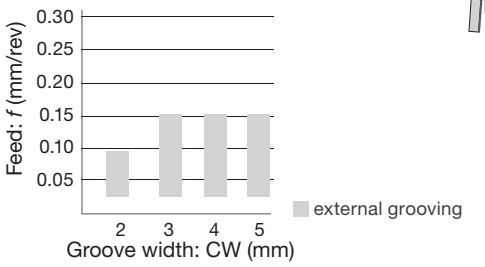


F186 page

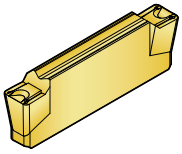
Handed insert
Minimize burr generation when workpiece is cut off

CW = 2 - 5 mm





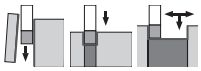
WGT

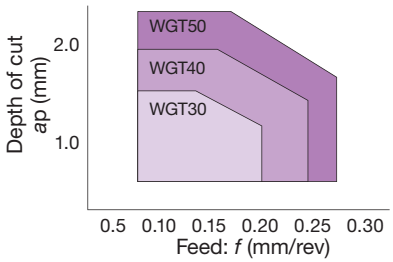


F185 page

1st choice for turning
Low cutting force and good chip control for traversing

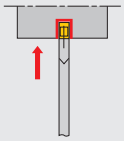
CW = 3 - 5 mm

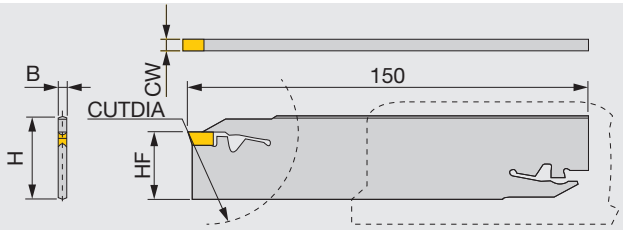




CCH

External grooving and parting blade, for 1 corner inserts





Designation	CW	CUTDIA	H	B	HF	Insert
CCH32-30	3	100	32	2.2	24.6	GE30,GE30R/L,GE30-AL
CCH32-40	4	100	32	3.2	24.5	GE40,GE40R/L,GE40-AL
CCH32-50	5	120	32	4.2	24.3	GE50,GE50R/L,GE50-AL

• CUTDIA Max. parting dia

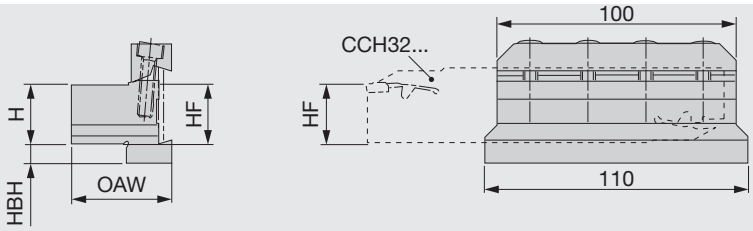
SPARE PARTS



Designation	Wrench
CCH32-...	CTL-2

CCBS-32

Tool block for CCH blade



Designation	H	HF	HBH	OAW	Blade
CCBS20-32	20	20	13	38	CCH32...
CCBS25-32	25	25	8	42	CCH32...
CCBS32-32	32	32	5	42	CCH32...

SPARE PARTS





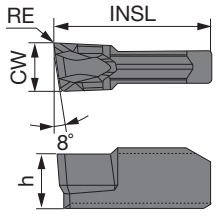
Designation	Clamp	Screw	Wrench
CCBS**-32	CC-32	CM6X25	P-5

Reference pages: Inserts → F189 - F193
Standard cutting conditions → F193

INSERT

GE-R/L

For parting (with hand)



Right hand (R) shown.

		T9225	T9125	AH120	GH730	NS9530	KS05F
P	Steel	★	☆	★	★	★	
M	Stainless	★		★	★		
K	Cast iron	☆		★	☆	☆	
N	Non-ferrous						★
S	Superalloys			☆			
H	Hard materials						

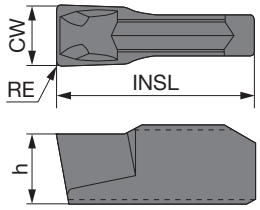
★ : First choice
☆ : Second choice

Designation	HAND	CW$^{+0.1}_{0}$	RE	Coated				Cermet	Uncoated	INSL	h
				T9225	T9125	AH120	GH730	NS9530	KS05F		
GE30R	R	3	0.2			●	●			10	3.5
GE30L	L	3	0.2				●			10	3.5
GE40R	R	4	0.2			●	●			10	4
GE40L	L	4	0.2				●			10	4
GE50R	R	5	0.2				●			12	4.5
GE50L	L	5	0.2			●	●			12	4.5

●: Line up

GE

For general grooving



		T9225	T9125	AH120	GH730	NS9530	KS05F
P	Steel	★	☆	★	★	★	
M	Stainless	★		★	★		
K	Cast iron	☆		★	☆	☆	
N	Non-ferrous						★
S	Superalloys			☆			
H	Hard materials						

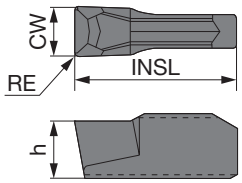
★ : First choice
☆ : Second choice

Designation	HAND	CW$^{+0.1}_{0}$	RE	Coated				Cermet	Uncoated	INSL	h
				T9225	T9125	AH120	GH730	NS9530	KS05F		
GE20	N	2	0.2			●	●	●		10	3.5
GE30	N	3	0.2	●	●	●	●	●		10	3.5
GE40	N	4	0.2	●	●	●	●	●		10	4
GE50	N	5	0.2	●	●	●	●	●		12	4.5

●: Line up

Reference pages: Toolholder → F188
Standard cutting conditions → F193

GF



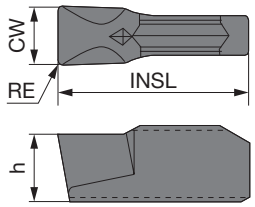
P	Steel	★	★
M	Stainless	★	
K	Cast iron	☆	☆
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$	RE	Coated	Cermet	INSL	h
			GH730	NS9530		
GF30	3	0.2	●	●	10	3.5
GF40	4	0.2	●	●	10	4
GF50	5	0.2	●	●	12	4.5

●: Line up

GN



P	Steel	★	
M	Stainless	★	
K	Cast iron	☆	
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

★ : First choice
☆ : Second choice

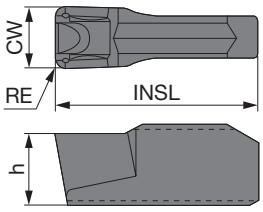
Designation	$CW^{+0.1}_{0}$	RE	Coated	INSL	h
			GH730		
GN30	3	0.2	●	10	3.5
GN40	4	0.2	●	10	4
GN50	5	0.2	●	12	4.5

●: Line up

Reference pages: Toolholder → F188
Standard cutting conditions → F193

GT

For turning



P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous															
S	Superalloys			☆												
H	Hard materials															

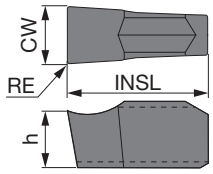
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$	RE	Coated						Cermet								INSL	h
			T9225	T9125	AH120	GH730			NS9530									
GT30	3	0.4			●	●			●								10	3.5
GT40	4	0.4			●	●			●								10	4
GT50	5	0.4	●	●	●	●			●								12	4.5

●: Line up

GE-AL

For aluminium and non-ferrous metal



P	Steel	★	☆	★	★			★								
M	Stainless	★		★	★											
K	Cast iron	☆		★	☆			☆								
N	Non-ferrous										★					
S	Superalloys			☆												
H	Hard materials															

★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.1}_{0}$	RE	Coated						Cermet			Uncoated						INSL	h
				T9225	T9125	AH120	GH730			NS9530			KS05F							
GE20-AL	N	2	0.2																10	3.5
GE30-AL	N	3	0.2										●						10	3.5
GE40-AL	N	4	0.2										●						10	4

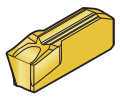
●: Line up

Reference pages: Toolholder → F188
Standard cutting conditions → F193

1 corner insert

External grooving

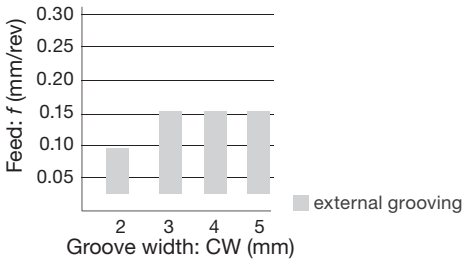
GE R/L



F189 page

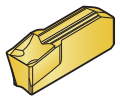
Handed insert
Minimize burr generation when workpiece is cut off

CW = 3 - 5 mm





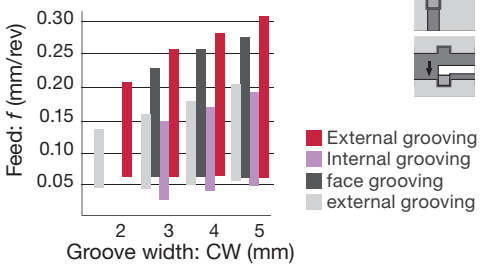
GE

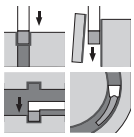


F189 page

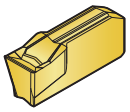
1st choice for external grooving and parting
Excellent chip control for grooving

CW = 2 - 5 mm





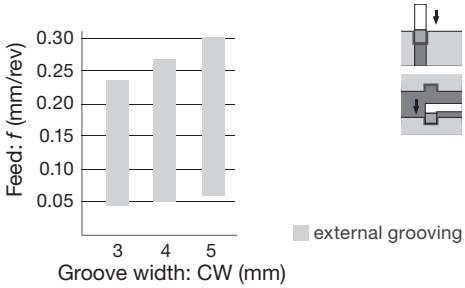
GF

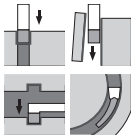


F190 page

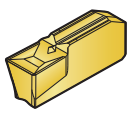
1st choice for face grooving
Low cutting force and good chip control for face grooving

CW = 3 - 5 mm





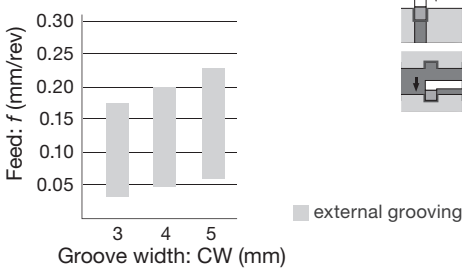
GN

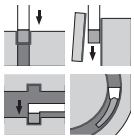


F190 page

1st choice for internal grooving
Low cutting force and good chip control
Good chip control

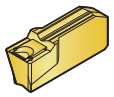
CW = 3 - 5 mm





1 corner insert

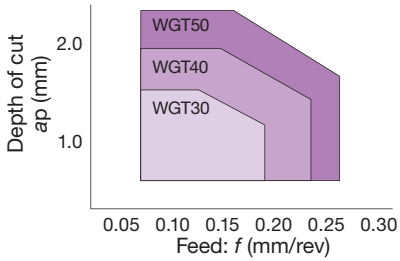
GT

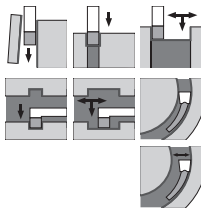


F191 page

1st choice for turning
Low cutting force and good chip control for traversing

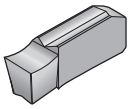
CW = 3 - 5 mm





For aluminium and non-ferrous metal

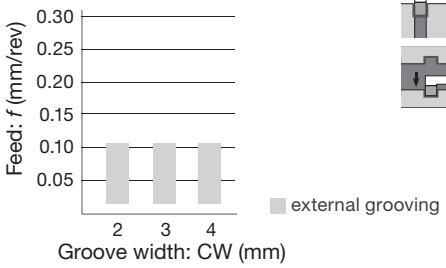
GE-AL

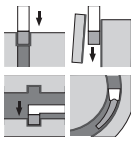


F191 page

Reduce cutting force and welding due to sharp chipbreaker

CW = 2 - 4 mm





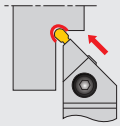
STANDARD CUTTING CONDITIONS

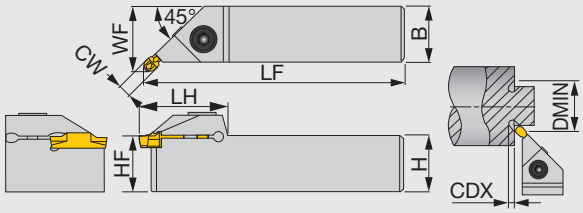
ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)
P	Low carbon steel (~ HB150)	T9225	80 - 300
		T9125	80 - 200
		NS9530	100 - 200
		GH730	50 - 180
	Medium carbon steel, Alloy steel (HB150 ~ 250)	T9125	80 - 180
		NS9530	80 - 180
		GH730	50 - 150
	High carbon steel, Alloy steel (HB250 ~)	T9125	80 - 150
		NS9530	80 - 150
		GH730	50 - 120
M	Stainless steels	T9125	80 - 150
		GH730	50 - 120
K	Grey iron, Ductile cast iron	T9125	80 - 200
		GH730	50 - 180
N	Aluminium alloy, Non-ferrous metal	KS05F	200 - 300

External

Operation	Feed: *f* (mm/rev) Groove width 2	3	4	5
Grooving (GE**)	0.06 - 0.2	0.06 - 0.25	0.07 - 0.27	0.07 - 0.3
external grooving (GE**R/L)	0.04 - 0.1	0.04 - 0.14	0.04 - 0.14	0.04 - 0.14
Turning (GT**)	-	Depth of cut *ap* = 0.5 - 1.5 *f* = 0.06 - 0.2	Depth of cut *ap* = 0.5 - 2 *f* = 0.06 - 0.25	Depth of cut *ap* = 0.5 - 2.5 *f* = 0.06 - 0.27
Grooving for Aluminium alloys (GE**-AL)	0.03 - 0.1	0.03 - 0.1	0.03 - 0.1	-

TUNGCUT
CGEUR/L
External 45° undercutting toolholder





Right hand (R) shown.

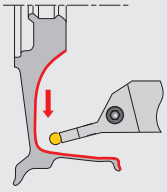
Designation	CW	DMIN	Seat size	CDX	H	B	LF	LH	HF	WF (1)	Insert	Torque*
CGEUR/L1616-3T02	3	32	3	2.8	16	16	110	30	16	19.3	DTIU...	5
CGEUR/L2020-3T02	3	32	3	2.8	20	20	125	30	20	23.3	DTIU...	5
CGEUR/L2525-3T02	3	32	3	2.8	25	25	150	30	25	28.3	DTIU...	5
CGEUR/L1616-4T02	4	32	4	2.8	16	16	110	31	16	19.5	DTIU...	8.5
CGEUR/L2020-4T02	4	32	4	2.8	20	20	125	31	20	23.5	DTIU...	8.5
CGEUR/L2525-4T02	4	32	4	2.8	25	25	150	31	25	28.5	DTIU...	8.5
CGEUR/L2525-6T03	6	34	5, 6	3.4	25	25	150	35	25	28.9	DTIU...	8.5

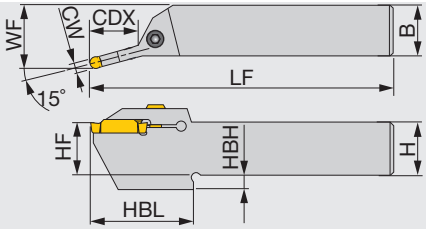
(1) "WF" value is calculated with groove width "CW" shown in the table.
*Torque: Recommended clamping torque (N·m)

SPARE PARTS

Designation	Clamping screw	Wrench
CGEUR/L****-3T02	CM5X0.8X16-A	P-4
CGEUR/L1616-4T02	CM6X1X16-A	P-5
CGEUR/L2020-4T02	CM6X1X20-A	P-5
CGEUR/L2525-4T02/6T03	CM6X1X25-A	P-5

TUNGCUT
CTER/L-15A
Square shank toolholder for profiling aluminium wheel





Right hand (R) shown.

Designation	CW	Seat size	CDX	H	B	LF	HF	WF	HBH	HBL	Insert	Torque*
CTER/L2525-6T25-15A	6	6	25	25	25	150	25	32.2	7	50.5	DTA...	5
CTER/L2525-8T30-15A	8	8	30	25	25	150	25	32.9	7	55	DTA...	5

*Torque: Recommended clamping torque (N·m)

SPARE PARTS

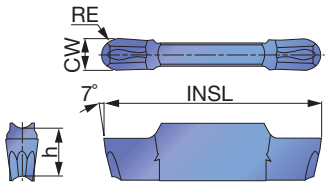
Designation	Clamping screw	Wrench
CTER/L2525-****-15A	CM6X1X25-A	P-5

Reference pages: Inserts → F195 - F197
Standard cutting conditions → F196

INSERT

DTIU

Profiling and undercutting (for high precision)



P	Steel	★	☆	☆
M	Stainless	★	☆	★
K	Cast iron	★		☆
N	Non-ferrous			
S	Superalloys	★	☆	
H	Hard materials			

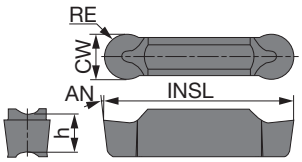
★ : First choice
☆ : Second choice

Designation	CW±0.02	RE	Coated			INSL	h
			AH7025	AH725	GH130		
DTIU300-150	3	1.5	●	●		20	5
DTIU400-200	4	2	●	●	●	20	5
DTIU500-250	5	2.5	●	●	●	25	5.5
DTIU600-300	6	3	●	●	●	25	5.5

●: Line up

DTA

Aluminium wheel machining (for high precision)



P	Steel			
M	Stainless			
K	Cast iron			
N	Non-ferrous	★		
S	Superalloys			
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	CW±0.02	RE	Uncoated	INSL	h	AN
			TH10			
DTA600-300	6	3	●	25	5.5	7
DTA800-400	8	4	●	30	6.7	10

●: Line up

Reference pages: Toolholder → F194
Standard cutting conditions → F196

STANDARD CUTTING CONDITIONS

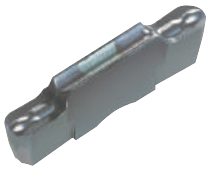
ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (m/min)
P	Steel (S45C, SCM435, etc.)	< 300 HB	1st choice	AH7025, AH725	50 - 180
		< 300 HB	Wear resistance	T9225	80 - 300
		< 300 HB	Wear resistance	T9125	80 - 200
		< 300 HB	Fracture resistance	GH130	50 - 120
		< 300 HB	Suface quality	NS9530	80 - 220
M	Stainless steels (SUS303, SUS304, etc.)	< 200 HB	1st choice	AH7025, AH725	50 - 120
		< 200 HB	Fracture resistance	GH130	50 - 120
K	Grey cast irons (FC250, etc.)	-	1st choice	T515	50 - 180
		-	Fracture resistance	GH130	50 - 180
	Ductile cast irons (FCD450, etc.)	-	1st choice	T515	50 - 120
		-	Fracture resistance	GH130	50 - 120
N	Aluminium alloys (Si < 12%)	-	1st choice	TH10	100 - 500
		-	1st choice	KS05F	100 - 600
S	Superalloys (Inconel 718, etc.)	< HRC 40	1st choice	AH7025	20 - 60
		< HRC 40	Wear resistance	AH905	20 - 80
	Titanium alloys (Ti-6Al-4V, etc.)	< HRC 40	1st choice	AH905	20 - 80
		< HRC 40	Fracture resistance	AH7025, AH725	20 - 80
		< HRC 40	Suface quality	KS05F	20 - 60
H	Hardened steel (SCM435, SUJ2, etc.)	> HRC 50	1st choice	BX360	80 - 150

*Please see below for feed: *f* (mm/rev).

TUNGCUT - Chipbreaker Guide

Profiling and undercutting

DTIU type (2 corners)

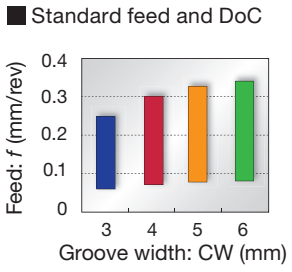


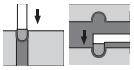
F195 page

Full radius type

Excellent chip control

CW = 3 - 6 mm





Aluminium wheel machining

DTA type (2 corners)

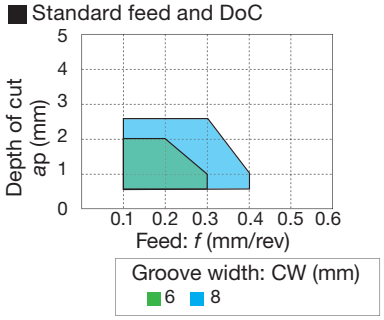


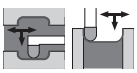
F195 page

Full radius type

Excellent chip control
For aluminium wheel profiling
Ground insert

CW = 6 - 8 mm





AH7025 Cutting performance

First choice grade for grooving application
New AH7025 grade - Drastically improved reliability with world's first coating technology

Tool life comparison in grooving

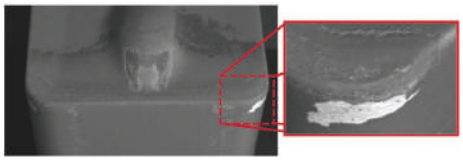
Alloy steel (SCM440) **P**

AH7025



No. of grooving: 60 pcs

Conventional grade



No. of grooving: 30 pcs

Insert : DTE3-040 AH7025
Cutting speed : V_c = 150 m/min
Feed : f = 0.17 mm/rev
Groove depth : 17 mm
Machining : External grooving
Coolant : Wet

Allows stable machining without peeling off, evenafter twice the cutting time versus the conventional grade.
→ The combination of Nano-multi-layered AlTiN Coating with high Al content and tough substrate provides highly efficient machining in various grooving operations

Grade

AH7025 P M S

- First recommended grade for general purpose
- New PVD coating with high Al content provides excellent adhesion strength
- Improved wear and chipping resistance

AH725 P M S

- General purpose
- Newly developed coating with well controlled rystal structure and fracture resistance
- Improved adhesion strength

T515 K

- First recommended grade for cast iron
- Exellent wear resistance in high-speed machining

T9225 P

- Suitable for steel machining at high speed
- New CVD coating and substrate deliver an outstanding balance
- Balance of wear and chipping resistance

T9125 P

- Suitable for steel machining at high speed
- Balance of wear and chipping resistance

NS9530 P

- Advanced cermet for finish cutting
- Innovative grade with incredible fracture and high wear resistance

GH130 P M K

- Recommended for interrupted machining
- TiCNO PVD coating layer with high wear resistance
- High hardness

AH905 S

- Remarkable for machining of heat resistant alloy
- Exclusive coating layer improves adhesion strength and wear resistance

KS05F N S

- Recommended for non-ferrous materials
- For titanium

TH10 N

- Recommended for non-ferrous materials

BX360 H

- Suitable for hardened steel machining
- Ideal balance of wear and chipping resistance due to the optimum CBN content and grain size

PARTS FOR COOLANT HOSE

Connecting hose

Fig.1

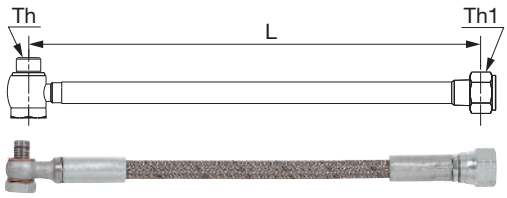
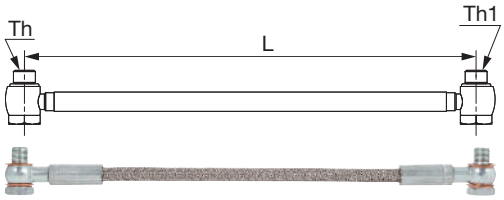
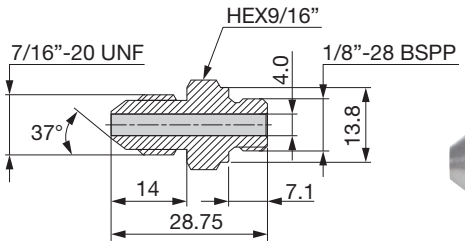


Fig.2



Designation	Length L	Screw Th	Screw Th1	Max. pressure (Mpa)	Fig.
CHP-HOSE-G1/8-7/16-200BS	200	G1/8"-28 BSPP	7/16"-20 UNF	26	1
CHP-HOSE-G1/8-7/16-250BS	250	G1/8"-28 BSPP	7/16"-20 UNF	26	1
CHP-HOSE-5/16-7/16-200BS	200	5/16"-24UNF	7/16"-20 UNF	20	1
CHP-HOSE-5/16-G1/8-200BS	200	5/16"-24UNF	G1/8"-28 BSPP	20	1
CHP-HOSE-G1/8-G1/8-200BB	200	G1/8"-28 BSPP	G1/8"-28 BSPP	26	2
CHP-HOSE-G1/8-G1/8-250BB	250	G1/8"-28 BSPP	G1/8"-28 BSPP	26	2

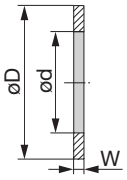
Adapter





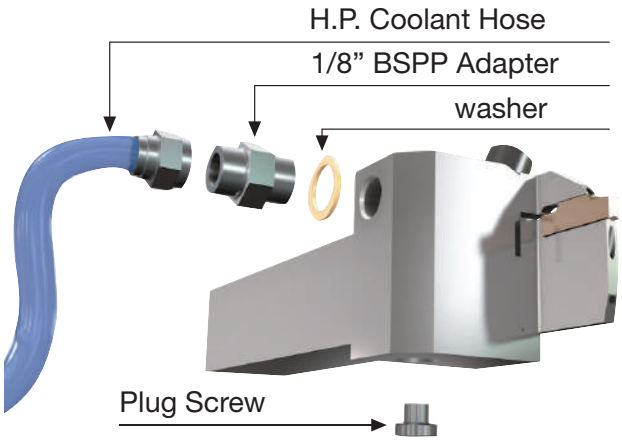
Designation
CHP-NIPPLE-G1/8-7/16UNF

Seal washer





Designation	øD	ød	W
CHP-COPPER-SEAL1/8	15	8	1
CHP-COPPER-SEAL5/16	11	8	1
CHP-COPPER-SEAL5/16-2.5	11	8	2.5



Miniature Machining



Miniature Machining - Content structure

- Products are listed by application.
- In the same application, products are listed by cutting edge shape.
- The same cutting edge shape are sorted by insert.
- Items are listed by product series.
- Toolholders in the catalog are our standard stock items.

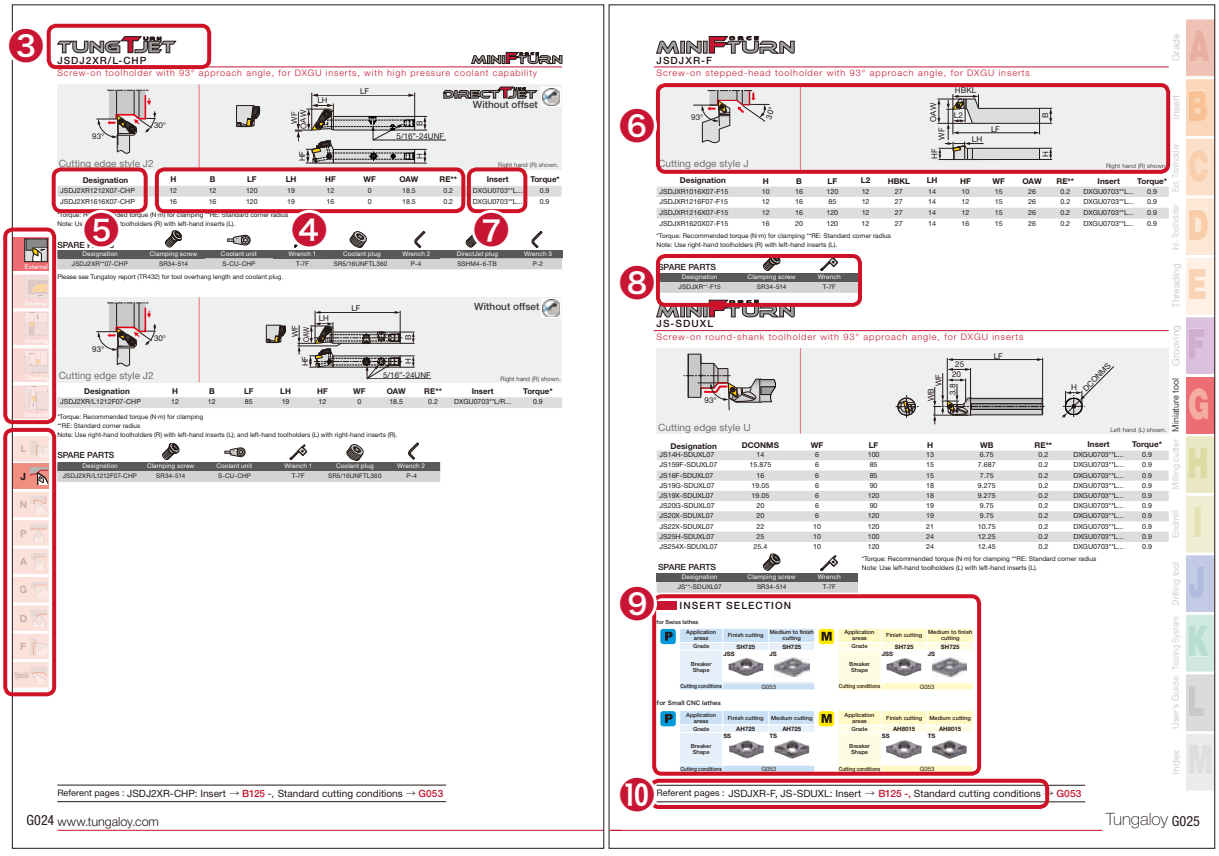
How to use the page

Method ① Select the application and the cutting edge shape described at the left end of each page, jump to the page on the left index, and choose a designation you need (❺) in the dimension table (❹). Applicable inserts are shown in (❼) and (❾).

Method ②. Select the cutting edge on G003 and check the details on the product page.

Method ③. Select the series name on G003 and check the details on each page.

Method ④ Select an item from Quick Guide on G004 - G013.



❶ : Application
❷ : Cutting edge shape
❸ : Tool series name
❹ : Dimension table
❺ : Toolholder designation
e.g. right-hand, 25x25 square shank

→ **JSDJ2X R 1212 X07-CHP**

❻ : Dimension drawing (conforming to ISO13399)
❼ : Applicable insert
❽ : Spare parts
❾ : Insert selection
❿ : Reference page

When ordering
- Please specify the designation and quantity.

e.g. **JSWL2XR1212X04-CHP** ... 1 (one toolholder per package)
* Inserts are not included. Please order those separately.

Main products

L 95° G017
J 93° G023
N 63° G036
P 62.5° G038
A 91° G039
G 91° G041
D 45° G042
F 91° G043
Special G043



MINI FORCE TURN MINI FORCE TURN

Economical double-sided inserts with excellent sharpness

G016



J-SERIES J-SERIES

Toolholders for small-part machining

G004 - G006, G009 - G010
G011, F076 - F082



TETRA MINI CUT TETRA MINI CUT

Unique insert pocket geometry for grooving with high quality and precision

CW = 0.33 - 3.0 mm

G009, G011, G062 - G069
F006 - F007, F033 - F042



TETRA FORCE CUT TETRA FORCE CUT

4-cornered insert with good clamping rigidity for highly precise grooving and parting

CW = 0.5 - 3.18 mm

G009, G070 - G074
F006 - F007, F043 - F051



DUO JUST CUT DUO JUST CUT

Innovative clamping system for high rigidity in parting

CW = 1.0 - 2.0 mm

G010, G011, G086 - G094



TUNGCUT TUNGCUT

Multi-functional tool series for various grooving operations

CW = 1.4 - 4.0 mm

G010, G095 - G102, F006 - F032
F087 - F102, F122 - F141



TINY MINI TURN TINY MINI TURN

Solid boring bar for turning small diameters with high precision

G013, G054 - G061



TUNG HEAVY GROOVE TUNG HEAVY GROOVE

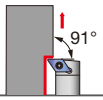
Highly rigid clamping for wide grooving and profiling in one pass

CW = 10 - 25 mm

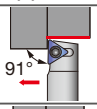
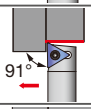
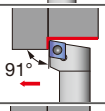
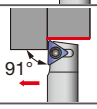
G009, G078 - G079
F006 - F007, F066 - F069

Miniature External Turning - Quick Guide

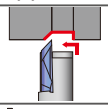
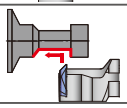
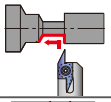
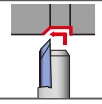
Facing

Application	Designation	Insert: Positive type	Insert: Negative type	Shank size (mm)	Clamping style	page
	**JSDFCR/L** Cutting edge angle 91° Insert: DC□□	✓		12 16	Screw-on clamping with offset	G043

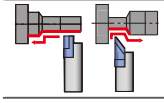
External Turning

Application	Designation	Insert: Positive type	Insert: Negative type	Shank size (mm)	Clamping style	page
	**JTTACR/L** Cutting edge angle 91° Insert: TC□□	✓		8 16	Back side clamping without offset	G039
	**JSTACR/L** Cutting edge angle 91° Insert: TC□□	✓		8 16	Screw-on clamping without offset	G039
	**JSCGCR/L** Cutting edge angle 91° Insert: CC□□	✓		12 16	Screw-on clamping with offset	G041
	**JTTANR/L** Cutting edge angle 91° Insert: TN□□		✓	12 16	Back side clamping without offset	G047

Back Turning

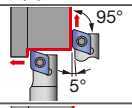
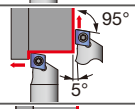
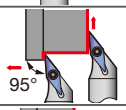
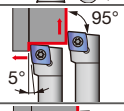
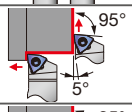
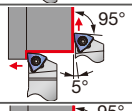
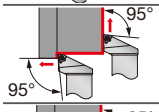
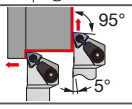
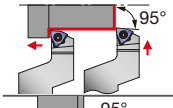
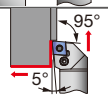
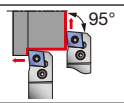
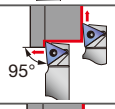
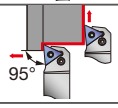
Application	Designation	Insert: Positive type	Insert: Negative type	Shank size (mm)	Clamping style	page
	**JSTBR/L** Insert: JTBR/L3□□	✓		10 16	Screw-on clamping	G048
	**JS-TBL3** Insert: JTBR3□□	✓		ø19.05 ø25.4	Screw-on clamping	G048
	**JSEGR/L** Insert: J10ER/L□□	✓		10 16	Screw-on clamping	G050
	**JSXBR/L** Insert: JXBR/L8□□	✓		10 25	Screw-on clamping	G052

Front & Reverse Turning

Application	Designation	Insert: Positive type	Insert: Negative type	Shank size (mm)	Clamping style	page
	**JSXGR/L** Insert: JXFR/L8 JXRR/L8	✓		10 25	Screw-on clamping	G043

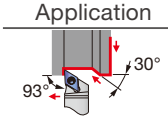
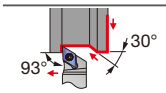
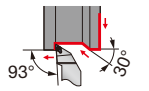
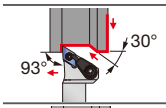
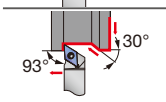
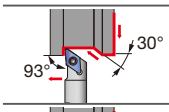
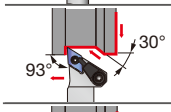
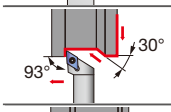
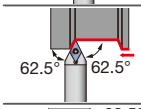
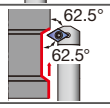
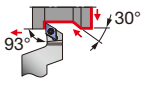
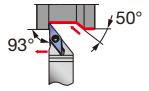
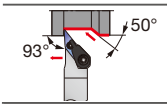
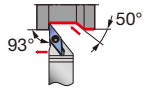
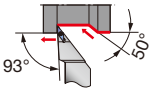
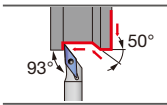
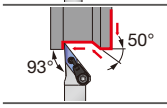
Miniature External Turning - Quick Guide

External Turning & Facing

Application	Designation	Insert: Positive type	Insert: Negative type	Shank size (mm)	Clamping style	page
	**JTCL2CR/L** Cutting edge angle 95° Insert: CC□□	✓		8 — 16	Back side clamping without offset	G020
	**JSCL2CR/L** Cutting edge angle 95° Insert: CC□□	✓		10 — 16	Screw-on clamping without offset	G019
	**JSVL2PR/L** Cutting edge angle 95° Insert: VP□□	✓		10 — 16	Screw-on clamping without offset	G022
	**JSCLCR/L** Cutting edge angle 95° Insert: CC□□	✓		8 — 16	Screw-on clamping with offset	G021
	**JPWL2XR/L** Cutting edge angle 95° Insert: WXGU	✓		10 — 16	Side clamping without offset	G017
	**JSWL2XR/L** Cutting edge angle 95° Insert: WXGU	✓		10 — 20	Screw-on clamping without offset	G017
	**JSWLXR/L** Cutting edge angle 95° Insert: WXGU	✓		20 — 25	Screw-on clamping with offset	C029
	**JSWL2XR/L-CHP** Cutting edge angle 95° Insert: WXGU	✓		12 — 16	Screw-on clamping without offset	G018
	**JSWLXR-F** Cutting edge angle 95° Insert: WXGU	✓		10 — 16	Screw-on clamping with offset	G018
	**PCLNR** Cutting edge angle 95° Insert: CN□□		✓	20	Lever-lock clamping with offset	G044
	**PCL2NR** Cutting edge angle 95° Insert: CN□□		✓	20	Lever-lock clamping without offset	G044
	**JTTLNR/L** Cutting edge angle 95° Insert: TN□□		✓	12 — 16	Back side clamping without offset	G045
	**PTL2NR/L** Cutting edge angle 95° Insert: TN□□		✓	20	Lever-lock clamping without offset	G045

Miniature External Turning - Quick Guide

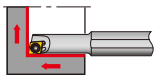
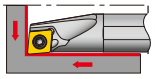
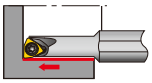
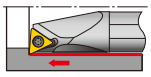
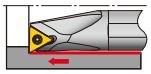
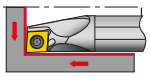
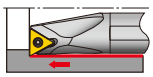
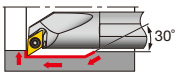
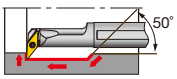
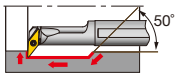
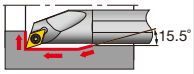
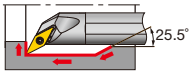
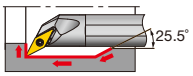
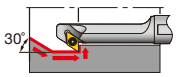
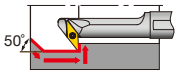
External Turning & Profiling

Application	Designation	Insert: Positive type	Insert: Negative type	Shank size (mm)	Clamping style	page
	**JPDJ2XR/L** Cutting edge angle 93° Insert: DXGU	✓		10 16	Side clamping without offset	G023
	**JSDJ2XR/L** Cutting edge angle 93° Insert: DXGU	✓		10 20	Screw-on clamping without offset	G023
	**JSDJXR/L** Cutting edge angle 93° Insert: DXGU	✓		20 25	Screw-on clamping with offset	C037
	**JSDJ2XR/L-CHP** Cutting edge angle 93° Insert: DXGU	✓		12 16	Screw-on clamping without offset	G024
	**JTDJ2CR/L** Cutting edge angle 93° Insert: DC□□	✓		10 16	Back side clamping without offset	G026
	**JSDJ2CR/L** Cutting edge angle 93° Insert: DC□□	✓		8 16	Screw-on clamping without offset	G026
	**JSDJ2CR/L-CHP** Cutting edge angle 93° Insert: DC□□	✓		12 16	Screw-on clamping without offset	G027
	**JSDJCR/L** Cutting edge angle 93° Insert: DC□□	✓		8 16	Screw-on clamping with offset	G028
	**JSDNCN** Cutting edge angle 62.5° Insert: DC□□	✓		10 16	Screw-on clamping with offset	G036
	**JSDN3CR/L** Cutting edge angle 62.5° Insert: DC□□	✓		12 16	Screw-on clamping with offset	G036
	**JSDJXR-F** Cutting edge angle 93° Insert: DXGU	✓		10 16	Screw-on clamping with offset	G025
	**JPVJ2XR/L** Cutting edge angle 93° Insert: VXGU	✓		10 16	Side clamping without offset	G030
	**JSVJ2XR/L-CHP** Cutting edge angle 93° Insert: VXGU	✓		12 16	Screw-on clamping without offset	G031
	**JSVJ2XR/L** Cutting edge angle 93° Insert: VXGU	✓		10 20	Screw-on clamping without offset	G030
	**JSVJXR/L** Cutting edge angle 93° Insert: VXGU	✓		20 25	Screw-on clamping with offset	C054
	**JSVJ2BR/L** Cutting edge angle 93° Insert: VB□□	✓		10 16	Screw-on clamping without offset	G033
	**JSVJ2BR/L-CHP** Cutting edge angle 93° Insert: VB□□	✓		12	Screw-on clamping without offset	G034

Miniature Internal Turning - Quick Guide

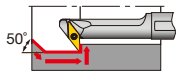
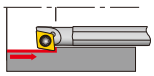
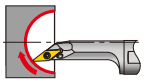
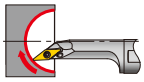
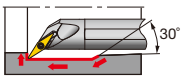
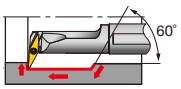
Positive type

StreamJet-Bar

Application	Description & Application	ISO insert	Y-Pro	Shank Material	Shank Size	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	page
	**SEXPR/L** Boring & Internal facing Insert: EP□□	✓		Steel Uncoated	ø4 - ø8 ø4 - ø8	ø4.5 ø7 ø4.5 ø7	D031 D032
	**SCLCR/L** Boring & Internal facing Insert: CC□□	✓		Steel Uncoated	ø4 - ø25 ø4 - ø25	ø5 ø27 ø5 ø27	D014 D016
	**SWUBR/L** Boring Insert: WB□□	✓		Steel Uncoated	ø5 - ø8 ø5 - ø8	ø6 ø8 ø6 ø8	D073
	**STUPR/L** Boring Insert: TP□□	✓		Steel Uncoated	ø7 - ø32 ø7 - ø25	ø8 ø34 ø8 ø27	D056 D058
	**STFPR/L** Blind hole boring Insert: TP□□	✓		Steel Uncoated	ø8 - ø25 ø8 - ø20	ø10 ø27 ø10 ø22	D041
	**SCLPR/L** Boring & Internal facing Insert: CP□□	✓		Steel Uncoated	ø8 - ø25 ø8 - ø16	ø10 ø27 ø10 ø20	D017 D018
	**STFCR/L** Blind hole boring Insert: TC□□	✓		Steel Uncoated	ø10 - ø16 ø10 - ø16	ø12 ø18 ø12 ø18	D040
	**SDUCR/L** Boring & Internal profiling Insert: DC□□	✓		Steel Uncoated	ø10 - ø25 ø10 - ø20	ø13 ø32 ø13 ø27	D048
	**SVUCR/L** Boring & Internal profiling Insert: VC□□	✓		Steel Uncoated	ø12 - ø25 ø12 - ø25	ø16 ø32 ø18 ø32	D066
	**SVUBR/L** Boring & Internal profiling Insert: VB□□	✓		Steel Uncoated	ø16 - ø25 ø16 - ø25	ø20 ø32 ø24.5 ø34	D062 D063
	**SDQCR/L** Boring & Internal profiling Insert: DC□□	✓		Steel Uncoated	ø10 - ø25 ø10 - ø20	ø13 ø30 ø13 ø25	D075 D076
	**SVQCR/L** Boring & Internal profiling Insert: VC□□	✓		Steel Uncoated	ø10 - ø16 ø10 - ø16	ø13.5 ø21.5 ø13.5 ø21.5	D080
	**SVQBR/L** Boring & Internal profiling Insert: VB□□	✓		Steel Uncoated	ø12 - ø25 ø12 - ø25	ø17 ø30.5 ø17 ø30.5	D078 D079
	**SDZCR/L** Internal retracting Insert: DC□□	✓		Steel Uncoated	ø12 - ø25 ø12 - ø16	ø14 ø25 ø18 ø22	D084
	**SVZCR/L** Internal retracting Insert: VC□□	✓		Steel	ø12	ø16	D088

Miniature Internal Turning - Quick Guide

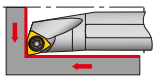
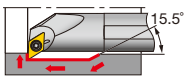
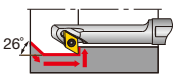
StreamJet-Bar

Application	Description & Application	ISO insert	Y-Pro	Shank Material	Shank Size	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	page
	**SVZBR/L** Internal retracting Insert: VB□□	✓		Steel	ø16 - ø32	ø20 ø40	D087
	**SEZPR/L** Internal retracting Insert: EP□□	✓		Steel Uncoated	ø4 - ø5 ø4 - ø5	ø5.5 ø6.5 ø5.5 ø6.5	D086
	**SVJCR/L** Internal sphere cutting Insert: VC□□	✓		Steel	ø12 - ø16	ø16 ø20	D035
	**SVJBR/L** Internal sphere cutting Insert: VB□□	✓		Steel	ø20 - ø25	ø25 ø30	D034
	**SYQBR/L** Internal undercut & profiling Insert: YW□□		✓	Steel Uncoated	ø12 - ø16 ø12 - ø16	ø17 ø21.5 ø17 ø21.5	D082
	**SYUBR/L** Boring & Internal profiling Insert: YW□□		✓	Steel Uncoated	ø16 ø12 - ø16	ø20 ø20 ø24.5	D074

Miniature Internal Turning - Quick Guide

Double-sided insert with positive cutting edges

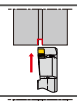
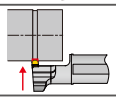
MiniForce-Turn

Application	Description & Application	MiniForce-Turn	Shank Material	Shank Size	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	page
	**SWLXR/L** Boring & Internal facing Insert: WXGU	✓	Steel Uncoated	ø10 - ø20 ø10 - ø20	ø12 ø22 ø12 ø22	D026
	**SDXXR/L** Boring & Internal profiling Insert: DXGU	✓	Steel Uncoated	ø10 - ø20 ø10 - ø20	ø13 ø24 ø13 ø24	D033
	**SDZXR/L** Internal retracting Insert: DXGU	✓	Steel Uncoated	ø12 - ø20 ø12 - ø16	ø14 ø20 ø18 ø22	D083

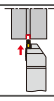
Miniature Grooving - Quick Guide

External Grooving

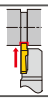
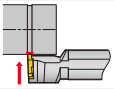
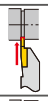
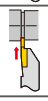
TetraMini-Cut

Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. groove depth (mm)	page
	**STCR/L-18-CHP**	TC*18R/L...	12 16	0.33 - 3.0	0.8 - 3.5	G063
	**STCR/L-18**	TC*18R/L...	10 25	0.33 - 3.0	0.8 - 3.5	G062
	**JS-STCL18**	TC*18R...	ø14 ø25.4	0.33 - 3.0	0.8 - 3.5	G063

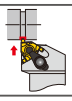
TetraForce-Cut

Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. groove depth (mm)	page
	**STCR/L-27**	TC*27...	10 25	0.5 - 3.18	1.0 - 6.4	G070

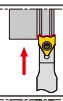
J-series

Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. groove depth (mm)	page
	**JSTGR/L**	JTGR/L3...	10 16	0.33 - 3.0	0.7 - 2.6	G074
	**JS-TGL3**	JTGR3...	ø19.05 ø25.4	0.33 - 3.0	0.7 - 2.6	G074
	**JSVGR/L**	JVGR/L...	10 16	0.33 - 2.0	0.7 - 5.5	G077
	**JSXGR/L**	JXGR/L8...	10 25	0.7 - 2.0	4.5 - 6.0	G076

GTGN

Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. groove depth (mm)	page
	**CER/L**	GTGN-16E...	12 20	1.0 - 2.25	1.0 - 6.4	F064

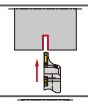
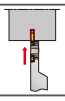
TungHeavyGroove

Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. groove depth (mm)	page
	**FPGN**	PSGB...	12 25	10 - 25	Wide grooving and profiling	G078
	**SPGN**	PSGB...	12 25	10 - 25	Wide grooving and profiling	G078

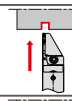
Miniature Parting - Quick Guide

Parting

DuoJustCut

Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. parting diameter (mm)	page
	**JSXXR/L-X-CHP**	JXPG…	12 16	1.0 - 2.0	ø20	G087
	**JSXXR/L-X-S-CHP** **JSXXR/L-F-S-CHP**	JXPG…	12 16	1.0 - 2.0	ø20	G088
	**JSXXR/L**	JXPG…	10 20	1.0 - 2.0	ø20	G086
	**JSXXR/L-S**	JXPG…	10 16	1.0 - 2.0	ø20	G086

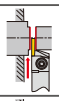
TungCut

Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. parting diameter (mm)	page
	**JCTER/L-CHP**	DG…/SG…	12 20	1.4 - 3.0	ø32	G096
	**JCTER/L**	DG…/SG…	10 20	1.4 - 3.0	ø32	G095
	**CGER/L**	DG…/SG…	10 20	1.4 - 3.0	ø55	G095

My-T

Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. parting diameter (mm)	page
	**JCGSSR/L**	GE20…	10 25	2.0	ø32	F058

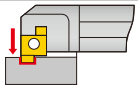
J-series

Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. parting diameter (mm)	page
	**JCCWSR/L**	JCC*200F…	10 25	2.0	ø20	F078
	**JCGWSR/L**	JCGN200F…	10 16	2.0	ø20	F079

Miniature Grooving - Quick Guide

Internal Grooving

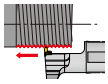
SNG

Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. groove depth (mm)	Min. bore diameter (mm)	page
	**SNGR/L**	*GR/L…	ø8.0 ø20.0	1.0 - 3.5	1.5 - 3.0	8.0 - 24.0	F112

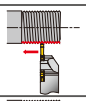
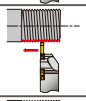
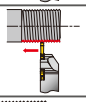
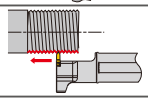
Miniature Threading - Quick Guide

External Threading

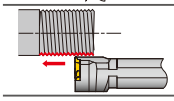
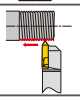
TetraMini-Cut

Application	Designation	Insert	Shank size (mm) 0 10 20 30	corner R (mm)	Pitch (mm)	page
	**STCR/L-18-CHP**	TCT18R/L...	12 16	0.05 - 0.2	0.4 - 3.0	G063
	**STCR/L-18**	TCT18R/L...	10 25	0.05 - 0.2	0.4 - 3.0	G062
	**JS-STCL18**	TCT18R...	ø14 ø25.4	0.05 - 0.2	0.4 - 3.0	G063

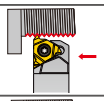
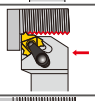
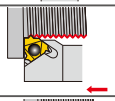
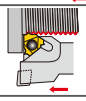
DuoJust-Cut

Application	Designation	Insert	Shank size (mm) 0 10 20 30	corner R (mm)	Pitch (mm)	page
	**JSXXR/L-CHP**	JXTG12...	12 16	0.05Max. - 0.1	0.2 - 1.5	G087
	**JSXXR/L-X-S-CHP** **JSXXR/L-F-S-CHP**	JXTG12...	12 16	0.05Max. - 0.1	0.2 - 1.5	G088
	**JSXXR/L**	JXTG12...	10 20	0.05Max. - 0.1	0.2 - 1.5	G086
	**JSXXR/L-S**	JXTG12...	10 16	0.05Max. - 0.1	0.2 - 1.5	G086
	**JS-SXXL09**	JXTG12R...	ø19.05 ø25.4	0.05Max. - 0.1	0.2 - 1.5	G090

J-series

Application	Designation	Insert	Shank size (mm) 0 10 20 30	corner R (mm)	Pitch (mm)	page
	**JSTTR/L**	JTTR/L3...	10 16	0.05 - 0.1	0.5 - 1.0	G084
	**JS-TTL3**	JTTR3...	ø19.05 ø25.4	0.05 - 0.1	0.5 - 1.0	G084
	**JSXBR/L**	JXT*R6000F	10 25	0.03	0.5 - 1.0	G083

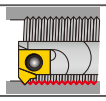
TungThread

Application	Designation	Insert	Shank size (mm) 0 10 20 30	corner R (mm)	Pitch (mm)	page
	**JSE2R16-CHP**	16ER/L...	12 16	0.05 - 0.22	0.5 - 3.0	G080
	**CER/L**	16ER/L...	12 25	0.05 - 0.22	0.5 - 3.0	F064
	**B-S/CER/L**	16ER/L...	-	0.05 - 0.22	0.5 - 3.0	G081
	**BC-SER/L**	16ER/L...	-	0.05 - 0.22	0.5 - 3.0	E035

Miniature Threading - Quick Guide

Internal Threading

TungThread

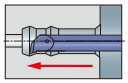
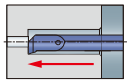
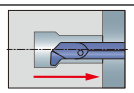
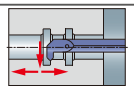
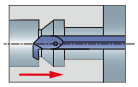
Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. groove depth (mm)	Min. bore diameter (mm)	page
	**SNR/L**	6IR/L...	8	-	0.5 - 2.0	8.0 - 10.0	E036

Miniature Internal Turning - Quick Guide

TinyMini-Turn - Solid carbide tools for small diameters turning

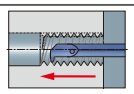
Boring, profiling & chamfering

TinyMini-Turn

Application	Description & Application	Shank Size	Min. bore diameter DMIN (mm) 0 2 4 6 8 10	page
	**JBT** Boring, profiling & chamfering	ø4 & ø7	ø0.6 — ø7	G054
	**JBP** Face grooving	ø4 & ø7	ø2.8 — ø5	G055
	**JBU** Back boring & chamfering	ø7	ø5	G055
	**JBC** Boring & 45°chamfering	ø7	ø5 — ø6.8	G055
	**JBB** Back boring	ø4 & ø7	ø3 — ø7	G056

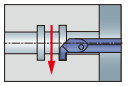
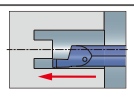
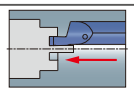
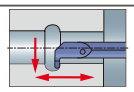
Threading

TinyMini-Turn

Application	Description & Application	Shank Size	Min. bore diameter DMIN (mm) 0 2 4 6 8 10	page
	**JBI** Threading (Metric thread)	ø4 & ø7	ø4 — ø7	G056

Internal Grooving

TinyMini-Turn

Application	Description & Application	Shank Size	Groove width	Min. bore diameter DMIN (mm) 0 2 4 6 8 10 12 14 15	page
	**JBG** Internal Grooving	ø4 & ø7	0.5 - 2	ø2 — ø6.8	G057
	**JBF** Face grooving	ø7	1 - 3	ø6 — ø15	G058
	**JBS** Face grooving (for shaft)	ø7	2	ø6	G058
	**JBR** Boring & profiling (full radius type)	ø7	1	ø5 — ø6.8	G058

TUNG TURN JET



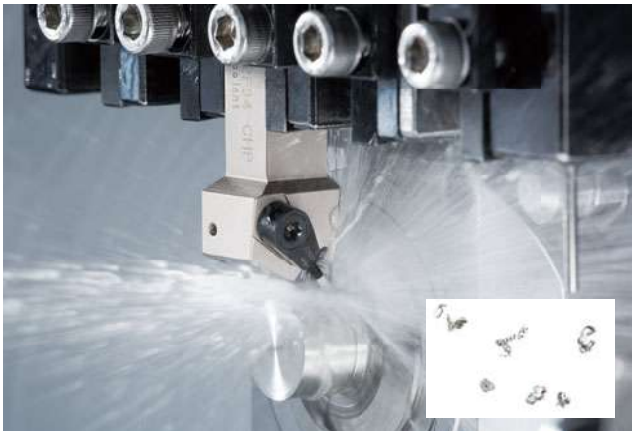
Thru-coolant holder system

High pressure coolant is supplied through the holder to facilitate smooth chip evacuation, improved chip breaking and reduced machine down-time

External coolant supply at normal pressure



High pressure coolant (7 MPa)



Coolant jets from two outlets ensure high cutting efficiency and extended tool life

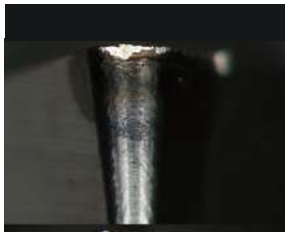
Directly to the cutting edge

Reliable chip control
Reduces crater and notch wears

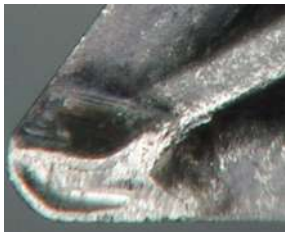




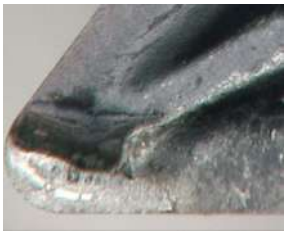
Excessive wear with external coolant supply (at normal pressure)



High pressure coolant (7 MPa)



Excessive crater wear with external coolant supply (at normal pressure)

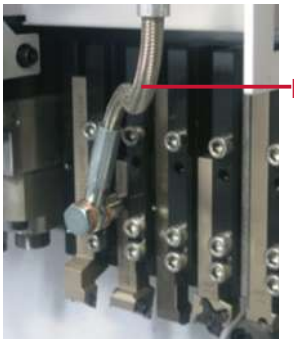


High pressure coolant (7 MPa)

Reference pages: G018, G020, G024, G027, G031, G034, G063, G087, G088, G096

Tube-free design streamlines tool setup.
Through-coolant supply enables high productivity

Conventional

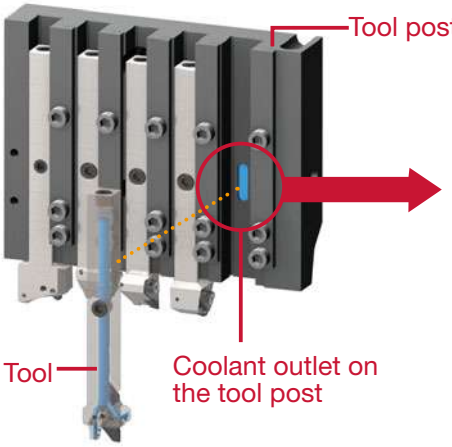


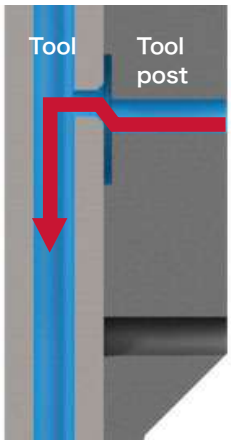
DirectTung-Jet system

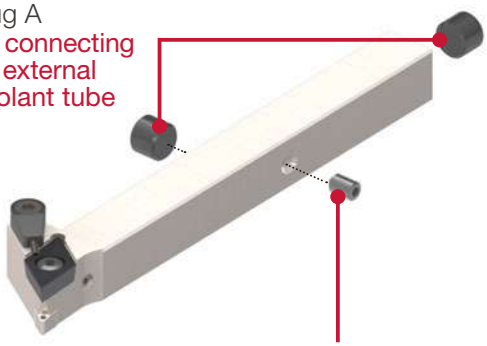


No need for coolant tube setup. Eliminates chip entanglement on tubes and streamlines tool replacement.

Coolant is supplied from the tool post directly to the tools.







Use a non-coolant-through tool **when a coolant supply is not needed through the tool.**





Nozzle tube delivers coolant directly to the cutting edge

Reference pages : G018, G020, G024, G027, G031, G034, G063, G080, G087, G088, G096



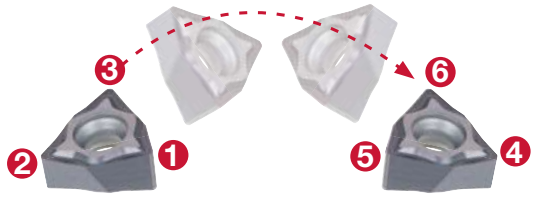


Economical double-sided positive insert

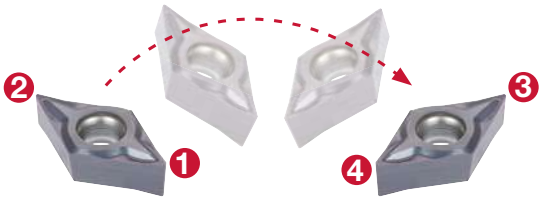
Innovative geometry and seat interface ensures stability and high performance.

Insert

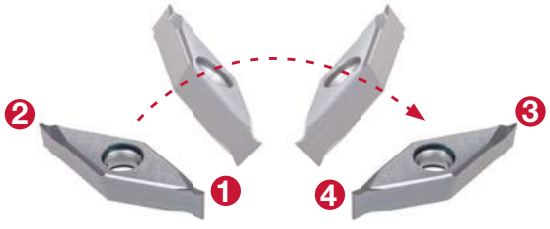
WXGU0403·· 6 positive cutting edges



DXGU0703·· 4 positive cutting edges

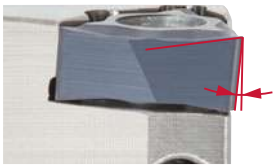


VXGU09T2·· 4 positive cutting edges

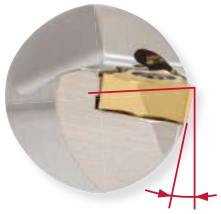


High rake angle

External turning



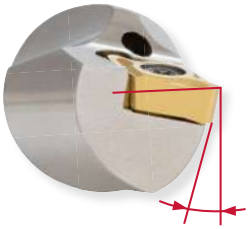
Internal turning



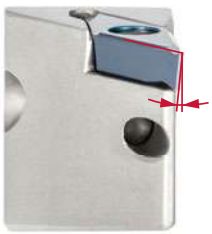
External turning



Internal turning



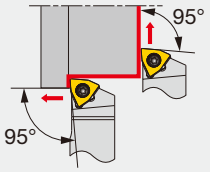
External turning



Reference pages : G017 - G019, G023, G025, G030, G02, G053

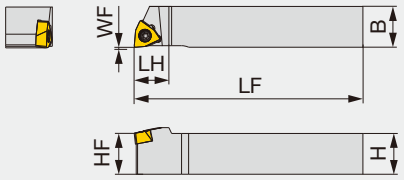
MINIFORCE TURN
JSWL2XR/L

Screw-on toolholder with 95° approach angle, for WXGU inserts



Cutting edge style L2

Without offset



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSWL2XR/L1010X04	10	10	120	11	10	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1212F04	12	12	85	11	12	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1212X04	12	12	120	11	12	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1616X04	16	16	120	13	16	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L2020H04	20	20	100	13	20	0	0.2	WXGU0403**L/R...	0.9

*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

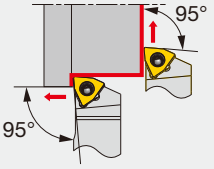
SPARE PARTS




Designation	Clamping screw	Wrench
JSWL2XR/L...	SR34-514	T-7F

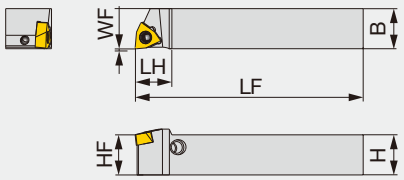
MINIFORCE TURN
JPWL2XR/L

Lever-lock toolholder with 95° approach angle, for WXGU inserts



Cutting edge style L2

Without offset



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JPWL2XR/L1010X04	10	10	120	11	10	0	0.2	WXGU0403**L/R...	0.9
JPWL2XR/L1212F04	12	12	85	11	12	0	0.2	WXGU0403**L/R...	0.9
JPWL2XR/L1212X04	12	12	120	11	12	0	0.2	WXGU0403**L/R...	0.9
JPWL2XR/L1616X04	16	16	120	13	16	0	0.2	WXGU0403**L/R...	0.9

*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS






Designation	Lever	Pin	Clamping screw	Wrench
JPWL2XR/L...	SLLV-2	SL-PI-2	SR10400611	HW2.0/5RED

INSERT SELECTION

for Swiss lathes

P	Application areas	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Breaker Shape	JSS 	JS 
	Cutting conditions	G053	

M	Application areas	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Breaker Shape	JSS 	JS 
	Cutting conditions	G053	

for Small CNC lathes

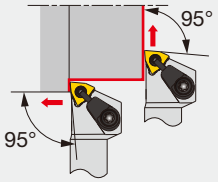
P	Application areas	Finish cutting	Medium cutting
	Grade	AH725	AH725
	Breaker Shape	SS 	TS 
	Cutting conditions	G053	

M	Application areas	Finish cutting	Medium cutting
	Grade	AH8015	AH8015
	Breaker Shape	SS 	TS 
	Cutting conditions	G053	

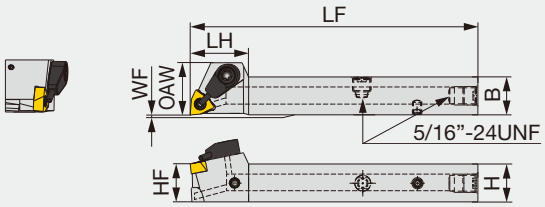
Reference pages : JSWL2XR/L, JPWL2XR/L: Insert → B158 -, Standard cutting conditions → G053

JSWL2XR/L-CHP

Screw-on toolholder with 95° approach angle, for WXGU inserts, with high pressure coolant capability



Cutting edge style L2



DIRECTTJET Without offset

Right hand (R) shown.

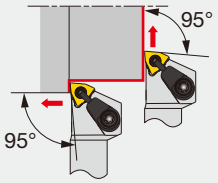
Designation	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSWL2XR1212X04-CHP	12	12	120	18.5	12	0	16.5	0.2	WXGU0403**L...	0.9
JSWL2XR1616X04-CHP	16	16	120	18.5	16	0	16.5	0.2	WXGU0403**L...	0.9

*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L).

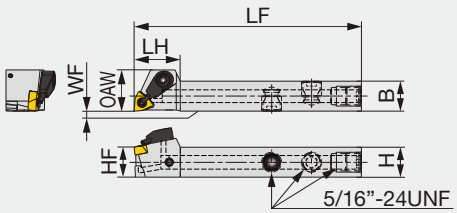
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench
JSWL2XR**04-CHP	SR34-514	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Please see Tungaloy report (TR432) for tool overhang length and coolant plug.



Cutting edge style L2



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSWL2XR/L1212F04-CHP	12	12	85	18	12	0	16.5	0.2	WXGU0403**L/R...	0.9

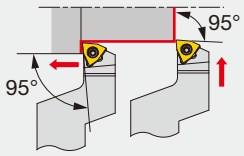
*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

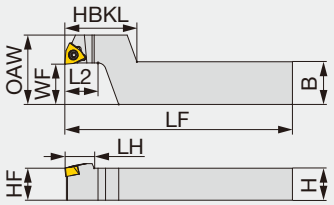
Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2
JSWL2XR/L1212F04-CHP	SR34-514	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4

MINIFORCE TURN JSWLXR-F

Screw-on stepped-head toolholder with 95° approach angle, for WXGU inserts



Cutting edge style L



Right hand (R) shown.

Designation	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSWLXR1016X04-F15	10	16	120	12	27	11	10	15	26	0.2	WXGU0403**L...	0.9
JSWLXR1216F04-F15	12	16	85	12	27	11	12	15	26	0.2	WXGU0403**L...	0.9
JSWLXR1216X04-F15	12	16	120	12	27	11	12	15	26	0.2	WXGU0403**L...	0.9
JSWLXR1620X04-F15	16	20	120	12	27	11	16	15	26	0.2	WXGU0403**L...	0.9

*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
JSWLXR**-F15	SR34-514	T-7F

Reference pages : JSWL2XR/L-CHP, JSWLXR-F: Insert → B158 -, Standard cutting conditions → G053

INSERT SELECTION

for Swiss lathes

P	Application areas	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Breaker Shape	JSS 	JS 
	Cutting conditions	G053	

M	Application areas	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Breaker Shape	JSS 	JS 
	Cutting conditions	G053	

for Small CNC lathes

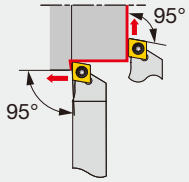
P	Application areas	Finish cutting	Medium cutting
	Grade	AH725	AH725
	Breaker Shape	SS 	TS 
	Cutting conditions	G053	

M	Application areas	Finish cutting	Medium cutting
	Grade	AH8015	AH8015
	Breaker Shape	SS 	TS 
	Cutting conditions	G053	

J-SERIES

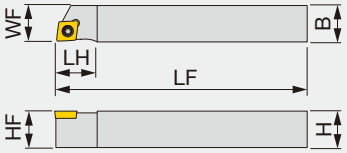
JSCL2CR/L

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style L2

Without offset



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSCL2CR/L1010X06	10	10	120	12	10	10	0.2	CC**0602...	1.2
JSCL2CR/L1212F06	12	12	85	12	12	12	0.2	CC**0602...	1.2
JSCL2CR/L1212X06	12	12	120	12	12	12	0.2	CC**0602...	1.2
JSCL2CR/L1212F09	12	12	85	16	12	12	0.2	CC**09T3...	1.2
JSCL2CR/L1212X09	12	12	120	16	12	12	0.2	CC**09T3...	1.2
JSCL2CR/L1616X09	16	16	120	16	16	16	0.2	CC**09T3...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS




Designation	Clamping screw	Wrench
JSCL2CR/L**06	CSTB-2.5	T-8F
JSCL2CR/L**09	CSTB-4SD	T-8F

INSERT SELECTION

P	Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
	Grade	SH725	SH725	AH725	SH725
	Breaker Shape	01 	JS 	JS 	J10 
	Cutting conditions	G053			

M	Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
	Grade	SH725	SH725	AH725	SH725
	Breaker Shape	01 	JS 	JS 	J10 
	Cutting conditions	G053			

K	Application areas	medium to finish cutting
	Grade	T515
	Breaker Shape	CM 
	Cutting conditions	B022

N	Application areas	Precision finishing	Finish cutting	Medium cutting
	Grade	DX120	TH10	KS05F
	Breaker Shape	T-DIA with rake 	W20 	AL 
	Cutting conditions	B024		

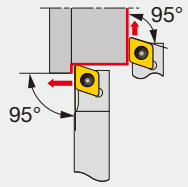
S	Application areas	Finish cutting	Medium to finish cutting
	Grade	SH725	AH725
	Breaker Shape	JS 	JS 
	Cutting conditions	G053	

H	Application areas	Precision finishing	Finish cutting
	Grade	BXM10	BXM20
	Breaker Shape	T-CBN 	T-CBN 
	Cutting conditions	B028	

Reference pages : JSCL2CR/L: Insert → B109 -, CBN → B180, PCD → B190 -

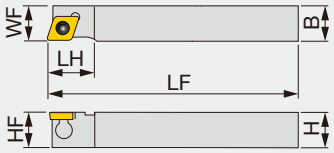
JTCL2CR/L

Back-clamp toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style L2

Without offset



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JTCL2CR/L1010X06	10	10	120	12	10	10	0.2	CC**0602...	0.9
JTCL2CR/L1212F09	12	12	85	16	12	12	0.2	CC**09T3...	1.2
JTCL2CR/L1212X09	12	12	120	16	12	12	0.2	CC**09T3...	1.2
JTCL2CR/L1616X09	16	16	120	16	16	16	0.2	CC**09T3...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

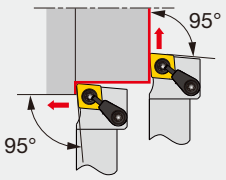
SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
JTCL2CR/L**06	JCP-2	JDS-3525	P-2F
JTCL2CR/L**09	JCP-3	JDS-5040	P-2.5F

JSCL2CR-CHP

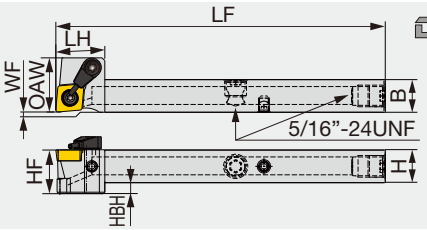
J-SERIES

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability



Cutting edge style L2





DIRECT TJET Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	HBH	WF	OAW	RE**	Insert	Torque*
JSCL2CR1212X09-CHP***	12	12	120	18	12	4	0	20	0.2	CC**09T3	1.2
JSCL2CR1212X09B-CHP	12	12	120	18	12	1.5	0	20	0.2	CC**09T3	1.2
JSCL2CR1616X09-CHP	16	16	120	18	16	0	0	20	0.2	CC**09T3	1.2

*Torque: Recommended torque (N·m) for clamping **RE : Standard corner radius
*** : This item will be replaced with a new product in the future.

SPARE PARTS

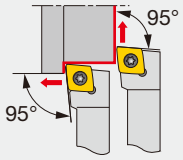
Designation	Clamping screw	Coolant unit	Wrench
JSCL2CR**-CHP	CSTB-4SD	S-CU-CHP	T-8F

Reference pages : JTCL2CR/L, JSCL2CR-CHP: Insert → B109 -, CBN → B180, PCD → B190 -

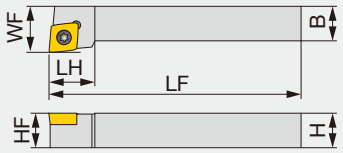
J-SERIES

JSCLCR/L

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style L



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSCLCR/L0808H06	8	8	100	12	8	10	0.4	CC**0602...	1.2
JSCLCR/L1010H06	10	10	100	12	10	12	0.4	CC**0602...	1.2
JSCLCR/L1212H09	12	12	100	16	12	16	0.8	CC**09T3...	1.2
JSCLCR/L1616H09	16	16	100	16	16	20	0.8	CC**09T3...	1.2

**RE: Standard corner radius

SPARE PARTS

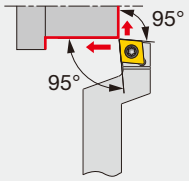



Designation	Clamping screw	Wrench
JSCLCR/L**H06	CSTB-2.5	T-8F
JSCLCR/L**H09	CSTB-4SD	T-8F

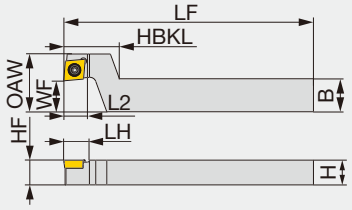
J-SERIES

JSCLCR-F

Screw-on stepped-head toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style L



Right hand (R) shown.

Designation	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSCLCR1216F09-F15	12	16	85	12	27	12.5	12	15	28	0.2	CC**09T3...	1.2
JSCLCR1216X09-F15	12	16	120	12	27	12.5	12	15	28	0.2	CC**09T3...	1.2
JSCLCR1620X09-F15	16	20	120	12	27	12.5	16	15	28	0.2	CC**09T3...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS

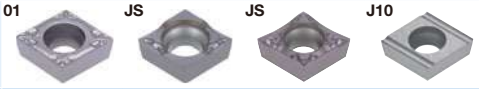



Designation	Clamping screw	Wrench
JSCLCR**F15	CSTB-4SD	T-8F

INSERT SELECTION

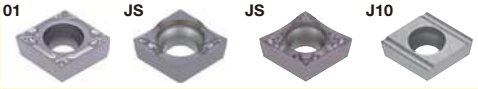
P

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Breaker Shape	01	JS	JS	J10
Cutting conditions	G053			



M

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Breaker Shape	01	JS	JS	J10
Cutting conditions	G053			



K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022



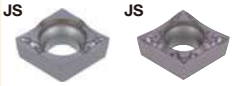
N

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	TH10	KS05F
Breaker Shape	T-DIA with rake	W20	AL
Cutting conditions	B024		



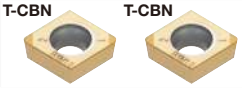
S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Breaker Shape	JS	JS
Cutting conditions	G053	



H

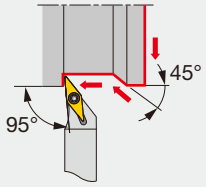
Application areas	Precision finishing	Finish cutting
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	



Reference pages :JSCLCR/L, JSCLCR-F: Insert → B109 -, CBN → B180, PCD → B190 -

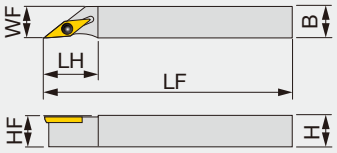
JSVL2PR/L

Screw-on toolholder with 95° approach angle, for positive 35° rhombic inserts



Cutting edge style L2

Without offset



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVL2PR/L1010X08	10	10	120	16	10	10	0.2	VP**0802...	0.6
JSVL2PR/L1010K08	10	10	125	16	10	10	0.2	VP**0802...	0.6
JSVL2PR/L1212F08	12	12	85	16	12	12	0.2	VP**0802...	0.6
JSVL2PR/L1212F11	12	12	85	21	12	12	0.2	VP**1103...	1.2
JSVL2PR/L1212X08	12	12	120	16	12	12	0.2	VP**0802...	0.6
JSVL2PR/L1212X11	12	12	120	21	12	12	0.2	VP**1103...	1.2
JSVL2PR/L1212K08	12	12	125	16	12	12	0.2	VP**0802...	0.6
JSVL2PR/L1616X08	16	16	120	16	16	16	0.2	VP**0802...	0.6
JSVL2PL1616K08	16	16	125	16	16	16	0.2	VP**0802...	0.6
JSVL2PR/L1616X11	16	16	120	21	16	16	0.2	VP**1103...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSVL2PR/L**08	CSTB-2L	T-6F
JSVL2PR/L**11	CSTB-2.5	T-8F

INSERT SELECTION

P

Application areas	Finish cutting	Finish cutting
Grade	SH725	SH725
Breaker Shape	JRP	JSP
Cutting conditions	G053	

M

Application areas	Finish cutting	Finish cutting
Grade	SH725	SH725
Breaker Shape	JRP	JSP
Cutting conditions	G053	

S

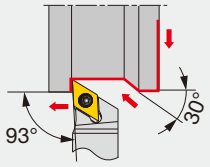
Application areas	Finish cutting	Finish cutting
Grade	SH725	SH725
Breaker Shape	JRP	JSP
Cutting conditions	G053	

Reference pages :JSVL2PR/L: Insert → B155 -

MINIFORCE TURN

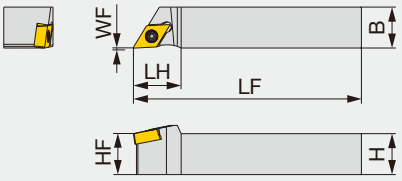
JSDJ2XR/L

Screw-on toolholder with 93° approach angle, for DXGU inserts



Cutting edge style J2

Without offset



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSDJ2XR/L1010X07	10	10	120	14	10	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L1212F07	12	12	85	14	12	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L1212X07	12	12	120	14	12	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L1616X07	16	16	120	18	16	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L2020H07	20	20	100	18	20	0	0.2	DXGU0703**L/R...	0.9

*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

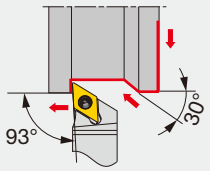
SPARE PARTS

Designation	Clamping screw	Wrench
JSDJ2XR/L...	SR34-514	T-7F

MINIFORCE TURN

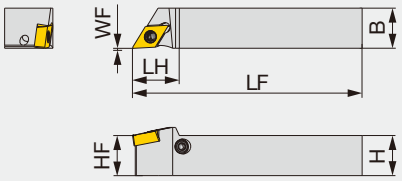
JPDJ2XR/L

Lever-lock toolholder with 93° approach angle, for DXGU inserts



Cutting edge style J2

Without offset



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JPDJ2XR/L1010X07	10	10	120	14	10	0	0.2	DXGU0703**L/R...	0.9
JPDJ2XR/L1212F07	12	12	85	14	12	0	0.2	DXGU0703**L/R...	0.9
JPDJ2XR/L1212X07	12	12	120	14	12	0	0.2	DXGU0703**L/R...	0.9
JPDJ2XR/L1616X07	16	16	120	18	16	0	0.2	DXGU0703**L/R...	0.9

*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Lever	Pin	Clamping screw	Wrench
JPDJ2XR/L...	SLLV-2	SL-PI-2	SR10400611	HW2.0/5RED

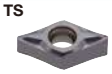
INSERT SELECTION

for Swiss lathes

P	Application areas	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Breaker Shape	JSS 	JS 
	Cutting conditions	G053	

M	Application areas	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Breaker Shape	JSS 	JS 
	Cutting conditions	G053	

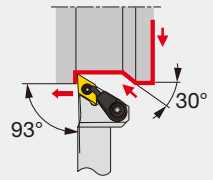
for Small CNC lathes

P	Application areas	Finish cutting	Medium cutting
	Grade	AH725	AH725
	Breaker Shape	SS 	TS 
	Cutting conditions	G053	

M	Application areas	Finish cutting	Medium cutting
	Grade	AH8015	AH8015
	Breaker Shape	SS 	TS 
	Cutting conditions	G053	

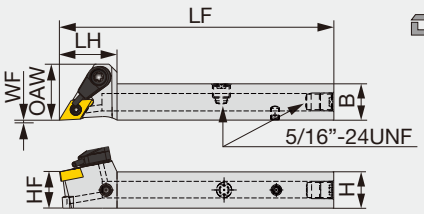
Reference pages : JSDJ2XR/L, JPDJ2XR/L: Insert → B125 -, Standard cutting conditions → G053

Screw-on toolholder with 93° approach angle, for DXGU inserts, with high pressure coolant capability



Cutting edge style J2





DIRECTTJET URN
Without offset

Right hand (R) shown.

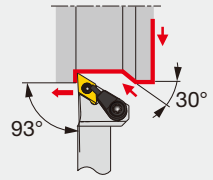
Designation	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJ2XR1212X07-CHP	12	12	120	19	12	0	18.5	0.2	DXGU0703**L...	0.9
JSDJ2XR1616X07-CHP	16	16	120	19	16	0	18.5	0.2	DXGU0703**L...	0.9

*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L).

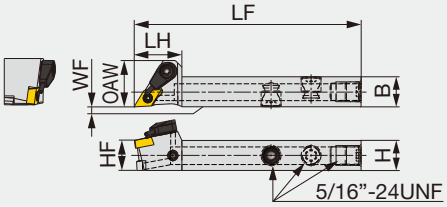
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSDJ2XR**07-CHP	SR34-514	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Please see Tungaloy report (TR432) for tool overhang length and coolant plug.



Cutting edge style J2



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJ2XR/L1212F07-CHP	12	12	85	19	12	0	18.5	0.2	DXGU0703**L/R...	0.9

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

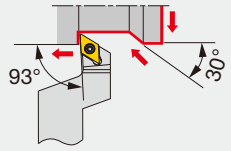
Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2
JSDJ2XR/L1212F07-CHP	SR34-514	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4

External
Internal
Grooving
Threading
Parting-off
L
J
N
P
A
G
D
F
Special

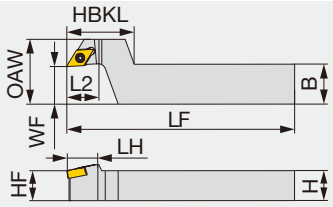
Reference pages : JSDJ2XR-CHP: Insert → B125 -, Standard cutting conditions → G053

MINIFORCE TURN
JSDJXR-F

Screw-on stepped-head toolholder with 93° approach angle, for DXGU inserts



Cutting edge style J



Right hand (R) shown.

Designation	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJXR1016X07-F15	10	16	120	12	27	14	10	15	26	0.2	DXGU0703**L...	0.9
JSDJXR1216F07-F15	12	16	85	12	27	14	12	15	26	0.2	DXGU0703**L...	0.9
JSDJXR1216X07-F15	12	16	120	12	27	14	12	15	26	0.2	DXGU0703**L...	0.9
JSDJXR1620X07-F15	16	20	120	12	27	14	16	15	26	0.2	DXGU0703**L...	0.9

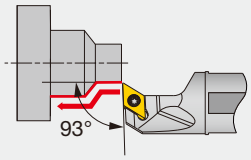
*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS

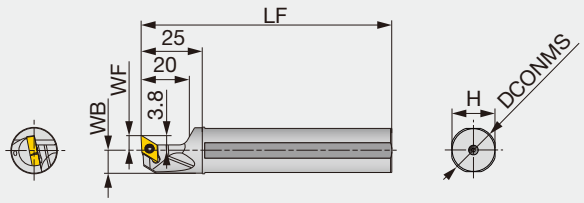
Designation	Clamping screw	Wrench
JSDJXR**-F15	SR34-514	T-7F

MINIFORCE TURN
JS-SDUXL

Screw-on round-shank toolholder with 93° approach angle, for DXGU inserts



Cutting edge style U



Left hand (L) shown.

Designation	DCONMS	WF	LF	H	WB	RE**	Insert	Torque*
JS14H-SDUXL07	14	6	100	13	6.75	0.2	DXGU0703**L...	0.9
JS159F-SDUXL07	15.875	6	85	15	7.687	0.2	DXGU0703**L...	0.9
JS16F-SDUXL07	16	6	85	15	7.75	0.2	DXGU0703**L...	0.9
JS19G-SDUXL07	19.05	6	90	18	9.275	0.2	DXGU0703**L...	0.9
JS19X-SDUXL07	19.05	6	120	18	9.275	0.2	DXGU0703**L...	0.9
JS20G-SDUXL07	20	6	90	19	9.75	0.2	DXGU0703**L...	0.9
JS20X-SDUXL07	20	6	120	19	9.75	0.2	DXGU0703**L...	0.9
JS22X-SDUXL07	22	10	120	21	10.75	0.2	DXGU0703**L...	0.9
JS25H-SDUXL07	25	10	100	24	12.25	0.2	DXGU0703**L...	0.9
JS254X-SDUXL07	25.4	10	120	24	12.45	0.2	DXGU0703**L...	0.9

SPARE PARTS

Designation	Clamping screw	Wrench
JS**-SDUXL07	SR34-514	T-7F

*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius
Note: Use left-hand toolholders (L) with left-hand inserts (L).

INSERT SELECTION

for Swiss lathes

P	Application areas	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Breaker Shape	JSS	JS
	Cutting conditions	G053	

M	Application areas	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Breaker Shape	JSS	JS
	Cutting conditions	G053	

for Small CNC lathes

P	Application areas	Finish cutting	Medium cutting
	Grade	AH725	AH725
	Breaker Shape	SS	TS
	Cutting conditions	G053	

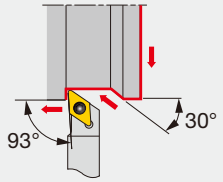
M	Application areas	Finish cutting	Medium cutting
	Grade	AH8015	AH8015
	Breaker Shape	SS	TS
	Cutting conditions	G053	

Reference pages : JSDJXR-F, JS-SDUXL: Insert → B125 -, Standard cutting conditions → G053

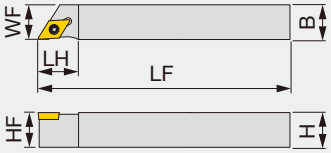
J-SERIES

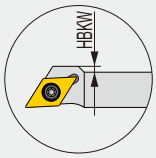
JSDJ2CR/L

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style J2





Without offset

JSDJ2CR/L1010X11
JSDJ2CR/L1212F11
JSDJ2CR/L1212X11

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	HBKW	RE**	Insert	Torque*
JSDJ2CR/L0808F07	8	8	85	14	8	8	-	0.2	DC**0702...	1.2
JSDJ2CR/L1010X07	10	10	120	14	10	10	-	0.2	DC**0702...	1.2
JSDJ2CR/L1010X11	10	10	120	20	10	10	4	0.2	DC**11T3...	1.2
JSDJ2CR/L1212F07	12	12	85	14	12	12	-	0.2	DC**0702...	1.2
JSDJ2CR/L1212F11	12	12	85	20	12	12	2	0.2	DC**11T3...	1.2
JSDJ2CR/L1212X07	12	12	120	14	12	12	-	0.2	DC**0702...	1.2
JSDJ2CR/L1212X11	12	12	120	20	12	12	2	0.2	DC**11T3...	1.2
JSDJ2CR/L1616X11	16	16	120	20	16	16	-	0.2	DC**11T3...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS

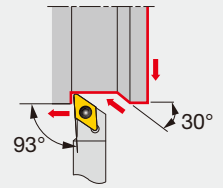



Designation	Clamping screw	Wrench
JSDJ2CR/L**07	CSTB-2.5	T-8F
JSDJ2CR/L**11	CSTB-4SD	T-8F

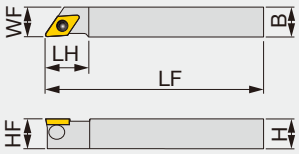
J-SERIES

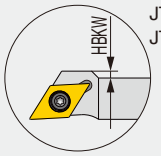
JTDJ2CR/L

Back-clamp toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style J2





Without offset

JTDJ2CR/L1212F11
JTDJ2CR/L1212X11

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	HBKW	RE**	Insert	Torque*
JTDJ2CR/L1010X07	10	10	120	14	10	10	-	0.2	DC**0702...	0.9
JTDJ2CR/L1212F07	12	12	85	14	12	12	-	0.2	DC**0702...	0.9
JTDJ2CR/L1212X07	12	12	120	14	12	12	-	0.2	DC**0702...	0.9
JTDJ2CR/L1212F11	12	12	85	20	12	12	2	0.2	DC**11T3...	1.2
JTDJ2CR/L1212X11	12	12	120	20	12	12	2	0.2	DC**11T3...	1.2
JTDJ2CR/L1616X11	16	16	120	20	16	16	-	0.2	DC**11T3...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS



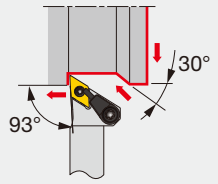


Designation	Clamp	Clamping screw	Wrench
JTDJ2CR/L**07	JCP-2	JDS-3525	P-2F
JTDJ2CR/L**11	JCP-3	JDS-5040	P-2.5F

External
Internal
Grooving
Threading
Parting-off
L
J
N
P
A
G
D
F
Special

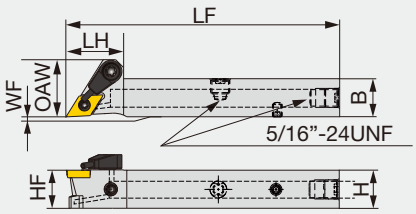
Reference pages : JSDJ2CR/L, JTDJ2CR/L: Insert → B119 -, CBN → B181, PCD → B190 -

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style J2





DIRECTTJET
Without offset

Right hand (R) shown.

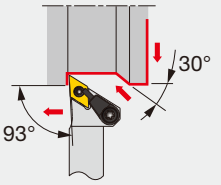
Designation	H	B	LF	LH	HF	WF	OAW	RE	Insert	Torque*
JSDJ2CR1212X11-CHP	12	12	120	19	12	0	20.5	0.2	DC**11T3...	1.2
JSDJ2CR1616X11-CHP	16	16	120	19	16	0	20.5	0.2	DC**11T3...	1.2

*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius

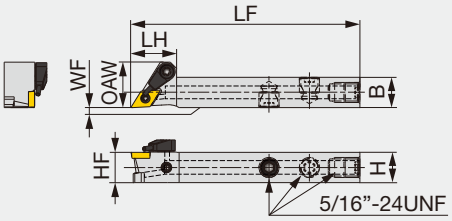
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSDJ2CR**11-CHP	CSTB-4SD	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Please see Tungaloy report (TR432) for tool overhang length and coolant plug.



Cutting edge style J2



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJ2CR/L1212F07-CHP	12	12	85	18	12	0	18	0.2	DC**0702...	0.9
JSDJ2CR/L1212F11-CHP	12	12	85	19	12	0	20.5	0.2	DC**11T3...	0.9

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2
JSDJ2CR**11-CHP	CSTB-4SD	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4

INSERT SELECTION

P

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Breaker Shape	01	JS	JS	J10
Cutting conditions	G053			

M

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Breaker Shape	01	JS	JS	J10
Cutting conditions	G053			

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application areas	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA with rake	AL
Cutting conditions	B024	

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Breaker Shape	JS	JS
Cutting conditions	G053	

H

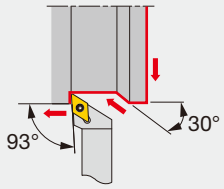
Application areas	Precision finishing	Finish cutting
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages : JSDJ2CR/L-CHP: Insert → B119 -, CBN → B181, PCD → B190 -

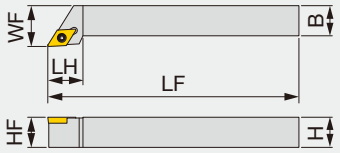
J-SERIES

JSDJCR/L

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style J



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSDJCR/L0808H07	8	8	100	14	8	10	0.4	DC**0702...	1.2
JSDJCR/L1010H11	10	10	100	18	10	12	0.8	DC**11T3...	1.2
JSDJCR/L1212H07	12	12	100	14	12	16	0.4	DC**0702...	1.2
JSDJCR/L1212H11	12	12	100	18	12	16	0.8	DC**11T3...	1.2
JSDJCR/L1616H11	16	16	100	18	16	20	0.8	DC**11T3...	1.2

SPARE PARTS

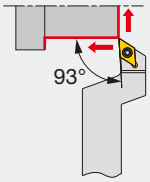
Designation	Clamping screw	Wrench
JSDJC**H07	CSTB-2.5	T-8F
JSDJC**H11	CSTB-4SD	T-8F

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

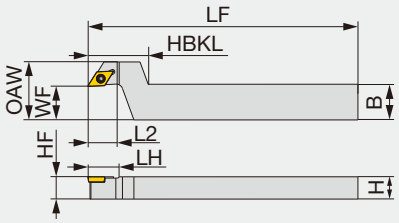
J-SERIES

JSDJCR-F

Screw-on stepped-head toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style J



Right hand (R) shown.

Designation	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJCR1016X07-F15	10	16	120	12.5	27	14	10	15	26	0.2	DC**0702...	1.2
JSDJCR1216F07-F15	12	16	85	12.5	27	14	12	15	26	0.2	DC**0702...	1.2
JSDJCR1216X07-F15	12	16	120	12.5	27	14	12	15	26	0.2	DC**0702...	1.2
JSDJCR1216F11-F15	12	16	85	12.5	27	20	12	15	28	0.2	DC**11T3...	1.2
JSDJCR1216X11-F15	12	16	120	12.5	27	20	12	15	28	0.2	DC**11T3...	1.2
JSDJCR1620X11-F15	16	20	120	12.5	27	20	16	15	28	0.2	DC**11T3...	1.2

SPARE PARTS

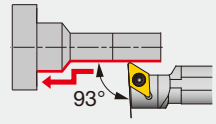
Designation	Clamping screw	Wrench
JSDJCR**07-F15	CSTB-2.5	T-8F
JSDJCR**11-F15	CSTB-4SD	T-8F

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

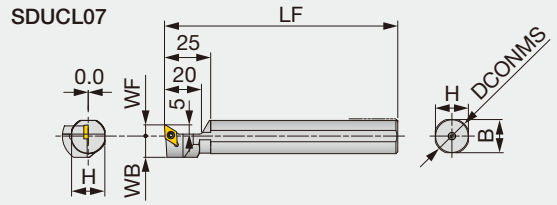
Reference pages : JSDJCR/L, JSDJCR-F: Insert → B119 -, CBN → B181, PCD → B190 -

JS-SDUCL

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style U



Left hand (L) shown.

Designation	DCONMS	WF	LF	H	B	WB	RE**	Insert	Torque*
JS19K-SDUCL07	19.05	6	125	18	18	11.5	0.4	DC**0702...	1.2
JS20K-SDUCL07	20	6	125	19	19	11.5	0.4	DC**0702...	1.2
JS22K-SDUCL07	22	6	125	21	21	11.5	0.4	DC**0702...	1.2
JS19K-SDUCL11	19.05	10	125	18	18	11.5	0.8	DC**11T3...	1.2
JS20K-SDUCL11	20	10	125	19	19	11.5	0.8	DC**11T3...	1.2
JS22K-SDUCL11	22	11	125	21	21	11.5	0.8	DC**11T3...	1.2
JS25K-SDUCL11	25.4	12	125	24	24	12.7	0.8	DC**11T3...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JS**K-SDUCL07	CSTB-2.5	T-8F
JS**K-SDUCL11	CSTB-4SD	T-8F

INSERT SELECTION

P

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Breaker Shape	01	JS	JS	J10
Cutting conditions	G053			

M

Application areas	Precision Finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Breaker Shape	01	JS	JS	J10
Cutting conditions	G053			

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B024		

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Breaker Shape	JS	JS
Cutting conditions	G053	

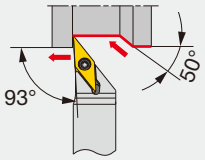
H

Application areas	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages : JS-SDUCL: Insert → B119 -, CBN → B181, PCD → B190 -

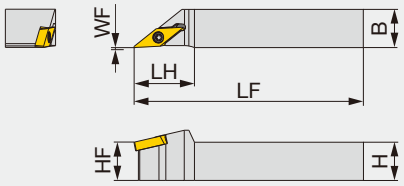
JSVJ2XR/L

Screw-on toolholder with 93° approach angle, for VXGU inserts



Cutting edge style J2

Without offset



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVJ2XR/L1010X09	10	10	120	17	10	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1212F09	12	12	85	19	12	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1212X09	12	12	120	19	12	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1616X09	16	16	120	19	16	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L2020H09	20	20	100	19	20	0	0.2	VXGU09T2**L/R...	0.9

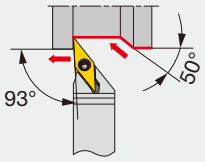
SPARE PARTS

Designation	Clamping screw	Wrench
JSVJ2XR/L...	SR34-508	T-7F

*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L).
Use left-hand toolholders (L) with right-hand inserts (R).

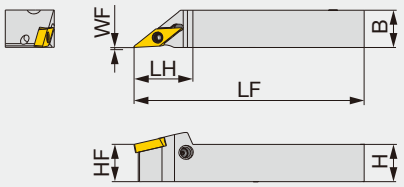
JPVJ2XR/L

Lever-lock toolholder with 93° approach angle, for VXGU inserts



Cutting edge style J2

Without offset



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JPVJ2XR/L1010X09	10	10	120	19	10	0	0.2	VXGU09T2**L/R...	0.9
JPVJ2XR/L1212F09	12	12	85	19	12	0	0.2	VXGU09T2**L/R...	0.9
JPVJ2XR/L1212X09	12	12	120	19	12	0	0.2	VXGU09T2**L/R...	0.9
JPVJ2XR/L1616X09	16	16	120	19	16	0	0.2	VXGU09T2**L/R...	0.9

SPARE PARTS

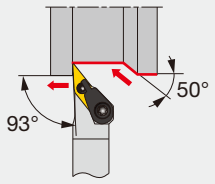
Designation	Lever	Pin	Clamping screw	Wrench
JPVJ2XR/L...	SLLV-1	SL-PI-2	SR10400611	HW2.0/5RED

*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L).
Use left-hand toolholders (L) with right-hand inserts (R).

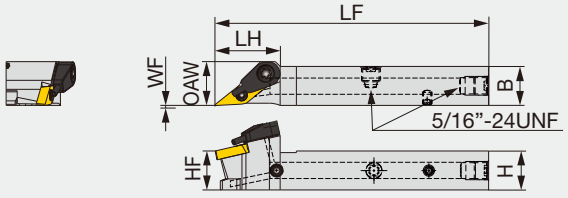
Reference pages : JSVJ2XR/L, JPVJ2XR/L: Insert → B156, Standard cutting conditions → G053

JSVJ2XR/L-CHP

Screw-on toolholder with 93° approach angle, for VXGU inserts, with high pressure coolant capability



Cutting edge style J2



DIRECTTJET Without offset

Right hand (R) shown.

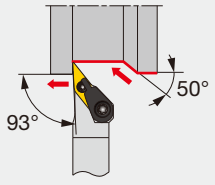
Designation	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJ2XR1212X09-CHP	12	12	120	19.5	12	0	13.4	0.2	VXGU09T2**L...	0.9
JSVJ2XR1616X09-CHP	16	16	120	19.5	16	0	16	0.2	VXGU09T2**L...	0.9

*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L).

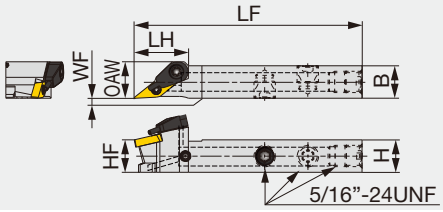
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSVJ2XR**F09-CHP	SR34-508	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Please see Tungaloy report (TR432) for tool overhang length and coolant plug.



Cutting edge style J2



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJ2XR/L1212F09-CHP	12	12	85	20	12	0	13.5	0.2	VXGU09T2**L/R...	0.9

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2
JSVJ2XR**F09-CHP	SR34-508	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4

INSERT SELECTION

P

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JRP	JS
Cutting conditions	G053	

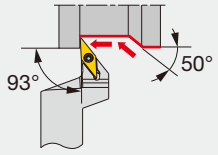
M

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JRP	JS
Cutting conditions	G053	

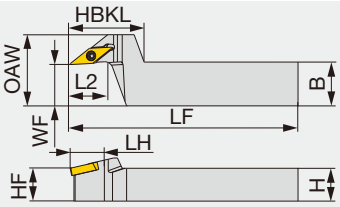
Reference pages : JSVJ2XR/L-CHP: Insert → B156, Standard cutting conditions → G053

MINIFORCE TURN
JSVJXR-F

Screw-on stepped-head toolholder with 93° approach angle, for VXGU inserts



Cutting edge style J



Right hand (R) shown.

Designation	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJXR1016X09-F15	10	16	120	12	27	19	10	15	26	0.2	VXGU09T2**L...	0.9
JSVJXR1216F09-F15	12	16	85	12	27	19	12	15	26	0.2	VXGU09T2**L...	0.9
JSVJXR1216X09-F15	12	16	120	12	27	19	12	15	26	0.2	VXGU09T2**L...	0.9
JSVJXR1620X09-F15	16	20	120	12	27	19	16	15	26	0.2	VXGU09T2**L...	0.9

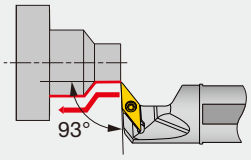
*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius
Note: Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS

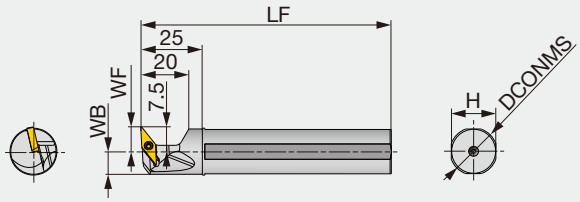
Designation	Clamping screw	Wrench
JSVJXR**-F15	SR34-508	T-7F

MINIFORCE TURN
JS-SVUXL

Screw-on round-shank toolholder with 93° approach angle, for VXGU inserts



Cutting edge style U



Left hand (L) shown.

Designation	DCONMS	WF	LF	H	WB	RE**	Insert	Torque*
JS159F-SVUXL09	15.875	10	85	15	7.7	0.2	VXGU09T2**L...	0.9
JS16F-SVUXL09	16	10	85	15	7.7	0.2	VXGU09T2**L...	0.9
JS19G-SVUXL09	19.05	10	90	18	9.2	0.2	VXGU09T2**L...	0.9
JS19X-SVUXL09	19.05	10	120	18	9.2	0.2	VXGU09T2**L...	0.9
JS20G-SVUXL09	20	10	90	19	9.7	0.2	VXGU09T2**L...	0.9
JS20X-SVUXL09	20	10	120	19	9.7	0.2	VXGU09T2**L...	0.9
JS22X-SVUXL09	22	10	120	21	10.7	0.2	VXGU09T2**L...	0.9
JS25H-SVUXL09	25	10	100	24	12.2	0.2	VXGU09T2**L...	0.9
JS254X-SVUXL09	25.4	10	120	24	12.4	0.2	VXGU09T2**L...	0.9

*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius
Note: Use left-hand toolholders (L) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
JS**-SVUXL09	SR34-508	T-7F

INSERT SELECTION

P

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JRP 	JS 
Cutting conditions	G053	

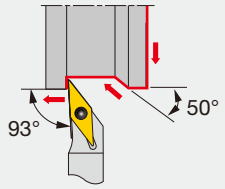
M

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Breaker Shape	JRP 	JS 
Cutting conditions	G053	

Reference pages : JSVJXR-F, JS-SVUXL: Insert → B156, Standard cutting conditions → G053

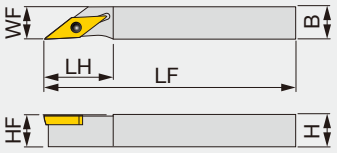
JSVJ2BR/L

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style J2

Without offset



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVJ2BR/L1010X11	10	10	120	21	10	10	0.2	VB**1103...	1.2
JSVJ2BR/L1212F11	12	12	85	21	12	12	0.2	VB**1103...	1.2
JSVJ2BR/L1212X11	12	12	120	21	12	12	0.2	VB**1103...	1.2
JSVJ2BR/L1616X11	16	16	120	21	16	16	0.2	VB**1103...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSVJ2BR/L...	CSTB-2.5	T-8F

INSERT SELECTION

P

Application areas	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Breaker Shape	JS	JS	J10
Cutting conditions	G053		

M

Application areas	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Breaker Shape	JS	JS	J10
Cutting conditions	G053		

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

S

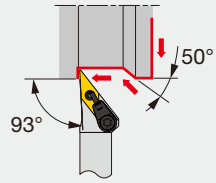
Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Breaker Shape	JS	JS
Cutting conditions	G053	

H

Application areas	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

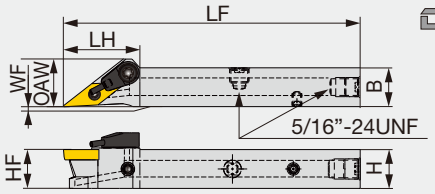
Reference pages : JSVJ2BR/L-CHP: Insert → B150 -, CBN → B186

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts, with high pressure coolant capability



Cutting edge style J2





DIRECTTJET Without offset

Right hand (R) shown.

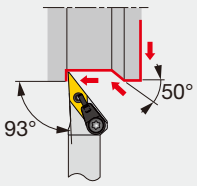
Designation	H	B	LF	LH	HF	WF	OAW	RE	Insert	Torque*
JSVJ2BR1212X11-CHP	12	12	120	23.6	12	0	14.7	0.2	VB**1103	1.2
JSVJ2BR1616X11-CHP	16	16	120	23.6	16	0	16	0.2	VB**1103	1.2

*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius

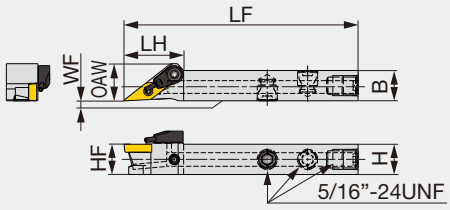
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSVJ2B**11-CHP	CSTB-2.5	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Please see Tungaloy report (TR432) for tool overhang length and coolant plug.



Cutting edge style J2



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJ2BR/L1212F11-CHP	12	12	85	23.6	12	0	14.7	0.2	VB**1103...	1.2

*Torque: Recommended torque (N·m) for clamping **RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2
JSVJ2B**11-CHP	CSTB-2.5	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4

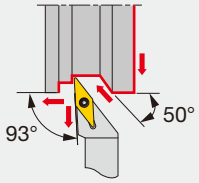
External
Internal
Grooving
Threading
Parting-off
L
J
N
P
A
G
D
F
Special

Reference pages : JSVJ2BR/L-CHP: Insert → B150 -, CBN → B186

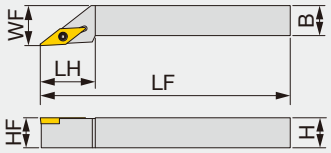
J-SERIES

JSVJBR/L

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style J



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVJBR/L1010H11	10	10	100	20	10	12	0.4	VB**1103...	1.2
JSVJBR/L1212H11	12	12	100	22	12	16	0.4	VB**1103...	1.2
JSVJBR/L1616H11	16	16	100	22	16	20	0.4	VB**1103...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS

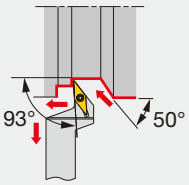



Designation	Clamping screw	Wrench
JSVJBR/L...	CSTB-2.5	T-8F

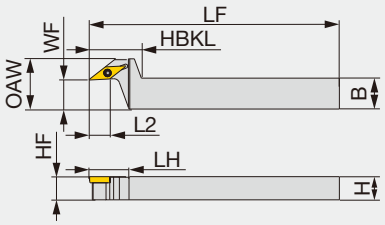
J-SERIES

JSVJBR-F

Screw-on stepped-head toolholder with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style J



Right hand (R) shown.

Designation	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJBR1216F11-F15	12	16	85	12.6	27	21	12	15	26	0.2	VB**1103...	1.2
JSVJBR1216X11-F15	12	16	120	12.6	27	21	12	15	26	0.2	VB**1103...	1.2
JSVJBR1620X11-F15	16	20	120	12.6	27	21	16	15	26	0.2	VB**1103...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS




Designation	Clamping screw	Wrench
JSVJBR**-F15	CSTB-2.5	T-8F

INSERT SELECTION

P

Application areas	Finish cutting	Medium to Finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Breaker Shape	JS	JS	J10
Cutting conditions	G053		

M

Application areas	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Breaker Shape	JS	JS	J10
Cutting conditions	G053		

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Breaker Shape	JS	JS
Cutting conditions	G053	

H

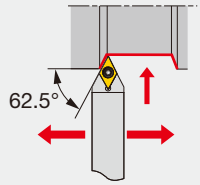
Application areas	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages : JSVJBR/L, JSVJBR-F: Insert → B150 -, CBN → B186

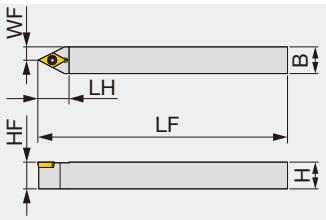
J-SERIES

JSDNCN

Screw-on toolholder with 62.5° approach angle, for positive 55° rhombic inserts



Cutting edge style N



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSDNCN1010X07	10	10	120	15	10	5	0.2	DC**0702...	1.2
JSDNCN1010X11	10	10	120	21	10	5	0.2	DC**11T3...	1.2
JSDNCN1212F07	12	12	85	15	12	6	0.2	DC**0702...	1.2
JSDNCN1212X07	12	12	120	15	12	6	0.2	DC**0702...	1.2
JSDNCN1212F11	12	12	85	21	12	6	0.2	DC**11T3...	1.2
JSDNCN1212X11	12	12	120	21	12	6	0.2	DC**11T3...	1.2
JSDNCN1616X11	16	16	120	21	16	8	0.2	DC**11T3...	1.2

SPARE PARTS

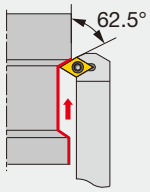
Designation	Clamping screw	Wrench
JSDNCN**07	CSTB-2.5	T-8F
JSDNCN**11	CSTB-4SD	T-8F

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

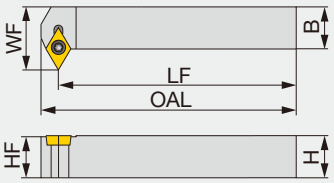
J-SERIES

JSDN3CR/L

Screw-on toolholder with 62.5° approach angle (N3-style), for positive 55° rhombic inserts



Cutting edge style N3



Right hand (R) shown.

Designation	H	B	OAL	LF	HF	WF	RE**	Insert	Torque*
JSDN3CR1212H07	12	12	105	100	12	18	0.4	DC**0702...	1.2
JSDN3CR1616H11	16	16	107	100	16	25	0.8	DC**11T3...	1.2

SPARE PARTS

Designation	Clamping screw	Wrench
JSDN3CR1212H07	CSTB-2.5	T-8F
JSDN3CR1616H11	CSTB-4SD	T-8F

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

INSERT SELECTION

P

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Breaker Shape	01	JS	JS	J10
Cutting conditions	G053			

M

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Breaker Shape	01	JS	JS	J10
Cutting conditions	G053			

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B024		

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Breaker Shape	JS	JS
Cutting conditions	G053	

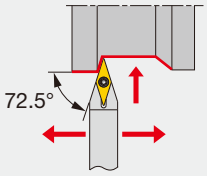
H

Application areas	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

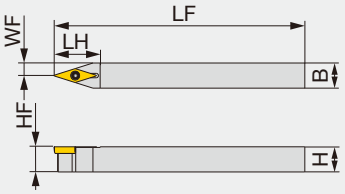
Reference pages : JSDNCN, JSDN3CR/L: Insert → B119 -, CBN → B181, PCD → B190 -

JSVNBN

Screw-on toolholder with 72.5° approach angle, for positive 35° rhombic inserts



Cutting edge style N



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVNBN1010X11	10	10	120	22	10	5	0.2	VB**1103...	1.2
JSVNBN1212F11	12	12	85	22	12	6	0.2	VB**1103...	1.2
JSVNBN1212X11	12	12	120	22	12	6	0.2	VB**1103...	1.2
JSVNBN1616X11	16	16	120	22	16	8	0.2	VB**1103...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSVNBN...	CSTB-2.5	T-8F

INSERT SELECTION

P

Application areas	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Breaker Shape	JS	JS	J10
Cutting conditions	G053		

M

Application areas	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Breaker Shape	JS	JS	J10
Cutting conditions	G053		

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Breaker Shape	JS	JS
Cutting conditions	G053	

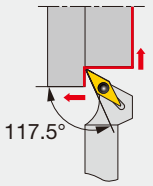
H

Application areas	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

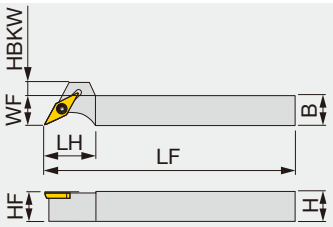
Reference pages : JSVNBN: Insert → B150 -, CBN → B186

JSVP2PR/L

Screw-on toolholder with 117.5° approach angle, for positive 35° rhombic inserts



Cutting edge style P2



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	HBKW	RE**	Insert	Torque*
JSVP2PR/L1010K08	10	10	125	16	10	10	4	0.2	VP**0802...	0.6
JSVP2PR/L1010K11	10	10	125	20	10	10	8	0.2	VP**1103...	1.2
JSVP2PR/L1212K08	12	12	125	16	12	12	2	0.2	VP**0802...	0.6
JSVP2PR/L1212K11	12	12	125	20	12	12	6	0.2	VP**1103...	1.2
JSVP2PR/L1616K08	16	16	125	16	16	16	2	0.2	VP**0802...	0.6
JSVP2PR/L1616K11	16	16	125	20	16	16	6	0.2	VP**1103...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSVP2PR/L**08	CSTB-2L	T-6F
JSVP2PR/L**11	CSTB-2.5	T-8F

INSERT SELECTION

P

Application areas	Finish cutting	Finish cutting
Grade	SH725	SH725
Breaker Shape	JRP	JSP
Cutting conditions	G053	

M

Application areas	Finish cutting	Finish cutting
Grade	SH725	SH725
Breaker Shape	JRP	JSP
Cutting conditions	G053	

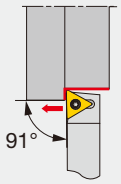
S

Application areas	Finish cutting	Finish cutting
Grade	SH725	SH725
Breaker Shape	JRP	JSP
Cutting conditions	G053	

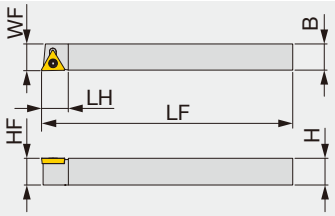
Reference pages : JSVP2PR/L: Insert → B155 -

J-SERIES
JSTACR/L

Screw-on toolholder with 91° approach angle, for positive 60° triangular inserts



Cutting edge style A



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSTACR/L0808K08	8	8	125	10	8	8	0.2	TC**0802...	0.6
JSTACR/L1010K08	10	10	125	10	10	10	0.2	TC**0802...	0.6
JSTACR/L1212K11	12	12	125	12	12	12	0.4	TC**1102...	1.2
JSTACR/L1616H11	16	16	100	12	16	16	0.4	TC**1102...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

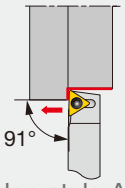
SPARE PARTS



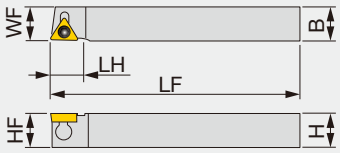

Designation	Clamping screw	Wrench
JSTACR/L**K08	CSTB-2L	T-6F
JSTACR/L**11	CSTB-2.5	T-8F

J-SERIES
JTTACR/L

Back-clamp toolholder with 91° approach angle, for positive 60° triangular inserts



Cutting edge style A



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JTTACL0810K08	8	10	125	10	8	10	0.2	TC**0802...	0.9
JTTACR/L1212M11	12	12	150	12	12	12	0.4	TC**1102...	0.9
JTTACR/L1616M11	16	16	150	12	16	16	0.4	TC**1102...	0.9

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS





Designation	Clamp	Clamping screw	Wrench
JTTACL0810K08	JCP-1	JDS-3525	P-2F
JTTACR/L**M11	JCP-2	JDS-3525	P-2F

INSERT SELECTION

P

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Breaker Shape	01	JS	JS	J10
Cutting conditions	G053			

M

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Breaker Shape	01	JS	JS	J10
Cutting conditions	G053			

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

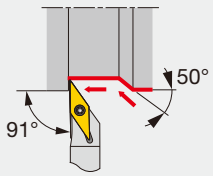
N

Application areas	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA	with rake AL
Cutting conditions	B024	

Reference pages : JSTACR/L, JTTACR/L: Insert → B137 -, PCD → B190

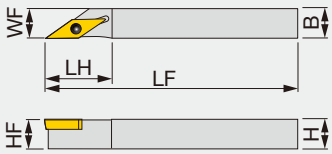
JSVABR/L

Screw-on toolholder with 91° approach angle, for positive 35° rhombic inserts



Cutting edge style A

Without offset



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVABR/L1010K11	10	10	125	21	10	10	0.2	VB**1103...	1.2
JSVABL1212K11	12	12	125	21	12	12	0.2	VB**1103...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSVABR/L...	CSTB-2.5	T-8F

INSERT SELECTION

P

Application areas	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Breaker Shape	JS	JS	J10
Cutting conditions	G053		

M

Application areas	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Breaker Shape	JS	JS	J10
Cutting conditions	G053		

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Breaker Shape	JS	JS
Cutting conditions	G053	

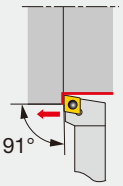
H

Application areas	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

Reference pages : JSVABR/L: Insert → B150 -, CBN → B186

JSCGCR/L

Screw-on toolholder with 91° approach angle, for positive 80° rhombic inserts



Cutting edge style G



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSCGCR/L1212H06	12	12	100	12	12	16	0.4	CC**0602...	1.2
JSCGCR/L1616H09	16	16	100	16	16	20	0.8	CC**09T3...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSCGCR/L1212H06	CSTB-2.5	T-8F
JSCGCR/L1616H09	CSTB-4SD	T-8F

INSERT SELECTION

P

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Breaker Shape	01	JS	JS	J10
Cutting conditions	G053			

M

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Breaker Shape	01	JS	JS	J10
Cutting conditions	G053			

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	TH10	KS05F
Breaker Shape	T-DIA with rake	W20	AL
Cutting conditions	B024		

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Breaker Shape	JS	JS
Cutting conditions	G053	

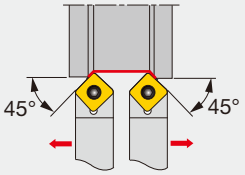
H

Application areas	Precision finishing	Finish cutting
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

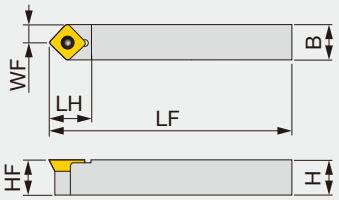
Reference pages :JSCGCR/L: Insert → B109 -, CBN → B180, PCD → B190 -

SSDC/PN

Screw-on toolholder with 45° approach angle, for positive square inserts



Cutting edge style D



Designation	H	B	LF	LH	HF	WF	RE**	Insert
SSDCN1010K07	10	10	125	12	10	5	0.4	SC**0702...
SSDPN1010H	10	10	100	12	10	5	0.4	SP*P042...
SSDCN1212K09	12	12	125	15	12	6	0.8	SC**09T3...
SSDPN1212H	12	12	100	12	12	6	0.4	SP*P042...
SSDCN1616H09	16	16	100	15	16	8	0.8	SC**09T3...
SSDPN1616H	16	16	100	14	16	8	0.8	SP*M322...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SSDCN1010K07	CSTB-3	-	-	-	T-9F
SSDPN1010H	CSTA-NO3	-	-	-	T-9F
SSDCN1212K09	CSTB-4	-	-	-	T-15F
SSDPN1212H	CSTA-NO3	-	-	-	T-9F
SSDCN1616H09	CSTB-3.5L	DTS5-3.5	SSS32	P-3.5	T-15F
SSDPN1616H	CSTA-NO5	-	-	-	T-9F

INSERT SELECTION

P

Application areas	Medium to finish cutting	Medium cutting
Grade	AH725	AH725
Breaker Shape	PS 	PM 
Cutting conditions	B018	

M

Application areas	Medium cutting
Grade	AH725
Breaker Shape	PM 
Cutting conditions	B020

K

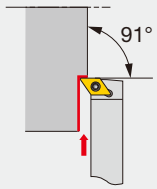
Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM 
Cutting conditions	B022

Reference pages :SSDC/PN: Insert → B133 -

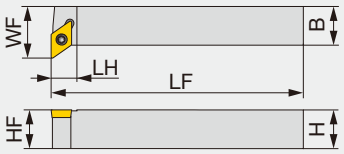
J-SERIES

JSDFCR/L

Screw-on toolholder for facing with 91° approach angle, for positive 55° rhombic inserts



Cutting edge style F



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSDFCR/L1212H07	12	12	100	8	12	16	0.4	DC**0702...	1.2
JSDFCR/L1616H11	16	16	100	10.5	16	22	0.8	DC**11T3...	1.2

SPARE PARTS

Designation	Clamping screw	Wrench
JSDFCR/L1212H07	CSTB-2.5	T-8F
JSDFCR/L1616H11	CSTB-4SD	T-8F

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

INSERT SELECTION

P

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Breaker Shape	01	JS	JS	J10
Cutting conditions	G053			

M

Application areas	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Breaker Shape	01	JS	JS	J10
Cutting conditions	G053			

K

Application areas	Medium to finish cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B022

N

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA (with rake)	T-DIA	AL
Cutting conditions	B024		

S

Application areas	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Breaker Shape	JS	JS
Cutting conditions	G053	

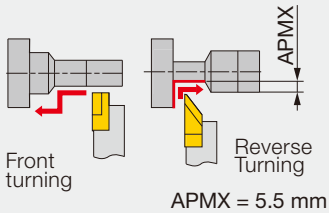
H

Application areas	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B028	

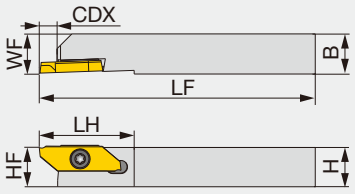
J-SERIES

JSXGR/L

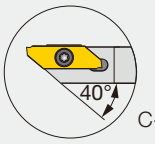
Screw-on toolholder for front/reverse turning and external grooving



APMX = 5.5 mm



Without offset



C-type

Right hand (R) shown.

Designation	H	B	LF	LH	CDX	HF	WF	Insert
JSXGR/L1010K8-C	10	10	125	29	6.7	10	10	JXFR/L8..., JXRR/L8...
JSXGR/L1212K8-C	12	12	125	29	6.7	12	12	JXFR/L8..., JXRR/L8...
JSXGR/L1616K8	16	16	125	29	6.5	16	16	JXFR/L8..., JXRR/L8...
JSXGR/L2020K8	20	20	125	29	6.5	20	20	JXFR/L8..., JXRR/L8...
JSXGR/L2525K8	25	25	125	29	6.5	25	25	JXFR/L8..., JXRR/L8...

SPARE PARTS

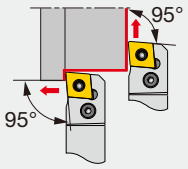
Designation	Clamping screw	Wrench 1	Wrench 2 *Optional
JSXGR/L...	CSTB-4SD	T-8F	(T-8L)

Can be used with JXG insert for parting and grooving.
Can be wrenched also from the back with a double-head screw.

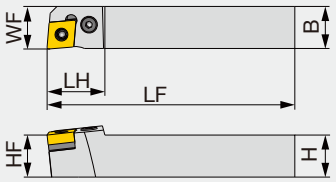
Reference pages : JSDFCR/L: Insert → B119 -, CBN → B181, PCD → B190 -, JSXGR/L: Insert → B160

PCL2NR

Lever-lock toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style L2



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PCL2NR2020H12	20	20	100	26	20	20	0.8	CN**1204...	3

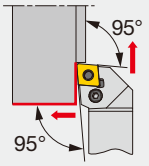
SPARE PARTS

Designation	Shim	Clamping screw	Lever	Spring pin	Wrench
PCL2NR2020H12	LSC42	LCS4	LCL4	LSP4	P-3

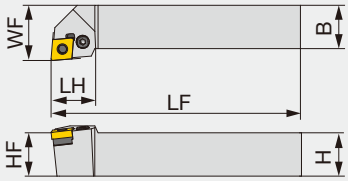
*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

PCLNR

Lever-lock toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style L



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PCLNR2020H12	20	20	100	26	20	25	0.8	CN**1204...	3

SPARE PARTS

Designation	Shim	Clamping screw	Lever	Spring pin	Wrench
PCLNR2020H12	LSC42	LCS4	LCL4	LSP4	P-3

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

External
Internal
Grooving
Threading
Parting-off
L
J
N
P
A
G
D
F
Special

INSERT SELECTION

P

Application areas	Precision finishing	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application areas	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application areas	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application areas	Finish cutting	Medium cutting
Grade	DX140	TH10
Breaker Shape	T-DIA	P
Cutting conditions	B012	

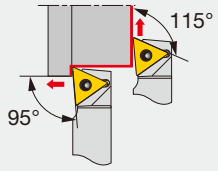
S

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

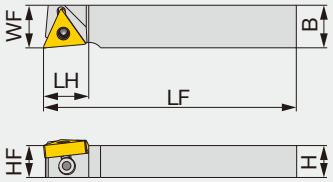
Reference pages :PCL2NR, PCLNR: Insert → B054 -, CBN → B170 -, PCD → B188 -

JTTLNR/L

Back-clamp toolholder with 95° approach angle, for negative 60° triangular inserts



Cutting edge style L



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JTTLNR/L1216F16	12	16	85	17	12	16	0.4	TN**1604...	1
JTTLNR/L1216X16	12	16	120	17	12	16	0.4	TN**1604...	1
JTTLNR/L1616X16	16	16	120	17	16	16	0.4	TN**1604...	1

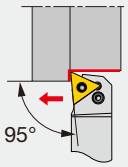
*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS

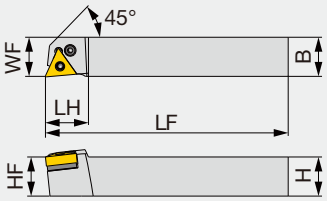
Designation	Clamp	Clamping screw	Wrench
JTTLNR/L...	JCP-3N	JDS-5040	P-2.5F

PTL2NR/L

Lever-lock toolholder with 95° approach angle, for negative 60° triangular inserts



Cutting edge style L2



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PTL2NR/L2020H16	20	20	100	22	20	20	0.4	TN**1604...	2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PTL2NR/L...	LST317 D30	LCS3	P-2.5	LSP3	LCL3

INSERT SELECTION

P

Application areas	Precision finishing	Finish cutting		Medium cutting	Medium to heavy cutting
Grade	SH725	SH725	GT9530	T9215	T9215
Breaker Shape	01	JRP	TSF	TM	TH
Cutting conditions	G053		B006		

M

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	SH725	SH725	T6130
Breaker Shape	01	JRP	SM
Cutting conditions	G053		B008

K

Application areas	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA	with rake T-DIA	P
Cutting conditions	B012		

S

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

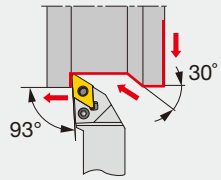
H

Application areas	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

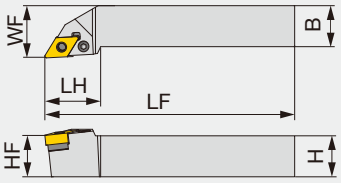
Reference pages : JTTLNR/L, PTL2NR/L: Insert → B084 -, CBN → B176 -, PCD → B188 -

PDJNR

Lever-lock toolholder with 93° approach angle, for negative 55° rhombic inserts



Cutting edge style J



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PDJNR2020H15	20	20	100	32	20	25	0.8	DN**1504...	3

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Lever	Spring pin	Wrench
PDJNR2020H15	LSD42	LCS4	LCL4	LSP4	P-3

INSERT SELECTION

P

Application areas	Precision finishing	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B006			

M

Application areas	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B008		

K

Application areas	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application areas	Precision finishing	Finish cutting	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

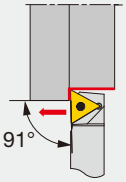
H

Application areas	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

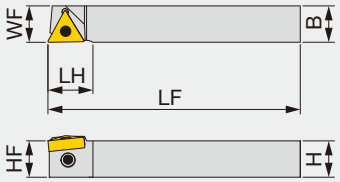
Reference pages : PDJNR: Insert → B065 -, CBN → B172 -, PCD → B188 -

JTTANR/L

Back-clamp toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style A



Without offset

Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JTTANR/L1216K16	12	16	125	19.8	12	16	0.4	TN**1604...	1.2
JTTANR/L1616K16	16	16	125	19.8	16	16	0.4	TN**1604...	1.2

*Torque: Recommended torque (N·m) for clamping
**RE: Standard corner radius

SPARE PARTS





Designation	Clamp	Clamping screw	Wrench
JTTANR/L...	JCP-3N	JDS-5040	P-2.5F

INSERT SELECTION

P

Application areas	Precision finishing	finish cutting		Medium cutting	Medium to heavy cutting
Grade	SH725	SH725	GT9530	T9215	T9215
Breaker Shape	01	JRP	TSF	TM	TH
Cutting conditions	G053		B006		

M

Application areas	Precision finishing	finish cutting	Medium cutting
Grade	SH725	SH725	T6130
Breaker Shape	01	JRP	SM
Cutting conditions	G053		B008

K

Application areas	finish cutting	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B010		

N

Application areas	Precision finishing	finish cutting	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B012		

S

Application areas	Precision finishing	finish cutting	Medium cutting
Grade	BX950	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B014		

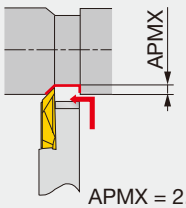
H

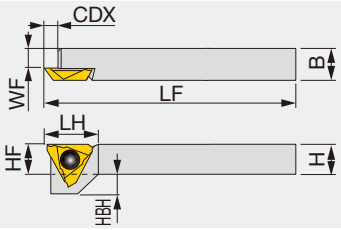
Application areas	Precision finishing	finish cutting
Grade	BXM10	BXM10
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B016	

Reference pages : JTTLNR/L: Insert → B084 -, CBN → B176 -, PCD → B188 -

JSTBR/L

Screw-on toolholder for back turning





Right hand (R) shown.

Designation	H	B	LF	LH	CDX	HF	WF	HBH	Insert	Torque*
JSTBR/L1010X3	10	10	120	15	5	10	6	5	JTBR/L3...	1.2
JSTBL1010K3	10	10	125	15	5	10	6	5	JTBR/L3...	1.2
JSTBR/L1212F3	12	12	85	15	5	12	8	3	JTBR/L3...	1.2
JSTBR/L1212X3	12	12	120	15	5	12	8	3	JTBR/L3...	1.2
JSTBR/L1616X3	16	16	120	15	5	16	12	-	JTBR/L3...	1.2

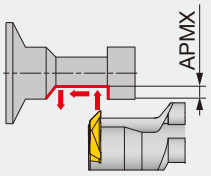
*Torque: Recommended torque (N·m) for clamping

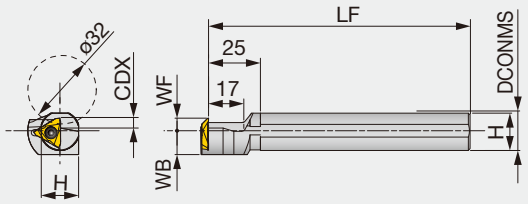
SPARE PARTS

Designation	Clamping screw	Wrench
JSTBR/L...	CSTB-4SD	T-8F

JS-TBL3

Screw-on toolholder for back turning





Right hand (R) shown.

Designation	DCONMS	H	LF	CDX	WF	WB	Insert	Torque*
JS19K-TBL3	19.05	18	125	4.5	6	11.5	JTBR3...	3
JS20K-TBL3	20	19	125	4.5	6	11.5	JTBR3...	3
JS22K-TBL3	22	21	125	4.5	6	11.5	JTBR3...	3
JS25K-TBL3	25.4	24	125	4.5	10	12.7	JTBR3...	3

*Torque: Recommended torque (N·m) for clamping

SPARE PARTS

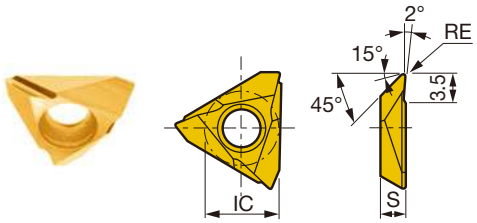
Designation	Clamping screw	Wrench
JS**-TBL3	CSTB-4S	T-15F

External
Internal
Grooving
Threading
Parting-off
L
J
N
P
A
G
D
F
Special

Reference pages : JSTBR/L, JS-TBL3: Insert, Standard cutting conditions → G049

INSERT

JTB (Sharp edge)

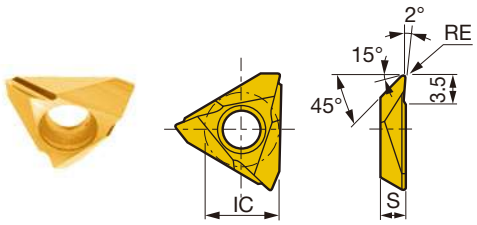


Right hand (R) shown.

Designation	RE	Coated				Cermet		Uncoated		IC	S	Max. depth of cut
		J740		SH725		NS9530		TH10				
		R	L	R	L	R	L	R	L			
JTBR/L3000F	0.03	●	●	●	●			●	●	9.438	3.18	2.5
JTBR/L3005F	0.05	●	●	●	●			●	●	9.438	3.18	2.5
JTBR/L3010F	0.1	●	●	●	●	●	●	●	●	9.438	3.18	2.5
JTBR/L3015F	0.15	●		●	●					9.438	3.18	2.5

● : Line up

JTB (Honed edge)



Right hand (R) shown.

Designation	RE	Coated		Coated cermet		IC	S	Max. depth of cut
		J740		J9530				
		R	L	R	L			
JTBR/L3005	0.05	●	●	●		9.438	3.18	2.5
JTBR/L3010	0.1	●	●	●		9.438	3.18	2.5

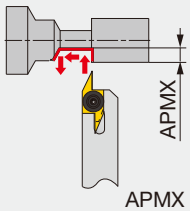
● : Line up

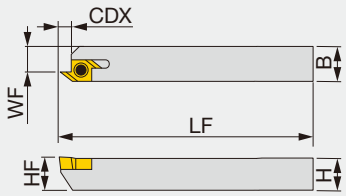
STANDARD CUTTING CONDITIONS (JTB type insert)

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Steel (S45C, etc. C45, etc.)	SH725	50 - 200	0.01 - 0.1
		J740	10 - 100	0.01 - 0.1
		NS9530	50 - 150	0.01 - 0.1
		J9530	50 - 150	0.01 - 0.1
	Free-cutting steel (SUM22, etc. 11SMn28, etc.)	SH725	50 - 200	0.01 - 0.1
		J740	10 - 100	0.01 - 0.1
M	Stainless steel (SUS304, etc. X5CrNi18-9, etc.)	SH725	50 - 200	0.01 - 0.1
		J740	10 - 100	0.01 - 0.1
		NS9530	50 - 150	0.01 - 0.1
		J9530	50 - 150	0.01 - 0.1
N	Aluminium alloys, Brass (Si < 12%, C3604B, etc. CW614N, etc.)	TH10	10 - 200	0.01 - 0.1
S	Difficult-to-machine material, Titanium alloys (Ti-6Al-4V, etc.)	TH10	10 - 30	0.01 - 0.1

JSEGR/L

Screw-on toolholder for back turning





Designation	H	B	LF	CDX	HF	WF	Insert	Torque*
JSEGR/L1010K10	10	10	125	3.3	10	7.5	J10ER/L...	1.2
JSEGR/L1212K10	12	12	125	3.3	12	9.5	J10ER/L...	1.2
JSEGR/L1616K10	16	16	125	3.3	16	13.5	J10ER/L...	1.2

*Torque: Recommended torque (N·m) for clamping

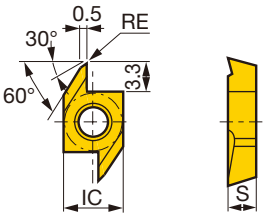
SPARE PARTS

Designation	Clamping screw	Wrench
JSEGR/L...	CSTB-2.5	T-8F

INSERT

J10E (Sharp edge)





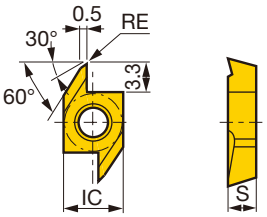
Right hand (R) shown.

Designation	RE	Coated				Cermet		Uncoated		IC	S	Max. depth of cut
		J740		SH725		NS9530		TH10				
		R	L	R	L	R	L	R	L			
J10ER/L005BF	0.05	●	●	●	●	●		●	●	6.35	3.18	3
J10ER/L010BF	0.1	●	●	●	●	●		●	●	6.35	3.18	3
J10ER/L015BF	0.15			●	●					6.35	3.18	3

● : Line up

J10E (Honed edge)





Right hand (R) shown.

Designation	RE	Coated		Coated cermet		IC	S	Max. depth of cut
		J740		J9530				
		R	L	R	L			
J10ER/L005B	0.05	●	●	●		6.35	3.18	3
J10ER/L010B	0.1	●	●	●		6.35	3.18	3

● : Line up

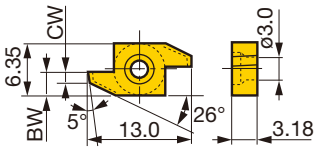
Reference pages : JSEGR/L: Standard cutting conditions → G051

STANDARD CUTTING CONDITIONS (J10E type insert)

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Steel S45C, etc. C45, etc.	SH725	50 - 200	0.01 - 0.1
		J740	10 - 100	0.01 - 0.1
		NS9530	50 - 150	0.01 - 0.1
		J9530	50 - 150	0.01 - 0.1
	Free-cutting steel SUM22, etc. 11SMn28, etc.	SH725	50 - 200	0.01 - 0.1
		J740	10 - 100	0.01 - 0.1
M	Stainless steel SUS303, SUS304 etc. X10CrNiS18-9, etc.	SH725	50 - 200	0.01 - 0.1
		J740	10 - 100	0.01 - 0.1
		NS9530	50 - 150	0.01 - 0.1
		J9530	50 - 150	0.01 - 0.1
N	Aluminium alloys, Brass Si < 12% C3604B, etc. CW614N, etc.	TH10	10 - 200	0.01 - 0.1
S	Difficult-to-machine material, Titanium alloys Ti-6Al-4V, etc.	TH10	10 - 30	0.01 - 0.1

INSERT

10E (Insert blank)



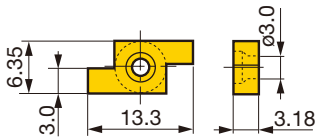
Right hand (R) shown.

Designation	Uncoated TH10 R	Uncoated TH10 L	CW	BW
10ER/L100B	●	●	1	2.5
10ER/L150B	●	●	1.5	3

● : Line up

Note: Right hand holder (JSEGR...) use right hand insert (10ER...)
and left hand holder (JSEGL...) use left hand insert (10EL...)

10E (Insert blank)



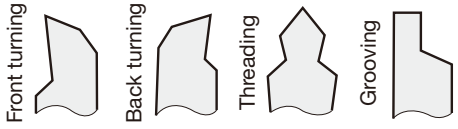
Right hand (R) shown.

Designation	Uncoated TH10 R	Uncoated TH10 L
10ER/L300	●	●

● : Line up

Note: Right hand holder (JSEGR...) use right hand insert (10ER...)
and left hand holder (JSEGL...) use left hand insert (10EL...)

Formed examples of insert blanks



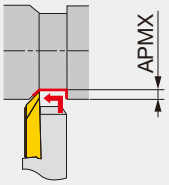
Notes:
- Front relief angle, side relief angle, edge width can be ground depending on the application.
- Insert blanks can be formed to a profiling tool which has a width up to 3 mm

Standard cutting conditions

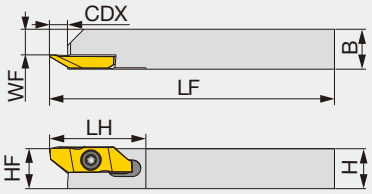
Operations	Workpiece material		Carbon steels	Stainless steels	Brass
Lateral feed (external turning)	Cutting speed (m/min)		~ 100	~ 50	~ 200
	Feed (mm/rev)	Roughing	~ 0.06	~ 0.03	~ 0.1
		Medium	~ 0.03	~ 0.025	~ 0.06
		Finishing	~ 0.02	~ 0.015	~ 0.04
Parting-off Grooving Forming	Cutting speed (m/min)		~ 80	~ 30	~ 150
	Feed (mm/rev)	Roughing	~ 0.02	~ 0.015	~ 0.05
		Medium	~ 0.015	~ 0.01	~ 0.03
		Finishing	~ 0.01	~ 0.008	~ 0.015

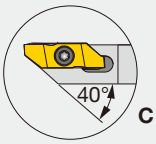
JSXBR/L

Screw-on toolholder for back turning and threading



APMX = 5.5 mm





C type

Right hand (R) shown.

Designation	H	B	LF	LH	CDX	HF	WF	Insert
JSXBR/L1010K8-C	10	10	125	29	6.7	10	5.7	JXBR/L8..., JXT*R...
JSXBR/L1212K8-C	12	12	125	29	6.7	12	7.7	JXBR/L8..., JXT*R...
JSXBR/L1616K8	16	16	125	29	6.4	16	11.7	JXBR/L8..., JXT*R...
JSXBR/L2020K8	20	20	125	29	6.4	20	15.7	JXBR/L8..., JXT*R...
JSXBR/L2525K8	25	25	125	29	6.4	25	20.7	JXBR/L8..., JXT*R...

Can be used with JXT insert for threading.
Can be wrenched also from the back with a double-head screw.

SPARE PARTS



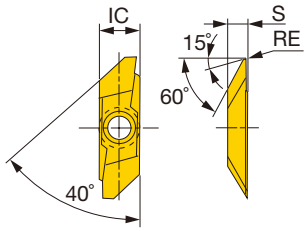


Designation	Clamping screw	Wrench
JSXBR/L...	CSTB-4SD	T-8F

INSERT

JXB (Sharp edge)





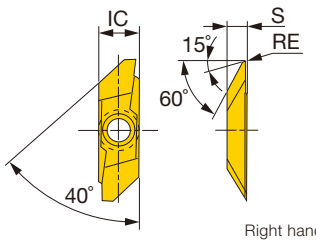
Right hand (R) shown.

Designation	RE	Coated J740 R	Coated J740 L	Uncoated TH10 R	Uncoated TH10 L	IC	S	Max. depth of cut
JXBR/L8000F	0.03	●	●	●	●	8	3.97	5.5
JXBR/L8005F	0.05	●	●	●	●	8	3.97	5.5
JXBR/L8010F	0.1	●	●	●	●	8	3.97	5.5
JXBR/L8015F	0.15	●	●	●	●	8	3.97	5.5

● : Line up

JXB (Honed edge)





Right hand (R) shown.

Designation	RE	Coated J740 R	Coated J740 L	IC	S	Max. depth of cut
JXBR/L8005	0.05	●	●	8	3.97	5.5
JXBR/L8010	0.1	●	●	8	3.97	5.5
JXBR/L8015	0.15	●	●	8	3.97	5.5

● : Line up

STANDARD CUTTING CONDITIONS (JXB type insert)

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev) grooving	Feed *f* (mm/rev) turning
P	General steel S45C, C45, etc.	J740	10 - 100	0.01 - 0.03	0.02 - 0.1
P	Free-cutting steel SUM22, 11SMn28, etc.	J740	10 - 100	0.01 - 0.03	0.02 - 0.1
M	Stainless steel SUS303, X10CrNiS18-9, etc.	J740	10 - 100	0.01 - 0.02	0.02 - 0.08
N	Aluminium alloys, Brass Si < 12% C3604B, etc. CW614N, etc	TH10	50 - 200	0.01 - 0.05	0.02 - 0.1
S	Difficult-to-machine material, Titanium alloys (Ti-6Al-4V, etc.)	TH10	10 - 30	0.01 - 0.02	0.02 - 0.05

MINI FORCE TURN
STANDARD CUTTING CONDITIONS
FOR EXTERNAL TURNING

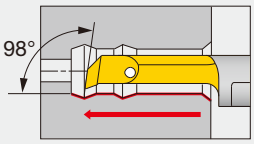
Applications	ISO	Workpiece material	Priority	Chip breaker	Grade	Cutting speed *Vc* (m/min)	Depth of cut *ap* (mm)	Feed *f* (mm/rev)
For swiss type automatic lathes	P	low carbon steel (SS400, etc. E275A, etc.) Carbon steel (S45C, etc. C45, etc.) Low alloy steel (SCM415, etc. 18CrMo4, etc.) Alloy steel (SCM440, etc. 42CrMo4, etc.)	First choice	JS	SH725	50 - 180	0.1 - 3	0.03 - 0.1
			With high sharpness	JSS	SH725	50 - 180	0.1 - 1.5	0.03 - 0.1
	M	Stainless steel (Austenitic) (SUS304, etc. X5CrNi18-9, etc.) Stainless steel (Martensitic and ferritic) (SUS430, etc. X6Cr17, etc.) Stainless steel (Precipitation hardened) (SUS630, etc. X5CrNiCuNb16-4, etc.)	First choice	JS	SH725	50 - 180	0.1 - 1.25	0.03 - 0.1
			With high sharpness	JSS	SH725	50 - 180	0.1 - 1.5	0.03 - 0.1
For small size CNC lathes	P	low carbon steel (SS400, etc. E275A, etc.) Carbon steel (S45C, etc. C45, etc.) Low alloy steel (SCM415, etc. 18CrMo4, etc.) Alloy steel (SCM440, etc. 42CrMo4, etc.)	First choice	SS	AH725	50 - 180	0.15 - 1.5	0.05 - 0.2
				TS	AH725	50 - 180	0.3 - 2	0.08 - 0.3
			For improved surface finish	SS	NS9530	50 - 200	0.15 - 1.5	0.05 - 0.2
				TS	NS9530	50 - 200	0.3 - 2	0.08 - 0.3
			For wear resistance	SS	GT9530	50 - 250	0.15 - 1.5	0.05 - 0.2
				TS	GT9530	50 - 250	0.3 - 2	0.08 - 0.3
	M	Stainless steel (Austenitic) (SUS304, etc. X5CrNi18-9, etc.) Stainless steel (Martensitic and ferritic) (SUS430, etc. X6Cr17, etc.) Stainless steel (Precipitation hardened) (SUS630, etc. X5CrNiCuNb16-4, etc.)	First choice	SS	AH8015	50 - 150	0.15 - 1.5	0.05 - 0.2
			For impact resistance	TS	AH8015	50 - 150	0.3 - 2	0.08 - 0.3

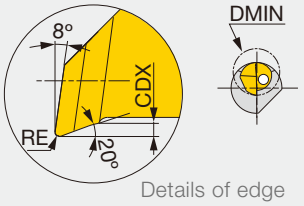
J-SERIES
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	low carbon steel (SS400, etc. E275A, etc.) Carbon steel (S45C, etc. C45, etc.) Low alloy steel (SCM415, etc. 18CrMo4, etc.) Alloy steel (SCM440, etc. 42CrMo4, etc.)	First choice	SH725	50 - 200	0.01 - 0.2
		For impact resistance	AH725	50 - 200	0.01 - 0.2
M	Stainless steel (Austenitic) (SUS304, etc. X5CrNi18-9, etc.) Stainless steel (Martensitic and ferritic) (SUS430, etc. X6Cr17, etc.) Stainless steel (Precipitation hardened) (SUS630, etc. X5CrNiCuNb16-4, etc.)	First choice	SH725	50 - 200	0.01 - 0.2
		For impact resistance	AH725	50 - 200	0.01 - 0.2
K	Titanium alloys Ti-6Al-4V, etc. Superalloys Inconel718, etc.	First choice	SH725	20 - 80	0.01 - 0.2
		For impact resistance	AH725	20 - 80	0.01 - 0.2

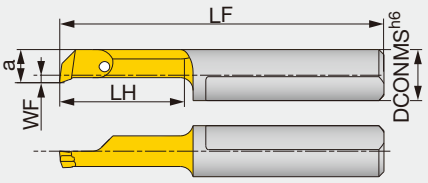
JBT R/L

Solid boring bar for boring, profiling, and chamfering





Details of edge



Right hand (R) shown.

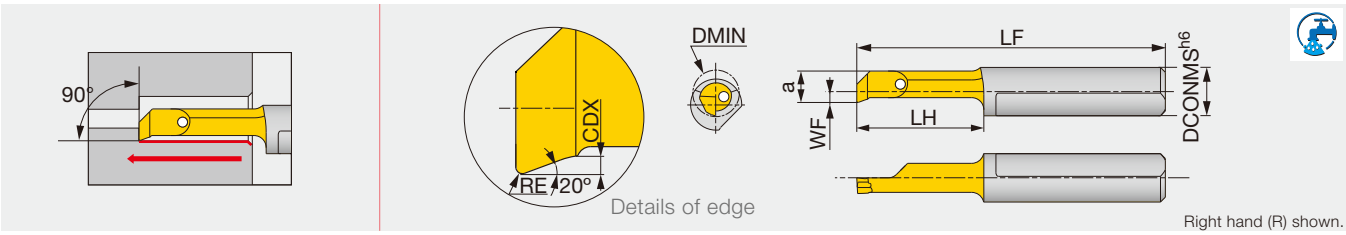
Designation	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}_{0}$
JBTR04020004-D006	●	0.6	4	-	0.5	18.5	2	0.08	0.04
JBTR04030004-D006	●	0.6	4	-	0.5	19.5	3	0.08	0.04
JBTR04045005-D010	●	1	4	-	0.9	21	4.5	0.1	0.05
JBTR04065005-D010	●	1	4	-	0.9	23	6.5	0.1	0.05
JBTR04040005-D020	●	2	4	-	1.7	20.5	4	0.1	0.05
JBTR04090005-D020	●	2	4	-	1.7	25.5	9	0.1	0.05
JBTR04140005-D020	●	2	4	-	1.7	30.5	14	0.1	0.05
JBTR/L04090010-D028	●	2.8	4	0.6	2.6	25.5	9	0.2	0.1
JBTR/L04150010-D028	●	2.8	4	0.6	2.6	31.5	15	0.2	0.1
JBTR/L04190010-D028	●	2.8	4	0.6	2.6	35.5	19	0.2	0.1
JBTR/L04090010-D040	●	4	4	1.5	3.5	25.5	9	0.3	0.1
JBTR/L04150010-D040	●	4	4	1.5	3.5	31.5	15	0.3	0.1
JBTR/L04190010-D040	●	4	4	1.5	3.5	35.5	19	0.3	0.1
JBTR04230010-D040	●	4	4	1.5	3.5	39.5	23	0.3	0.1
JBTR04270010-D040	●	4	4	1.5	3.5	43.5	27	0.3	0.1
JBTR/L07090015-D050	●	5	7	0.9	4.4	25	9	0.5	0.15
JBTR/L07140015-D050	●	5	7	0.9	4.4	30	14	0.5	0.15
JBTR/L07190015-D050	●	5	7	0.9	4.4	35	19	0.5	0.15
JBTR/L07240015-D050	●	5	7	0.9	4.4	40	24	0.5	0.15
JBTR/L07290015-D050	●	5	7	0.9	4.4	45	29	0.5	0.15
JBTR07340015-D050	●	5	7	0.9	4.4	50	34	0.5	0.15
JBTR/L07140015-D060	●	6	7	1.8	5.3	30	14	0.5	0.15
JBTR/L07210015-D060	●	6	7	1.8	5.3	37	21	0.5	0.15
JBTR/L07240015-D060	●	6	7	1.8	5.3	40	24	0.5	0.15
JBTR/L07290015-D060	●	6	7	1.8	5.3	45	29	0.5	0.15
JBTR07340015-D060	●	6	7	1.8	5.3	50	34	0.5	0.15
JBTR07410015-D060	●	6	7	1.8	5.3	57	41	0.5	0.15
JBTR/L07190015-D068	●	6.8	7	2.8	6.3	35	19	0.6	0.15
JBTR07240015-D068	●	6.8	7	2.8	6.3	40	24	0.6	0.15
JBTR/L07290015-D068	●	6.8	7	2.8	6.3	45	29	0.6	0.15
JBTR/L07340015-D070	●	7	7	2.8	6.3	50	34	0.6	0.15
JBTR07390015-D070	●	7	7	2.8	6.3	55	39	0.6	0.15
JBTR07440015-D070	●	7	7	2.8	6.3	60	44	0.6	0.15
JBTR07490015-D070	●	7	7	2.8	6.3	65	49	0.6	0.15

● : Line up

External
Internal
Grooving
Threading
Parting-off

Reference pages : JBT R/L: Standard cutting conditions → G060

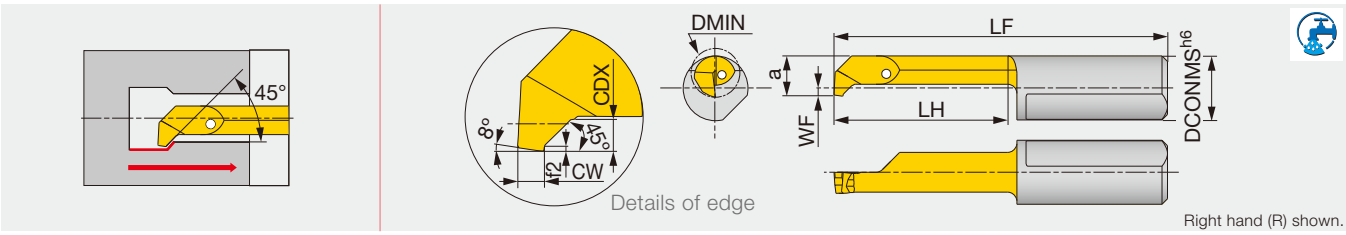
TINYMINITURN
JBP R
Solid boring bar for boring and chamfering



Designation	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}_{0}$
JBPR04090010-D028	●	2.8	4	0.9	2.6	25.5	9	0.2	0.1
JBPR04150010-D028	●	2.8	4	0.9	2.6	31.5	15	0.2	0.1
JBPR04090010-D040	●	4	4	1.5	3.5	25.5	9	0.3	0.1
JBPR04150010-D040	●	4	4	1.5	3.5	31.5	15	0.3	0.1
JBPR07140015-D050	●	5	7	0.9	4.4	30	14	0.5	0.15
JBPR07190015-D050	●	5	7	0.9	4.4	35	19	0.5	0.15

● : Line up

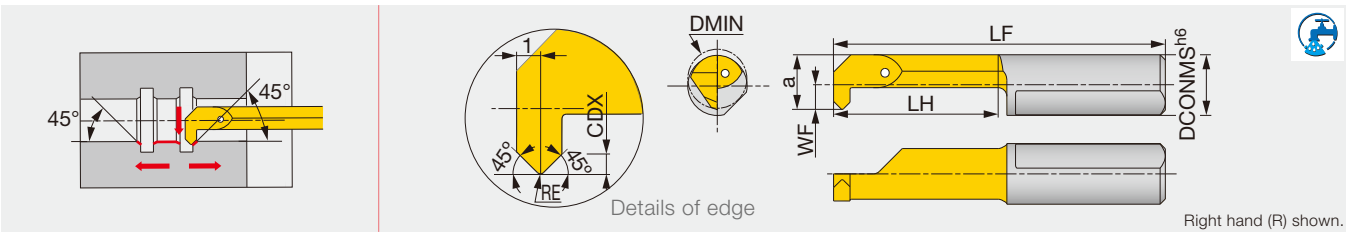
TINYMINITURN
JBU R
Solid boring bar for back boring and chamfering



Designation	SH730	DMIN	DCONMS	WF	a	LF	LH	f2	CDX	CW $^{+0.05}_{0}$
JBUR07140010-D050	●	5	7	0.9	4.4	30	14	0.2	1	1
JBUR07190010-D050	●	5	7	0.9	4.4	35	19	0.2	1	1

● : Line up

TINYMINITURN
JBC R
Solid boring bar for boring and 45° chamfering



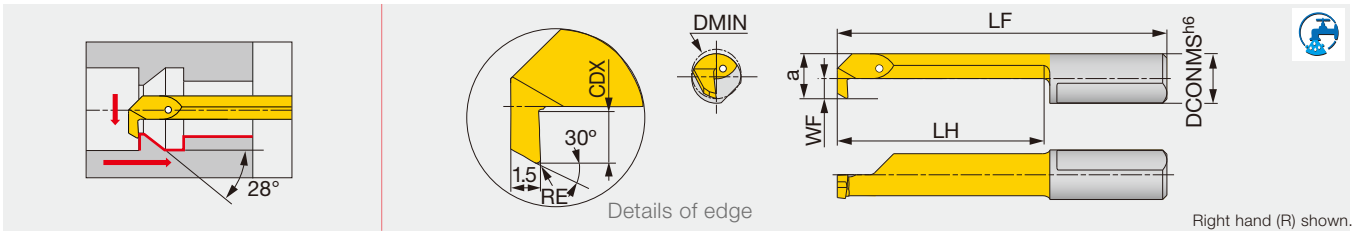
Designation	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{\pm 0.05}$
JBCR07140020-D050	●	5	7	0.9	4.4	30	14	0.7	0.2
JBCR07190020-D050	●	5	7	0.9	4.4	35	19	0.7	0.2
JBCR07190020-D068	●	6.8	7	2.8	6.3	35	19	0.7	0.2

● : Line up

Reference pages : JBP R, JBU R, JBC R: Standard cutting conditions → G060

JBB R

Solid boring bar for back boring

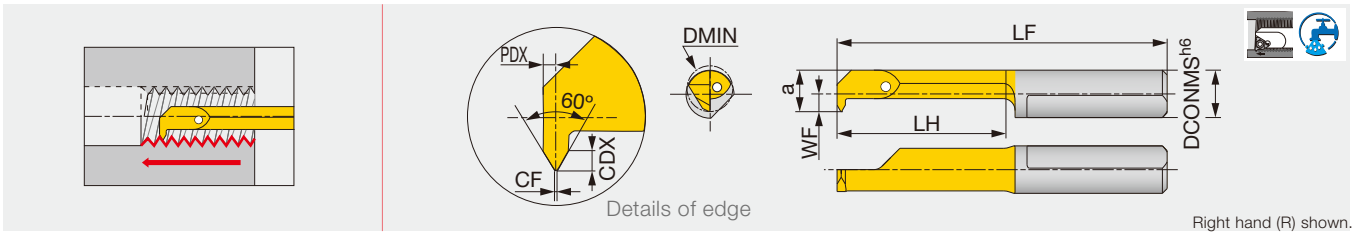


Designation	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE +0.05
JBBR04140020-D030	●	3	4	0.6	2.6	30	14	0.5	0.2
JBBR04190020-D030	●	3	4	0.6	2.6	35	19	0.5	0.2
JBBR04140015-D040	●	4	4	1.5	3.5	30	14	0.8	0.15
JBBR04240015-D040	●	4	4	1.5	3.5	40	24	0.8	0.15
JBBR07190020-D050	●	5	7	0.9	4.4	35	19	1	0.2
JBBR07290020-D050	●	5	7	0.9	4.4	45	29	1	0.2
JBBR07190020-D060	●	6	7	1.8	5.3	35	19	1.8	0.2
JBBR07290020-D060	●	6	7	1.8	5.3	45	29	1.8	0.2
JBBR07190020-D070	●	7	7	2.8	6.3	35	19	2.5	0.2
JBBR07290020-D070	●	7	7	2.8	6.3	45	29	2.5	0.2

● : Line up

JBI R

Solid boring bar for threading (metric)



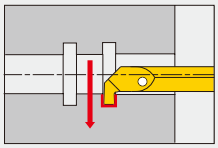
Designation	SH730	Pitch	DMIN	CF $^{0}_{-0.02}$	DCONMS	WF	a	LF	LH	CDX	PDX
JBIR04140050-D040	●	0.5	4	0.06	4	1.5	3.5	30	14	0.3	0.35
JBIR07140050-D050	●	0.5	5	0.06	7	0.9	4.4	30	14	0.3	0.35
JBIR07140075-D050	●	0.75	5	0.09	7	0.9	4.4	30	14	0.4	0.45
JBIR07140100-D048	●	1	4.8	0.12	7	0.9	4.4	30	14	0.6	0.55
JBIR07140100-D060	●	1	6	0.12	7	1.8	5.3	30	14	0.6	0.55
JBIR07140125-D060	●	1.25	6	0.15	7	1.8	5.3	30	14	0.7	0.65
JBIR07140150-D060	●	1.5	6	0.18	7	1.8	5.3	30	14	0.8	0.75
JBIR07140150-D070	●	1.5	7	0.18	7	2.8	6.3	30	14	0.8	0.75

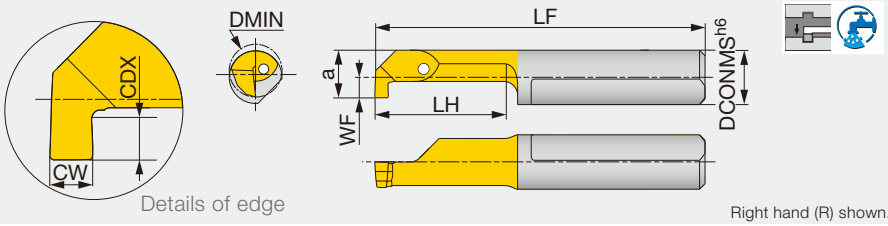
● : Line up

Reference pages : JBB R, JBI R: Standard cutting conditions → G060 - G061

JBG R/L

Solid boring bar for internal grooving





Designation	SH730	CW $^{+0.05}_{0}$	DMIN	DCONMS	WF	a	LF	LH	CDX
JBGR04050050-D020	●	0.5	2	4	0.2	1.8	21	5	0.4
JBGR04100050-D020	●	0.5	2	4	0.2	1.8	26	10	0.4
JBGR04050070-D030	●	0.7	3	4	0.7	2.7	21	5	0.6
JBGR04100070-D030	●	0.7	3	4	0.7	2.7	26	10	0.6
JBGR04090100-D040	●	1	4	4	1.5	3.5	25.5	9	0.8
JBGR04150100-D040	●	1	4	4	1.5	3.5	31.5	15	0.8
JBGR07090100-D050	●	1	5	7	0.9	4.4	25	9	1
JBGR07140100-D050	●	1	5	7	0.9	4.4	30	14	1
JBGR07090150-D050	●	1.5	5	7	0.9	4.4	25	9	1
JBGR07140150-D050	●	1.5	5	7	0.9	4.4	30	14	1
JBGR07090200-D050	●	2	5	7	0.9	4.4	25	9	1
JBGR07190200-D050	●	2	5	7	0.9	4.4	35	19	1
JBGR/L07090100-D060	●	1	6	7	1.8	5.3	25	9	1.8
JBGR07140100-D060	●	1	6	7	1.8	5.3	30	14	1.8
JBGR07210100-D060	●	1	6	7	1.8	5.3	37	21	1.8
JBGR07290100-D060	●	1	6	7	1.8	5.3	45	29	1.8
JBGR/L07090150-D060	●	1.5	6	7	1.8	5.3	25	9	1.8
JBGR07140150-D060	●	1.5	6	7	1.8	5.3	30	14	1.8
JBGR07210150-D060	●	1.5	6	7	1.8	5.3	37	21	1.8
JBGR07240150-D060	●	1.5	6	7	1.8	5.3	40	24	1.8
JBGR07290150-D060	●	1.5	6	7	1.8	5.3	45	29	1.8
JBGR07090200-D060	●	2	6	7	1.8	5.3	25	9	1.8
JBGR07140200-D060	●	2	6	7	1.8	5.3	30	14	1.8
JBGR07210200-D060	●	2	6	7	1.8	5.3	37	21	1.8
JBGR07240200-D060	●	2	6	7	1.8	5.3	40	24	1.8
JBGR07290200-D060	●	2	6	7	1.8	5.3	45	29	1.8
JBGR07090100-D068	●	1	6.8	7	2.7	6.2	25	9	2.5
JBGR07140100-D068	●	1	6.8	7	2.7	6.2	30	14	2.5
JBGR07210100-D068	●	1	6.8	7	2.7	6.2	37	21	2.5
JBGR07090150-D068	●	1.5	6.8	7	2.7	6.2	25	9	2.5
JBGR07140150-D068	●	1.5	6.8	7	2.7	6.2	30	14	2.5
JBGR07210150-D068	●	1.5	6.8	7	2.7	6.2	37	21	2.5
JBGR07290150-D068	●	1.5	6.8	7	2.7	6.2	45	29	2.5
JBGR07090200-D068	●	2	6.8	7	2.7	6.2	25	9	2.5
JBGR/L07140200-D068	●	2	6.8	7	2.7	6.2	30	14	2.5
JBGR07210200-D068	●	2	6.8	7	2.7	6.2	37	21	2.5
JBGR07250200-D068	●	2	6.8	7	2.7	6.2	40	25	2.5
JBGR07290200-D068	●	2	6.8	7	2.7	6.2	45	29	2.5

* Corner radius: less than 0.1 mm

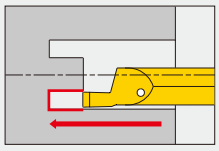
● : Line up

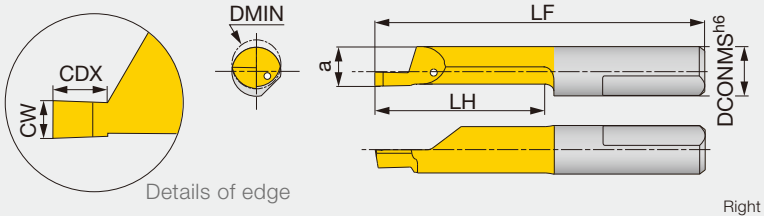
Reference pages : JBG R/L: Standard cutting conditions → G061

TINYMTURN INI

JBF R/L

Solid boring bar for face grooving





Right hand (R) shown.

Designation	SH730	CW $^{+0.05}_{0}$	DMIN	DCONMS	a	LF	LH	CDX
JBFR07110100-D060	●	1	6	7	5.2	26	10	1.5
JBFR07110150-D060	●	1.5	6	7	5.2	26	10	2
JBFR07110200-D060	●	2	6	7	5.2	26	10	3
JBFR07110100-D080	●	1	8	7	5.9	27	11	1.5
JBFR07110150-D080	●	1.5	8	7	5.9	27	11	2.5
JBFR07110200-D080	●	2	8	7	5.9	27	11	3
JBFR07110250-D080	●	2.5	8	7	5.9	27	11	3.5
JBFR07110300-D080	●	3	8	7	5.9	27	11	3.5
JBFR/L07210150-D080	●	1.5	8	7	5.9	36	21	2.5
JBFR07210200-D080	●	2	8	7	5.9	36	21	3
JBFR07210250-D080	●	2.5	8	7	5.9	36	21	3.5
JBFR07210300-D080	●	3	8	7	5.9	36	21	3.5
JBFR/L07300200-D080	●	2	8	7	5.9	46	30	3
JBFR07300300-D080	●	3	8	7	5.9	46	30	3.5
JBFR07200200-D080	●	2	8	7	5.9	36	20	3
JBFR07200250-D150	●	2.5	15	7	5.9	36	20	20
JBFR07200300-D150	●	3	15	7	5.9	36	20	20
JBFR07300300-D150	●	3	15	7	5.9	46	30	30

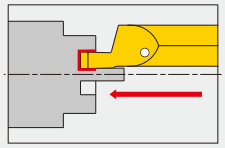
* Corner radius: less than 0.1 mm

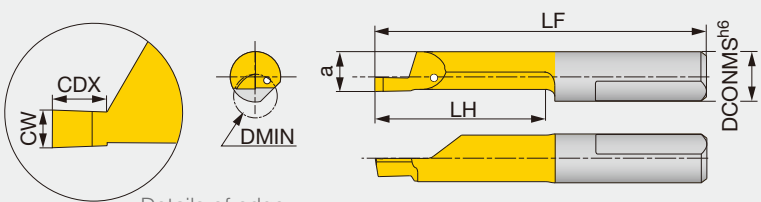
● : Line up

TINYMTURN INI

JBS R

Solid boring bar for face grooving (for shaft)





Right hand (R) shown.

Designation	SH730	CW $^{+0.05}_{0}$	DMIN	DCONMS	a	LF	LH	CDX
JBSR07200200-D060	●	2	6	7	5.2	36	20	4

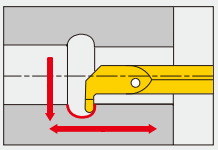
* Corner radius: less than 0.1 mm

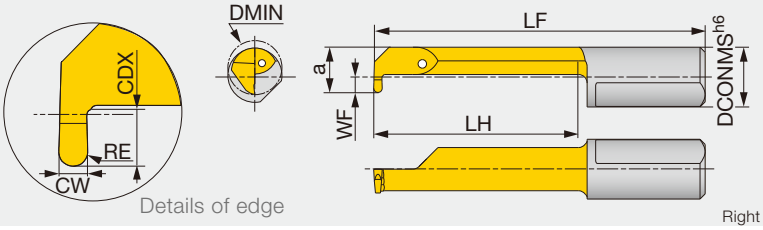
● : Line up

TINYMTURN INI

JBR R

Solid boring bar for boring and profiling





Right hand (R) shown.

Designation	SH730	CW $^{+0.05}_{0}$	DMIN	DCONMS	WF	a	LF	LH	CDX	RE
JBRR07190050-D050	●	1	5	7	0.9	4.4	35	19	1	0.5
JBRR07240050-D060	●	1	6	7	1.8	5.3	40	24	1.8	0.5
JBRR07290050-D068	●	1	6.8	7	2.8	6.3	45	29	2.5	0.5

● : Line up

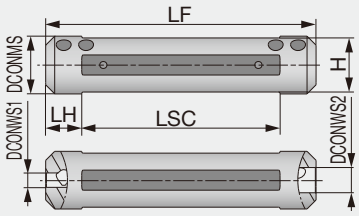
Reference pages : JBF R/L, JBS R: Standard cutting condition → G061, JBR R: Standard cutting conditions → G060

TINY MINI TURN

JBBS

Sleeve for external coolant supply





Designation	DCONMS	DCONWS1	DCONWS2	LF	LH	LSC	H
JBBS12-4-4	12	4	4	75	10	55	10.3
JBBS127-4-4	12.7	4	4	76.2	10	56.2	11.6
JBBS14-4-4	14	4	4	75	10	55	12
JBBS159-4-7	15.875	4	7	76.2	10	56.2	14
JBBS16-4-7	16	4	7	75	10	55	15
JBBS19-4-7	19.05	4	7	89	10	69	17.2
JBBS20-4-7	20	4	7	90	10	70	18
JBBS22-4-7	22	4	7	90	10	70	20
JBBS25-4-7	25	4	7	100	10	80	23
JBBS254-4-7	25.4	4	7	90	10	70	23.4

SPARE PARTS

Designation	Clamping screw	Wrench
JBBS12-4-4	SSHM5-4PF-S	P-2.5
JBBS127-4-4	SSHM5-6PF-S	P-2.5
JBBS14-4-4	SSHM5-4PF-S	P-2.5
JBBS**-4-7	SSHM5-6PF-S	P-2.5

TINY MINI TURN

JBBS-C

Sleeve for internal coolant supply



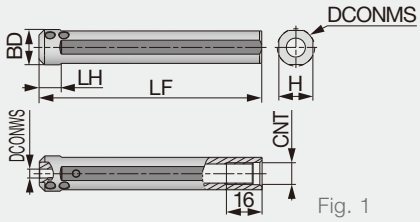


Fig. 1

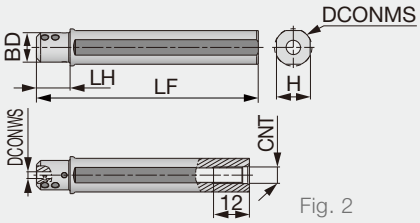


Fig. 2

Designation	DCONMS	BD	DCONWS	LF	LH	H	CNT	Fig.
JBBS159-4-L100C	15.875	15.875	4	100	10	14.58	R1/8	1
JBBS159-7-L100C	15.875	15.875	7	100	10	14.58	R1/8	1
JBBS16-4-L100C	16	16	4	100	10	15	R1/8	1
JBBS16-7-L100C	16	16	7	100	10	15	R1/8	1
JBBS19-4-L100C	19.05	17.5	4	100	20	17.2	R1/8	2
JBBS19-7-L100C	19.05	17.5	7	100	20	17.2	R1/8	2
JBBS20-4-L100C	20	17.5	4	100	20	18	R1/8	2
JBBS20-7-L100C	20	17.5	7	100	20	18	R1/8	2
JBBS22-4-L100C	22	17.5	4	100	20	20	R1/8	2
JBBS22-7-L100C	22	17.5	7	100	20	20	R1/8	2
JBBS25-4-L100C	25	18	4	100	23	23	R1/8	2
JBBS25-7-L100C	25	18	7	100	23	23	R1/8	2
JBBS254-4-L100C	25.4	18	4	100	23	23.4	R1/8	2
JBBS254-7-L100C	25.4	18	7	100	23	23.4	R1/8	2

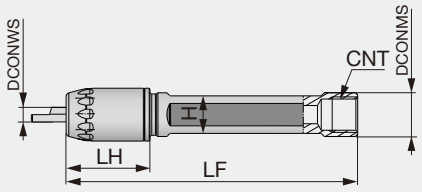
SPARE PARTS

Designation	Clamping screw	Wrench
JBBS**-4-L100C	SSHM5-6PF-S	P-2.5
JBBS**-7-L100C	SSHM5-4PF-S	P-2.5

JBBSA-C

Collet chuck sleeve for solid carbide bars





Designation	DCONMS	DCONWS	LF	LH	H	CNT
JBBSA16-4-L100C	16	4	100	23	14	Rc1/8
JBBSA16-7-L100C	16	7	100	23	18	Rc1/8
JBBSA20-4-L120C	20	4	120	23	18	Rc1/8
JBBSA20-7-L120C	20	7	120	23	18	Rc1/8

SPARE PARTS

Designation	Cap	Wrench
JBBSA**-4-L100C	CAP-A-4	WRENCH-A-4
JBBSA**-7-L100C	CAP-A-7	WRENCH-A-7

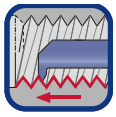
STANDARD CUTTING CONDITIONS



Boring, profiling, chamfering, back boring

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Low carbon steels (C15, C20 etc.)	SH730	40 - 140	0.01 - 0.08 *
P	Carbon steels, Alloy steels (C55, 42CrMoS4 etc.)	SH730	40 - 140	0.01 - 0.08 *
P	Prehardened steels (NAK80, PX5 etc.)	SH730	40 - 140	0.01 - 0.08 *
M	Stainless steels (X5CrNi18-9, X5CrNiMo17-12-2 etc)	SH730	40 - 140	0.01 - 0.08 *
K	Grey cast irons (250, 300 etc.)	SH730	30 - 100	0.01 - 0.08 *
K	Ductile cast irons (400-15, 600-3 etc.)	SH730	30 - 100	0.01 - 0.08 *
N	Aluminium alloys, Copper alloys Si < 12%	SH730	90 - 200	0.01 - 0.08 *
S	Titanium alloys (Ti-6Al-4V, etc.)	SH730	30 - 100	0.01 - 0.08 *
S	Superalloys (Inconel718, etc.)	SH730	30 - 100	0.01 - 0.08 *

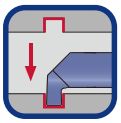
* JBTR/L04020004-D006, JBTR/L04030004-D006
Max. *f* = 0.01 mm/rev



Threading (metric thread)

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Number of passes Pitch (mm) 0.5	0.75	1	1.25	1.5
P	Low carbon steels (C15, C20 etc.)	SH730	40 - 140	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
P	Carbon steels, Alloy steels (C55, 42CrMoS4 etc.)	SH730	40 - 140	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
P	Prehardened steels (NAK80, PX5 etc.)	SH730	40 - 140	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
M	Stainless steels (X5CrNi18-9, X5CrNiMo17-12-2 etc)	SH730	40 - 140	8	10	12	15	18
K	Grey cast irons (250, 300 etc.)	SH730	30 - 100	7	9	12	14	17
K	Ductile cast irons (400-15, 600-3 etc.)	SH730	30 - 100	7	9	12	14	17
N	Aluminium alloys, Copper alloys Si < 12%	SH730	90 - 200	6	8	10	12	15

STANDARD CUTTING CONDITIONS



Internal grooving

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Low carbon steels (C15, C20 etc.)	SH730	40 - 140	0.01 - 0.03
P	Carbon steels, Alloy steels (C55, 42CrMoS4 etc.)	SH730	40 - 140	0.01 - 0.03
P	Prehardened steels (NAK80, PX5 etc.)	SH730	40 - 140	0.01 - 0.03
M	Stainless steels (X5CrNi18-9, X5CrNiMo17-12-2 etc)	SH730	40 - 140	0.01 - 0.03
K	Grey cast irons (250, 300 etc.)	SH730	30 - 100	0.01 - 0.03
K	Ductile cast irons (400-15, 600-3 etc.)	SH730	30 - 100	0.01 - 0.03
N	Aluminium alloys, Copper alloys Si < 12%	SH730	90 - 200	0.01 - 0.03
S	Titanium alloys Ti-6Al-4V etc.	SH730	30 - 100	0.01 - 0.03
S	Superalloys (Inconel718, etc.)	SH730	30 - 100	0.01 - 0.03

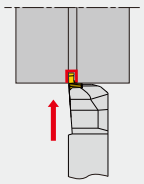


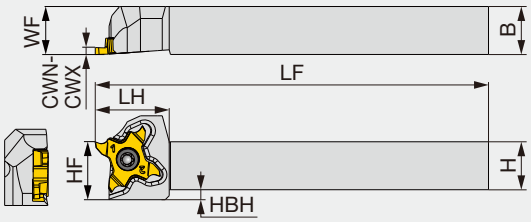
Face grooving

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Low carbon steels (C15, C20 etc.)	SH730	40 - 140	0.01 - 0.05
P	Carbon steels, Alloy steels (C55, 42CrMoS4 etc.)	SH730	40 - 140	0.01 - 0.05
P	Prehardened steels (NAK80, PX5 etc.)	SH730	40 - 140	0.01 - 0.05
M	Stainless steels (X5CrNi18-9, X5CrNiMo17-12-2 etc)	SH730	40 - 140	0.01 - 0.05
K	Grey cast irons (250, 300 etc.)	SH730	30 - 100	0.01 - 0.05
K	Ductile cast irons (400-15, 600-3 etc.)	SH730	30 - 100	0.01 - 0.05
N	Aluminium alloys, Copper alloys Si < 12%	SH730	90 - 200	0.01 - 0.05
S	Titanium alloys Ti-6Al-4V etc.	SH730	30 - 100	0.01 - 0.05
S	Superalloys (Inconel718, etc.)	SH730	30 - 100	0.01 - 0.05

STCR/L-18

External grooving and threading toolholder





Right-hand (R) shown.

Designation	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque*
STCR/L1010X18	0.33	3	10	10	120	18.5	10	10	4.5	TC*18...	1.2
STCR/L1212F18	0.33	3	12	12	85	18.5	12	12	2.5	TC*18...	1.2
STCR/L1212X18	0.33	3	12	12	120	18.5	12	12	2.5	TC*18...	1.2
STCR/L1616X18	0.33	3	16	16	120	18.5	16	16	-	TC*18...	1.2
STCR/L2020H18	0.33	3	20	20	100	18.5	20	20	-	TC*18...	1.2
STCR/L2020X18	0.33	3	20	20	120	23.0	20	25	-	TC*18...	1.2
STCR/L2525Z18	0.33	3	25	25	135	23.0	25	30	-	TC*18...	1.2

- The right hand insert (TC*18R...) is used for the right hand toolholders (STCR...), and the left hand insert is used for the left hand toolholders
*Torque: Recommended torque (N·m) for clamping

Left-Hand Insert



TCP18**L**...

Right-Hand Insert



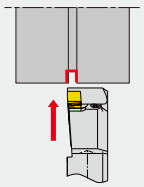
TCP18**R**...

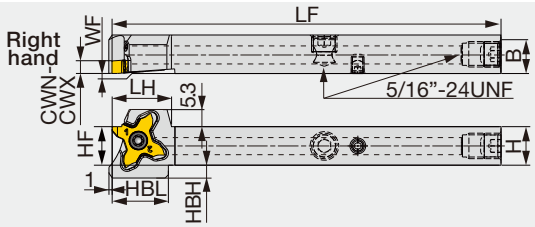
SPARE PARTS

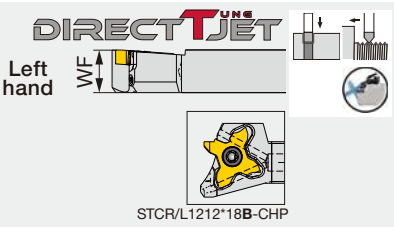
Designation	Clamping screw	Wrench
STCR...18	CSTC-4L100DL	T-1008/5
STCL...18	CSTC-4L100DR	T-1008/5

Reference pages : STCR/L-18: Inserts → G065 - G069, Standard cutting conditions → G069

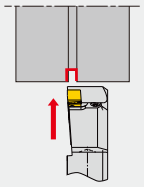
External grooving and threading toolholder, with high pressure coolant capability

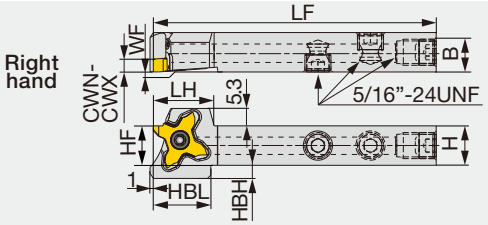


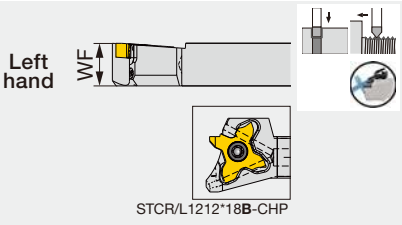




Designation	CWN	CWX	H	B	LF	LH	HF	WF	HBL	HBH	Insert	Torque*
STCR/L1212X18-CHP***(1)	0.33	3	12	12	120	18.5	12	0/12	17.5	4	TC*18...	1.2
STCR/L1212X18B-CHP (1)	0.33	3	12	12	120	18.5	12	0/12	17.5	4	TC*18...	1.2
STCR/L1616X18-CHP (1)	0.33	3	16	16	120	18.5	16	0/16	-	-	TC*18...	1.2







Designation	CWN	CWX	H	B	LF	LH	HF	WF	HBL	HBH	Insert	Torque*
STCR/L1212F18-CHP***	0.33	3	12	12	85	18.5	12	0/12	17.5	4	TC*18...	1.2
STCR/L1212F18B-CHP	0.33	3	12	12	85	18.5	12	0/12	17.5	4	TC*18...	1.2

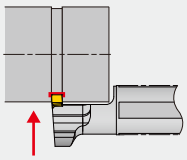
SPARE PARTS

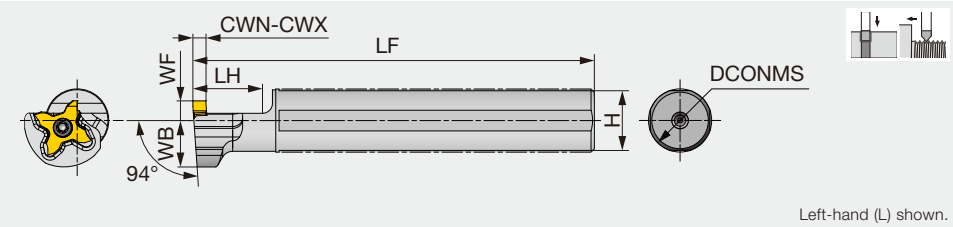
Designation	Clamping screw	Wrench
STCL**18-CHP	CSTC-4L100DR	T-1008/5
STCR**18-CHP	CSTC-4L100DL	T-1008/5

(1) Compatible to DirectTungJet system
- Use the right hand insert (TC*18R...) with the right hand toolholders (STCR...). Use the left hand insert (TC*18...) with the left hand holder (STCL...).
***: To be replaced with the new design

TETRAMINICUT
JS-STCL18

External grooving and threading toolholder with round shank, for Swiss lathes





Left-hand (L) shown.

Designation	CWN	CWX	DCONMS	H	LF	LH	WB	WF	Insert	Torque*
JS14H-STCL18	0.33	3	14	13	100	20	14	6	TC*18R...	1.2
JS159F-STCL18	0.33	3	15.875	15	85	20	14	6	TC*18R...	1.2
JS16F-STCL18	0.33	3	16	15	85	20	14	6	TC*18R...	1.2
JS19G-STCL18	0.33	3	19.05	18	90	20	14	6	TC*18R...	1.2
JS19X-STCL18	0.33	3	19.05	18	120	20	14	6	TC*18R...	1.2
JS20G-STCL18	0.33	3	20	19	90	20	14	6	TC*18R...	1.2
JS20X-STCL18	0.33	3	20	19	120	20	14	6	TC*18R...	1.2
JS22X-STCL18	0.33	3	22	21	120	20	12.25	10	TC*18R...	1.2
JS25H-STCL18	0.33	3	25	24	100	20	12.25	10	TC*18R...	1.2
JS254X-STCL18	0.33	3	25.4	24	120	20	12.25	10	TC*18R...	1.2

SPARE PARTS

Designation	Clamping screw	Wrench
JS...STCL18	CSTC-4L100DL	T-1008/5

- The left hand toolholder (STCL...) is used with the right hand inserts (TC*18R...)

*Torque: Recommended torque (N·m) for clamping

Reference pages : STCR/L-18-CHP: Inserts → G065 - G069, Standard cutting conditions → G069

Selection guide for TetraMini-Cut inserts

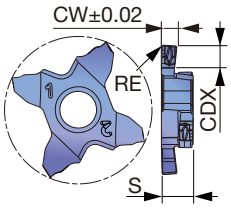
Groove width CW (mm)	Corner rad. RE (mm)	TCS18R (G065) AH7025 Honed edge	TCG18R/L (G066) AH7025 Honed edge	TCP18R/L (G067) AH725 Lightly honed edge	TCP18R/L-F (G068) SH725 Sharp edge
0.33	0.05			●	●
0.43	0.05			●	●
0.50	0.05			●	●
0.75	0.05			●	●
0.95	0.05			●	●
1.00	0.05				●
	0.1	●	●	●	●
1.20	0.05				●
	0.1	●	●	●	●
1.25	0.05				●
	0.1	●	●	●	●
	0.2	●	●		
1.30	0.2	●	●		
1.40	0.1	●	●	●	●
	0.2	●	●		
1.45	0.05				●
	0.1	●	●	●	●
	0.2		●		
1.50	0.05				●
	0.1	●	●	●	●
	0.2	●	●		
1.60	0.2	●	●		
1.70	0.2	●	●		
1.75	0.05				●
	0.1	●	●	●	●
	0.2	●	●		
1.85	0.2	●	●		
1.95	0.2	●	●		
2.00	0.05				●
	0.1	●	●	●	●
	0.2	●	●		
2.25	0.2	●	●		
2.30	0.2	●	●		
2.50	0.1	●	●	●	●
	0.2	●	●		
	0.3	●	●		
2.65	0.3	●	●		
2.80	0.3	●	●		
3.00	0.1	●	●	●	●
	0.2	●	●		
	0.3	●	●		

● : Line up

INSERT

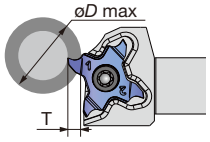
TCS18R (honed edge) (3D chipbreaker, honed edge)

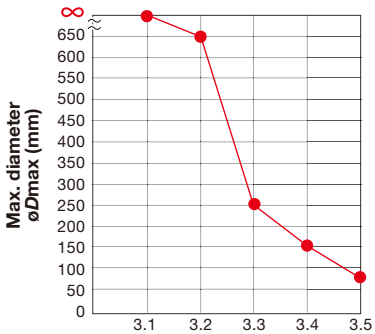




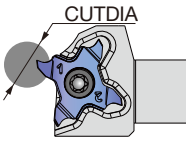
Designation	AH7025		CW	RE	CDX	S
	R	L				
TCS18R100-010	●		1	0.1	2	4
TCS18R120-010	●		1.2	0.1	2	4
TCS18R125-010	●		1.25	0.1	2	4
TCS18R125-020	●		1.25	0.2	2	4
TCS18R130-020	●		1.3	0.2	3.5*	4
TCS18R140-010	●		1.4	0.1	3.5*	4
TCS18R140-020	●		1.4	0.2	3.5*	4
TCS18R145-010	●		1.45	0.1	3.5*	4
TCS18R150-010	●		1.5	0.1	3.5*	4
TCS18R150-020	●		1.5	0.2	3.5*	4
TCS18R160-020	●		1.6	0.2	3.5*	4
TCS18R170-020	●		1.7	0.2	3.5*	4
TCS18R175-010	●		1.75	0.1	3.5*	4
TCS18R175-020	●		1.75	0.2	3.5*	4
TCS18R185-020	●		1.85	0.2	3.5*	4
TCS18R195-020	●		1.95	0.2	3.5*	4
TCS18R200-010	●		2	0.1	3.5*	4
TCS18R200-020	●		2	0.2	3.5*	4
TCS18R225-020	●		2.25	0.2	3.5*	4
TCS18R230-020	●		2.3	0.2	3.5*	4
TCS18R250-010	●		2.5	0.2	3.5*	4
TCS18R250-020	●		2.5	0.2	3.5*	4
TCS18R250-030	●		2.5	0.3	3.5*	4
TCS18R265-030	●		2.65	0.3	3.5*	4
TCS18R280-030	●		2.8	0.3	3.5*	4
TCS18R300-010	●		3	0.1	3.5*	4
TCS18R300-020	●		3	0.2	3.5*	4
TCS18R300-030	●		3	0.3	3.5*	4

Package quantity = 5pcs.
● : Line up





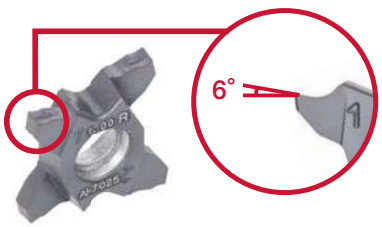
***Groove depth and max workpiece diameter (øDmax)**
Maximum workpiece diameter is limited relative to depth of cut in order to avoid collision between insert and workpiece.



Max. diameter CUTDIA (mm)
7

Grooving

TCS type (3D chipbreaker)

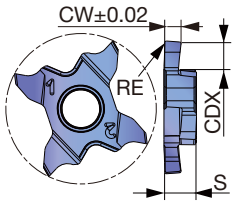


- The chipbreaker incorporates a dimple-like recess on the rake face to facilitate smooth chip flow with light cutting action
- Available in AH7025 for superior wear and fracture resistance

Reference pages : Toolholder → G062 - G063, Standard cutting conditions → G069

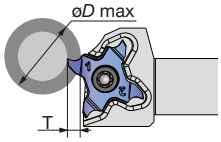
TCG18R/L (honed edge)

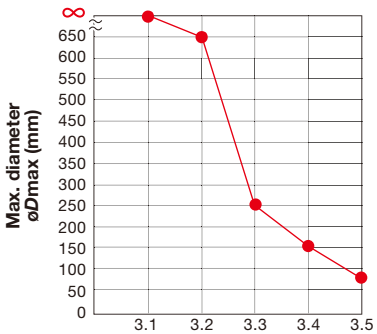




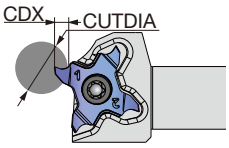
Designation	CW±0.02	RE	AH7025		CDX	S
			R	L		
TCG18R/L100-010	1	0.1	●	●	2	4
TCG18R/L120-010	1.2	0.1	●	●	2	4
TCG18R/L125-010	1.25	0.1	●	●	2	4
TCG18R/L125-020	1.25	0.2	●	●	2	4
TCG18R/L130-020	1.3	0.2	●	●	2	4
TCG18R/L140-010	1.4	0.1	●	●	3.5*	4
TCG18R/L140-020	1.4	0.2	●	●	3.5*	4
TCG18R/L145-010	1.45	0.1	●	●	3.5*	4
TCG18R/L145-020	1.45	0.2	●	●	3.5*	4
TCG18R/L150-010	1.5	0.1	●	●	3.5*	4
TCG18R/L150-020	1.5	0.2	●	●	3.5*	4
TCG18R/L160-020	1.6	0.2	●	●	3.5*	4
TCG18R/L170-020	1.7	0.2	●	●	3.5*	4
TCG18R/L175-010	1.75	0.1	●	●	3.5*	4
TCG18R/L175-020	1.75	0.2	●	●	3.5*	4
TCG18R/L185-020	1.85	0.2	●	●	3.5*	4
TCG18R/L195-020	1.95	0.2	●	●	3.5*	4
TCG18R/L200-010	2	0.1	●	●	3.5*	4
TCG18R/L200-020	2	0.2	●	●	3.5*	4
TCG18R/L225-020	2.25	0.2	●	●	3.5*	4
TCG18R/L230-020	2.3	0.2	●	●	3.5*	4
TCG18R/L250-010	2.5	0.1	●	●	3.5*	4
TCG18R/L250-020	2.5	0.2	●	●	3.5*	4
TCG18R/L250-030	2.5	0.3	●	●	3.5*	4
TCG18R/L265-030	2.65	0.3	●	●	3.5*	4
TCG18R/L280-030	2.8	0.3	●	●	3.5*	4
TCG18R/L300-010	3	0.1	●	●	3.5*	4
TCG18R/L300-020	3	0.2	●	●	3.5*	4
TCG18R/L300-030	3	0.3	●	●	3.5*	4

Package quantity = 5pcs.
● : Line up



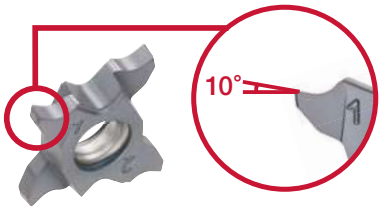


***Groove depth and max workpiece diameter (øDmax)**
Maximum workpiece diameter is limited relative to depth of cut in order to avoid collision between insert and workpiece.



Max. diameter CUTDIA (mm)
7

TCG type (Honed edge)



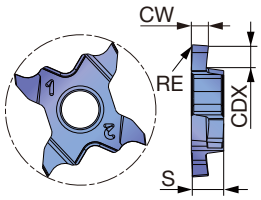
- Optimized rake angle and edge preparation enhances fracture resistance, allowing for smooth cutting
- AH7025 grade features a superior combination of wear and fracture resistances

Reference pages :Toolholder → G062 - G063, Standard cutting conditions → G069

INSERT

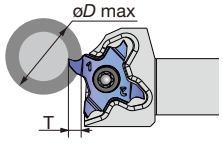
TCP18R/L (lightly honed edge)

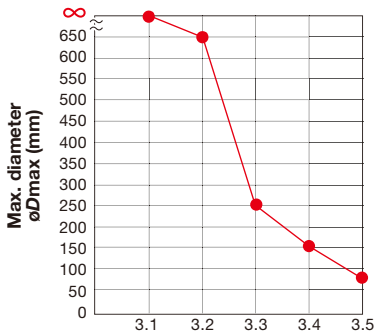




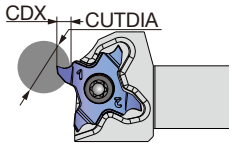
Designation	CW±0.02	RE	AH725		CDX	S
			R	L		
TCP18R/L033-005	0.33	0.05	●	●	0.8	4
TCP18R/L043-005	0.43	0.05	●	●	1.2	4
TCP18R/L050-005	0.5	0.05	●	●	1.2	4
TCP18R/L075-005	0.75	0.05	●	●	2	4
TCP18R/L095-005	0.95	0.05	●	●	2	4
TCP18R/L100-010	1	0.1	●	●	2	4
TCP18R/L120-010	1.2	0.1	●	●	2	4
TCP18R/L125-010	1.25	0.1	●	●	2	4
TCP18R/L140-010-35	1.4	0.1	●	●	3.5*	4
TCP18R/L145-010	1.45	0.1	●	●	2.5	4
TCP18R/L145-010-35	1.45	0.1	●	●	3.5*	4
TCP18R/L150-010	1.5	0.1	●	●	2.5	4
TCP18R/L150-010-35	1.5	0.1	●	●	3.5*	4
TCP18R/L175-010	1.75	0.1	●	●	2.5	4
TCP18R/L175-010-35	1.75	0.1	●	●	3.5*	4
TCP18R/L200-010	2	0.1	●	●	2.5	4
TCP18R/L200-010-35	2	0.1	●	●	3.5*	4
TCP18R/L250-010	2.5	0.1	●	●	2.5	4
TCP18R/L250-010-35	2.5	0.1	●	●	3.5*	4
TCP18R/L300-010	3	0.1	●	●	2.5	4
TCP18R/L300-010-35	3	0.1	●	●	3.5*	4

Package quantity = 5pcs.
●: Line up



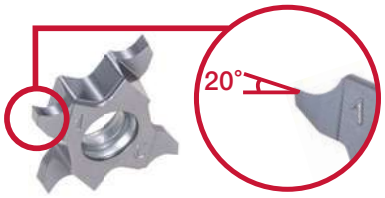


***Groove depth and max workpiece diameter (øDmax)**
Maximum workpiece diameter is limited relative to depth of cut in order to avoid collision between insert and workpiece.



Max. diameter CUTDIA (mm)
7

TCP type (Lightly honed edge)

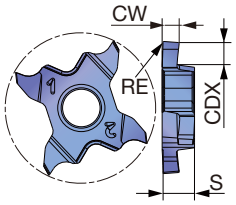


- A large rake angle ensures smooth cutting for excellent surface finish
- The insert in grade AH725 features a tough edge preparation for high resistance to fracture

Reference pages : Toolholder → G062 - G063, Standard cutting conditions → G069

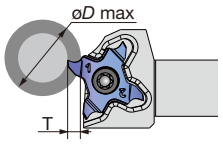
TCP18R/L-F (sharp edge)

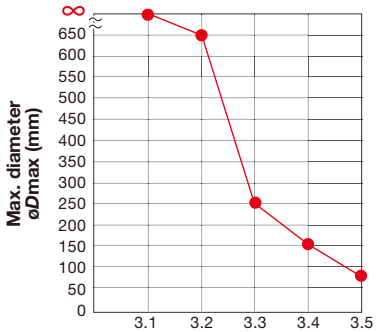




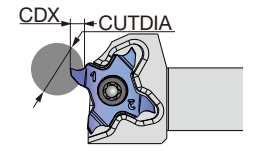
Designation	CW±0.02	RE	SH725 R	SH725 L	CDX	S
TCP18R/L033F-005	0.33	0.05	●	●	0.8	4
TCP18R/L043F-005	0.43	0.05	●	●	1.2	4
TCP18R/L050F-005	0.5	0.05	●	●	1.2	4
TCP18R/L075F-005	0.75	0.05	●	●	2	4
TCP18R/L095F-005	0.95	0.05	●	●	2	4
TCP18R/L100F-005	1	0.05	●		2	4
TCP18R/L100F-010	1	0.1	●	●	2	4
TCP18R/L120F-005	1.2	0.05	●		2	4
TCP18R/L120F-010	1.2	0.1	●	●	2	4
TCP18R/L125F-005	1.25	0.05	●		2	4
TCP18R/L125F-010	1.25	0.1	●	●	2	4
TCP18R/L140F-010-35	1.4	0.1	●		3.5*	4
TCP18R/L145F-005-35	1.45	0.05	●		3.5*	4
TCP18R/L145F-010	1.45	0.1	●	●	2.5	4
TCP18R/L145F-010-35	1.45	0.1	●	●	3.5*	4
TCP18R/L150F-005-35	1.5	0.05	●		3.5*	4
TCP18R/L150F-010	1.5	0.1	●	●	2.5	4
TCP18R/L150F-010-35	1.5	0.1	●	●	3.5*	4
TCP18R/L175F-005-35	1.75	0.05	●		3.5*	4
TCP18R/L175F-010	1.75	0.1	●	●	2.5	4
TCP18R/L175F-010-35	1.75	0.1	●	●	3.5*	4
TCP18R/L200F-005-35	2	0.05	●		3.5*	4
TCP18R/L200F-010	2	0.1	●	●	2.5	4
TCP18R/L200F-010-35	2	0.1	●	●	3.5*	4
TCP18R/L250F-010	2.5	0.1	●	●	2.5	4
TCP18R/L250F-010-35	2.5	0.1	●	●	3.5*	4
TCP18R/L300F-010	3	0.1	●	●	2.5	4
TCP18R/L300F-010-35	3	0.1	●	●	3.5*	4

Package quantity = 5pcs.
● : Line up



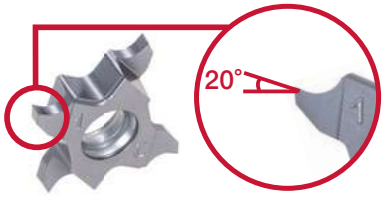


***Groove depth and max workpiece diameter (øDmax)**
Maximum workpiece diameter is limited relative to depth of cut in order to avoid collision between insert and workpiece.



Max. diameter CUTDIA (mm)
7

TCP-F type (Sharp edge)



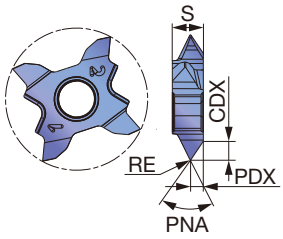
- High quality surface finish and precision thanks to the sharp cutting edge
- A quality level equivalent to that with cermet is achievable
- An extremely hard coating layer on grade SH725 provides sharp cutting edges, making it perfect for small part grooving

Reference pages : Toolholder → G062 - G063, Standard cutting conditions → G069

INSERT

TCT18R/L (for threading)



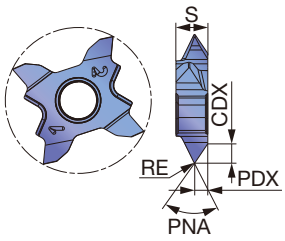


Designation	Grade AH725 R	L	pitch min	pitch max	PDX	CDX	RE	PNA	S
TCT18R/L-60N-010	●	●	0.8	3	1.6	2.67	0.1	60°	4
TCT18R/L-60N-020	●	●	1.5	3	1.6	2.57	0.2	60°	4

● : Line up

TCT18FR (sharp edge for threading)





Right-hand (R) shown.

Designation	Grade SH725 R	L	pitch min	pitch max	PDX	CDX	RE	PNA	S
TCT18FR-60A-005	●		0.4	1	0.6	0.99	0.05	60°	4
TCT18FR-60A-010	●		1	2	1	1.63	0.1	60°	4

● : Line up

STANDARD CUTTING CONDITIONS

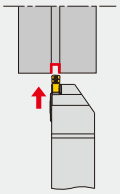
TCT18R/L (for threading / lightly honed edge) / TCT18FR (for threading / sharp edge)

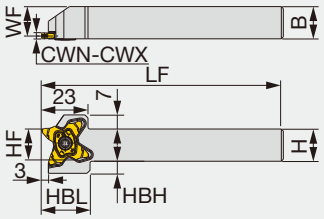
ISO	Workpiece material	Priority	Grades	Cutting speed *Vc* (m/min)	Pitch (mm)	TPI
P	Low carbon steel S15C / C15, S20C / C20, etc.	First choice	SH725	60 - 150	0.4 - 2.0	64 - 12
		Toughness	AH725	60 - 150	0.8 - 3.0	32 - 8
	Carbon steels, Alloy steel S55C / C55, SCM440 / 42CrMoS4, etc.	First choice	SH725	60 - 150	0.4 - 2.0	64 - 12
		Toughness	AH725	60 - 150	0.8 - 3.0	32 - 8
	Prehardened steels NAK80, PX5, etc.	First choice	SH725	60 - 150	0.4 - 2.0	64 - 12
		Toughness	AH725	60 - 150	0.8 - 3.0	32 - 8
M	Stainless steel (SUS304 / X5CrNi18-9, X5CrNiMo17-12-2, etc)	First choice	SH725	50 - 80	0.4 - 2.0	64 - 12
		Toughness	AH725	50 - 80	0.8 - 3.0	32 - 8
K	Grey cast iron (FC250 / GG25 / 250, FC300 / GG30 / 300, etc.)	First choice	AH725	50 - 100	0.8 - 3.0	32 - 8
		Sharpness	SH725	50 - 100	0.4 - 2.0	64 - 12
	Ductile cast iron (FCD400 / 400-15, FCD600 / 600-3, etc.)	First choice	AH725	50 - 100	0.8 - 3.0	32 - 8
		Sharpness	SH725	50 - 100	0.4 - 2.0	64 - 12
S	Titanium alloys (Ti-6Al-4V, etc.)	First choice	SH725	30 - 100	0.4 - 2.0	64 - 12
		Toughness	AH725	30 - 100	0.8 - 3.0	32 - 8
	Superalloys (Inconel718, etc.)	First choice	SH725	30 - 100	0.4 - 2.0	64 - 12
		Toughness	AH725	30 - 100	0.8 - 3.0	32 - 8

Reference pages : Toolholder → G062 - G063

STCR/L-27

External grooving toolholder







Right-hand (R) shown.

Designation	CWN	CWX	H	B	LF	HF	WF	HBH	HBL	Insert	Torque*
STCR/L1010-27	0.5	3.18	10	10	120	10	8.5	9.5	24	TC*27...	2.5
STCR/L1212-27	0.5	3.18	12	12	120	12	10.5	8	24	TC*27...	2.5
STCR/L1616-27	0.5	3.18	16	16	120	16	14.5	6	24	TC*27...	2.5
STCR/L2020-27	0.5	3.18	20	20	120	20	18.5	2	24	TC*27...	2.5
STCR/L2525-27	0.5	3.18	25	25	135	25	23.5	-	-	TC*27...	2.5

*Torque: Recommended torque (N·m) for clamping

SPARE PARTS



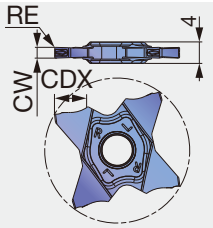


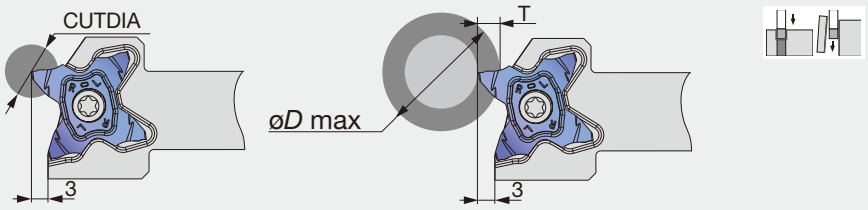
Designation	Screw	Wrench
STCR****-27	SR16-212-01397L	T-2010/5
STCL****-27	SR16-212-01397	T-2010/5

External
Internal
Grooving
Threading
Parting-off

Reference pages : STCR/L-27: Inserts → G071 - G073, Standard cutting conditions → G074

TCS27





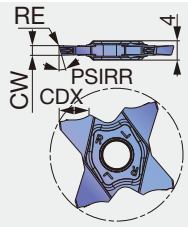
Designation	CW ± 0.02	RE	AH725	CDX	CUTDIA	Relation of groove depth (T) and Max. diameter (øD max)											
						T≦1	T≦2	T≦3	T≦3.5	T≦4	T≦4.5	T≦5	T≦5.5	T≦5.7	T≦6	T≦6.2	T≦6.4
TCS27-050-000	0.5	0	●	1	2	∞	-	-	-	-	-	-	-	-	-	-	-
TCS27-050-004	0.5	0.04	●	2.5	5	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-075-010	0.75	0.1	●	2.5	5	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-080-000	0.8	0	●	1.6	3.2	∞	-	-	-	-	-	-	-	-	-	-	-
TCS27-100-006	1	0.06	●	3.5	7	∞	∞	∞	600	-	-	-	-	-	-	-	-
TCS27-100-010	1	0.1	●	3.5	7	∞	∞	∞	600	-	-	-	-	-	-	-	-
TCS27-104-000	1.04	0	●	2	4	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-120-000	1.2	0	●	2	4	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-125-010	1.25	0.1	●	3.5	7	∞	∞	∞	600	-	-	-	-	-	-	-	-
TCS27-125-020	1.25	0.2	●	3.5	7	∞	∞	∞	600	-	-	-	-	-	-	-	-
TCS27-140-000	1.4	0	●	2	4	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-147-000	1.47	0	●	2.5	5	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-150-010	1.5	0.1	●	5.7	11.4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCS27-150-020	1.5	0.2	●	5.7	11.4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCS27-157-015	1.57	0.15	●	3	6	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-170-010	1.7	0.1	●	3	6	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-175-010	1.75	0.1	●	3	6	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-175-020	1.75	0.2	●	3	6	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-178-018	1.78	0.18	●	3	6	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-185-020	1.85	0.2	●	3	6	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-196-015	1.96	0.15	●	3	6	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-200-010	2	0.1	●	6.4	12.8	∞	∞	∞	600	280	180	130	105	85	60	50	30
TCS27-200-020	2	0.2	●	6.4	12.8	∞	∞	∞	600	280	180	130	105	85	60	50	30
TCS27-222-015	2.22	0.15	●	3.5	7	∞	∞	∞	600	-	-	-	-	-	-	-	-
TCS27-230-020	2.3	0.2	●	3.5	7	∞	∞	∞	600	-	-	-	-	-	-	-	-
TCS27-239-015	2.39	0.15	●	5.7	11.4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCS27-247-020	2.47	0.2	●	5.7	11.4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCS27-250-010	2.5	0.1	●	5.7	11.4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCS27-250-030	2.5	0.3	●	5.7	11.4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCS27-270-010	2.7	0.1	●	6.2	12.4	∞	∞	∞	600	280	180	135	105	95	85	78	-
TCS27-287-020	2.87	0.2	●	6.2	12.4	∞	∞	∞	600	280	180	135	105	95	85	78	-
TCS27-300-000	3	0	●	6.4	12.8	∞	∞	∞	600	280	180	135	105	95	85	78	55
TCS27-300-020	3	0.2	●	6.4	12.8	∞	∞	∞	600	280	180	135	105	95	85	78	55
TCS27-300-030	3	0.3	●	6.4	12.8	∞	∞	∞	600	280	180	135	105	95	85	78	55
TCS27-300-040	3	0.4	●	6.4	12.8	∞	∞	∞	600	280	180	135	105	95	85	78	55
TCS27-315-015	3.15	0.15	●	6.4	12.8	∞	∞	∞	600	280	180	135	105	95	85	78	68
TCS27-318-020	3.18	0.2	●	6.4	12.8	∞	∞	∞	600	280	180	135	105	95	85	78	68

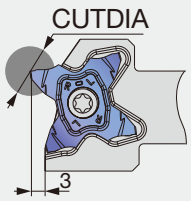
Package Quantity = 5 pcs.
● : Line up

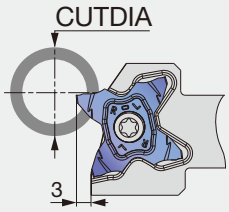
Reference pages : Toolholder → G070, Standard cutting conditions → G074

INSERT (for parting)

TCS27-R/L







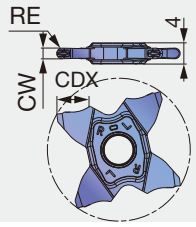
Right-hand (R) shown.

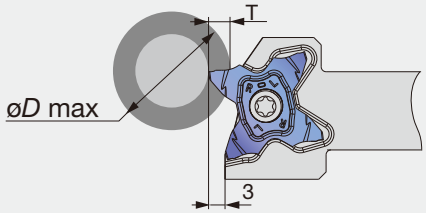
Designation	CW ± 0.02	RE	AH725		CDX	PSIRR/L	Max. parting-off dia. CUTDIA	
			R	L			Solid bar	Tube
TCS27-100-15R/L	1	0.06	●	●	3.5	15°	7	600
TCS27-150-6R/L	1.5	0.06	●	●	5.7	6°	11.4	35
TCS27-150-15R/L	1.5	0.06	●	●	5.7	15°	11.4	35
TCS27-200-6R/L	2	0.1	●	●	6.4	6°	12.8	30
TCS27-200-15R/L	2	0.1	●	●	6.4	15°	12.8	30

Package Quantity = 5 pcs.
● : Line up

INSERT (for grooving and profiling)

TCS27 (full radius)



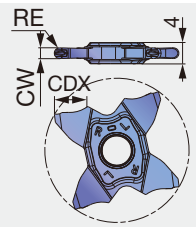


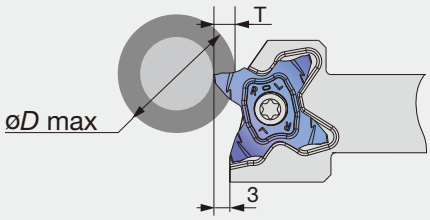
Designation	CW ± 0.02	RE	AH725	CDX	Relation of groove depth (T) and Max. diameter (øD max)										
					T≦1	T≦2	T≦3	T≦3.5	T≦4	T≦4.5	T≦5	T≦5.5	T≦5.7	T≦6	T≦6.2	T≦6.4
TCS27-157-079	1.57	0.79	●	3	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-200-100	2	1	●	3	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-239-120	2.39	1.2	●	5.7	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCS27-300-150	3	1.5	●	6.4	∞	∞	∞	600	280	180	135	105	95	85	78	55

Package Quantity = 5 pcs.
● : Line up

INSERT (for grooving and turning)

TCM27 (full radius)





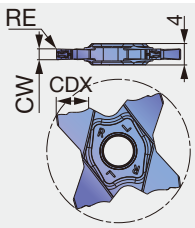
Designation	CW ± 0.02	RE	AH725	CDX	Relation of groove depth (T) and Max. diameter (øD max)										
					T≦1	T≦2	T≦3	T≦3.5	T≦4	T≦4.5	T≦5	T≦5.5	T≦5.7	T≦6	T≦6.2	T≦6.4
TCM27-157-079	1.57	0.79	●	3	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCM27-200-100	2	1	●	3.5	∞	∞	∞	600	-	-	-	-	-	-	-	-
TCM27-239-120	2.39	1.2	●	5.7	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCM27-300-150	3	1.5	●	6.4	∞	∞	∞	600	280	180	135	105	95	85	78	55

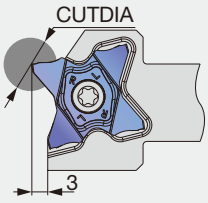
Package Quantity = 5 pcs.
● : Line up

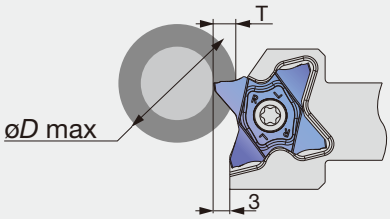
Reference pages : Toolholder → G070, Standard cutting conditions → G074

INSERT (For grooving and parting off)

TCM27





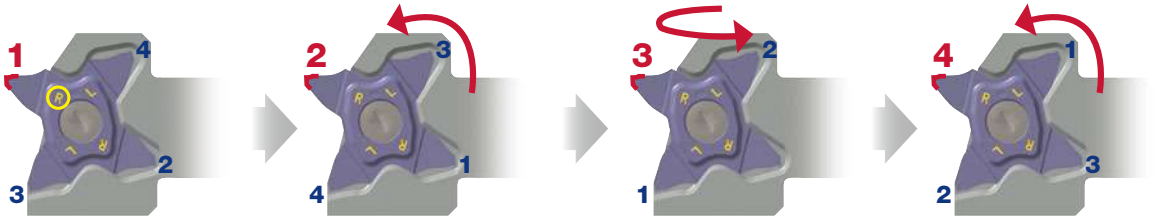




Designation	CW ± 0.02	RE	AH725	CDX	CUTDIA	Relation of groove depth (T) and Max. diameter (øD max)										
						T≦1	T≦2	T≦3	T≦3.5	T≦4	T≦4.5	T≦5	T≦5.5	T≦5.7	T≦6	T≦6.2	T≦6.4
TCM27-150-010	1.5	0.1	●	5.7	11.4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCM27-150-020	1.5	0.2	●	5.7	11.4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCM27-157-015	1.57	0.15	●	3	6	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCM27-170-010	1.7	0.1	●	3	6	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCM27-175-010	1.75	0.1	●	3	6	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCM27-175-020	1.75	0.2	●	3	6	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCM27-178-018	1.78	0.18	●	3	6	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCM27-185-020	1.85	0.2	●	3	6	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCM27-196-015	1.96	0.15	●	3	6	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCM27-200-010	2	0.1	●	6.4	12.8	∞	∞	∞	600	280	180	130	105	85	60	50	30
TCM27-200-020	2	0.2	●	6.4	12.8	∞	∞	∞	600	280	180	130	105	85	60	50	30
TCM27-222-015	2.22	0.15	●	3.5	7	∞	∞	∞	600	-	-	-	-	-	-	-	-
TCM27-230-020	2.3	0.2	●	3.5	7	∞	∞	∞	600	-	-	-	-	-	-	-	-
TCM27-239-015	2.39	0.15	●	5.7	11.4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCM27-247-020	2.47	0.2	●	5.7	11.4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCM27-250-010	2.5	0.1	●	5.7	11.4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCM27-250-030	2.5	0.3	●	5.7	11.4	∞	∞	∞	600	280	180	130	50	35	-	-	-
TCM27-270-010	2.7	0.1	●	6.2	12.4	∞	∞	∞	600	280	180	135	105	95	85	78	-
TCM27-287-020	2.87	0.2	●	6.2	12.4	∞	∞	∞	600	280	180	135	105	95	85	78	-
TCM27-300-000	3	0	●	6.4	12.8	∞	∞	∞	600	280	180	135	105	95	85	78	55
TCM27-300-020	3	0.2	●	6.4	12.8	∞	∞	∞	600	280	180	135	105	95	85	78	55
TCM27-300-030	3	0.3	●	6.4	12.8	∞	∞	∞	600	280	180	135	105	95	85	78	55
TCM27-300-040	3	0.4	●	6.4	12.8	∞	∞	∞	600	280	180	135	105	95	85	78	55
TCM27-315-015	3.15	0.15	●	6.4	12.8	∞	∞	∞	600	280	180	135	105	95	85	78	68
TCM27-318-020	3.18	0.2	●	6.4	12.8	∞	∞	∞	600	280	180	135	105	95	85	78	68

Package Quantity = 5 pcs.
● : Line up

HOW TO INDEX INSERTS



1. Right-hand edge (R) is used for the right-hand toolholders.
2. Rotate the insert
3. Flip over the insert
4. Rotate the insert

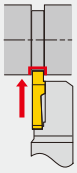
Reference pages : Toolholder → G070, Standard cutting conditions → G074

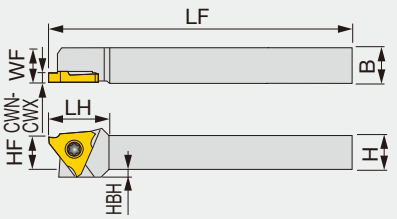
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grades	Cutting speed *Vc* (m/min)	Feed: *f* (mm/rev)					Depth of cut for profiling (with full radius insert)
				Grooving, parting-off		Parting-off (with hand)	Profiling (with full radius insert)		
				TCS	TCM	TCS	TCS	TCM	
P	Carbon steel (S45C / C45, etc.)	AH725	100 - 200	0.05 - 0.15	0.05 - 0.25	0.04 - 0.12	0.05 - 0.10	0.05 - 0.15	0.5
P	Alloy steel (SCM435 / 34CrMo4, etc.)	AH725	50 -180	0.05 - 0.15	0.05 - 0.25	0.04 - 0.12	0.05 - 0.10	0.05 - 0.15	0.5
M	Stainless steel (SUS304 / X5CrNi18-9, etc.)	AH725	100 - 150	0.05 - 0.15	0.05 - 0.20	0.04 - 0.12	0.05 - 0.10	0.05 - 0.15	0.5
K	Grey cast iron (FC250 / 250 / GG25, etc.)	AH725	50 - 180	0.05 - 0.15	0.05 - 0.25	0.04 - 0.12	0.05 - 0.10	0.05 - 0.15	0.5
K	Ductile cast iron (FCD400 / 400-15 / GGG400, etc.)	AH725	50 - 120	0.05 - 0.15	0.05 - 0.20	0.04 - 0.12	0.05 - 0.10	0.05 - 0.15	0.5
S	Titanium alloys (Ti-6Al-4V, etc.)	AH725	30 - 60	0.05 - 0.15	0.05 - 0.15	0.04 - 0.12	0.05 - 0.10	0.05 - 0.10	0.5
S	Superalloys (Inconel718, etc.)	AH725	20 - 50	0.05 - 0.15	0.05 - 0.15	0.04 - 0.12	0.05 - 0.10	0.05 - 0.10	0.5

J-SERIES
JSTGR/L

Screw-on external grooving toolholder, for Swiss lathes





Without offset

Right-hand (R) shown.

Designation	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque*
JSTGR/L1010X3	0.33	3	10	10	120	18.5	10	10	2	JTGR/L3...	1.2
JSTGR/L1212F3	0.33	3	12	12	85	18.5	12	12	-	JTGR/L3...	1.2
JSTGR/L1212X3	0.33	3	12	12	120	18.5	12	12	-	JTGR/L3...	1.2
JSTGR/L1616X3	0.33	3	16	16	120	18.5	16	16	-	JTGR/L3...	1.2
JSTGL1616K3	0.33	3	16	16	125	18.5	16	16	-	JTGR/L3...	1.2

*Torque: Recommended torque (N·m) for clamping

SPARE PARTS

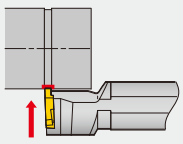


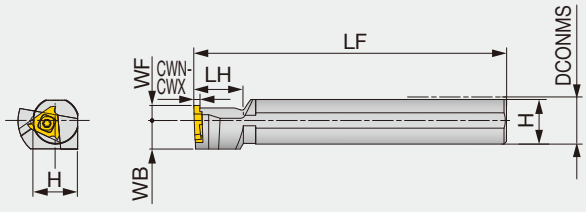


Designation	Clamping screw	Wrench 1	Wrench 2 (optional)
JSTGR/L...	CSTB-4SD	T-8F	(T-8L)

J-SERIES
JS-TGL3

Screw-on external grooving toolholder, for Swiss lathes





Left-hand (L) shown.

Designation	CWN	CWX	DCONMS	WF	LF	LH	H	WB	Insert	Torque*
JS19K-TGL3	0.33	3	19.05	6	125	20	18	11.5	JTGR3...	3.0
JS20K-TGL3	0.33	3	20	6	125	20	19	11.5	JTGR3...	3.0
JS22K-TGL3	0.33	3	22	6	125	20	21	11.5	JTGR3...	3.0
JS25K-TGL3	0.33	3	25.4	10	125	20	24	12.7	JTGR3...	3.0

Note: Use left-hand toolholders (L) with right-hand inserts (R). *Torque: Recommended torque (N·m) for clamping

SPARE PARTS



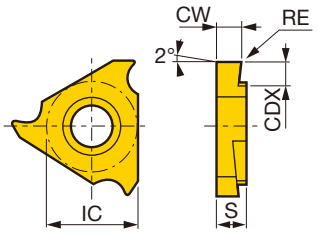

Designation	Clamping screw	Wrench
JS**-TGL3	CSTB-4S	T-15F

Reference pages :JSTGR/L, JS-TGL3: Inserts → G075,
Standard cutting conditions → G077

INSERT

JTG (Sharp edge)





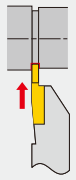
Right hand (R) shown.

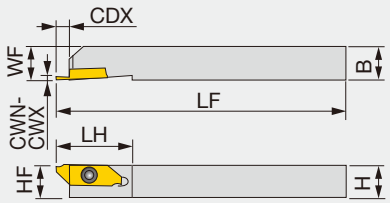
Designation	CW$^{+0.05}_{0}$	RE	Coated				Cermet		Uncoated		IC	S	CDX	Max. groove depth
			SH725		J740		NS9530		TH10					
			R	L	R	L	R	L	R	L				
JTGR/L3033F	0.33	0.03	●		●	●			●	●	9.525	3.18	0.8	0.7
JTGR/L3033F-005	0.33	0.05	●								9.525	3.18	0.8	0.7
JTGR/L3043F	0.43	0.03			●						9.525	3.18	1.2	1.1
JTGR/L3050F	0.5	0.03	●	●	●	●	●		●	●	9.525	3.18	1.2	1.1
JTGR/L3050F-005	0.5	0.05	●	●							9.525	3.18	1.2	1.1
JTGR/L3065F	0.65	0.03	●		●						9.525	3.18	2	1.9
JTGR/L3065F-010	0.65	0.1	●								9.525	3.18	2	1.9
JTGR/L3075F	0.75	0.03	●	●	●	●	●	●	●	●	9.525	3.18	2	1.9
JTGR/L3075F-010	0.75	0.1	●	●							9.525	3.18	2	1.9
JTGR/L3080F	0.8	0.03	●		●						9.525	3.18	2	1.9
JTGR/L3080F-010	0.8	0.1	●								9.525	3.18	2	1.9
JTGR/L3085F	0.85	0.03	●		●						9.525	3.18	2	1.9
JTGR/L3095F	0.95	0.03	●	●	●	●	●		●	●	9.525	3.18	2	1.9
JTGR/L3095F-010	0.95	0.1	●	●							9.525	3.18	2	1.9
JTGR/L3100F	1	0.05	●	●	●	●	●		●	●	9.525	3.18	2.2	2.1
JTGR/L3100F-010	1	0.1	●	●							9.525	3.18	2.2	2.1
JTGR/L3110F	1.1	0.05	●		●						9.525	3.18	2.2	2.1
JTGR/L3120F	1.2	0.05	●		●						9.525	3.18	2.2	2.1
JTGR/L3120F-010	1.2	0.1	●								9.525	3.18	2.2	2.1
JTGR/L3125F	1.25	0.05	●	●	●	●	●		●	●	9.525	3.18	2.2	2.1
JTGR/L3125F-010	1.25	0.1	●	●							9.525	3.18	2.2	2.1
JTGR/L3130F	1.3	0.05	●		●						9.525	3.18	2.2	2.1
JTGR/L3140F	1.4	0.05	●		●						9.525	3.18	2.2	2.1
JTGR/L3140F-010	1.4	0.1	●								9.525	3.18	2.2	2.1
JTGR/L3145F	1.45	0.05	●		●	●	●		●	●	9.525	3.18	2.2	2.1
JTGR/L3145F-010	1.45	0.1	●								9.525	3.18	2.2	2.1
JTGR/L3150F	1.5	0.05	●	●	●	●	●		●	●	9.525	3.18	2.2	2.1
JTGR/L3150F-010	1.5	0.1	●	●							9.525	3.18	2.2	2.1
JTGR/L3175F	1.75	0.05	●		●	●	●	●	●	●	9.525	3.18	2.2	2.1
JTGR/L3175F-010	1.75	0.1	●								9.525	3.18	2.2	2.1
JTGR/L3180F	1.8	0.05	●		●						9.525	3.18	2.2	2.1
JTGR/L3200F	2	0.05	●	●	●	●	●		●	●	9.525	3.18	2.7	2.6
JTGR/L3200F-010	2	0.1	●	●							9.525	3.18	2.7	2.6
JTGR/L3225F	2.25	0.05	●		●						9.525	3.18	2.7	2.6
JTGR/L3250F	2.5	0.05	●	●	●	●	●		●	●	9.525	3.18	2.7	2.6
JTGR/L3250F-010	2.5	0.1	●	●							9.525	3.18	2.7	2.6
JTGR/L3275F	2.75	0.05			●						9.525	3.18	2.7	2.6
JTGR/L3300F	3	0.05	●		●						9.525	3.18	2.7	2.6
JTGR/L3300F-010	3	0.1	●								9.525	3.18	2.7	2.6

● : Line up

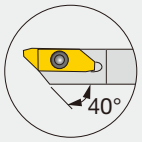
JSXGR/L

Screw-on toolholder without offset for front / reverse turning & external grooving





Without offset



C-type

Right hand (R) shown.

Designation	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert
JSXGR/L1010K8-C	0.7	2	6.7	10	10	125	29	10	10	JX*R/L8...
JSXGR/L1212K8-C	0.7	2	6.7	12	12	125	29	12	12	JX*R/L8...
JSXGR/L1616K8	0.7	2	6.5	16	16	125	29	16	16	JX*R/L8...
JSXGR/L2020K8	0.7	2	6.5	20	20	125	29	20	20	JX*R/L8...
JSXGR/L2525K8	0.7	2	6.5	25	25	125	29	25	25	JX*R/L8...

• Can be wrenched also from the back with a double-head screw. • This toolholders can be used for JXG insert (grooving), JFX insert (front-turning), JXK insert (reverse-turning)

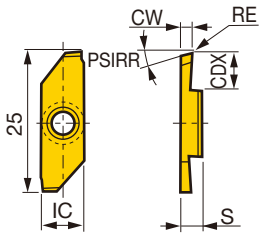
SPARE PARTS

Designation	Clamping screw	Wrench	Wrench 1 (Optional)
JSXGR/L	CSTB-4SD	T-8F	(T-8L)

INSERT

JXG (handed insert with sharp edge)





Right hand (R) shown.

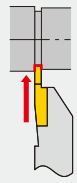
Designation	RE	Coated J740 R	Coated J740 L	Uncoated TH10 R	Uncoated TH10 L	IC	S	$CW^{+0.05}_{0}$	PSIRR	Max. groove depth
JXGR/L8070FA	0	●	●	●	●	8	3.97	0.7	15°	4.5
JXGR/L8070FA-005	0.05	●				8	3.97	0.7	15°	4.5
JXGR/L8100FA	0	●	●	●	●	8	3.97	1	15°	6
JXGR/L8100FA-005	0.05	●				8	3.97	1	15°	6
JXGR/L8100FA45	0	●		●		8	3.97	1	15°	4.5
JXGR/L8100FA45-005	0.05	●				8	3.97	1	15°	4.5
JXGR/L8150FA	0	●	●	●	●	8	3.97	1.5	15°	6
JXGR/L8150FA-005	0.05	●				8	3.97	1.5	15°	6
JXGR/L8150FA50	0	●		●		8	3.97	1.5	15°	5
JXGR/L8150FA50-005	0.05	●				8	3.97	1.5	15°	5
JXGR/L8180FA	0	●		●		8	3.97	1.8	15°	6
JXGR/L8180FA-005	0.05	●				8	3.97	1.8	15°	6
JXGR/L8200FA	0	●	●	●	●	8	3.97	2	15°	6
JXGR/L8200FA-005	0.05	●				8	3.97	2	15°	6
JXGR/L8200FN	0	●	●	●	●	8	3.97	2	-	6
JXGR/L8200FN-005	0.05	●				8	3.97	2	-	6

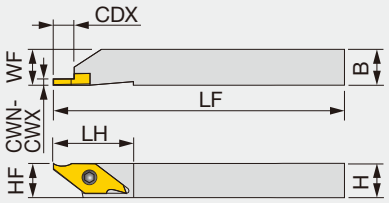
● : Line up

Referent pages : JSXGR/L: Standard cutting conditions → G077

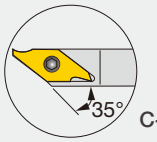
JSVGR/L

Screw-on external grooving toolholder, for Swiss lathes





Without offset



C-type

Right hand (R) shown.

Designation	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
JSVGR/L1010K-C	0.33	2	6.2	10	10	125	23	10	10	JVGR/L...	2.3
JSVGR/L1212K-C	0.33	2	6.2	12	12	125	23	12	12	JVGR/L...	2.3
JSVGR/L1616K	0.33	2	6.2	16	16	125	23	16	16	JVGR/L...	2.3

• Torque: Recommended torque (N·m) for clamping

SPARE PARTS



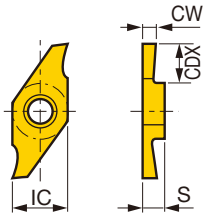


Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSVGR/L	CSTB-3S	T-9F	(T-8L)

INSERT

JVG (with hand, sharp edge)





Right hand (R) shown.

Designation	Coated				Cermet		Uncoated		IC	S	CW+0.05 0	CDX	Max. groove depth
	SH725		J740		NS9530		TH10						
	R	L	R	L	R	L	R	L					
JVGR/L033F	●	●	●				●		7.94	3.18	0.33	0.8	0.7
JVGR/L050F	●	●	●				●		7.94	3.18	0.5	1.2	1.1
JVGR/L075F	●	●	●				●		7.94	3.18	0.75	2	1.9
JVGR/L095F	●	●	●				●		7.94	3.18	0.95	2	1.9
JVGR/L100F	●	●	●		●	●	●	●	7.94	3.18	1	6	5.5
JVGR/L125F	●	●	●				●		7.94	3.18	1.25	5.5	5
JVGR/L150F	●	●	●		●	●	●	●	7.94	3.18	1.5	6	5.5
JVGR/L200F	●	●	●		●		●		7.94	3.18	2	6	5.5

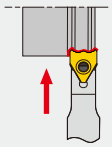
● : Line up

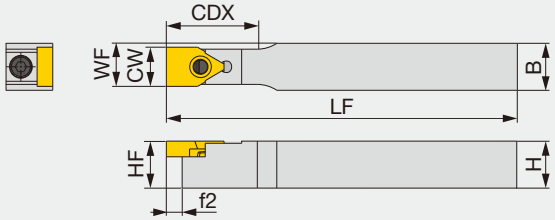
STANDARD CUTTING CONDITIONS (JXG and JVG inserts)

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Steel (S45C, etc. C45, etc.)	SH725	50 - 200	0.01 - 0.1
		J740	10 - 100	0.01 - 0.1
		NS9530	50 - 150	0.01 - 0.1
	Free-cutting steel (SUM22, etc. 11SMn28, etc.)	SH725	50 - 200	0.01 - 0.1
		J740	10 - 100	0.01 - 0.1
M	Stainless steel (SUS303, etc. X5CrNi18-9, etc.)	SH725	50 - 200	0.01 - 0.1
		J740	10 - 100	0.01 - 0.1
		NS9530	50 - 150	0.01 - 0.1
N	Aluminium alloys, Brass (Si < 12%, C3604B, etc. CW614N, etc.)	TH10	10 - 200	0.01 - 0.1
S	Difficult-to-machine material, Titanium alloys (Ti-6Al-4V, etc.)	TH10	10 - 30	0.01 - 0.1

FPGN

Lever-lock toolholder for external wide grooving and profiling





Designation	CW	CDX	H	B	LF	HF	WF	f2	Insert
FPGN1212X-10T20	10	25	12	12	125	12	11	5.5	PSGB10...
FPGN1616X-10T20	10	25	16	16	125	16	13	5.5	PSGB10...
FPGN2020K-10T20	10	25	20	20	130	20	15	5.5	PSGB10...
FPGN1616X-15T25	15	30	16	16	125	16	15.5	5.5	PSGB15...
FPGN2020K-15T25	15	30	20	20	130	20	17.5	5.5	PSGB15...
FPGN2020K-20T32	20	37	20	20	130	20	20	5.5	PSGB20...
FPGN2525M-20T32	20	37	25	25	155	25	22.5	5.5	PSGB20...
FPGN2525M-25T36	25	41	25	25	155	25	25	5.5	PSGB25...

*PSGB insert blank is available for tailored inserts.

SPARE PARTS

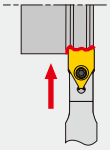


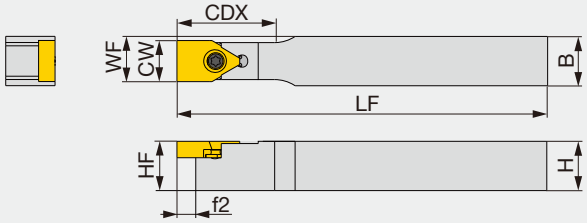



Designation	Lever	Clamping screw	Spring	Wrench
FPGN*****-10T..., 15T...	FCL4	FCS3	BP-5	P-2.5
FPGN*****-20T..., 25T...	FCL8	FCS6	BP-9	P-5

SPGN

Screw-on toolholder for external wide grooving and profiling





Designation	CW	CDX	H	B	LF	HF	WF	f2	Insert
SPGN1212X-10T20	10	25	12	12	125	12	11	5.5	PSGB10
SPGN1616X-10T20	10	25	16	16	125	16	13	5.5	PSGB10
SPGN2020K-10T20	10	25	20	20	130	20	15	5.5	PSGB10
SPGN1616X-15T25	15	30	16	16	125	16	15.5	5.5	PSGB15
SPGN2020K-15T25	15	30	20	20	130	20	17.5	5.5	PSGB15
SPGN2020K-20T32	20	37	20	20	130	20	20	5.5	PSGB20
SPGN2525M-20T32	20	37	25	25	155	25	22.5	5.5	PSGB20
SPGN2525M-25T36	25	41	25	25	155	25	25	5.5	PSGB25

*PSGB insert blank is available for tailored inserts. Can be used with profile grooving inserts, only

SPARE PARTS



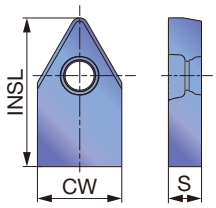

Designation	Clamping screw	Wrench
SPGN*****-10T20	CSTB-3L081	T-8F
SPGN*****-15T25	CSTB-4	T-15F
SPGN*****-20T..., 25T...	CSTB-5	T-20F

External
Internal
Grooving
Threading
Parting-off

Referent pages : FPGN, SPGN: Inserts, Standard cutting conditions → G079

INSERT

PSGB (Blank for wide profile grooving inserts*)



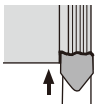
Designation	CW ± 0.025	Uncoated UX30	Uncoated TH10	INSL	S
PSGB10	10.2	●	●	18	4
PSGB15	15.2	●	●	20	5
PSGB20	20.2	●	●	27	6.5
PSGB25	25.2	●	●	27	6.5

Package quantity = 5pcs.
● : Line up
*These are blanks (semi-finished products) for wide profile grooving inserts that can be tailored.



Specially tailored profile insert

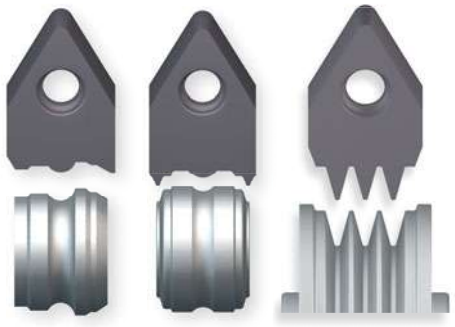
STANDARD CUTTING CONDITIONS



Wide profile grooving

ISO	Workpiece material	Hardness (HB)	Grade	Cutting speed *Vc* (m/min)
P	Steel (S45C, etc. C45, etc.)	< 200	UX30	50 - 150
P	Alloy steel (SCM440 / 42CrMo4, etc.)	< 300	UX30	50 - 120
M	Stainless steel (SUS303, etc. X5CrNi18-9, etc.)	< 200	UX30	50 - 120
K	Grey cast iron (FC250 / 250, etc.)	-	TH10	50 - 150
K	Ductile cast iron (FCD450 / 450-10S, etc.)	-	TH10	50 - 120
N	Aluminium alloy (Si < 12%, etc.)	-	TH10	100 - 500

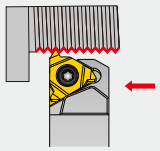
- Custom shaped inserts can be supplied on customer's request, according to the designated final shape on part drawing.
- Semi-finished blanks PSGB types are offered for purchase.

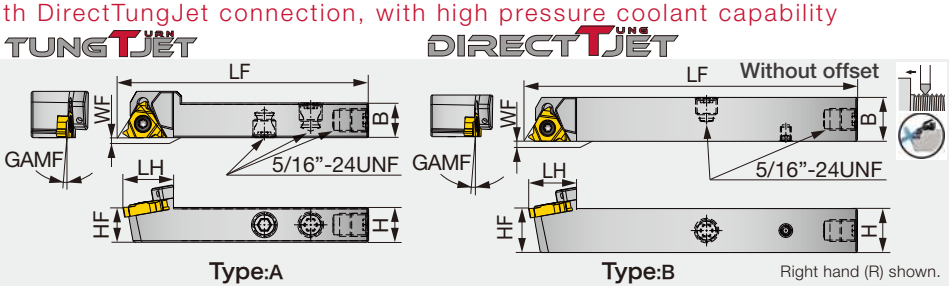


Referent pages : Toolholders → G078

JSE2R16-CHP

External threading toolholder with DirectTungJet connection, with high pressure coolant capability





Designation	H	B	LF	LH	HF	WF	GAMF	Type	Insert
JSE2R1212F16-CHP	12	12	85	19	12	0	1°	A	16ER...
JSE2R1212X16-CHP ※	12	12	120	19	12	0	1°	B	16ER...
JSE2R1616X16-CHP ※	16	16	120	19	16	0	1°	B	16ER...

* DirectTungJet specification

SPARE PARTS

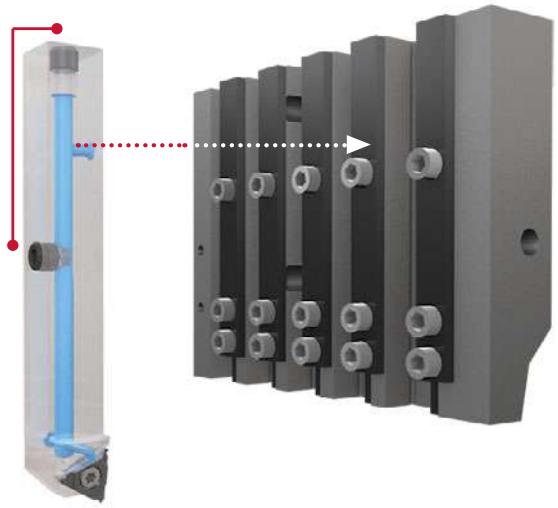
Designation	Clamping screw	Wrench
JSE2R**16-CHP	CSTB-3.5	T-15F

DIRECTTJET system

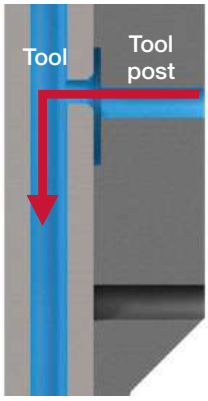
No need for coolant tube setup.
Eliminates chip entanglement on tubes and streamlines tool replacement.

Coolant is supplied from the tool post directly to the tools

Optional connection with external coolant tube

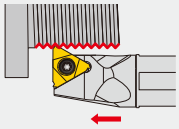


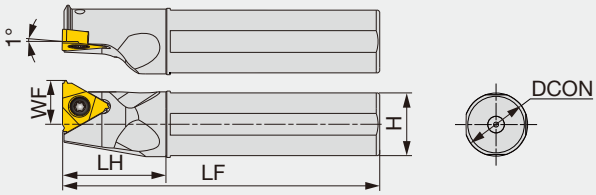
Detailed view of the coolant flow after connection



Referent pages : JSE2R16-CHP: Inserts → E010 -, Standard cutting conditions → E050

TUNGTHREAD
JS-SEL16
External threading toolholder, for Swiss lathes





Right hand (R) shown.

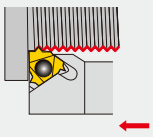
Designation	DCON	H	LF	LH	WF	Insert
JS16F-SEL16	16	15	85	25	11	16ER...
JS19G-SEL16	19.05	18	90	30	12.5	16ER...
JS19X-SEL16	19.05	18	120	30	12.5	16ER...
JS20G-SEL16	20	19	90	30	13	16ER...
JS20X-SEL16	20	19	120	30	13	16ER...
JS25HSEL16	25	24	100	30	15.5	16ER...
JS254X-SEL16	25.4	24	120	30	15.7	16ER...

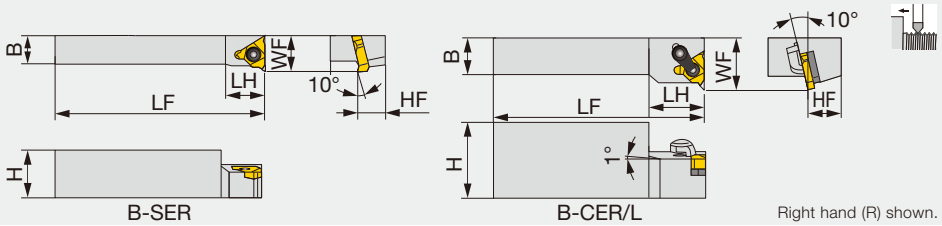
Note: Use left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
JS***-SEL16	CSTB-3.5	T-15F

TUNGTHREAD
B-S/CER/L
External threading toolholder, for Swiss lathes





Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	Insert
B-SER10H16	20	10	100	15	10	16	16ER...
B-SER12K16	24	12	125	18	12	18	16ER...
B-CER/L16M16	32	16	150	24	16	22	16ER/L...

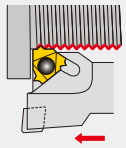
SPARE PARTS

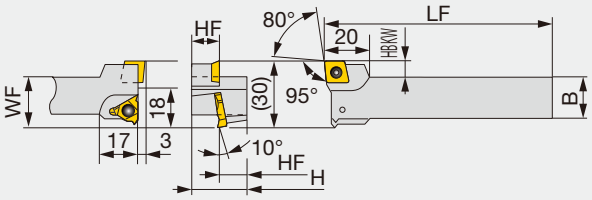
Designation	Clamp set	Shim set	Clamping screw	Wrench
B-SER**16	-	-	CSTB-3.5	T-15F
B-CER/L16M16	CSP16	A16-1	-	T-15F

Referent pages : JS-SEL16, B-S/CER/L: Inserts → E010 -, Standard cutting conditions → E050

BC-SER/L

External threading toolholder, for multi-functional Swiss lathes





Right hand (R) shown.

Designation	H	B	LF	HF	WF	HBKW	Insert
BC-SER12K16	24	16	125	12	23	7	16ER..., CC*T09T3...

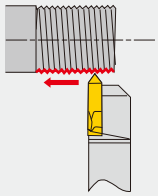
SPARE PARTS

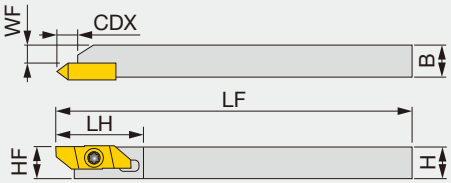
Designation	Clamping screw	Wrench
BC-SER12K16	CSTB-3.5	T-15F

Referent pages : BC-SER/L: Inserts → B109 - (CC*T09T3...), E010 - (16ER...), Standard cutting conditions → E050

JSXBR/L

Screw-on external threading toolholder, for Swiss lathes







C-type

Right hand (R) shown.

Designation	H	B	LF	LH	CDX	HF	WF	Insert
JSXBR1010K8-C	10	10	125	29	6.4	10	5.7	JXT*R...
JSXBR1212K8-C	12	12	125	29	6.4	12	7.7	JXT*R...
JSXBR1616K8	16	16	125	29	6.4	16	11.7	JXT*R...
JSXBR2020K8	20	20	125	29	6.4	20	15.7	JXT*R...
JSXBR2525K8	25	25	125	29	6.4	25	20.7	JXT*R...

- Can be wrenched from back side with both end torx screw.
- This toolholder is compatible with JXB-type inserts and JXT-type inserts.

SPARE PARTS



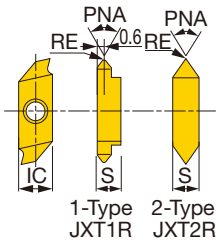


Designation	Clamping screw	Wrench 1	Wrench 2 (optional)
JSXBR...	CSTB-4SD	T-8F	(T-8L)

INSERT

JXT (sharp edge)





Designation	RE	Coated J740	Uncoated TH10	PNA	IC	S
JXT1R6000F	0.03	●	●	60°	8	3.97
JXT2R6000F	0.03	●	●	60°	8	3.97

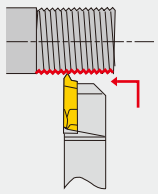
Machinable pitch range: 0.5 to 1 mm

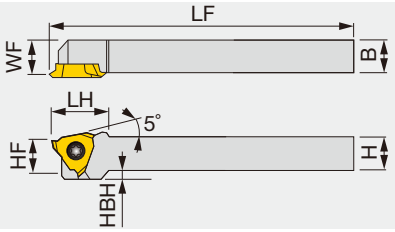
● : Line up

J-SERIES

JSTTR/L

Screw-on external threading toolholder, for Swiss lathes





Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	HBH	Insert
JSTTR/L1010X3	10	10	120	18.5	10	9.5	2	JTTR/L3...
JSTTR/L1212F3	12	12	85	18.5	12	11.5	-	JTTR/L3...
JSTTR/L1212X3	12	12	120	18.5	12	11.5	-	JTTR/L3...
JSTTR/L1616X3	16	16	120	18.5	16	15.5	-	JTTR/L3...

*Recommended clamping torque: 1.2 N·m

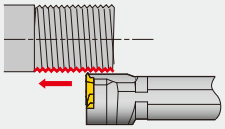
SPARE PARTS

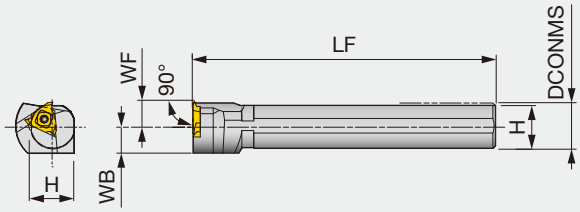
Designation	Clamping screw	Wrench 1	Wrench 2 (optional)
JSTTR/L...	CSTB-4SD	T-8F	(T-8L)

J-SERIES

JS-TTL3

Screw-on external threading toolholder, for Swiss lathes





Left hand (L) shown.

Designation	DCONMS	WF	LF	H	WB	Insert
JS19K-TTL3	19.05	10	125	18	11.5	JTTR30...
JS20K-TTL3	20	10	125	19	11.5	JTTR30...
JS22K-TTL3	22	10	125	21	11.5	JTTR30...
JS25K-TTL3	25.4	10	125	24	12.7	JTTR30...

*Recommended clamping torque: 3.5 N·m

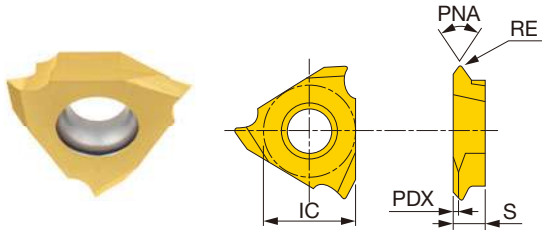
SPARE PARTS

Designation	Clamping screw	Wrench
JS**-TTL3	CSTB-4S	T-15F

Referent pages : JSTTR/L, JS-TTL3: Inserts, Standard cutting conditions → G085

INSERT

JTT (sharp edge)



Right hand (R) shown.

Designation	RE	Coated				Cermet		Uncoated		PNA	IC	S	PDX
		SH725		J740		NS9530		TH10					
		R	L	R	L	R	L	R	L				
JTTR/L3005F-55	0.05	●		●						55°	9.525	3.18	0.6
JTTR/L3005F	0.05	●	●	●		●		●		60°	9.525	3.18	0.9
JTTR/L3010F	0.1	●	●	●		●		●		60°	9.525	3.18	0.9

Machinable pitch range: 0.5 to 1 mm

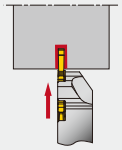
● : Line up

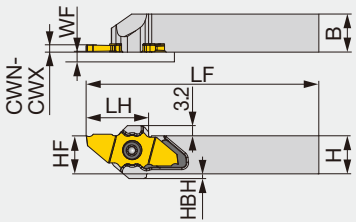
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Pitch (mm)	TPI
P	Low carbon steel (S15C, S25C etc.)	SH725	60 - 150	0.5 - 1	50 - 25
P	Carbon steel, Alloy steel (S55C, SCM440 etc.)	SH725	60 - 150	0.5 - 1	50 - 25
P	Pre-hardened steel (NAK80, PX5 etc.)	SH725	60 - 150	0.5 - 1	50 - 25
M	Stainless steel (SUS304, SUS316 etc.)	SH725	50 - 80	0.5 - 1	50 - 25
K	Grey cast iron (FC250, FC300 etc.)	TH10	50 - 100	0.5 - 1	50 - 25
K	Ductile cast iron (FCD400 etc.)	TH10	50 - 100	0.5 - 1	50 - 25
S	Titanium alloy (Ti-6Al-4V etc.)	SH725	30 - 100	0.5 - 1	50 - 25
S	Heat resistant alloy (Inconel 718 etc.)	SH725	30 - 100	0.5 - 1	50 - 25

JSXXR/L

Parting toolholder, for Swiss lathes





Right hand (R) shown.

Designation	CWN	CWX	H	B	LF**	LH**	HF	WF	HBL**	HBH	Insert	Torque*
JSXXR/L1010X09	1	2	10	10	120	19.65	10	0.2	19	3	JX*G06...,12...,16...,20...	1.2
JSXXR/L1212F09	1	2	12	12	85	19.65	12	0.2	19	1.5	JX*G06...,12...,16...,20...	1.2
JSXXR/L1212X09	1	2	12	12	120	19.65	12	0.2	19	1.5	JX*G06...,12...,16...,20...	1.2
JSXXR/L1616X09	1	2	16	16	120	19.65	16	0.2	-	-	JX*G06...,12...,16...,20...	1.2
JSXXR/L2020H09	1	2	20	20	100	22.5	20	0.2	-	-	JX*G06...,12...,16...,20...	1.2

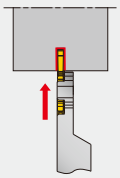
*Torque: Recommended torque (N·m) for clamping
**LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JXPG16... insert. LF, LH, and HBL will all be 2 mm shorter than the above values with JX*G12... and JXPG20...inserts, and 4 mm shorter for JXPG06... insert.
Note: Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).

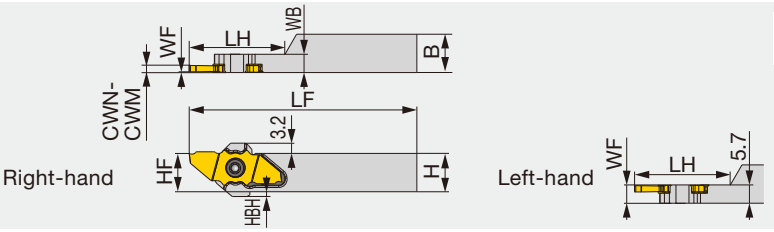
SPARE PARTS

Designation	Clamping screw	Wrench
JSXXR...	CSTC-4L100DL	T-1008/5
JSXXL...	CSTC-4L100DR	T-1008/5

JSXXR/L-S

Parting toolholder, for Swiss lathes (for sub spindle)





Designation	CWN	CWM	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque*
JSXXR/L1010X09-S	1	2	10	10	120	26	10	0.2/5.5	3	JXPG06...,12...,16...	1.2
JSXXR/L1212F09-S	1	2	12	12	85	26	12	0.2/5.5	1.5	JXPG06...,12...,16...	1.2
JSXXR/L1212X09-S	1	2	12	12	120	30	12	0.2/5.5	1.5	JXPG06...,12...,16...	1.2
JSXXR/L1616X09-S	1	2	16	16	120	30	16	0.2/5.5	-	JX*G06...,12...,16...,20...	1.2

*Torque: Recommended torque (N·m) for clamping
**LF (Functional Length) and LH (Head Length) values shown above are true with JXPG16... insert. LF and LH will be 2 mm shorter than the above values with JX*G12... insert, and 4 mm shorter for JXPG06... insert. LF, LH, and HBL will all be 2 mm shorter with JXPG20... insert.
***JXPG20... insert will not fit.
Note: Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).

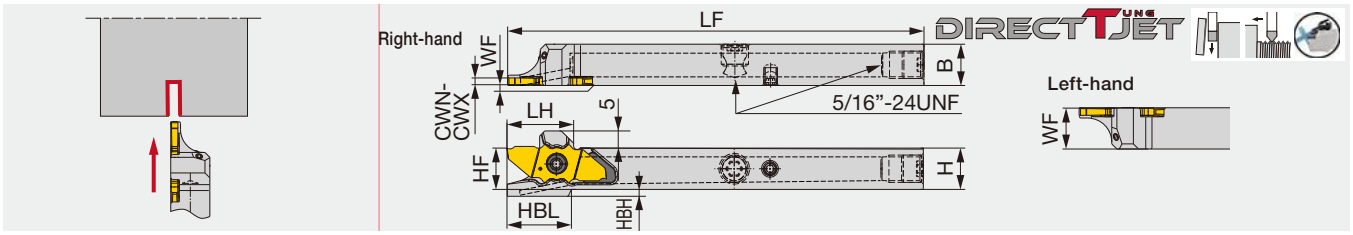
SPARE PARTS

Designation	Clamping screw	Wrench
JSXXR*****09-S	CSTC-4L055DL	T-1008/5
JSXXL*****09-S	CSTC-4L055DR	T-1008/5

Referent pages : JSXXR/L, JSXXR/L-S: Inserts → G091 - G092, Standard cutting conditions → G094

JSXXR/L-X-CHP

Parting-off tool for swiss lathes for DirectTungJet system



Designation	CWN	CWX	H	B	LF**	LH**	HF	WF	HBL**	HBH	Insert	Torque*
JSXXR/L1212X09-CHP	1	2	12	12	0.2/11.8	120	12	2	19.4	18.8	JX*G06...,12...,16..., 20...	1.2
JSXXR/L1616X09-CHP***	1	2	16	16	0.2/15.8	120	16	2.5	19.4	18.7	JX*G06...,12...,16..., 20...	1.2
JSXXR/L1616X09B-CHP	1	2	16	16	0.2/15.8	120	16	-	19.4	18.7	JX*G06...,12...,16..., 20...	1.2

*Torque: Recommended torque (N·m) for clamping
**LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JXPG16... insert. LF, LH, and HBL will all be 2 mm shorter than the above values with JX*G12... and JXPG20... inserts, and 4 mm shorter for JXPG06... insert.
***To be replaced with the new design
Note: Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).

SPARE PARTS

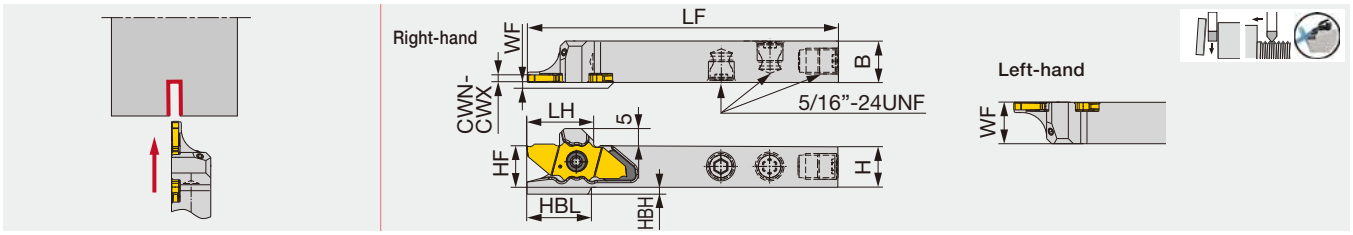
Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectTungJet plug	Wrench 3
JSXXR...	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSXXL...	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Parting-off widths : 1.0 mm and 1.5 mm (for a max parting diameter of ø6 mm)
: 1.5 mm and 2.0 mm (for max parting diameters of ø12 mm, ø16 mm and ø20 mm)
Threading pitch range : 0.2 - 1.5 mm

DUOJCUT UST

JSXXR/L-F-CHP

Parting-off tool for swiss lathes



Designation	CWN	CWX	H	B	LF**	LH**	HF	WF	HBL**	HBH	Insert	Torque*
JSXXR/L1212F09-CHP	1	2	12	12	85	≦19.4	12	0.2/11.8	-	2	JX*G06...,12...,16..., 20...	1.2

*Torque: Recommended torque (N·m) for clamping
**LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JXPG16... insert. LF, LH, and HBL will all be 2 mm shorter than the above values with JX*G12... and JXPG20... inserts, and 4 mm shorter for JXPG06... insert.
Note: Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).

SPARE PARTS

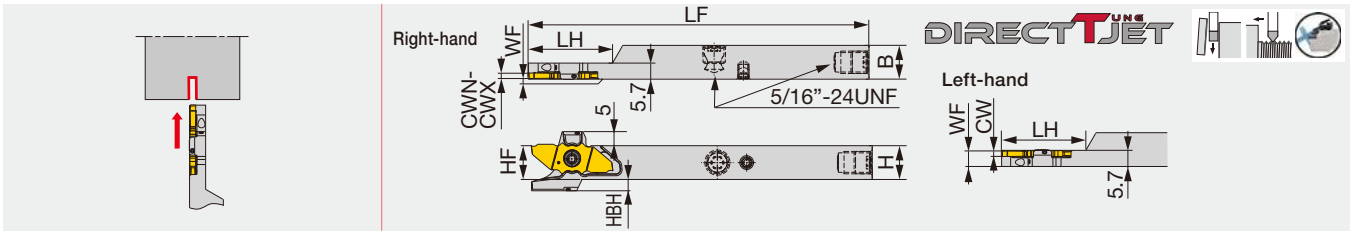
Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2
JSXXR...	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4
JSXXL...	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4

Parting-off widths : 1.0 mm and 1.5 mm (for a max parting diameter of ø6 mm)
: 1.5 mm and 2.0 mm (for max parting diameters of ø12 mm, ø16 mm and ø20 mm)
Threading pitch range : 0.2 ~ 1.5 mm

Referent pages : JSXXR/L-CHP, JSXXR/L-F-CHP: Inserts → G091 - G092, Standard cutting conditions → G094

JSXXR/L-X-S-CHP

Parting toolholder with DirectTungJet connection, for Swiss lathes (for sub spindle)



Designation	CWN	CWX	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque*
JSXXR/L1212X09-S-CHP***	1	2	12	12	120	30	12	0.2/5.5	4	JX*G06...,12...,16..., 20...	1.2
JSXXR/L1212X09B-S-CHP	1	2	12	12	120	30	12	0.2/5.5	2	JX*G06...,12...,16..., 20...	1.2
JSXXR/L1616X09-S-CHP***	1	2	16	16	120	30	16	0.2/5.5	1.5	JX*G06...,12...,16..., 20...	1.2
JSXXR/L1616X09B-S-CHP	1	2	16	16	120	30	16	0.2/5.5	-	JX*G06...,12...,16..., 20...	1.2

*Torque: Recommended torque (N·m) for clamping
**LF (Overall Tool Length) and LH (Head Length) values shown above are true with JXPG16... insert. Both LF and LH will be 2 mm shorter than the above value with JX*G12... and JXPG20... inserts; 4 mm shorter with JXPG06... insert.
***To be replaced with the new design
Note: Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).

SPARE PARTS

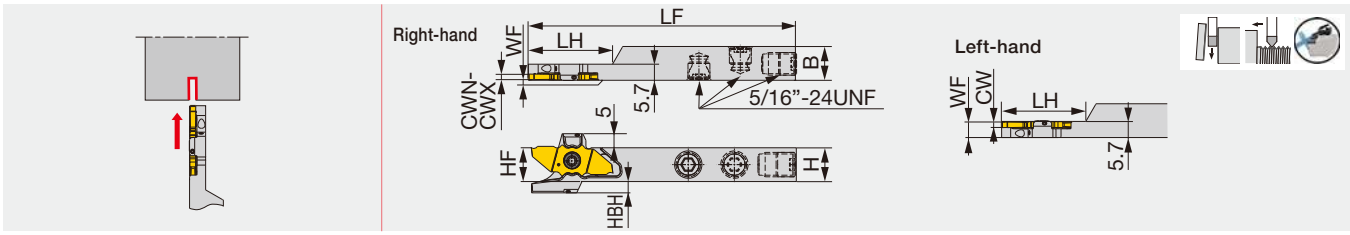
Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectTungJet plug	Wrench 3
JSXXR***-S-CHP	CSTC-4L055DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSXXL***-S-CHP	CSTC-4L055DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Parting-off widths : 1.0 mm and 1.5 mm (for a max parting diameter of ø6 mm)
: 1.5 mm and 2.0 mm (for max parting diameters of ø12 mm, ø16 mm and ø20 mm)

TUNGTJET URN
DUOJCUT UST

JSXXR/L-F-S-CHP

Parting toolholder, with high pressure coolant capability, for Swiss lathes (for sub spindle)



Designation	CWN	CWX	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque*
JSXXR/L1212F09-S-CHP***	1	2	12	12	85	26	12	0.2/5.5	4	JX*G06...,12...,16..., 20...	1.2
JSXXR/L1212F09B-S-CHP	1	2	12	12	85	30	12	0.2/5.5	2	JX*G06...,12...,16..., 20...	1.2

*Torque: Recommended torque (N·m) for clamping
**LF (Overall Tool Length) and LH (Head Length) values shown above are true with JXPG16... insert. Both LF and LH will be 2 mm shorter than the above value with JX*G12... and JXPG20... inserts; 4 mm shorter with JXPG06... insert.
***To be replaced with the new design
Note: Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).

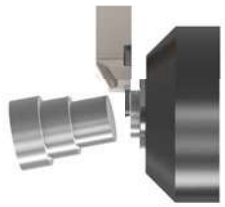
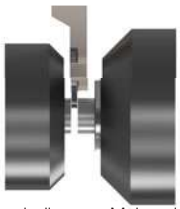
SPARE PARTS

Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2
JSXXR***-S-CHP	CSTC-4L055DL	T-1008/5	SR5/16UNFTL360	P-4
JSXXL***-S-CHP	CSTC-4L055DR	T-1008/5	SR5/16UNFTL360	P-4

Parting-off widths : 1.0 mm and 1.5 mm (for a max parting diameter of ø6 mm)
: 1.5 mm and 2.0 mm (for max parting diameters of ø12 mm, ø16 mm and ø20 mm)

Referent pages : JSXXR/L-X-S-CHP, JSXXR/L-F-S-CHP: Inserts → G091 - G092, Standard cutting conditions → G094

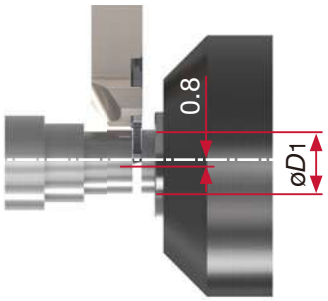
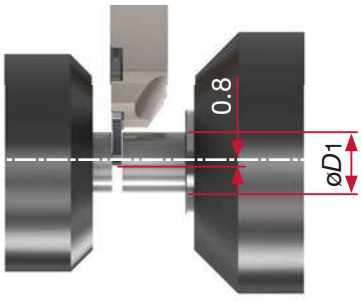
HOW TO SELECT TOOLS

	Large-diameter machining of workpiece with rigidity		Small-diameter machining of workpiece with short overhang	
			Sub-spindle tooling	
	Main-spindle tooling	Sub-spindle tooling	Workpiece with long overhang at the side of sub-spindle for the process after parting-off	Short workpiece with low rigidity
Application	 Main spindle Position of parting-off is at the side of the main spindle	 Sub-spindle Main spindle Position of parting-off is at the side of the sub-spindle	 Sub-spindle Main spindle Position of parting-off is at the side of the main spindle	 Sub-spindle Main spindle Position of parting-off is at the side of the sub-spindle
Toolholder	R-hand (JSXXR type)	L-hand (JSXXL type)	R-hand (JSXXR-S type)	L-hand (JSXXL-S type)
Insert	Right-hand insert with lead angle to remove center core (JXPG**R***-15 type)	Left-hand insert (JXPG**L*** type)	Right-hand insert (JXPG**R*** type)	Left-hand insert (JXPG**L*** type)

HOW TO SELECT TOOLHOLDERS FOR SUB-SPINDLE

Sub-spindle dia.	Parting-off dia.	B	LF	Insert	Toolholder
ø40	~ ø6	10	116	JXPG06*	JSXXR/L1010X09-S
ø40	~ ø6	12	81	JXPG06*	JSXXR/L1212F09-S
ø40	~ ø12	10	118	JXPG12*	JSXXR/L1010X09-S
ø40	~ ø12	12	83	JXPG12*	JSXXR/L1212F09-S
ø40	~ ø16	10	120	JXPG16*	JSXXR/L1010X09-S
ø40	~ ø16	12	85	JXPG16*	JSXXR/L1212F09-S
ø40	~ ø20	12	87	JXPG20*	JSXXR/L1212F09B-S-CHP
ø50	~ ø6	12	116	JXPG06*	JSXXR/L1212X09-S
ø50	~ ø6	16	116	JXPG06*	JSXXR/L1616X09-S
ø50	~ ø12	12	118	JXPG12*	JSXXR/L1212X09-S
ø50	~ ø12	16	118	JXPG12*	JSXXR/L1616X09-S
ø50	~ ø16	12	85	JXPG16*	JSXXR/L1212F09-S
ø50	~ ø16	12	120	JXPG16*	JSXXR/L1212X09-S
ø50	~ ø16	16	120	JXPG16*	JSXXR/L1616X09-S
ø50	~ ø20	12	87	JXPG20*	JSXXR/L1212F09B-S-CHP
ø50	~ ø20	12	122	JXPG20*	JSXXR/L1212X09B-S-CHP
ø50	~ ø20	16	122	JXPG20*	JSXXR/L1616X09-S

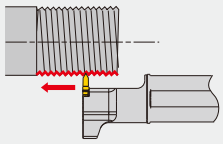
MAX. PARTING-OFF DIA. & DEPTH

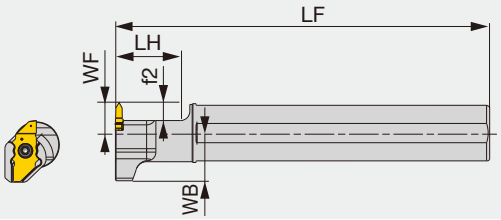
Main-spindle tooling	Sub-spindle tooling
 Main spindle	 Sub-spindle Main spindle

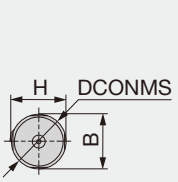
There will be no tool-workpiece interference when parting off the workpiece with the cutting edge position apart from the workpiece center by 8 mm or more.

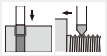
JS-SXXL09

Threading toolholder with round shank









Designation	DCONMS	H	B	LF	LH	WB	WF	f2	Insert	Torque*
JS19G-SXXL09	19.05	18	18	90	21	15.43	10	6	JX*G06,12*R	1.2
JS19X-SXXL09	19.05	18	18	120	21	15.43	10	6	JX*G06,12*R	1.2
JS20G-SXXL09	20	19	19	90	21	15.4	10	6	JX*G06,12*R	1.2
JS20X-SXXL09	20	19	19	120	21	15.4	10	6	JX*G06,12*R	1.2
JS22X-SXXL09	22	21	21	120	21	15.4	10	6	JX*G06,12*R	1.2
JS25H-SXXL09	25	24	24	100	21	15.4	10	6	JX*G06,12*R	1.2
JS254X-SXXL09	25.4	24	24	120	21	15.4	10	6	JX*G06,12*R	1.2

* Torque: Recommended torque (N·m) for clamping

Threading insert (JXTG12FR) and parting-off inserts (JXPG06R ,12R) fit this holder.

SPARE PARTS



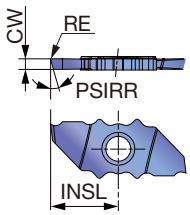


Designation	Clamping screw	Wrench
JS***-SXXL09	CSTC-4L100DL	T-1008/5

Referent pages : JS-SXXL09: Inserts → G091 - G092, Standard cutting conditions → G094

JXPG**R/L-F (sharp edge)





Right hand (R) shown.

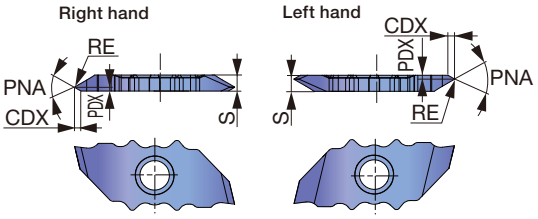
Designation	CW±0.025	RE	SH725		CUTDIA	INSL	PSIRR/L
			R	L			
JXPG06R/L10F	1	0.05	●	●	6	10.5	0°
JXPG06R/L15F	1.5	0.05	●	●	6	10.5	0°
JXPG06R/L10F-15	1	0.05	●	●	6	10.5	15°
JXPG06R/L15F-15	1.5	0.05	●	●	6	10.5	15°
JXPG12R/L15F	1.5	0.05	●	●	12	12.5	0°
JXPG12R/L20F	2	0.05	●	●	12	12.5	0°
JXPG12R/L15F-15	1.5	0.05	●	●	12	12.5	15°
JXPG12R/L20F-15	2	0.05	●	●	12	12.5	15°
JXPG16R/L15F	1.5	0.05	●	●	16	14.5	0°
JXPG16R/L20F	2	0.05	●	●	16	14.5	0°
JXPG16R/L15F-15	1.5	0.05	●	●	16	14.5	15°
JXPG16R/L20F-15	2	0.05	●	●	16	14.5	15°
JXPG20R/L15F	1.5	0.05	●	●	20	16.5	0°
JXPG20R/L20F	2	0.05	●	●	20	16.5	0°
JXPG20R/L15F-15	1.5	0.05	●	●	20	16.5	15°
JXPG20R/L20F-15	2	0.05	●	●	20	16.5	15°

● : Line-up
CUTDIA: Max. parting-off dia.
Packing quantity = 5 pcs.

Referent pages : Toolholders → G086 - G088, G090, Standard cutting conditions → G094

JXTG12FR/L-60 (For Threading / Sharp edge)





Designation	Grade SH725 R	Grade SH725 L	Pitches	PDX	CDX	RE	S	PNA
JXTG12FR/L-60A-000	●	●	0.2 - 0.4	0.25	0.4	Flat (0.05 max)	2.5	60°
JXTG12FR/L-60B-000	●	●	0.2 - 0.4	2.25	0.4	Flat (0.05 max)	2.5	60°
JXTG12FR/L-60A-005	●	●	0.4 - 1	0.6	0.99	0.05	2.5	60°
JXTG12FR/L-60B-005	●	●	0.4 - 1	1.9	0.99	0.05	2.5	60°
JXTG12FR/L-60N-010	●	●	1 - 1.5	1.25	2.07	0.1	2.5	60°

Dimensions (mm)

● : Line-up
Packing quantity = 5 pcs.

EDGE ORIENTATION AND DESCRIPTION OF THREADING INSERTS

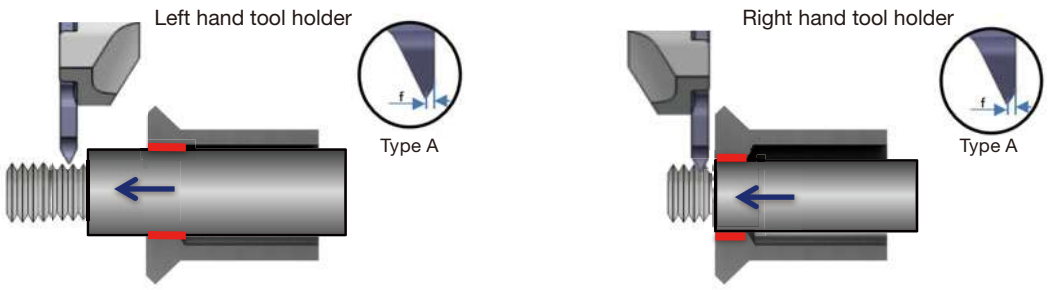
	Type A	Type B	Type N
Right hand	a > b	a < b	a = b
Left hand	a > b	a < b	a = b

JXTG 12 F R - 60 A - 005

- JXTG: Insert shape
- 12: Insert size
- F: sharp edge
- R: Hand
- 60: Thread angle
- A: Edge orientation
- 005: Corner radius

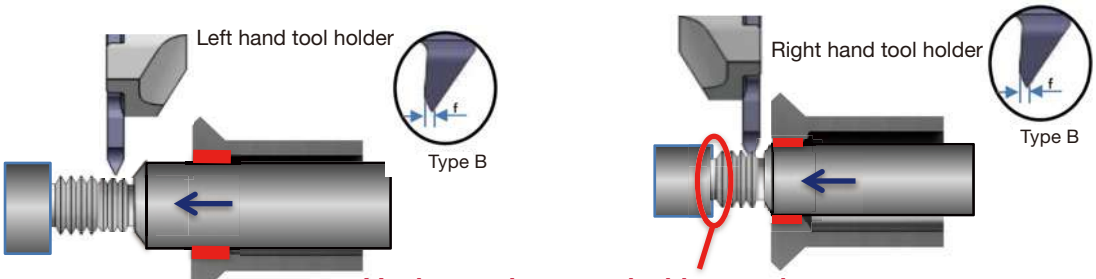
Referent pages : Toolhoders → G086 - G088, G090, Standard cutting conditions → G094

WHEN TO USE TYPE A AND TYPE B INSERT



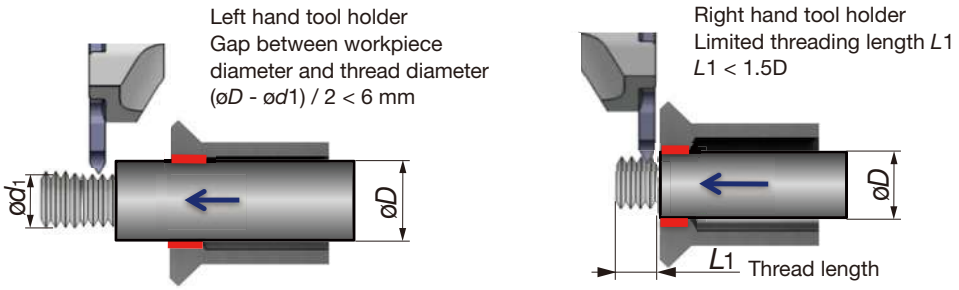
Threading close to the wall

Threading operation following back-turning

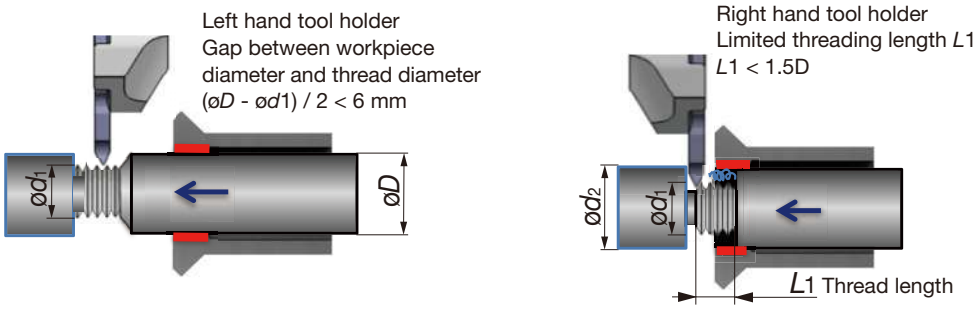


Undercutting needed in previous process

THREADING WORKPIECE IN MAIN SPINDLE



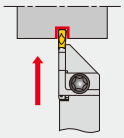
Threading operation following back-turning

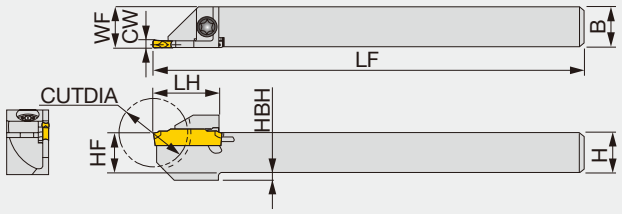


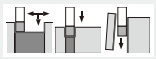
STANDARD CUTTING CONDITIONS (Parting-off)

ISO	Workpiece materials	Grades	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Low carbon steels (C15, C20, etc.)	SH725	50 - 200	0.01 - 0.05
	Carbon steels, Alloy steels (C55, 42CrMoS4, etc.)	SH725	50 - 200	0.01 - 0.05
	Free cutting steels (SUH22, SUH23, etc)	SH725	50 - 200	0.01 - 0.05
M	Stainless steels (X5CrNi18-9, X5CrNiMo17-12-2, etc)	SH725	50 - 200	0.01 - 0.05
N	Aluminium alloys (A5056, A6061, etc)	SH725	150 - 200	0.01 - 0.05
	Copper alloy (C2600, C280C, etc)	SH725	100 - 200	0.01 - 0.05
S	Titanium alloys (Ti-6Al-4V, etc.)	SH725	30 - 80	0.01 - 0.05
	Superalloys (Inconel718, etc.)	SH725	30 - 80	0.01 - 0.05

TUNGCUT
JCTER/L
External grooving and parting toolholder, for Swiss lathes







Insert:
Seat size 1 = DGS1.4-016
Seat size 2, 3, = DGM, SGM, DGS, SGS, DGE, DTE, DGG, DGL

Right hand (R) shown.

Designation	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF(1)	HBH	Torque*
JCTER/L1010X1.4T10	1.4	1	20	10	10	120	18	10	10.2	-	3
JCTER/L1212F1.4T12	1.4	1	24	12	12	85	19.5	12	12.2	-	3
JCTER/L1212X1.4T12	1.4	1	24	12	12	120	19.5	12	12.2	-	3
JCTER/L1414-1.4T12	1.4	1	24	14	14	125	19.5	14	14.2	-	3
JCTER/L1616X1.4T16	1.4	1	32	16	16	120	24	16	16.2	-	3
JCTER/L1010X2T10	2	2	20	10	10	120	19	10	10.1	2	3
JCTER/L1212F2T12	2	2	24	12	12	85	19	12	12.1	2	3
JCTER/L1212X2T12	2	2	24	12	12	120	19	12	12.1	2	3
JCTER/L1414-2T12	2	2	24	14	14	125	19	14	14.1	-	3
JCTER/L1616X2T16	2	2	32	16	16	120	24	16	16.1	-	3
JCTER/L1212F3T12	3	3	24	12	12	85	19	12	12.3	2	3
JCTER/L1212X3T12	3	3	24	12	12	120	19	12	12.3	2	3
JCTER/L1616X3T16	3	3	32	16	16	120	24	16	16.3	-	3
JCTER/L2020H3T16	3	3	32	20	20	100	24	20	20.3	-	3

(1) The value for "WF" is true when the insert with the width, indicated in "CW" in the table is mounted. • CUTDIA: Maximum parting-off diameter
*Torque: Recommended torque (N·m) for clamping

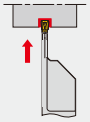
SPARE PARTS

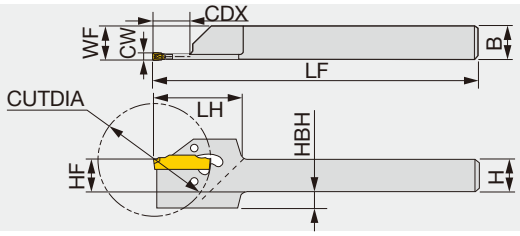




Designation	Clamping screw	Wrench
JCTER/L...	CSHB-4-A	T-15F

TUNGCUT
CGER/L
External deep grooving and parting toolholder, for Swiss lathes







Insert:
Seat size 1 = DGS1.4-016
Seat size 2, 3, 4, = DGM, SGM, DGS, SGS, SGN, DGG, DTM, DGL

Right hand (R) shown.

Designation	CW	Seat size	CUTDIA(1)	CDX	H	B	LF	LH	HF	WF (2)	HBH
CGER/L2020-1.4T14	1.4	1	29/29	9.7	20	20	125	31	20	20.2	-
CGER/L1212-2T17	2	2	35/35	11.8	12	12	150	31	12	12.1	6
CGER/L1616-2T17	2	2	35/35	11.8	16	16	150	31	16	16.1	2
CGER/L2020-2T17	2	2	35/35	9.8	20	20	125	31	20	20.1	-
CGER/L1212-3T19	3	3	38/40	12	12	12	150	31	12	12.3	6
CGER/L1616-3T19	3	3	38/45	14.9	16	16	150	31	16	16.3	2
CGER/L2020-3T19	3	3	38/45	13.2	20	20	125	31	20	20.3	-
CGER/L2020-4T19	4	4	38/55	20.3	20	20	125	33	20	20.4	-

• Wrench, CRW**, should be ordered separately. Insert is clamped by the elastic deformation of upper jaw.
(1) DG*/SG* Maximum diameter of parting off Dmax, can be increased by using SG* insert for some toolholders. (2) "WF" value is calculated with groove width "CW" shown in the table.

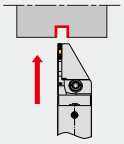
SPARE PARTS

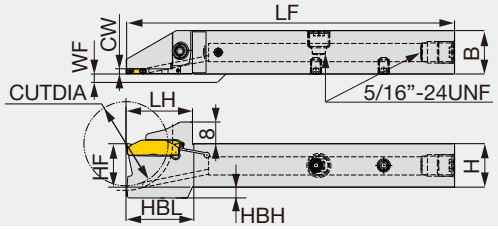


Designation	Wrench (Option)
CGER/L2020-1.4T14	CRW23
CGER/L****-2T17 - 4T19	CRW33

Referent pages : JCTER/L, CGER/L: Inserts → G097 - G102, Standard cutting conditions → G102

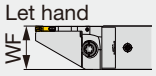
External grooving and parting toolholder with DirectTungJet connection





DIRECTTUNGJET





Insert:
Seat size 2 = DGM, SGM, DGS, SGS, DGE, DGG, SGN

Right hand (R) shown.

Designation	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF (1)	HBH	HBL	Torque*
JCTER/L1212X2T12-CHP	2	2	25	12	12	120	24.7	12	0/12	5	24.7	3
JCTER/L1616X2T12-CHP	2	2	25	16	16	120	24.7	16	0/16	1	24.5	3
JCTER/L1616X2T16-CHP	2	2	32	16	16	120	24.7	16	0/16	4	24.7	3
JCTER/L2020X2T16-CHP	2	2	32	20	20	120	24.7	20	0/20	-	-	3

(1) "WF" value is calculated with groove width "CW" shown in the table. • CUTDIA: Max. parting off dia.
*Torque: Recommended torque (N·m) for clamping
• Please see the page G015 for DirectTungJet system.

SPARE PARTS

Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JCTER/L...	CSHB-4-A	T-15F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Parting-off width : 2.0 mm

External
Internal
Grooving
Threading
Parting-off

Referent pages : JCTER/L-CHP: Inserts → G097 - G102, Standard cutting conditions → G102

EXTERNAL GROOVING AND PARTING

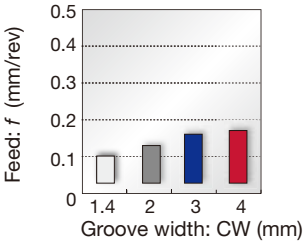
DGS type (2 corners) SGS type (1 corner)

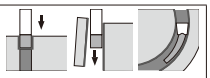


page G098, G100

For Swiss lathes

Unique-designed edge and chipbreaker
Handed insert available
CW = 1.4 - 3 mm





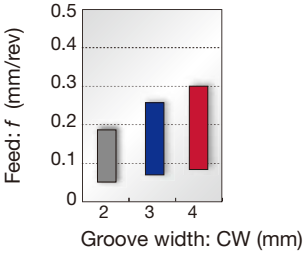
DGM type (2 corners) SGM type (1 corner)

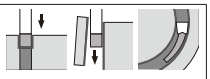


page G099

High fracture resistance

Smooth chip evacuation
Well-designed edge with high strength
Handed insert available
CW = 2 - 3 mm





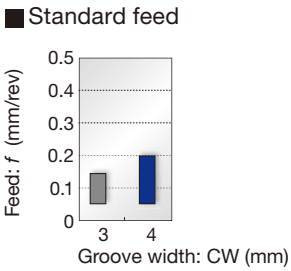
DGL type (2 corners)

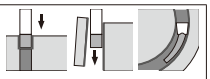


page G101

1st choice for mild steel

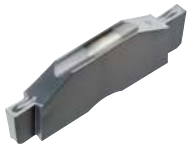
Chipbreaker with excellent chip control at low feed
Suitable for mild steel that often has difficulties in chip control





EXTERNAL GROOVING

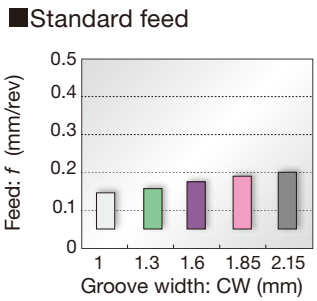
DGE type (2 corners)



page G100

For shallow grooves with high accuracy

Excellent chip control
CW = 1 - 2.15 mm





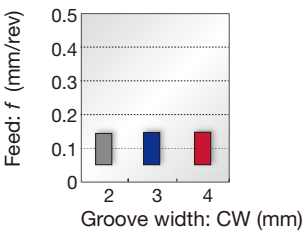
DGG type (2 corners)

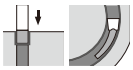


page G101

For non-ferrous materials and titanium alloys

Chipbreaker with low cutting force
Sharp cutting edge that prevents vibration and delivers fine surface finish
CW = 2 - 3 mm





SGN-CBN type (1 corner)



page G102

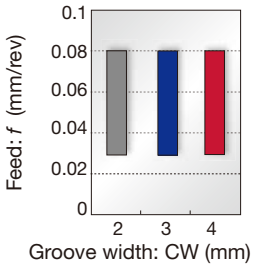
For hardened steel cutting

Optimum cutting edge shape for grooving of hardened steels

Close tolerance width for finishing (W = ±0.025 mm)

CW = 2 - 3 mm

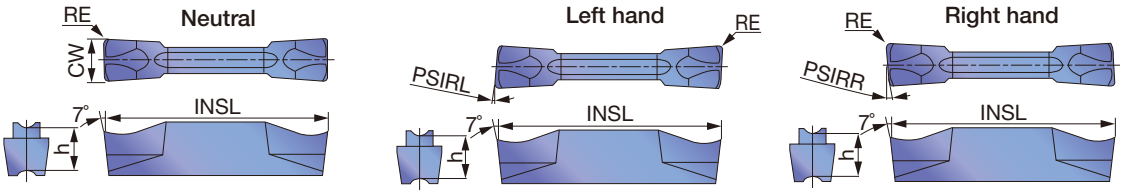
■ Standard feed





DGS

External grooving and parting off, 2 cornered



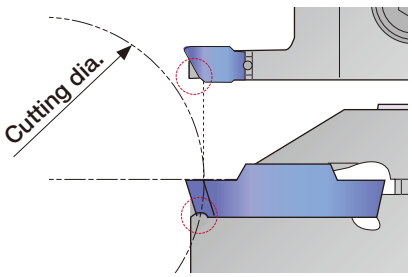
Designation	Insert seat size	CW±0.05	RE	Coated										Cermet		INSL	h	PSIRR/L
				T9225		T9125		AH7025		AH725		GH130		NS9530				
				R	L	R	L	R	L	R	L	R	L	R	L			
DGS1.4-016	1	1.4	0.16					●		●		●				16	4.3	0°
DGS2-020	2	2	0.2	●		●		●		●		●		●		20	5	0°
DGS2-020-6R/L	2	2	0.2					●	●	●	●	●	●			19.95	5	6°
DGS2-002-6R/L	2	2	0.02							●	●	●	●			19.5	5	6°
DGS2-020-15R/L	2	2	0.2					●	●	●	●	●	●			19.95	5	15°
DGS2-002-15R/L	2	2	0.02							●	●	●	●			19.5	5	15°
DGS3-020	3	3	0.2	●		●		●		●		●		●		20	5	0°
DGS3-020-6R/L	3	3	0.2					●	●	●	●	●	●			19.9	5	6°
DGS3-002-6R/L	3	3	0.02							●	●	●	●			19.45	5	6°
DGS3-020-15R/L	3	3	0.2					●	●	●	●	●	●			19.9	5	15°
DGS3-002-15R/L	3	3	0.02							●	●	●	●			19.45	5	15°
DGS4-030	4	4	0.3	●		●		●		●		●		●		20	5	0°
DGS4-030-4R/L	4	4	0.3					●	●	●	●	●	●			19.8	5	4°

● : Line-up

Caution

Designation	Cutting dia.
DGM2-002-15R/L	28
DGM3-002-15R/L	29
DGM4-030-15R/L	30
SGM3-020-15R/L	103

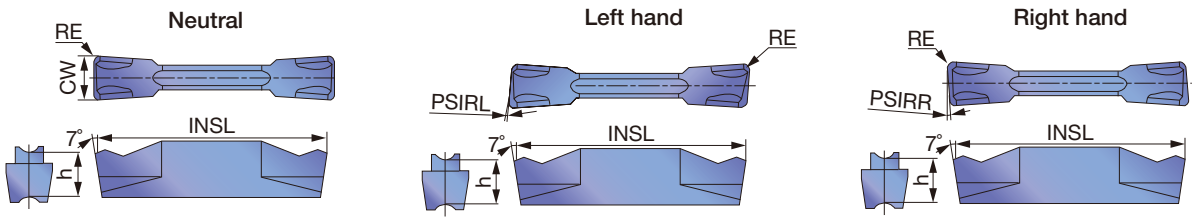
Designation	Cutting dia.
DGS2-002-15R/L	28
DGS3-002-15R/L	29
SGS3-020-15R/L	103
SGS3-002-15R/L	34



Referent pages : Toolhoders → G095 - G096, Standard cutting conditions → G102

DGM

External grooving and parting off, 2 cornered

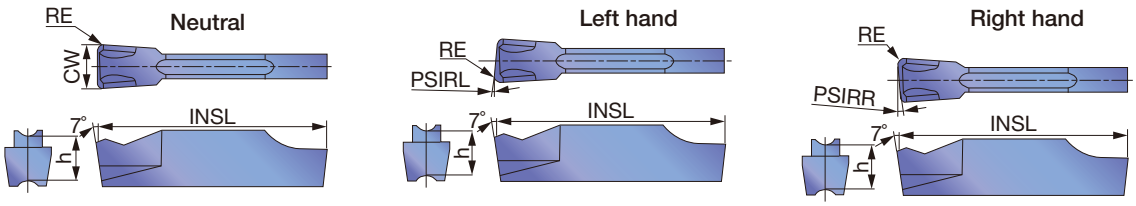


Designation	Insert seat size	CW±0.05	RE	Coated										Cermet				
				T9225		T9125		AH7025		AH725		AH905		GH130		NS9530				
				R	L	R	L	R	L	R	L	R	L	R	L	R	L	INSL	h	PSIRR/L
DGM2-020	2	2	0.2	●		●		●		●				●		●		20	5	0°
DGM2-020-6R/L	2	2	0.2					●	●	●	●			●	●			19.8	5	6°
DGM2-020-8R/L	2	2	0.2					●	●	●	●			●	●			19.8	5	8°
DGM2-020-15R/L	2	2	0.2					●	●	●	●			●	●			19.8	5	15°
DGM2-002-15R/L	2	2	0.02							●	●			●	●			19.35	5	15°
DGM3-020	3	3	0.2	●		●		●		●		●		●		●		20	5	0°
DGM3-020-6R/L	3	3	0.2					●	●	●	●			●	●			19.9	5	6°
DGM3-002-6R/L	3	3	0.02							●	●			●	●			19.45	5	6°
DGM3-020-15R/L	3	3	0.2					●	●	●	●			●	●			19.9	5	15°
DGM4-030	4	4	0.3	●		●		●		●		●		●		●		20	5	0°
DGM4-030-4R/L	4	4	0.3					●	●	●	●			●	●			19.8	5	4°
DGM4-030-15R/L	4	4	0.3					●	●	●	●			●	●			19.8	5	15°

● : Line-up

SGM

External deep grooving and parting off, single-cornered



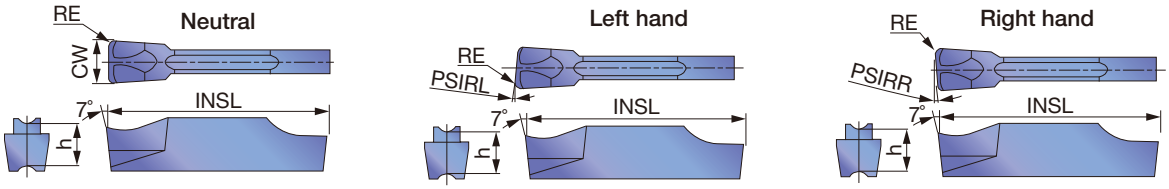
Designation	Insert seat size	CW±0.05	RE	Coated								
				AH7025		AH725		GH130				
				R	L	R	L	R	L	INSL	h	PSIRR/L
SGM2-020	2	2	0.2		●		●		●	20	5	0°
SGM2-020-6R/L	2	2	0.2	●	●	●	●	●	●	19.8	5	6°
SGM3-020	3	3	0.2		●		●		●	20	5	0°
SGM3-020-6R/L	3	3	0.2	●	●	●	●	●	●	19.6	5	6°
SGM3-020-15R/L	3	3	0.2	●	●	●	●	●	●	19.6	5	15°
SGM4-030	4	4	0.3		●		●		●	20	5	0°
SGM4-030-4R/L	4	4	0.3	●	●	●	●	●	●	19.65	5	4°

● : Line-up

Referent pages : Toolhoders → G095 - G096, Standard cutting conditions → G102

SGS

External deep grooving and parting off, single-cornered

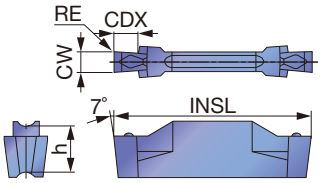


Designation	Insert seat size	CW±0.05	RE	Coated						INSL	h	PSIRR/L
				AH7025		AH725		GH130				
				R	L	R	L	R	L			
SGS2-020	2	2	0.2	●		●		●		20	5	0°
SGS2-020-6R/L	2	2	0.2	●	●	●	●	●	●	19.8	5	6°
SGS2-020-15R/L	2	2	0.2	●	●	●	●	●	●	19.8	5	15°
SGS3-020	3	3	0.2	●		●		●		20	5	0°
SGS3-020-6R/L	3	3	0.2	●	●	●	●	●	●	19.64	5	6°
SGS3-002-6R/L	3	3	0.02			●	●	●	●	19.8	5	6°
SGS3-020-15R/L	3	3	0.2	●	●	●	●	●	●	19.64	5	15°
SGS3-002-15R/L	3	3	0.02			●	●	●	●	19.8	5	15°
SGS4-030	4	4	0.3	●		●		●		20	5	0°

● : Line-up

DGE

External grooving (for high-precision machining)



Designation	Insert seat size	CW±0.02	RE	Coated			Cermet	CDX	INSL	h
				AH7025	AH725	GH130	NS9530			
DGE100-000	2	1	0		●	●	●	2.5	20	5
DGE130-000	2	1.3	0		●	●	●	2.5	20	5
DGE160-010	2	1.6	0.1	●	●	●	●	2.5	20	5
DGE185-010	2	1.85	0.1	●	●	●	●	3.5	20	5
DGE215-015	2	2.15	0.15	●	●	●	●	3.5	20	5

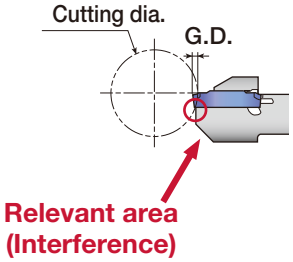
● : Line-up

DGE Caution

CDX is limited as shown in the picture to the right according to the groove depth, G.D. Please refer to the following table.

G.D = Groove depth

Designation	Max. groove depth (mm)	Cutting dia.				
		G.D. = 1	G.D. = 1.5	G.D. = 2	G.D. = 2.5	G.D. = 3
DGE100-000	2	∞	18.6	11.5	-	-
DGE130-000						
DGE160-010						
DGE185-010	3				8.8	7
DGE215-015						

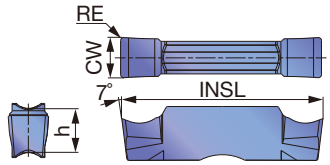


Referent pages : Toolhoders → G095 - G096, Standard cutting conditions → G102

INSERT

DGG

External and face grooving (for high-precision machining)

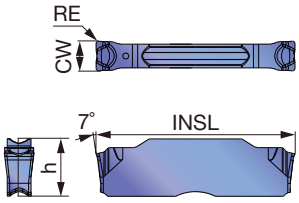


Designation	Insert seat size	CW±0.02	RE	Coated		Uncoated	INSL	h
				AH7025	NS9530	KS05F		
DGG200-020	2	2	0.2	●	●	●	20	5
DGG300-020	3	3	0.2	●	●	●	20	5
DGG400-040	4	4	0.4	●	●	●	20	5

● : Line-up

DGL

External, Parting-off



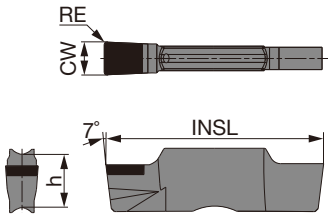
Designation	Insert seat size	CW±0.02	RE	Coated	INSL	h
				AH7025		
DGL3-025	3	3	0.25	●	20	5
DGL4-030	4	4	0.3	●	20	5

● : Line-up

Referent pages : Toolhoders → G095 - G096,Standard cutting conditions → G102

SGN

External grooving of hardened steels



Designation	Insert seat size	CW±0.025	RE	CBN	INSL	h
				BX360		
SGN200-020	2	2	0.2	●	20	5
SGN300-020	3	3	0.2	●	20	5
SGN400-020	4	4	0.2	●	20	5

● : Line-up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Chipbreaker	Priority	Recomended grade	Cutting speed *Vc* (m/min)
P	Steels C45, 34CrMo4, etc.	< 300 HB	DGS	First choice	AH7025, AH725	50 - 180
		< 300 HB	DGM	Priority for wear resistance	T9125	80 - 200
		< 300 HB	DGS	Priority for fracture resistance	GH130	50 - 120
		< 300 HB	DGS	Priority for surface finish	NS9530	80 - 220
		< 300 HB	DGL	For mild steel Chip control	AH7025	50 - 180
M	Stainless steels X10CrNiS18-9, etc.	< 200 HB	DGS	First choice	GH130	50 - 120
		< 200 HB	DGM	Priority for impact resistance	AH7025, AH725	50 - 120
K	Grey cast irons GG25, 250, etc.	-	DGM	First choice	GH130	50 - 180
	Ductile cast irons GGG45, 450-10S, etc.	-	DGM	First choice	GH130	50 - 120
N	Aluminium alloys Si < 12%	-	DGG	First choice	TH10	100 - 500
S	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	DGM	First choice	AH905	20 - 80
		< HRC 40	DGS	Priority for fracture resistance	AH7025, AH725	20 - 80
H	Hardened steels 34CrMo4, etc.	> HRC 50	DGN	First choice	BX360	80 - 150

Referent pages : Toolhoders → G095 - G096

Mill Line



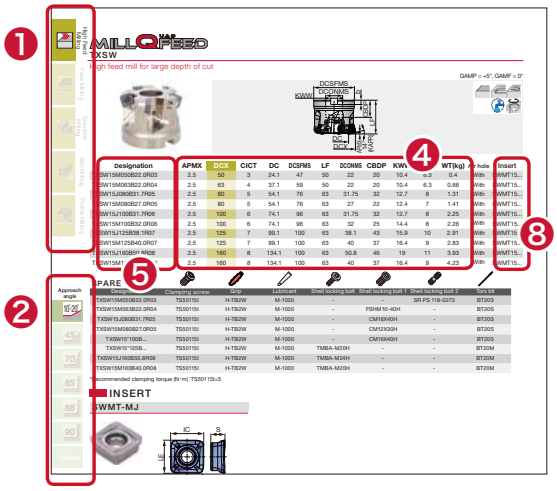
Mill Line - Content structure

- Products are listed by application.
- Please refer the table of contents and the icons.

How to use the page

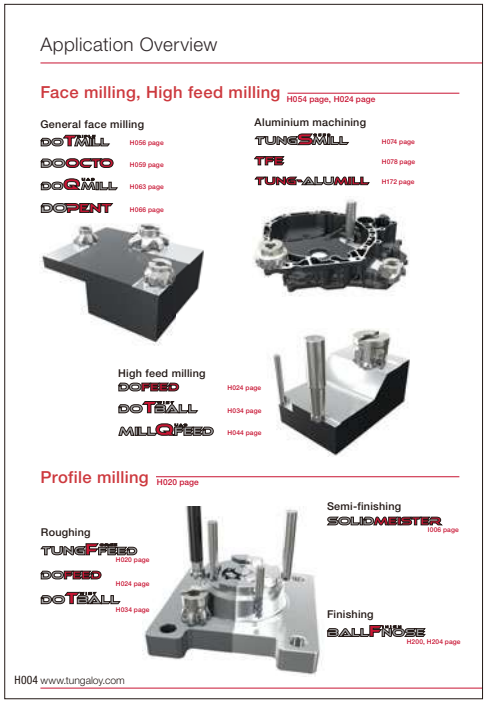
Method ①

Select the application (❶) and the approach angle (❷) at the left end of each page and choose a designation you need (❺) in the dimension table (❹). Applicable inserts are shown in (❽).



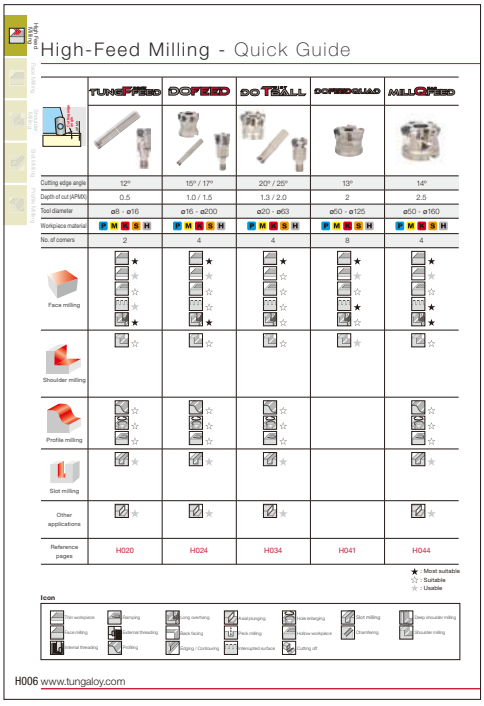
Method ②

Select the tool series name on **H004 – H005** and check the details on the product page.



Method ③

Select the tool series or the tool specification on **H006 - H015** and see the details on each page.



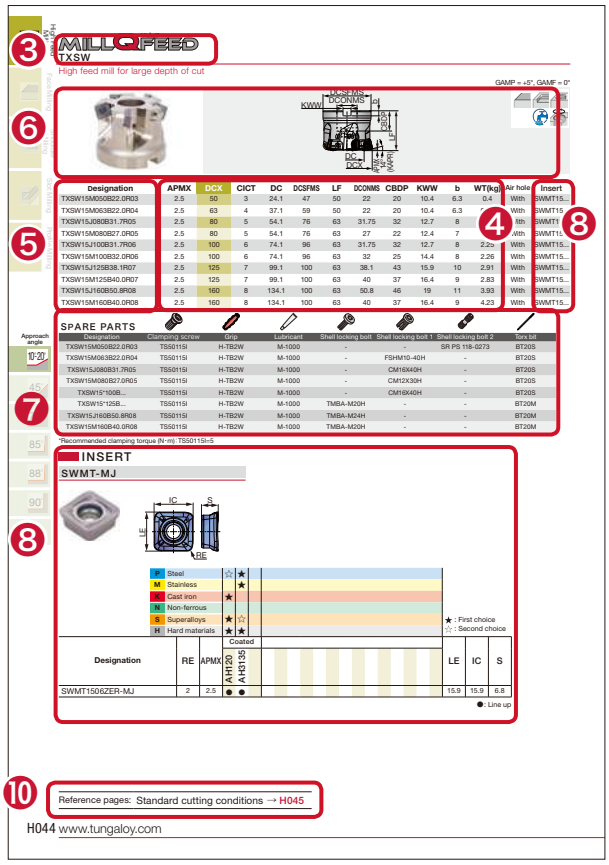
Icon

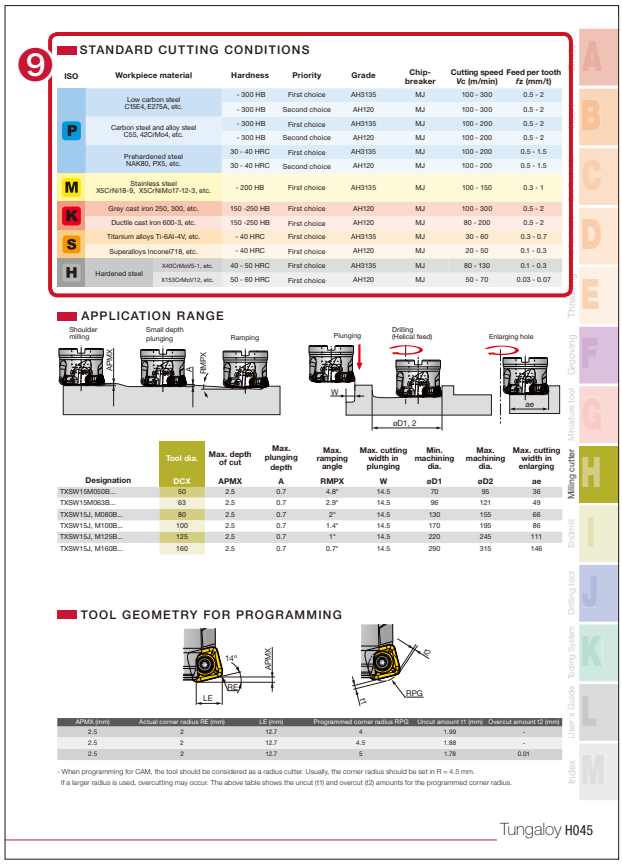
Approach angle

10°-20°	10° ~ 20°
45°	45°
70°	70°
85°	85°
88°	88°
90°	90°

Application

Thin workpiece	Deep shoulder milling	Chamfering
Ramping	Face milling	Shoulder milling
Long overhang	External threading	Internal threading
Axial plunging	Back facing	Profiling
Hole enlarging	Peck milling	Edging / Contouring
Slot milling	Hollow workpiece	Interrupted surface
		Cutting off





❶ : Application
❷ : Approach angle
❸ : Tool series name
❹ : Dimension table
❺ : Mill designation
❻ : Dimension drawing (conforming to ISO13399)
❼ : Spare parts
❽ : Insert
❾ : Standard cutting conditions
❿ : Reference page

Machining accuracy

F	Finishing
M	Medium cutting
R	Roughing
	Coolant hole

Workpiece material

P	Steel
M	Stainless steel
K	Cast iron
N	Non-ferrous metal
S	Superalloy
H	Hard material

When ordering
- Please specify the designation and quantity for mills.
  e.g. **TPW13R080M25.4-06** ... 1 (one mill per package)
- Please specify the designation, grade, and quantity for inserts.
  e.g. **SWMT1304PDPR-MJ AH120** ... 10 (10 inserts per package)

*You will find a note if the number per package is not 10.

Application Overview

Face milling, High feed milling

H054 page, H024 page

General face milling

DOTRIPLEMILL H056 page

DOOCTO H059 page

DOQUADMILL H063 page

DOPENT H066 page



Aluminium machining

TUNGSPEEDMILL H074 page

TFE H078 page

TUNG-ALUMILL H172 page



High feed milling

DOFEED H024 page

DOTWISTBALL H034 page

MILLQUADFEED H044 page



Profile milling

H020 page

Roughing

TUNGFORCEFEED H020 page

DOFEED H024 page

DOTWISTBALL H034 page



Semi-finishing

SOLIDMEISTER I006 page

Finishing

BALLFINISHNOSE H200, H204 page

Shoulder milling

H118 page

Shoulder milling (double side)

DOFTRI H120 page

DOREC H165 page

TECMILL H169 page



Shoulder milling (single side)

TUNG-TRI H123 page

TUNGTRISHRED H133 page

TUNGFREC H136 page



Other applications



Slot milling

TUNGMINISLIT H188 page

TUNGTHINSLIT H192 page

TUNGUNIVERSALSLOT H194 page

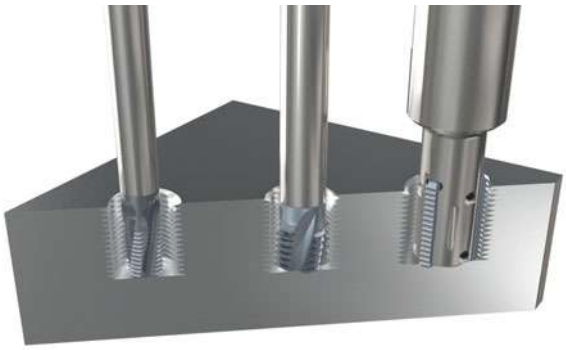
TECTANGENTIALSLOT H197 page

Thread milling

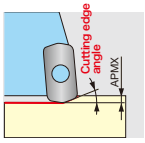
Thread milling cutter I124 page

THREADMILLING I102 page

TUNGMEISTER I060 page



High-Feed Milling - Quick Guide

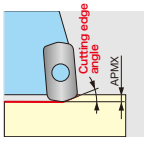
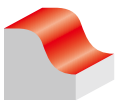


	TUNGFEED	DOFEED	DOTWIST BALL	DOFEEDQUAD	MILLQUAD FEED
					
Cutting edge angle	12°	15° / 17°	20° / 25°	13°	14°
Depth of cut (APMX)	0.5	1.0 / 1.5	1.3 / 2.0	2	2.5
Tool diameter	ø8 - ø16	ø16 - ø200	ø20 - ø63	ø50 - ø125	ø50 - ø160
Workpiece material	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H
No. of corners	2	4	4	8	4
Face milling	★ ☆ ☆ ★ ★	★ ☆ ☆ ☆ ★	★ ☆ ☆ ☆ ☆	★ ☆ ☆ ★ ☆	★ ☆ ☆ ★ ★
Shoulder milling	☆	☆	☆	★	☆
Profile milling	☆ ☆ ☆	☆ ☆ ☆	☆ ☆ ☆		☆ ☆ ☆
Slot milling	★	★	★		★
Other applications	★	★	★		★
Reference pages	H020	H024	H034	H041	H044

★ : Most suitable
☆ : Suitable
★ : Usable

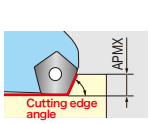
Icon

Thin workpiece
Face milling
Internal threading
Ramping
External threading
Profiling
Long overhang
Back facing
Edging / Contouring
Axial plunging
Peck milling
Interrupted surface
Hole enlarging
Hollow workpiece
Cutting off
Slot milling
Chamfering
Deep shoulder milling
Shoulder milling

	MILLFEED TXP				
					
Cutting edge angle	10° / 15° / 20°				
Depth of cut (APMX)	1.5 / 3				
Tool diameter	ø20 - ø160				
Workpiece material	P M K H				
No. of corners	3				
 Face milling	 ★ ☆ ★ ★				
 Shoulder milling	 ☆				
 Profile milling	 ☆ ☆ ☆				
 Slot milling	 ★				
Other applications	 ★				
Reference pages	H046				

★ : Most suitable
☆ : Suitable
★ : Usable

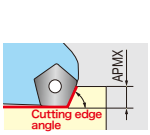
Face Milling - Quick Guide

	DO TRIPLE MILL	DOOCTO	DOPENT	DOQUAD MILL	TUNGMILL
					
Cutting edge angle	45°	44° / 45° / 15°	70°	88°	30°~45°
Depth of cut (APMX)	6 / 3.4	4.75 / 7.5 / 3.5 / 1.5	6.4	9.5	4 / 5 / 2
Tool diameter	ø50 - ø160	ø63 - ø315	ø32 - ø160	ø50 - ø100	ø25 - ø200
Workpiece material	P M K S H	P M K S H	P M K N S	P M K S H	P M K S N
No. of corners	8 / 16	8 / 16	10	8	4
Face milling	★ ☆ ★ ★	★ ★ ★ ★	★ ★ ☆ ☆	★ ★ ☆ ☆	★ ★ ★ ★
Shoulder milling				★	
Profile milling	★				
Slot milling				★	
Other applications	☆	☆			☆
Reference pages	H056	H059	H066	H063	H070

★ : Most suitable
☆ : Suitable
★ : Usable

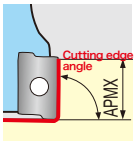
Icon

- Thin workpiece
- Face milling
- Internal threading
- Ramping
- External threading
- Profiling
- Long overhang
- Back facing
- Edging / Contouring
- Axial plunging
- Peck milling
- Interrupted surface
- Hole enlarging
- Hollow workpiece
- Cutting off
- Slot milling
- Chamfering
- Deep shoulder milling
- Shoulder milling

	TFE	TUNGSMILL		DPD EDPD	NMS EMS
					
Cutting edge angle	85°	90°	90°	90°	-
Depth of cut (APMX)	8 / 3.5 / 1.5	4.5	4 / 11	8	0.2
Tool diameter	ø63 - ø125	ø50 - ø160	ø25 - ø125	ø63 - ø160	ø80 - ø200
Workpiece material	P M K N	N	N	N	P M K S
No. of corners	4 / 1 / 2	1	1 / 2	1	4
Face milling	★ ★ ★ ☆	★ ★ ★ ☆	★ ★ ☆ ☆	★ ☆ ★ ☆	★ ☆ ★ ☆
Shoulder milling		★	★	★	
Profile milling					
Slot milling					
Other applications					
Reference pages	H078	H076	H074	H082	H112

★ : Most suitable
☆ : Suitable
★ : Usable

Shoulder milling - Quick Guide

	TUNGFREC	TUNGREC		TUNG-TRI	
			Roughing 		Roughing 
Cutting edge angle	90°	90°	90°	90°	90°
Depth of cut (APMX)	6	7 / 10.6 / 16.7	30.4 - 48.8	6 / 10 / 15	54 - 97 (-139)
Tool diameter	ø8 - ø40	ø12 - ø160	ø25 - ø50	ø12 - ø160	ø50 - ø100
Workpiece material	P M K N S H	P M K N S	P M K N S	P M K N S	P M K N S
No. of corners	2	2	2	3	3
Face milling	★ ☆ ★ ☆ ☆	☆ ☆ ★ ★ ★	★ ★ ★ ★ ★	★ ☆ ★ ☆ ☆	★ ★ ★ ☆ ☆
Shoulder milling	★ ★ ★	★ ☆ ★	★ ☆ ★	★ ★ ☆	★ ★ ★
Profile milling	★ ☆ ☆	★ ☆ ★	★ ★ ★	★ ★ ☆	★ ★ ★
Slot milling	★	☆		★	
Other applications	★	★		★	
Reference pages	H136	H141	H144	H123	H125

★ : Most suitable
☆ : Suitable
★ : Usable

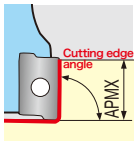
Icon

Thin workpiece	Ramping	Long overhang	Axial plunging	Hole enlarging	Slot milling	Deep shoulder milling
Face milling	External threading	Back facing	Peck milling	Hollow workpiece	Chamfering	Shoulder milling
Internal threading	Profiling	Edging / Contouring	Interrupted surface	Cutting off		

	TUNGTSHRED	TUNGTSHRED Roughing	TUNGQUAD	TUNGQUAD Roughing	TUNG-ALUMILL
					
Cutting edge angle	90°	90°	90°	90°	90°
Depth of cut (APMX)	16	61 - 76	4	20.3 - 24.2	13 - 16
Tool diameter	ø50 - ø100	ø63 - ø80	ø12 - ø40	ø20 - ø25	ø25 - ø125
Workpiece material	P M K S	P M K S	P M K N S	P M K N S	N
No. of corners	3	3	4	4	2
Face milling	☆ ★ ★ ☆ ★	★ ★ ★ ☆ ★	☆ ☆ ★ ★ ★	★ ★ ★ ★ ★	★ ★ ★ ★ ☆
Shoulder milling	★ ★ ☆	☆ ★ ☆	★ ★ ☆	★ ☆ ★	★ ★ ★
Profile milling					★ ★ ★
Slot milling	★	★	★		★
Other applications			★		☆
Reference pages	H133 - H134	H133	H155	H156	H172

★ : Most suitable
☆ : Suitable
★ : Usable

Shoulder milling - Quick Guide -

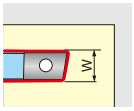
	TUNGMILL	DOFTRI	DOREC	TECMILL	
					Roughing 
Cutting edge angle	90°	90°	90°	90°	90°
Depth of cut (APMX)	10	11	9.0 / 16	9.7 / 15.1	58.5 / 66.9
Tool diameter	ø32 - ø200	ø32 - ø125	ø25 - ø160	ø32 - ø125	ø50 - ø63
Workpiece material	P M K N S H	P M K S H	P M K S H	P M K S H	P M K S H
No. of corners	4	6	4	4	4
Face milling	☆ ☆ ★ ★ ★	★ ☆ ★ ★ ☆	★ ★ ★ ★ ★	☆ ★ ★ ★ ★	★ ★ ★ ★ ★
Shoulder milling	★ ★ ★	★ ★ ☆	★ ★ ☆	★ ★ ★	★ ☆ ☆
Profile milling			★ ★ ★		
Slot milling	★	☆	★		
Other applications	★	★	☆	☆	
Reference pages	H160	H120	H165	H169	

★ : Most suitable
☆ : Suitable
★ : Usable

Icon

- Thin workpiece
- Face milling
- Internal threading
- Ramping
- External threading
- Profiling
- Long overhang
- Back facing
- Edging / Contouring
- Axial plunging
- Peck milling
- Interrupted surface
- Hole enlarging
- Hollow workpiece
- Cutting off
- Slot milling
- Chamfering
- Deep shoulder milling
- Shoulder milling

Slot milling - Quick Guide -

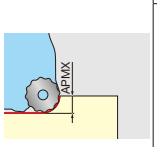
	TUNGMSLIT	TUNGTSLIT	TUNGUSLOT	TECTSLOT	
					
Depth of cut (W)	1.6 - 4.1	4 - 8	10 - 16	16 - 25	
Tool diameter	ø63 - ø125	ø80 - ø200	ø80 - ø160	ø100 - ø250	
Workpiece material	P M K	P M K S	P M K S	P M K S	
No. of corners	1	6	6	4	
Face milling	★ ★ ★ ★ ★	★ ★ ★ ★ ★	☆ ★ ★ ★ ☆	☆ ★ ★ ★ ☆	
Shoulder milling	★ ★	★ ★	☆ ☆ ★	☆ ☆ ★	
Profile milling					
Slot milling	★	★	★	★	
Other applications	★	★			
Reference pages	H188	H192	H194	H196	

★ : Most suitable
☆ : Suitable
★ : Usable

Icon

Thin workpiece
Face milling
Internal threading
Ramping
External threading
Profiling
Long overhang
Back facing
Edging / Contouring
Axial plunging
Peck milling
Interrupted surface
Hole enlarging
Hollow workpiece
Cutting off
Slot milling
Chamfering
Deep shoulder milling
Shoulder milling

Profile milling - Quick Guide -

	DO TWIST BALL	ROUNDSPLIT	BALL ROUGH NOSE	BALL FINISH NOSE	DO MINI MILL
					
Depth of cut (APMX)	4 / 5 / 6	6 / 8	11.8 / 13.6 / 17.7	4 - 16	1
Tool diameter	ø20 - ø63	ø32 - ø125	ø16 - ø25	ø8 - ø32	ø16 - ø25
Workpiece material	P M K S H	P M K N S	P M K S H	P M K N S H	P H
No. of corners	4	4 / 8	2	1	6
Face milling	☆ ☆ ☆	☆ ☆ ★	★ ☆ ☆	★ ★ ☆	★ ★ ☆
Shoulder milling	★	☆	☆	☆	☆
Profile milling	★ ★ ☆	★ ☆ ☆	★ ☆ ☆	★ ☆ ☆	★ ☆ ★
Slot milling	☆	☆	★	★	★
Other applications	★	★	★	★	☆
Reference pages	H034	H215	H202	H204	H209

★ : Most suitable
☆ : Suitable
★ : Usable

Icon

- Thin workpiece
- Face milling
- Internal threading
- Ramping
- External threading
- Profiling
- Long overhang
- Back facing
- Edging / Contouring
- Axial plunging
- Peck milling
- Interrupted surface
- Hole enlarging
- Hollow workpiece
- Cutting off
- Slot milling
- Chamfering
- Deep shoulder milling
- Shoulder milling

Thread milling - Quick Guide -

	SOLIDTHREAD	TUNGMEISTER	THREADMILLING	
			ETLN	Thread milling cutter
				
Pitch	0.25 - 3.5	0.5 - 4.5	1 - 3	1.5 - 6
Tool diameter	ø0.7 - ø20	ø10 - ø21.7	ø17 - ø30	ø23 - ø80
Workpiece material	P M K S	P M K S	P M K S	P M K
No. of corners	1	1	2	2
Thread milling	★ ★	★ ★	★ ★	★ ★
Reference pages	I102	I118	I124	I126

★ : Most suitable
☆ : Suitable
★ : Usable

Icon

Thin workpiece
Face milling
Internal threading
Ramping
External threading
Profiling
Long overhang
Back facing
Edging / Contouring
Axial plunging
Peck milling
Interrupted surface
Hole enlarging
Hollow workpiece
Cutting off
Slot milling
Chamfering
Deep shoulder milling
Shoulder milling

Designation system for Insert

Symbol	Hole	Shape of hole	Chipbreaker	Shape
N	Without	–	Without	
R			Single-sided	
F			Double-sided	
W	With	Partly cylindrical hole, single-side 40° ~ 60° Counter sink	Without	
T			Single-sided	
Q		Partly cylindrical hole, double-side 40° ~ 60° Counter sink	Without	
U			Double-sided	
B		Partly cylindrical hole, single-side 70° ~ 90° Counter sink	Without	
H			Single-sided	
C		Partly cylindrical hole, double-side 70° ~ 90° Counter sink	Without	
J			Double-sided	
X	–	–	–	

④ Groove and hole

Shape	Cutting edge length (ℓ)
S	
T	
R	
H	
A	

⑤ Cutting edge length

Symbol	Thickness (mm)
02	2.38
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52

Thickness

⑥ Thickness

(Example)

Metric

①	②	③	④	⑤
P	N	C	U	09

(Example)

Inch

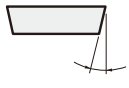
①	②	③	④	⑤
S	D	K	N	4

① Shape

Symbol	Shape	Nose angle (degree)	Figure
H	Hexagonal	120°	
S	Square	90°	
T	Triangular	60°	
C	Rhombic	80°	
E		75°	
G		70°	
L	Rectangular	90°	
A	Parallelogram	85°	
R	Round		
W	Wiper	80°	
W	Special	–	
O	Octagonal	135°	
P	Pentagonal	108°	
X	Special	Others	
Y	Special		
Z	Special		

② Relief angle

Symbol	Relief angle
C	7°
D	15°
E	20°
F	25°
G	30°
M	Others
N	0°
P	11°
Q	Other applications
O	Other applications
X	Other applications
S	Other applications
W	2-step relief

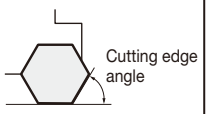


③ Accuracy (mm)

Symbol (class)	Corner height (m)	Thickness (s)	I. C. dia. (ød)
A	± 0.005	± 0.025	± 0.025
C	± 0.013	± 0.025	± 0.025
E	± 0.025	± 0.025	± 0.025
G	± 0.025	± 0.13	± 0.025
H	± 0.013	± 0.025	± 0.013
K	± 0.013	± 0.025	± 0.05 ~ ± 0.13
M	± 0.08 ~ ± 0.18	± 0.13	± 0.05 ~ ± 0.13
N	± 0.08 ~ ± 0.18	± 0.025	± 0.05 ~ ± 0.13

Standard I. C. dia.	I. C. dia. (ød) tolerance		Corner height (mm) tolerance	
	J, K, L, M, N	U	M, N	U
6.35	± 0.05	± 0.08	± 0.08	± 0.13
9.525				
12.7	± 0.08	± 0.13	± 0.13	± 0.2
15.875	± 0.1	± 0.18	± 0.15	± 0.27
19.05				
25.4	± 0.13	± 0.25	± 0.18	± 0.38

Symbol	Cutting edge angle
A	45°
D	60°
E	75°
F	85°
G	70°
H	87°
P	90°
Z	Special

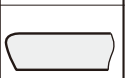
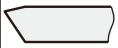


⑦ Cutting edge angle

Symbol	Relief angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
Z	Special



⑧ Wiper relief angle

Symbol	Cutting edge	Shape
F	Sharp	
E	Round	
T	Chamfer	
S	Combination	
P	Combination	

⑨ Major cutting edge

Symbol	Hand of insert
R	Right
L	Left
N	Without

⑩ Hand of insert

Symbol	Description
HM	General-purpose high feed milling chipbreaker
MM	General-purpose milling chipbreaker
MW	Milling insert with wiper edge
B	Milling insert for burr removal
D	Insert with diamond sintered body
W	Wiper insert (multiple corners)
WS	Wiper insert (single corner)
WD	Wiper insert (with diamond sintered body)
BD	Wiper for burr removal (diamond sintered body)
MJ	General-purpose milling chipbreaker
MH	Milling chipbreaker with reinforced cutting edge
ML	Milling chipbreaker for low cutting force
MS	Milling chipbreaker for stainless steel
HJ	High feed milling chipbreaker
AJ	Milling chipbreaker for non-ferrous metal
NMJ	General-purpose milling chipbreaker with serration
NAJ	Milling chipbreaker with serration for non-ferrous metal

⑪ Supplementary symbol

⑥	⑦	⑧	⑨	⑩		⑪
05	G	N	E	R	-	MJ
2	Z		T	N		16
⑥	⑦		⑨	⑩		⑪

④ Groove and hole		
Symbol	Shape of hole	Hole
A	Without	With
F	Double side	Without
G	Double side	With
M	Single side	With
N	Without	With
U	Without	Without
W	Without	With

⑤ Inscribed circle (I. C.)		
Symbol		I. C. dia. (mm)
Inch	3	9.525
	4	12.7
	5	15.875
	6	19.05

⑥ Thickness		
Symbol		Thickness (mm)
Inch	2	3.18
	3	4.76
	4	6.35
	6	9.52

⑦ Corner radius	
Symbol	Corner radius (mm)
1	0.4 (0.397)
2	0.8 (0.794)
3	1.2 (1.191)
4	1.6 (1.588)
5	2.0 (1.984)
6	2.4 (2.381)
Symbol	Description
F	Special design (e.g. for MS cutter)
H	 Chamfer for corner angle 60°
S	 Chamfer for corner angle 15°
Z	 Flat chamfer

*For wiper inserts, the designation uses “W” as the shape symbol of inch items. For metric items, the shape symbol is the same as that of regular inserts, and a supplementary symbol, such as W, WS, and WD, is at the end of each designation.

DOFEED

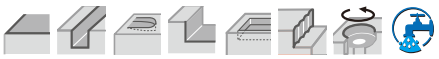
Innovative high-feed cutters!

DoFeed offers outstanding productivity thanks to its close-pitch insert orientation and light cutting geometry. The rich lineup is suitable for a wide variety of applicaions.



Outstanding productivity

Excellent chip evacuation prevents chip packing





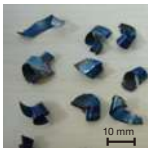
Optimized coolant jet delivery effectively removes chip and prevent it from re-cutting

Large inclination forms ideal chips and controls the chips flow



DOFEED

Good
Curl consistently at ideal length



Competitor
Poor
Crushed or unstable

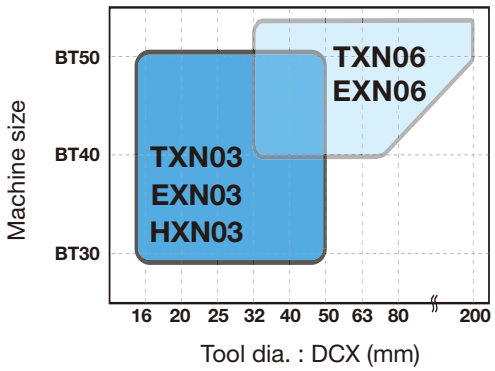
Steel

Cutter	: TXN06R050M22.0E05
Insert	: LNMU06X5ZER-MJ
Grade	: AH725
Workpiece material	: Carbon steels (S55C / C55)
Cutting speed	: *Vc* =180 m/min
Feed per tooth	: *fz* = 1.8 mm/t
Depth of cut	: *ap* =1.0 mm
Coolant	: Dry
Machine	: Vertical M/C, BT50

Rich lineup of cutter bodies from ø16 to ø200 mm

Insert	Bore type	Shank type	Modular type
LN*U03  Max. ap = 1.0 mm	**TXN03** (DCX = 40 - 50 mm) 	**EXN03** (DCX = 16 - 40 mm) 	**HXN03** (DCX = 16 - 40 mm) 
LN*U06  Max. ap = 1.5 mm	**TXN06** (DCX = 50 - 200 mm) 	**EXN06** (DCX = 32 - 40 mm) 	

Applicable area



Reference pages: H024

TUNGFORCE FEED



Small-diameter high feed milling cutter with impressive machining efficiency and reliability

Built to perform at higher machining conditions



Thick insert corner
Max 10 % thicker
than competitors'

Strong insert corner for high feed operations

- Thick insert corner is designed to withstand fracturing force

Robust and easy-to-handle insert screws

- M2 screws reduce screw neck shears under high cutting forces. A larger screw enhances insert's fixation and easy handling.



TUNGFORCE FEED
(M2)



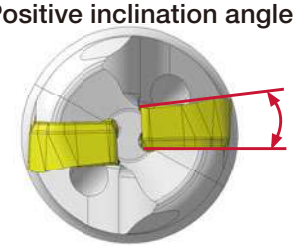
Competitor
(M1.8)

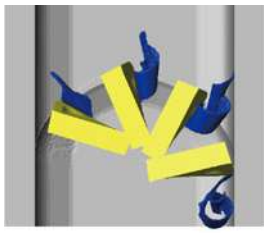
Proper chip formation assures a reliable machining process

Positive inclination angle of the insert promotes smooth chip evacuation

- The positive cutting edge position contributes to a controlled chip formation and easy chip evacuation when machining next to shoulder and slotting operation.

Positive inclination angle





Proper chip control eliminates recuts and premature insert failure

Chip formation

TUNGFORCE FEED



Ideal curled chips

Competitor



Crushed chips

P Steel

Cutter	: EXLS02M010C10.0LF20R02
Insert	: LSMT0202ZER-HM AH3225
Workpiece material	: S55C
Cutting speed	: *Vc* = 200 m/min
Application	: Slotting
Depth of cut	: *ap* = 0.5 mm × 20 passes
Coolant	: Dry
Machine	: Vertical M/C, BT40

Reference pages: H020

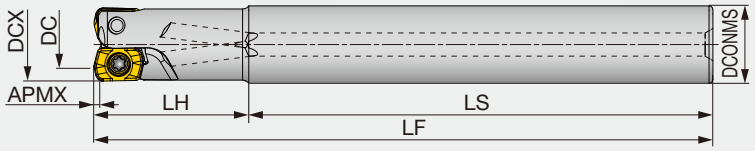
TUNGFORCE FEED

EXLS

High feed endmill, shank type

GAMP = +4°, GAMF = -21° ~ -17°





Designation	APMX	DCX	CICT	DC	DCONMS	LS	LH	LF	WT (kg)	Air hole	Insert
EXLS02M008C08.0LH16R01	0.5	8	1	4.29	8	59	16	75	0.02	With	LSMT02...
EXLS02M008C08.0LH30R01	0.5	8	1	4.29	8	59	31	90	0.03	With	LSMT02...
EXLS02M010C10.0LH20R02	0.5	10	2	6.28	10	60	20	80	0.04	With	LSMT02...
EXLS02M010C10.0LH40R02	0.5	10	2	6.28	10	60	40	100	0.05	With	LSMT02...
EXLS02M010C08.0LH20R02	0.5	10	2	6.28	8	60	20	80	0.03	With	LSMT02...
EXLS02M012C12.0LH50R02	0.5	12	2	8.31	12	60	50	110	0.08	With	LSMT02...
EXLS02M012C12.0LH20R03	0.5	12	3	8.31	12	60	20	80	0.06	With	LSMT02...
EXLS02M012C10.0LH20R03	0.5	12	3	8.31	10	60	20	80	0.04	With	LSMT02...
EXLS02M016C16.0LH50R03	0.5	16	3	12.31	16	70	50	120	0.17	With	LSMT02...
EXLS02M016C16.0LH30R05	0.5	16	5	12.31	16	70	30	100	0.14	With	LSMT02...

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
EXLS02M...	CSPB-2H	M-1000	IP-6DB

*Recommended clamping torque (N·m): CSPB-2H=0.7

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

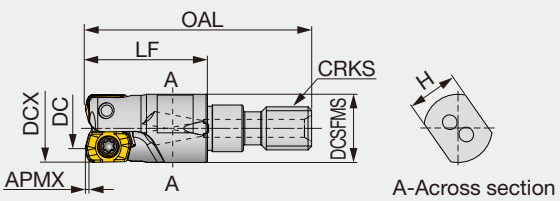
TUNGFORCE FEED

HXLS

High feed endmill, shank type

GAMP = +4°, GAMF = -21° ~ -17°





Designation	APMX	DCX	CICT	DC	OAL	LF	H	DCSFMS	CRKS	WT (kg)	Air hole	Insert
HXLS02M008M06R01	0.5	8	1	4.29	33.5	19	7	9.5	M6	0.01	With	LSMT02...
HXLS02M010M06R02	0.5	10	2	6.28	31.5	17	7	9.5	M6	0.01	With	LSMT02...
HXLS02M012M06R02	0.5	12	2	8.31	31.5	17	7	10	M6	0.01	With	LSMT02...
HXLS02M012M06R03	0.5	12	3	8.31	31.5	17	7	10	M6	0.01	With	LSMT02...
HXLS02M016M08R03	0.5	16	3	12.31	40	23	10	13	M8	0.03	With	LSMT02...
HXLS02M016M08R05	0.5	16	5	12.31	40	23	10	13	M8	0.03	With	LSMT02...

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
HXLS02M...	CSPB-2H	M-1000	IP-6DB

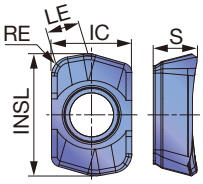
*Recommended clamping torque (N·m): CSPB-2H=0.7

Reference pages: Inserts → H021, Standard cutting conditions → H022 - H023, TungFlex → H208

INSERT

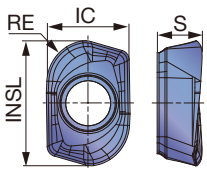
LSMT-HM (High feed)





LSMT-MM (Radius)





P	Steel	★	☆
M	Stainless	★	
K	Cast iron	☆	★
N	Non-ferrous		
S	Superalloys	☆	★
H	Hard materials		★

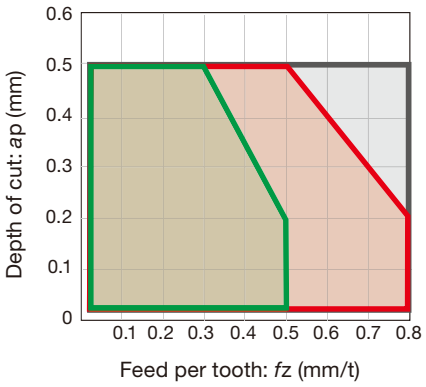
★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH3225	Coated AH8015	LE	INSL	IC	S
LSMT0202ZER-HM	1	0.5	●	●	1.7	6.4	4.2	2.3
LSMT0202R2-MM	2	2.0	●	●	-	6.4	4.3	2.3

●: Line up

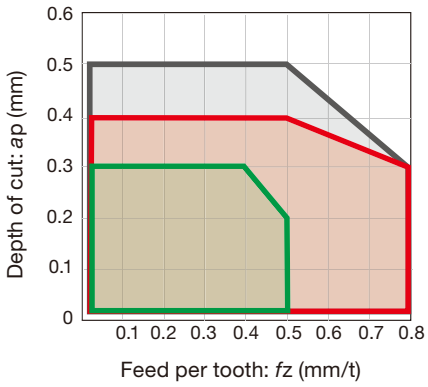
APPLICATION

LSMT02-HM



- For standard shanks in ≤ 3xD
- For long-neck shanks in ≥ 4xD
- For modular head shanks in ≥ 7xD

LSMT02-MM



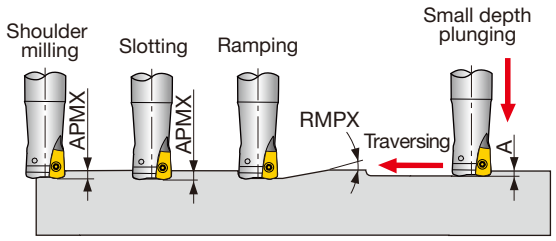
- For standard shanks in ≤ 3xD
- For long-neck shanks in ≥ 4xD
- For modular head shanks in ≥ 7xD

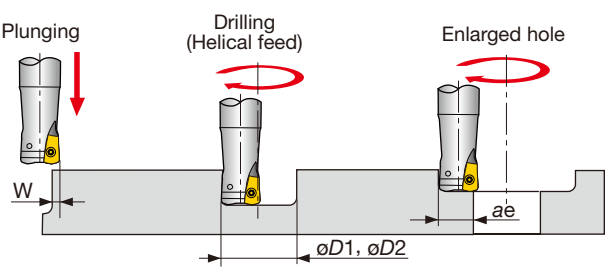
* When the DOC is 0.5 mm or more, the feed less than 0.15 mm/t is recommended.

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Carbon steels (S45C / C45, S55C / C55, etc)		- 300HB	First choice	AH3225	100 - 300	0.2 - 0.8
			- 300HB	Wear resistance	AH8015	100 - 300	0.2 - 0.8
	Alloy steels (SCM440 / 42CrMo4, etc)		- 300HB	First choice	AH3225	100 - 300	0.2 - 0.8
			- 300HB	Wear resistance	AH8015	100 - 300	0.2 - 0.8
	Prehardened steels (NAK80, PX5, etc)		30 - 40HRC	First choice	AH8015	100 - 200	0.2 - 0.5
			30 - 40HRC	Fracture resistance	AH3225	100 - 200	0.2 - 0.5
M	Stainless steels (SUS304 / X5CrNi18-9, SUS316 / X5CrNiMo17-12-3, etc)		- 200HB	First choice	AH3225	100 - 150	0.2 - 0.5
K	Gray cast irons (FC250 / 250 / GG25, FC300 / 300 / GG30, etc)		150 - 250HB	First choice	AH8015	100 - 300	0.2 - 0.8
			150 - 250HB	Fracture resistance	AH3225	100 - 300	0.2 - 0.8
	Ductile cast irons (FCD600 / 600-3 / GGG60, etc)		150 - 250HB	First choice	AH8015	80 - 200	0.2 - 0.8
			150 - 250HB	Fracture resistance	AH3225	80 - 200	0.2 - 0.8
S	Titanium alloy (Ti-6Al-4V, etc)		- 40HRC	First choice	AH3225	30 - 60	0.1 - 0.3
			- 40HRC	Wear resistance	AH8015	30 - 60	0.1 - 0.3
	Heat resistance alloy (Inconel, Hastelloy, etc)		- 40HRC	First choice	AH8015	20 - 50	0.1 - 0.3
			- 40HRC	Fracture resistance	AH3225	20 - 50	0.1 - 0.3
H	Hardened steel	SKD61 / X40CrMoV5-1, etc	40 - 50HRC	First choice	AH8015	80 - 150	0.1 - 0.5
		SKD11 / X153CrMoV12, etc	50~60HRC	First choice	AH8015	50 - 70	0.1 - 0.3

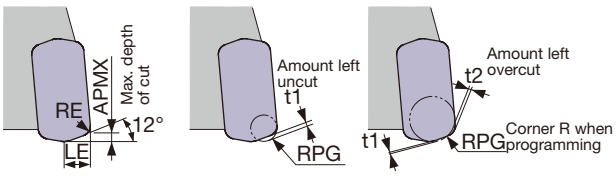
APPLICATION RANGE





Designation	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Max. cutting width in plunging W	Min. machining *øD1*	Max. machining *øD2*	Max. cutting width in enlarged hole ae
E/HXLS02M008…	8	0.5	4°	0.2	2	10	15	5.9
E/HXLS02M010…	10	0.5	3.3°	0.2	2	14	19	7.9
E/HXLS02M012…	12	0.5	2°	0.2	2	18	23	9.9
E/HXLS02M016…	16	0.5	1.3°	0.2	2	26	31	13.9

Tool geometry on programming



LSMT02...-HM

Corner R when programming: RPG	Amount left uncut t1 (mm)	Amount left overcut t2 (mm)
1.0 *Recommend	0.162	0
1.5	0.07	0.14
2	0	0.34

Tool dia.: ø*D*c (mm), Number of revolutions: *n* (min-1), Feed speed: *V*f (mm/min), Max. depth of cut: *a*p = 0.5 mm, Number of teeth: CICT

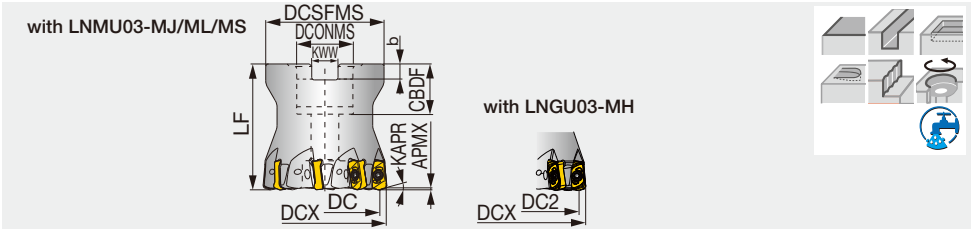
ø8, CICT = 1		ø10, CICT = 2		ø12			ø16		
n	*V*f	*n*	*V*f	*n*	*V*f		*n*	*V*f	
					CICT = 2	CICT = 3		CICT = 3	CICT = 5
7960	3980	6370	6370	5310	5310	7970	3980	5970	9950
				*V*c = 200 m/min, *f*z = 0.5 mm/t					
7960	3980	6370	6370	5310	5310	7970	3980	5970	9950
				*V*c = 200 m/min, *f*z = 0.5 mm/t					
5970	2390	4780	3820	3980	3180	4780	2990	3590	5980
				*V*c = 150 m/min, *f*z = 0.4 mm/t					
4780	1910	3820	3060	3190	2550	3830	2390	2870	4780
				*V*c = 120 m/min, *f*z = 0.4 mm/t					
7960	3980	6370	6370	5310	5310	7970	3980	5970	9950
				*V*c = 200 m/min, *f*z = 0.5 mm/t					
5970	2990	4780	4780	3980	3980	5970	2990	4490	7480
				*V*c = 150 m/min, *f*z = 0.5 mm/t					
1590	320	1270	510	1060	420	640	800	480	800
				*V*c = 40 m/min, *f*z = 0.2 mm/t					
1190	240	1000	400	800	320	480	600	360	600
				*V*c = 30 m/min, *f*z = 0.2 mm/t					
4780	1430	3820	2290	3190	1910	2870	2390	2150	3590
				*V*c = 120 m/min, *f*z = 0.3 mm/t					
2390	480	1910	760	1590	640	950	1190	710	1190
				*V*c = 60 m/min, *f*z = 0.2 mm/t					

DOFEED
TXN03

High feed mill, for 4-corner double sided inserts

GAMP = +6°,GAMF = +12° ~ 13°





Designation	APMX	DCX	CICT	DC	DC2	DCSFMS	DCONMS	CBDF	LF	b	KWW	KAPR	WT(kg)	Air hole	Insert
TXN03R040M16.0E05	1	40	5	33.6	33.6	35	16	18	40	5.6	8.4	17°	0.2	With	LN*U03...
TXN03R040M16.0E06	1	40	6	33.6	33.6	35	16	18	40	5.6	8.4	17°	0.2	With	LN*U03...
TXN03R050M22.0E05	1	50	5	43.6	43.6	47	22	20	50	6.3	10.4	17°	0.5	With	LN*U03...
TXN03R050M22.0E08	1	50	8	43.6	43.6	47	22	20	50	6.3	10.4	17°	0.5	With	LN*U03...
TXN03R050M22.2-08	1	50	8	43.6	43.6	47	22.225	20	50	5	8	17°	0.5	With	LN*U03...

SPARE PARTS

Designation	Clamping screw	Lubricant	Shell locking bolt	Wrench
TXN03R04...	CSPB-2.5	M-1000	CM8X30H	IP-8D
TXN03R05...	CSPB-2.5	M-1000	CM10X30H	IP-8D

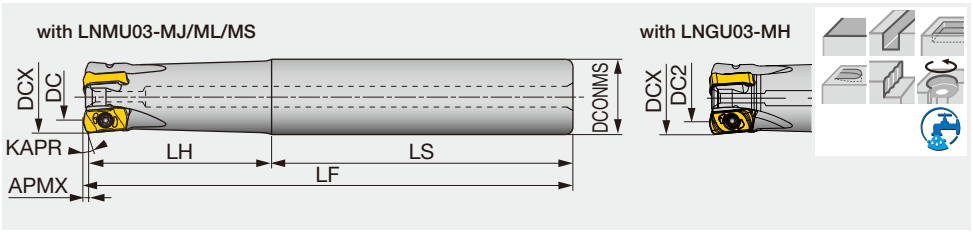
*Recommended clamping torque (N·m):CSPB-2.5=1.3

DOFEED
EXN03

High feed endmill, shank type, with center through coolant hole, for 4-corner double sided inserts

GAMP = +6°, GAMF = +5° ~ +11°





Designation	APMX	DCX	CICT	DC	DC2	DCONMS	LF	LH	LS	KAPR	WT(kg)	Air hole	Insert
EXN03R016M16.0-02	1	16	2	9.6	9.8	16	100	30	70	15°	0.2	With	LN*U03...
EXN03R016M16.0-02L	1	16	2	9.6	9.8	16	150	50	100	15°	0.2	With	LN*U03...
EXN03R018M16.0-02	1	18	2	11.5	11.7	16	100	30	70	17°	0.2	With	LN*U03...
EXN03R018M16.0-02L	1	18	2	11.5	11.7	16	150	25	125	17°	0.2	With	LN*U03...
EXN03R020M20.0-03	1	20	3	13.5	13.6	20	130	50	80	17°	0.3	With	LN*U03...
EXN03R020M20.0-03L	1	20	3	13.5	13.6	20	160	80	80	17°	0.3	With	LN*U03...
EXN03R020M20.0-04	1	20	4	13.5	13.6	20	130	50	80	17°	0.3	With	LN*U03...
EXN03R022M20.0-03	1	22	3	15.5	15.6	20	130	50	80	17°	0.3	With	LN*U03...
EXN03R022M20.0-03L	1	22	3	15.5	15.6	20	160	30	130	17°	0.4	With	LN*U03...
EXN03R022M20.0-04	1	22	4	15.5	15.6	20	130	50	80	17°	0.3	With	LN*U03...
EXN03R025M25.0-04	1	25	4	18.5	18.6	25	140	60	80	17°	0.5	With	LN*U03...
EXN03R025M25.0-04L	1	25	4	18.5	18.6	25	180	100	80	17°	0.6	With	LN*U03...
EXN03R025M25.0-05	1	25	5	18.5	18.6	25	140	60	80	17°	0.5	With	LN*U03...
EXN03R028M25.0-04	1	28	4	21.5	21.6	25	140	60	80	17°	0.5	With	LN*U03...
EXN03R028M25.0-04L	1	28	4	21.5	21.6	25	180	35	145	17°	0.7	With	LN*U03...
EXN03R028M25.0-05	1	28	5	21.5	21.6	25	140	60	80	17°	0.5	With	LN*U03...
EXN03R030M32.0-04	1	30	4	23.5	23.6	32	150	70	80	17°	0.8	With	LN*U03...
EXN03R030M32.0-04L	1	30	4	23.5	23.6	32	200	120	80	17°	0.9	With	LN*U03...
EXN03R030M32.0-05	1	30	5	23.5	23.6	32	150	70	80	17°	0.8	With	LN*U03...
EXN03R032M32.0-05	1	32	5	25.5	25.6	32	150	70	80	17°	0.8	With	LN*U03...
EXN03R032M32.0-05L	1	32	5	25.5	25.6	32	200	120	80	17°	1.1	With	LN*U03...
EXN03R032M32.0-06	1	32	6	25.5	25.6	32	150	70	80	17°	0.9	With	LN*U03...
EXN03R035M32.0-05	1	35	5	28.5	28.6	32	150	35	115	17°	0.9	With	LN*U03...
EXN03R035M32.0-05L	1	35	5	28.5	28.6	32	200	35	165	17°	1.2	With	LN*U03...
EXN03R035M32.0-06	1	35	6	28.5	28.6	32	150	35	115	17°	0.9	With	LN*U03...

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
EXN03...	CSPB-2.5	M-1000	IP-8D

*Recommended clamping torque (N·m):CSPB-2.5=1.3

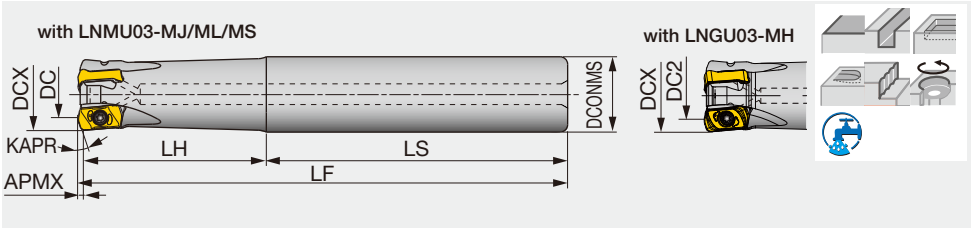
Reference pages: Inserts → H027, Standard cutting conditions → H028 - H029

DOFEED
EXN03-C

High feed endmill, shank type, with coolant directly to the tool tips, for 4-corner double sided inserts

GAMP = +6°,GAMF = +5° ~ +11°





Designation	APMX		CICT	DC	DC2	DCONMS	LF	LH	LS	KAPR	WT(kg)	Air hole	Insert
EXN03R016M16.0-02-C	1	16	2	9.6	9.8	16	100	30	70	15°	0.2	With	LN*U03...
EXN03R016M16.0-02L-C	1	16	2	9.6	9.8	16	150	50	100	15°	0.2	With	LN*U03...
EXN03R020M20.0-03-C	1	20	3	13.5	13.6	20	130	50	80	17°	0.3	With	LN*U03...
EXN03R020M20.0-03L-C	1	20	3	13.5	13.6	20	160	80	80	17°	0.3	With	LN*U03...
EXN03R020M20.0-04-C	1	20	4	13.5	13.6	20	130	50	80	17°	0.3	With	LN*U03...
EXN03R025M25.0-04-C	1	25	4	18.5	18.6	25	140	60	80	17°	0.5	With	LN*U03...
EXN03R025M25.0-04L-C	1	25	4	18.5	18.6	25	180	100	80	17°	0.6	With	LN*U03...
EXN03R025M25.0-05-C	1	25	5	18.5	18.6	25	130	60	80	17°	0.5	With	LN*U03...
EXN03R032M32.0-05-C	1	32	5	25.5	25.6	32	150	70	80	17°	0.8	With	LN*U03...
EXN03R032M32.0-05L-C	1	32	5	25.5	25.6	32	200	120	80	17°	1.1	With	LN*U03...
EXN03R032M32.0-06-C	1	32	6	25.5	25.6	32	150	70	80	17°	0.8	With	LN*U03...
EXN03R040M32.0-06-C	1	40	6	33.6	33.7	32	150	45	105	17°	1	With	LN*U03...
EXN03R040M32.0-06L-C	1	40	6	33.6	33.7	32	220	45	175	17°	1.4	With	LN*U03...

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
EXN03...	CSPB-2.5	M-1000	IP-8D

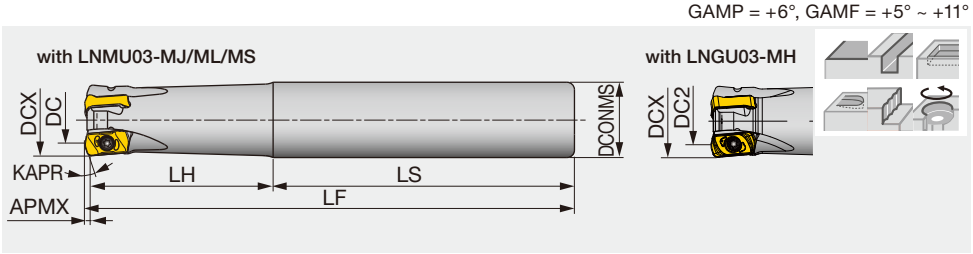
*Recommended clamping torque (N·m):CSPB-2.5=1.3

DOFEED
EXN03-N

High feed endmill (Eco), shank type, for double sided inserts

GAMP = +6°, GAMF = +5° ~ +11°





Designation	APMX	DCX	CICT	DC	DC2	DCONMS	LF	LH	LS	KAPR	WT (kg)	Air hole	Insert
EXN03R016M16.0-02N	1	16	2	9.6	9.8	16	100	30	70	15°	0.2	Without	LN*U03...
EXN03R020M20.0-03N	1	20	3	13.5	13.6	20	130	50	80	17°	0.3	Without	LN*U03...
EXN03R025M25.0-04N	1	25	4	18.5	18.6	25	140	60	80	17°	0.5	Without	LN*U03...
EXN03R032M32.0-05N	1	32	5	25.5	25.6	32	150	70	80	17°	0.8	Without	LN*U03...

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
EXN03...	CSPB-2.5	M-1000	IP-8D

*Recommended clamping torque (N·m):CSPB-2.5=1.3

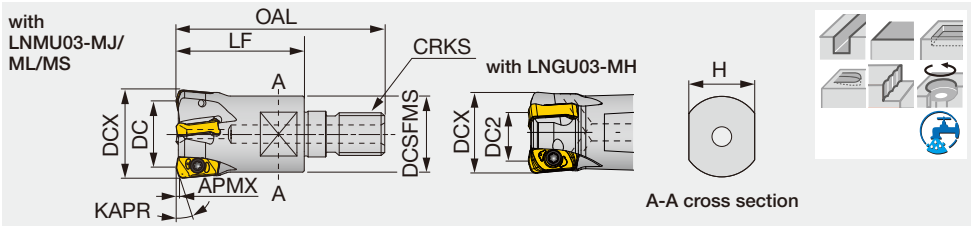
Reference pages: Inserts → H027, Standard cutting conditions → H028 - H029

DOFEED
HXN03

High feed endmill, modular type, with center through coolant hole (TungFlex)

GAMP= +6°,GAMF= +5° ~ +11°





Designation	APMX	DCX	CICT	DC	DC2	OAL	LF	H	DCSFMS	KAPR	CRKS	WT(kg)	Air hole	Insert
HXN03R016MM08-02	1	16	2	9.6	9.8	42	25	10	12.8	15°	M8	0.03	With	LN*U03...
HXN03R018MM08-02	1	18	2	11.5	11.7	42	25	10	14.5	17°	M8	0.04	With	LN*U03...
HXN03R020MM10-03	1	20	3	13.5	13.6	49	30	15	17.8	17°	M10	0.06	With	LN*U03...
HXN03R020MM10-04	1	20	4	13.5	13.6	49	30	15	17.8	17°	M10	0.06	With	LN*U03...
HXN03R022MM10-03	1	22	3	15.5	15.6	49	30	15	17.8	17°	M10	0.06	With	LN*U03...
HXN03R022MM10-04	1	22	4	15.5	15.6	49	30	15	17.8	17°	M10	0.07	With	LN*U03...
HXN03R025MM12-04	1	25	4	18.5	18.6	57	35	17	20.8	17°	M12	0.1	With	LN*U03...
HXN03R025MM12-05	1	25	5	18.5	18.6	57	35	17	20.8	17°	M12	0.11	With	LN*U03...
HXN03R028MM12-04	1	28	4	21.5	21.6	57	35	17	23	17°	M12	0.12	With	LN*U03...
HXN03R028MM12-05	1	28	5	21.5	21.6	57	35	17	23	17°	M12	0.12	With	LN*U03...
HXN03R030MM16-04	1	30	4	23.5	23.6	63	40	22	28.8	17°	M16	0.19	With	LN*U03...
HXN03R030MM16-05	1	30	5	23.5	23.6	63	40	22	28.8	17°	M16	0.2	With	LN*U03...
HXN03R032MM16-05	1	32	5	25.5	25.6	63	40	22	28.8	17°	M16	0.2	With	LN*U03...
HXN03R032MM16-06	1	32	6	25.5	25.6	63	40	22	28.8	17°	M16	0.21	With	LN*U03...

Please see the page **H208** for TungFlex modular shank.

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
HXN03...	CSPB-2.5	M-1000	IP-8D

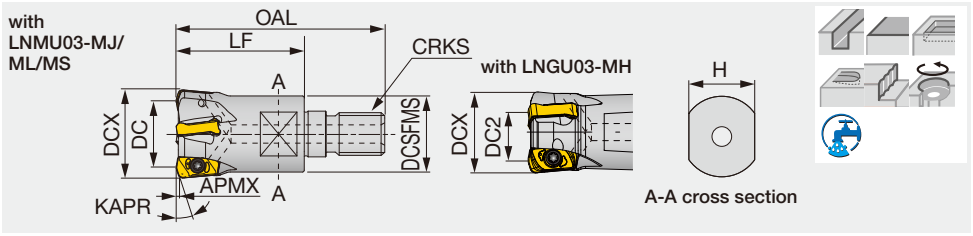
*Recommended clamping torque (N·m):CSPB-2.5=1.3

DOFEED
HXN03-C

High feed endmill, modular type, with coolant directly to the tool tips (TungFlex)

GAMP= +6°,GAMF= +5° ~ +11°





Designation	APMX		CICT	DC	DC2	OAL	LF	H	DCSFMS	KAPR	CRKS	WT(kg)	Air hole	Insert
HXN03R016MM08-02-C	1	16	2	9.6	9.8	42	25	10	12.8	15°	M8	0.03	With	LN*U03...
HXN03R020MM10-03-C	1	20	3	13.5	13.6	49	30	15	17.8	17°	M10	0.06	With	LN*U03...
HXN03R020MM10-04-C	1	20	4	13.5	13.6	49	30	15	17.8	17°	M10	0.06	With	LN*U03...
HXN03R025MM12-04-C	1	25	4	18.5	18.6	57	35	17	20.8	17°	M12	0.1	With	LN*U03...
HXN03R025MM12-05-C	1	25	5	18.5	18.6	57	35	17	20.8	17°	M12	0.1	With	LN*U03...
HXN03R032MM16-05-C	1	32	5	25.5	25.6	63	40	22	28.8	17°	M16	0.2	With	LN*U03...
HXN03R032MM16-06-C	1	32	6	25.5	25.6	63	40	22	28.8	17°	M16	0.2	With	LN*U03...
HXN03R040MM16-06-C	1	40	6	33.6	33.7	63	40	22	28.8	17°	M16	0.27	With	LN*U03...

Please see the page **H206** for TungFlex modular shank.

SPARE PARTS

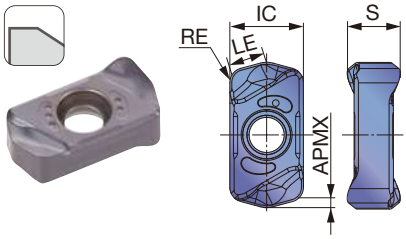
Designation	Clamping screw	Lubricant	Wrench
HXN03...	CSPB-2.5	M-1000	IP-8D

*Recommended clamping torque (N·m):CSPB-2.5=1.3

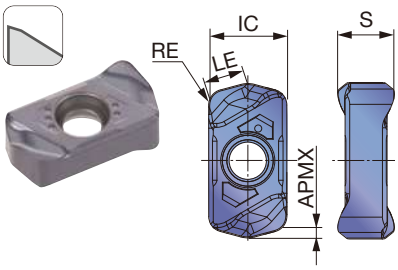
Reference pages: Inserts → H027, Standard cutting conditions → H028 - H029, TungFlex → H208

INSERT

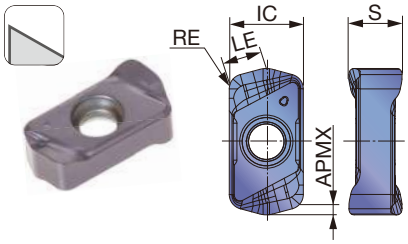
LNMU03-MJ (General purpose)



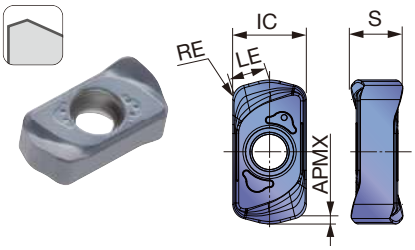
LNMU03-ML (Low cutting force)



LNMU03-MS (For stainless steel)



LNGU03-MH (Reinforced cutting edge)



P	Steel		☆	★	☆		
M	Stainless	☆		★			
K	Cast iron		★		☆		
N	Non-ferrous						
S	Superalloys	★	☆				
H	Hard materials		☆		★	★	

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated					LE	IC	S
			AH130	AH725	AH3035	AH8015	AH8005			
LNMU0303ZER-MJ	1.2	1	●	●	●	●		3.2	6	4.3
LNMU0303ZER-ML	1.2	1	●	●	●	●		3.2	6	4.3
LNMU0303ZER-MS	1.2	1	●					3.2	6	4.3
LNGU0303ZER-MH	1.2	1				●	●	3.2	6	4.3

●: Line up

STANDARD CUTTING CONDITIONS TXN03/EXN03/HXN03

ISO	Workpiece material	Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (m/min)	Feed per tooth: *fz* (mm/t) Tool dia.: DCX (mm) ø16 ~ ø22	ø25 ~ ø50	Plunging	ø16, CICT = 2 *n*	ø16, CICT = 2 *Vf*	ø18, CICT = 2 *n*	ø18, CICT = 2 *Vf*	ø20 *n*	ø20 *Vf* CICT = 3	ø20 *Vf* CICT = 4
P	Carbon steels (C45, C55, etc.)	~ 300HB	First choice	AH3035	MJ	100 - 300	0.5 -1.2	0.5 - 1.5	0.1	3,980	6,370	3,540	5,660	3,180	7,630	10,180
			Wear resistance	AH8015	MJ					*Vc* = 200 m/min, *fz* = 0.8 mm/t						
	Alloy steels (42CrMo4, 17Cr3, etc.)	~ 300HB	First choice	AH3035	MJ	100 - 300	0.5 -1.2	0.5 - 1.5	0.1	3,980	6,370	3,540	5,660	3,180	7,630	10,180
			Wear resistance	AH8015	MJ					*Vc* = 200 m/min, *fz* = 0.8 mm/t						
	Prehardened steels (NAK80, PX5, etc.)	30 ~ 40HRC	First choice	AH3035	ML	100 - 200	0.5 - 1.0	0.5 - 1.0	0.1	2,980	4,170	2,650	3,710	2,390	5,020	6,690
										Vc = 150 m/min, *fz* = 0.7 mm/t						
		30 ~ 40HRC	Fracture resistance	AH3035	MJ	100 - 200	0.5 - 1.2	0.5 - 1.5	0.1	2,980	4,770	2,650	4,240	2,390	5,740	7,650
										Vc = 150 m/min, *fz* = 0.8 mm/t						
		30 ~ 40HRC	Wear resistance	AH8015	ML	100 - 200	0.5 - 1.0	0.5 - 1.0	0.1	2,980	4,170	2,650	3,710	2,390	5,020	6,690
										Vc = 150 m/min, *fz* = 0.7 mm/t						
M	Stainless steels (X5CrNi18-10, X5CrNiMo17-12-2, etc.)	~ 200HB	First choice	AH130	MS	80 - 150	0.3 - 0.8	0.3 - 0.8	0.1	2,390	2,390	2,120	2,120	1,910	2,860	3,820
			Wear resistance	AH3035	ML											
			Fracture resistance	AH3035	MJ					*Vc* = 120 m/min, *fz* = 0.5 mm/t						
	Martensitic stainless steel and precipitation hardening stainless steel (X20Cr13, X5CrNiCuNb16-4)	~ 40HRC	First choice	AH3035	MJ	80 - 120	0.1 - 0.3	0.1 - 0.3	0.1	1,990	800	1,770	710	1590	950	1,270
										Vc = 100 m/min, *fz* = 0.2 mm/t						
			Fracture resistance	AH8015	MH		0.1 - 0.5	0.1 - 0.5	0.1	1,990	1,190	1,770	1,060	1590	1,430	1,910
										Vc = 100 m/min, *fz* = 0.3 mm/t						
K	Gray cast irons (GG25, GG30, etc.)	150 ~ 250HB	First choice	AH725	MJ	100 - 300	0.5 - 1.2	0.5 - 1.5	0.1	3,980	6,370	3,540	5,660	3,180	7,630	10,180
										Vc = 200 m/min, *fz* = 0.8 mm/t						
		150 ~ 250HB	Wear resistance	AH8015	MJ	100 - 300	0.5 - 0.7	0.5 - 1.0	0.1	3,980	4,780	3,540	4,250	3,180	5,720	7,630
										Vc = 200 m/min, *fz* = 0.6 mm/t						
	Ductile cast irons (GGG40, etc.)	150 ~ 250HB	First choice	AH725	MJ	80 - 200	0.5 - 1.2	0.5 - 1.5	0.1	2,980	4,770	2,650	4,240	2,390	5,740	7,650
			Wear resistance	AH8015	MJ					*Vc* = 150 m/min, *fz* = 0.8 mm/t						
S	Titanium alloy (Ti-6Al-4V, etc.)	~ 40HRC	First choice	AH130	ML	30 - 60	0.3 - 0.7	0.3 - 0.7	0.08	800	640	710	570	640	770	1,020
			Fracture resistance	AH130	MJ					*Vc* = 40 m/min, *fz* = 0.4 mm/t						
	Heat-resistance alloy (Inconel, Hasteroy, etc.)	~ 40HRC	First choice	AH725	ML	20 - 50	0.1 - 0.3	0.1 - 0.3	0.05	600	240	530	210	480	290	380
			Fracture resistance	AH725	MJ					*Vc* = 30 m/min, *fz* = 0.2 mm/t						
H	Hot mold steel (X40CrMoV5-1, etc.)	40 ~ 55HRC	First choice	AH8015	MH	80 - 150	0.1 - 0.5	0.1 - 0.5	0.05	2,390	1,430	2,120	1,270	1,910	1,720	2,290
			Low resistance	AH8015	MJ					*Vc* = 120 m/min, *fz* = 0.3 mm/t						
	Hot mold steel of D.T.C materials (DAC**, DH**, DIEVER, etc)	40 ~ 55HRC	First choice	AH8015	MJ	50-100	0.1 - 0.3	0.1 - 0.3	0.05	1,590	640	1,420	570	1,270	760	1,020
			Fracture resistance	AH8015	MH					*Vc* = 80 m/min, *fz* = 0.2mm/t						
	Cold mold steel (X153CrMoV12, etc.)	55~ 60HRC	First choice	AH8005	MH	50 - 70	0.05 - 0.2	0.03 - 0.1	0.03	1,190	290	1,060	250	950	340	450
										Vc = 60 m/min, *fz* = 0.12 mm/t						
		55 ~ 60HRC	Fracture resistance	AH8015	MH	50 - 70	0.03 - 0.1	0.05 - 0.2	0.03	1,190	150	1,060	130	950	170	230
										Vc = 60 m/min, *fz* = 0.06 mm/t						

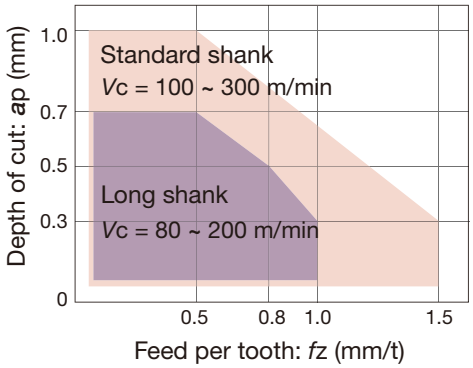
- When chips stay in the cutting zone during slotting or pocketing, use air blast to remove chips from the work area.

- Tool overhang length must be as short as possible to avoid chatter. When the tool overhang length is long, decrease the number of revolutions and feed.

Cautionary points in use

The use of a standard or long shank

When using a long shank, please lower the cutting conditions (Vc, fz, ap) to 70% of the maximum conditions for the standard shank.

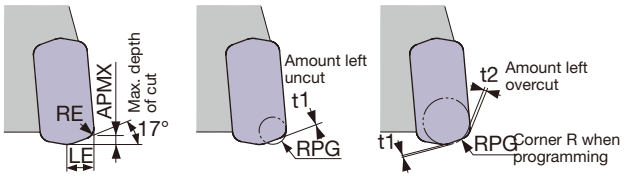


Tool dia.: DCX = ø16 ~ 35 mm
Workpeice: S55C / C55 (200HB)

L/D ratio of overhang
Standard shank: L/D ≤ 3
Long shank: L/D = 4

Tool geometry on programming

When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set as R = 1.5 mm. If a larger radius is used, overcutting will occur. The following table shows the amount left uncut (t1) and overcut (t2).



LNMU03-MJ/ML

Max. depth of cut APMX (mm)	Corner radius RE	LE (mm)	Corner R when programming: RPG	Amount left uncut t1 (mm)	Amount left overcut t2 (mm)
1.0	1.2	3.0	1.0	0.6	-
1.0	1.2	3.0	1.5	0.5	-
1.0	1.2	3.0	2.0	0.25	0.08
1.0	1.2	3.0	2.5	0.14	0.26

LNGU03-MH

Max. depth of cut APMX (mm)	Corner radius RE (mm)	LE (mm)	Corner R when programming: RPG	Amount left uncut t1 (mm)	Amount left overcut t2 (mm)
1.0	1.2	3.0	1.0	0.45	-
1.0	1.2	3.0	1.5	0.35	-
1.0	1.2	3.0	2.0	0.2	0.1
1.0	1.2	3.0	2.5	0.08	0.29

Each value in table is calculated theoretically at the maximum condition.

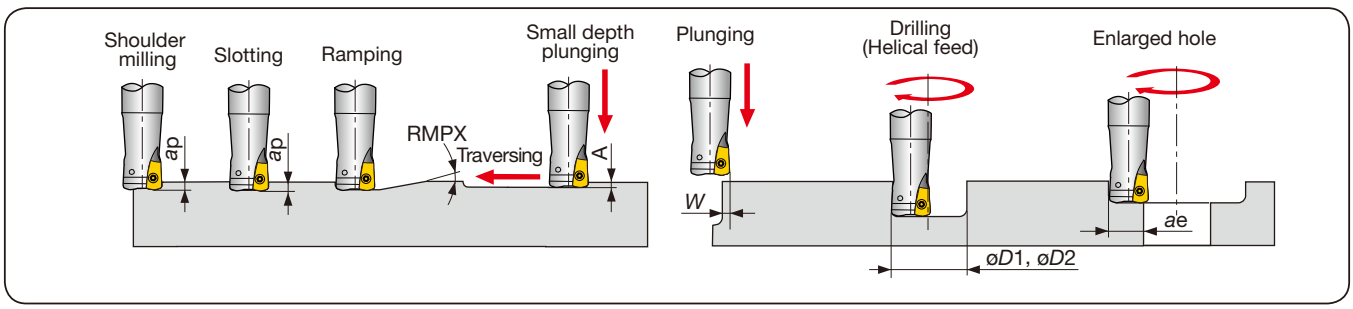
Tool dia.: øDc (mm), Number of revolutions: *n* (min^{-1}), Feed speed: *Vf* (mm/min), Max. depth of cut: *ap* = 1.0 mm

ø22			ø25			ø28			ø30			ø32			ø35			ø40			ø50		
n	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*	
	CICT=3	CICT=4		CICT=4	CICT=5		CICT=4	CICT=5		CICT=4	CICT=5		CICT=5	CICT=6		CICT=5	CICT=6		CICT=5	CICT=6		CICT=5	CICT=8
2,890	6,940	9,250	2,550	8,160	10,180	2,270	7,280	9,100	2,120	8,480	10,600	1,990	9,950	11,940	1,820	9,100	10,920	1,590	7,950	9,540	1,270	6,350	10,160
Vc = 200 m/min, *fz* = 1.0 mm/t																							
2,890	6,940	9,250	2,550	8,160	10,180	2,270	7,280	9,100	2,120	8,480	10,600	1,990	9,950	11,940	1,820	9,100	10,920	1,590	7,950	9,540	1,270	6,350	10,160
Vc = 200 m/min, *fz* = 1.0 mm/t																							
2,170	4,560	6,080	1,910	5,350	6,690	1,710	4,790	5,990	1,590	4,450	5,570	1,490	5,220	6,260	1,360	4,760	5,710	1,190	4,170	5,000	950	3,330	5,320
Vc = 150 m/min, *fz* = 0.7 mm/t																							
2,170	5,210	6,940	1,910	7,640	9,550	1,710	6,840	8,550	1,590	6,360	7,950	1,490	7,450	8,940	1,360	6,800	8,160	1,190	5,950	7,140	950	4,750	7,600
Vc = 150 m/min, *fz* = 1.0 mm/t																							
2,170	4,560	6,080	1,910	5,350	6,690	1,710	4,790	5,990	1,590	4,450	5,570	1,490	5,220	6,260	1,360	4,760	5,710	1,190	4,170	5,000	950	3,330	5,320
Vc = 150 m/min, *fz* = 0.7 mm/t																							
3,180	4,770	6,360	1,530	3,060	3,820	1,360	2,720	3,400	1,270	2,540	3,180	1,190	2,980	3,570	1,090	2,720	3,270	960	2.400	2,880	760	1.900	2,280
Vc = 120 m/min, *fz* = 0.5 mm/t																							
1,450	870	1,160	1,270	1,020	1,270	1,140	910	1,140	1,060	850	1,060	1,000	1,000	1,200	910	910	1,090	800	800	960	640	640	1,020
Vc = 100 m/min, *fz* = 0.2 mm/t																							
1,450	1,300	1,740	1,270	1,520	1,910	1,140	1.370	1,710	1,060	1,270	1,590	1,000	1,500	1,800	910	1,370	1,640	800	1,200	1,440	640	960	1,530
Vc = 100 m/min, *fz* = 0.3 mm/t																							
2,890	6,940	9,250	2,550	8,160	10,180	2,270	7,280	9,100	2,120	8,480	10,600	1,990	9,950	11,940	1,820	9,100	10,920	1,590	7,950	9,540	1,270	6,350	10,160
Vc = 200 m/min, *fz* = 1.0 mm/t																							
2,890	5,200	6,940	2,550	6,110	7,640	2,270	5,460	6,820	2,120	6,780	8,480	1,990	7,960	9,550	1,820	7,280	8,740	1,590	6,360	7,630	1,270	5,080	8,130
Vc = 200 m/min, *fz* = 0.8 mm/t																							
2,170	5,210	6,940	1,910	6,110	7,640	1,710	5,460	6,820	1,590	6,360	7,950	1,490	7,450	8,940	1,360	6,800	8,160	1,190	5,950	7,140	950	4,750	5,700
Vc = 150 m/min, *fz* = 1.0 mm/t																							
580	700	930	510	820	1,020	450	730	910	420	840	1,050	400	1,000	1,200	360	900	1,080	320	800	960	250	630	1,000
Vc = 40 m/min, *fz* = 0.5 mm/t																							
430	260	340	380	230	290	340	200	260	320	260	320	300	300	360	270	270	320	240	240	290	190	190	300
Vc = 30 m/min, *fz* = 0.2 mm/t																							
1,740	1,570	2,090	1,530	1,840	2,300	1,360	1,630	2,040	1,270	1,520	1,910	1,190	1,790	2,140	1,090	1,640	1,960	950	1,430	1,710	760	1,140	1,820
Vc = 120 m/min, *fz* = 0.3 mm/t																							
1,160	700	930	1,020	820	1,020	910	730	910	850	680	850	800	800	960	730	730	880	640	640	770	510	510	820
Vc = 80 m/min, *fz* = 0.2mm/t																							
870	310	420	760	300	380	680	270	340	640	260	320	600	300	360	550	230	340	480	240	280	380	200	300
Vc = 60 m/min, *fz* = 0.1 mm/t																							
870	160	210	760	150	190	680	140	170	640	130	160	600	150	180	550	120	170	480	120	140	380	100	150
Vc = 60 m/min, *fz* = 0.06 mm/t																							

- The above table shows the conditions for standard shank type cutters. When using long shank type cutters, the number of teeth may be different. In this case, the cutting conditions should be changed by referring to: "The usage of standard and long shanks" shown in previous page.

- Cutting conditions are generally limited by the rigidity and power of the machine and the rigidity of the workpiece. When setting the conditions, start from half of the values of the standard cutting conditions and then increase the value gradually while making sure the machine is running normally.

Applications



Designation	Tool dia. DCX	Max. depth of cut APMX	Max. ramping angle RMPX		Max. plunging depth A	Max. cutting width in plunging *W*		Min.machinable hole dia. *øD1*		Max.machinable hole dia. *øD2*	Max. cutting width in enlarged hole *ae*
			MJ/ML/MS	MH		MJ/ML/MS	MH	MJ/ML/MS	MH		
E/HXN03R016M...	ø16	1	2.1°	1.7°	0.3	3.5	3	22	23	30	12.5
E/HXN03R018M...	ø18	1	1.7°	1.6°	0.3	3.5	3	26	27	34	14.5
E/HXN03R020M...	ø20	1	1.4°	1.3°	0.3	3.5	3	30	31	38	16.5
E/HXN03R022M...	ø22	1	1.2°	1.1°	0.3	3.5	3	34	35	42	18.5
E/HXN03R025M...	ø25	1	1.0°	0.9°	0.3	3.5	3	40	41	48	21.5
E/HXN03R028M...	ø28	1	0.8°	0.8°	0.3	3.5	3	46	46	54	24.5
E/HXN03R030M...	ø30	1	0.7°	0.7°	0.3	3.5	3	50	50	58	26.5
E/HXN03R032M...	ø32	1	0.7°	0.7°	0.3	3.5	3	54	54	62	28.5
EXN03R035M...	ø35	1	0.6°	0.6°	0.3	3.5	3	60	60	68	31.5
E/H/TXN03R040M...	ø40	1	0.5°	0.5°	0.3	3.5	3	70	70	78	36.5
TXN03R050M...	ø50	1	0.4°	0.4°	0.3	3.5	3	90	90	98	46.5

· For *øDc* above ø33 mm, slot milling, ramping or contouring is not recommended as chips may be re-cut

DOFEED
TXN06

High feed mill, for 4-corner double sided inserts

GAMP = +10°, GAMF = +2° ~ +6°



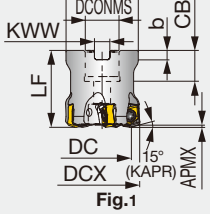
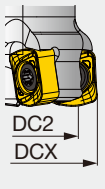


Fig.1



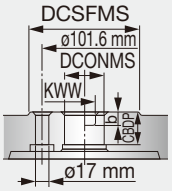


Fig.2

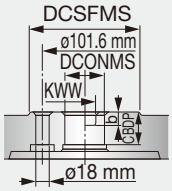


Fig.3



Designation	APMX	DCX	CICT	DC	DC2	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert	Fig.
TXN06R050M22.0E04	1.5	50	4	37.6	36.9	47	50	22	20	10.4	6.3	0.4	With	LN*U06...	1
TXN06R050M22.0E05	1.5	50	5	37.6	36.9	47	50	22	20	10.4	6.3	0.4	With	LN*U06...	1
TXN06R050M22.2-04	1.5	50	4	37.6	36.9	47	50	22.225	20	8	5	0.4	With	LN*U06...	1
TXN06R050M22.2-05	1.5	50	5	37.6	36.9	47	50	22.225	20	8	5	0.4	With	LN*U06...	1
TXN06R052M22.0E04	1.5	52	4	39.6	38.9	49	50	22	20	10.4	6.3	0.5	With	LN*U06...	1
TXN06R052M22.0E05	1.5	52	5	39.6	38.9	49	50	22	20	10.4	6.3	0.5	With	LN*U06...	1
TXN06R063M22.0E04	1.5	63	4	50.6	49.8	59	50	22	20	10.4	6.3	0.8	With	LN*U06...	1
TXN06R063M22.0E06	1.5	63	6	50.6	49.8	59	50	22	20	10.4	6.3	0.8	With	LN*U06...	1
TXN06R063M22.2-04	1.5	63	4	50.6	49.8	59	50	22.225	20	8	5	0.8	With	LN*U06...	1
TXN06R063M22.2-06	1.5	63	6	50.6	49.8	59	50	22.225	20	8	5	0.8	With	LN*U06...	1
TXN06R066M27.0E04	1.5	66	4	53.6	52.8	63	50	27	22	12.4	7	0.8	With	LN*U06...	1
TXN06R066M27.0E06	1.5	66	6	53.6	52.8	63	50	27	22	12.4	7	0.8	With	LN*U06...	1
TXN06R080M27.0E05	1.5	80	5	67.6	66.8	76	63	27	22	12.4	7	1.6	With	LN*U06...	1
TXN06R080M27.0EE05	1.5	80	5	67.6	66.8	60	63	27	22	12.4	7	1.2	With	LN*U06...	1
TXN06R080M27.0E08	1.5	80	8	67.6	66.8	76	63	27	22	12.4	7	1.6	With	LN*U06...	1
TXN06R080M27.0EE08	1.5	80	8	67.6	66.8	60	63	27	22	12.4	7	1.2	With	LN*U06...	1
TXN06R080M31.7-05	1.5	80	5	67.6	66.8	76	63	31.75	32	12.7	8	1.6	With	LN*U06...	1
TXN06R080M31.7-08	1.5	80	8	67.6	66.8	76	63	31.75	32	12.7	8	1.6	With	LN*U06...	1
TXN06R100M31.7-06	1.5	100	6	87.6	86.8	96	63	31.75	32	12.7	8	2.2	With	LN*U06...	1
TXN06R100M32.0E06	1.5	100	6	87.6	86.8	96	63	32	25	14.4	8	2.2	With	LN*U06...	1
TXN06R125M38.1-08	1.5	125	8	112.6	111.8	100	63	38.1	43	15.9	10	3	With	LN*U06...	1
TXN06R125M40.0E08	1.5	125	8	112.6	111.8	100	63	40	37	16.4	9	3	With	LN*U06...	1
TXN06R160M40.0E10	1.5	160	10	147.6	146.8	100	63	40	37	16.4	9	5	With	LN*U06...	1
TXN06R160M50.8-10	1.5	160	10	147.6	146.8	100	63	50.8	46	19	11	4.6	With	LN*U06...	1
TXN06R200M47.6-12	1.5	200	12	187.6	186.8	130	63	47.625	38	25.4	14	7.7	Without	LN*U06...	2
TXN06R200M60.0E12	1.5	200	12	187.6	186.8	130	63	60	38	25.7	14	7.2	Without	LN*U06...	3

SPARE PARTS








Designation	Clamping screw	Grip	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Torx bit
TXN06R050M22.0...	CSPB-5	H-TB2W	M-1000	-	FSHM10-40H	BLDIP20/S7
TXN06R050M22.2-04	CSPB-5	H-TB2W	M-1000	-	CM10-30H	BLDIP20/S7
TXN06R050M22.2-05, TXN06R052M22.0...	CSPB-5	H-TB2W	M-1000	-	FSHM10-40H	BLDIP20/S7
TXN06R063M...	CSPB-5	H-TB2W	M-1000	-	CM10X30H	BLDIP20/S7
TXN06R066,080M27.0...	CSPB-5	H-TB2W	M-1000	-	CM12X30H	BLDIP20/S7
TXN06R080,100M31.7...	CSPB-5	H-TB2W	M-1000	-	CM16X40H	BLDIP20/S7
TXN06R125M...	CSPB-5	H-TB2W	M-1000	TMBA-M20H	-	BLDIP20/S7
TXN06R160M40.0...	CSPB-5	H-TB2W	M-1000	TMBA-M20H	-	BLDIP20/M7
TXN06R160M50.8...	CSPB-5	H-TB2W	M-1000	TMBA-M24H	-	BLDIP20/M7
TXN06R200M...	CSPB-5	H-TB2W	M-1000	-	-	BLDIP20/M7

*Recommended clamping torque (N·m):CSPB-5=5

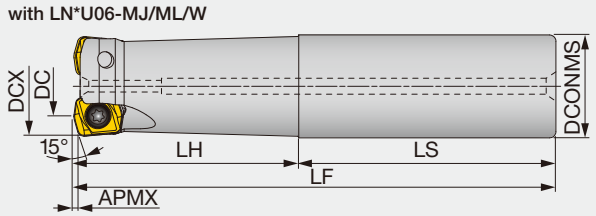
Reference pages: Inserts → H031, Standard cutting conditions → H032 - H033

EXN06

High feed endmill, shank type, for 4-corner double sided inserts

GAMP=+10°,GAMF= -2°~+6°





Designation	APMX	DCX	CICT	DC	DC2	DCONMS	LF	LH	LS	WT(kg)	Air hole	Insert
EXN06R032M32.0-02	1.5	32	2	19.7	19.1	32	150	70	80	0.8	With	LN*U06...
EXN06R032M32.0-02L	1.5	32	2	19.7	19.1	32	200	120	80	1.1	With	LN*U06...
EXN06R035M32.0-02	1.5	35	2	22.7	22	32	150	45	105	0.9	With	LN*U06...
EXN06R035M32.0-02L	1.5	35	2	22.7	22	32	200	45	155	1.2	With	LN*U06...
EXN06R040M32.0-03	1.5	40	3	27.7	27	32	150	45	105	0.9	With	LN*U06...
EXN06R040M32.0-03L	1.5	40	3	27.7	27	32	220	45	175	1.3	With	LN*U06...

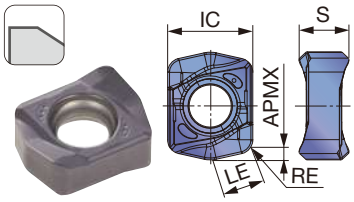
SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
EXN06	CSPB-5	M-1000	IP-20D

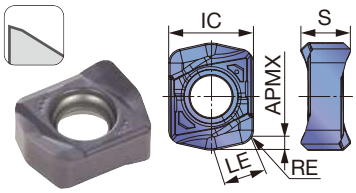
*Recommended clamping torque (N·m):CSPB-5=5

INSERT

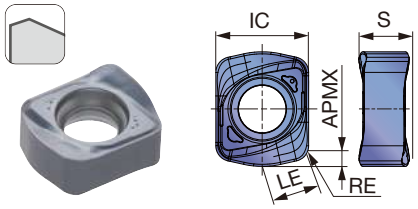
LNMU06-MJ



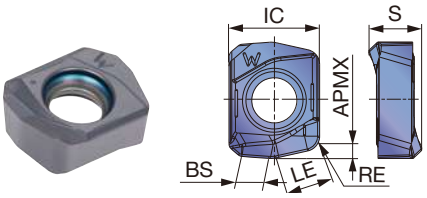
LNMU06-ML



LNGU06-MH



LNGU06-W (2 corners)



P	Steel			☆	★	☆	
M	Stainless		☆		★		
K	Cast iron	★		☆		☆	
N	Non-ferrous						
S	Superalloys		★	☆			
H	Hard materials			☆		★	★

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	AH130	AH725	AH3035	AH8015	AH8005	LE	IC	S	BS
LNMU06X5ZER-MJ	2	1.5	●	●	●	●	●		6	12	7	-
LNMU06X5ZER-ML	2	1.5	●	●	●	●	●		6	12	7	-
LNGU06X5ZER-MH	2	1.5					●	●	6	12	7	-
LNGU06X5ZER-W	2	1.5			●				6	12	7	3.6

●: Line up

Reference pages: Standard cutting conditions → H032 - H033

STANDARD CUTTING CONDITIONS TXN06 / EXN06

ISO	Workpiece material	Hardness	Priority	Grades	Chip-breaker	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t) Tool dia: DCX (mm) ø32 ~ ø200	Feed when plunging *fz* (mm/t)	ø32, CICT = 2 *n*	ø32, CICT = 2 *Vf*	ø35, CICT = 2 *n*	ø35, CICT = 2 *Vf*	ø40, CICT = 3 *n*	ø40, CICT = 3 *Vf*
P	Carbon steels (C45, C55, etc.)	~ 300HB	First choice	AH3035	MJ	100 - 300	0.5 - 1.5	0.15	1,990	3,980	1,820	3,640	1,590	4,770
			Wear resistance	AH8015	MJ				*Vc* = 200 m/min, *fz* = 1.0 mm/t					
	Alloy steels (42CrMo4, 17Cr3, etc.)	~ 300HB	First choice	AH3035	MJ	100 - 300	0.5 - 1.5	0.15	1,990	3,980	1,820	3,640	1,590	4,770
			Wear resistance	AH8015	MJ				*Vc* = 200 m/min, *fz* = 1.0 mm/t					
	Prehardened steels (NAK80, PX5, etc.)	30 ~ 40HRC	First choice	AH3035	ML	100 - 200	0.5 - 1.0	0.15	1,490	2,380	1,360	2,180	1,190	2,860
									Vc = 150 m/min, *fz* = 0.8 mm/t					
		30 ~ 40HRC	Fracture resistance	AH3035	MJ	100 - 200	0.5 - 1.5	0.15	1,490	2,980	1,360	2,720	1,190	3,570
									Vc = 150 m/min, *fz* = 1.0 mm/t					
		30 ~ 40HRC	Wear resistance	AH8015	ML	100 - 200	0.5 - 1.0	0.15	1,490	2,380	1,360	2,180	1,190	2,860
									Vc = 150 m/min, *fz* = 0.8 mm/t					
M	Stainless steels (X5CrNi18-10, X5CrNiMo17-12-2 etc.)	~ 200HB	First choice	AH3035	ML	100 - 150	0.3 - 0.8	0.1	1,190	1,430	1,090	1,310	950	1,710
			Fracture resistance	AH3035	MJ				*Vc* = 120 m/min, *fz* = 0.6 mm/t					
K	Gray cast irons (GG25, GG30, etc.)	150 ~ 250HB	First choice	AH120	MJ	100 - 300	0.5 - 1.5	0.15	1,990	3,980	1,820	3,640	1,590	4,770
			Wear resistance	AH8015	MJ				*Vc* = 200 m/min, *fz* = 1.0 mm/t					
		150 ~ 250HB	First choice	AH120	MJ	80 - 200	0.5 - 1.5	0.15	1,490	2,980	1,360	2,720	1,190	3,570
			Wear resistance	AH8015	MJ				*Vc* = 150 m/min, *fz* = 1.0 mm/t					
S	Titanium alloy (Ti-6Al-4V, etc.)	~ 40HRC	First choice	AH130	ML	30 - 60	0.3 - 0.7	0.08	400	400	360	360	320	480
			Fracture resistance	AH130	MJ				*Vc* = 40 m/min, *fz* = 0.5 mm/t					
	Heat-resistance alloy (Inconel, Hasteroy, etc.)	~ 40HRC	First choice	AH725	ML	20 - 50	0.1 - 0.3	0.05	300	120	270	110	240	140
			Fracture resistance	AH725	MJ				*Vc* = 30 m/min, *fz* = 0.2 mm/t					
H	Hot mold steel (X40CrMoV5-1, etc.)	40 ~ 55HRC	First choice	AH8015	MH	80 - 150	0.1 - 0.5	0.05	1,190	710	1,090	650	950	850
			Low resistance	AH8015	MJ				*Vc* = 120 m/min, *fz* = 0.3mm/t					
	Hot mold steel of D.T.C materials (DAC**, DH**, DIEVER, etc)	40 ~ 55HRC	First choice	AH8015	MJ	50-100	0.1 - 0.3	0.05	800	320	730	290	640	380
			Fracture resistance	AH8015	MH				*Vc* = 80 m/min, *fz* = 0.2mm/t					
	Cold mold steel (X153CrMoV12, etc.)	55 ~ 65HRC	First choice	AH8005	MH	50 - 70	0.05 - 0.2	0.03	600	120	550	110	480	140
									Vc = 60 m/min, *fz* = 0.1 mm/t					
		55 ~ 65HRC	Fracture resistance	AH8015	MH	50 - 70	0.03 - 0.1	0.03	600	60	550	55	480	70
									Vc = 60 m/min, *fz* = 0.05 mm/t					

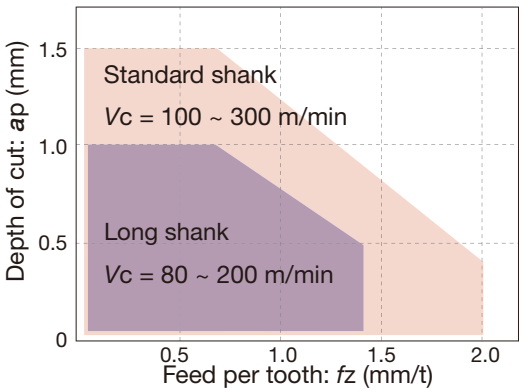
· The above table shows the conditions for standard shank type cutters. When using long shank type cutters, the number of teeth may be different. In this case, the cutting conditions should be changed by referring to: "The usage of standard and long shanks" shown in previous page.

· Cutting conditions are generally limited by the rigidity and power of the machine and the rigidity of the workpiece. When setting the conditions, start from half of the values of the standard cutting conditions and then increase the value gradually while making sure the machine is running normally.

Cautionary points in use

The use of a standard or long shank

When using a long shank, please lower the cutting conditions (Vc, fz, ap) to 70% of the maximum conditions for the standard shank.

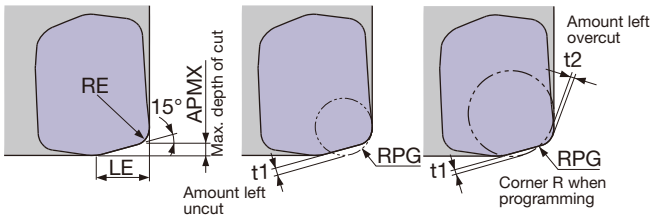


Tool dia.: ø*D*c = ø32 ~ 40 mm
Workpiece: S55C / C55 (200HB)

L/D ratio of overhang
Standard shank: L/D ≤ 3
Long shank: L/D = 4

Tool geometry on programming

When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set as R = 3.0 mm. If a larger radius is used, overcutting will occur. The following table shows the amount left uncut (t1) and overcut (t2).



LNMU06-MJ/ML

Max. depth of cut APMX (mm)	Corner radius RE	LE (mm)	Corner R when programming: RPG	Amount left uncut t1 (mm)	Amount left overcut t2 (mm)
1.5	2.0	6.0	2.0	1.0	-
			3.0	0.77	-
			4.0	0.54	0.26

LNGU06-MH

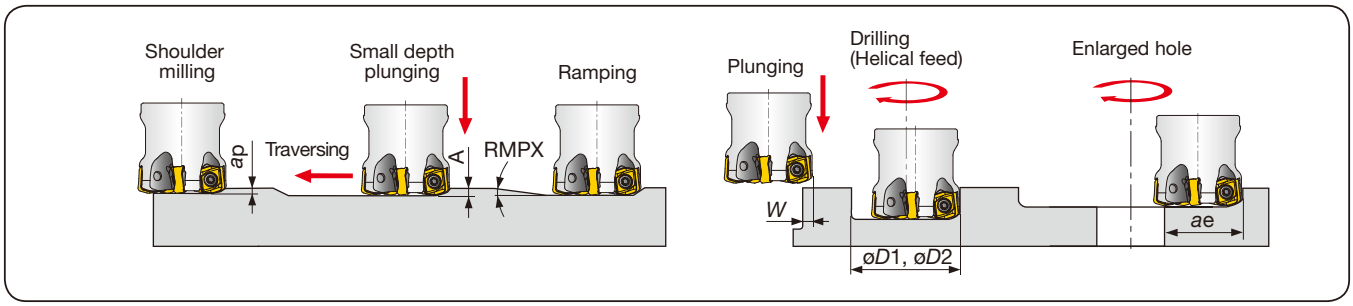
Max. depth of cut APMX (mm)	Corner radius RE	LE (mm)	Corner R when programming: RPG	Amount left uncut t1 (mm)	Amount left overcut t2 (mm)
1.5	2.0	6.0	2.0	0.9	-
			3.0	0.66	-
			4.0	0.41	0.26

Each value in table is calculated theoretically at the maximum condition.

Tool dia: DCX (mm), Number of revolution: *n* (min-1), Feed speed: *Vf* (mm/min), Max. depth of cut: *ap*=1.5mm, Number of teeth: CICT

ø50			ø63			ø80			ø100, CICT = 6		ø125, CICT = 8		ø160, CICT = 10		ø200, CICT = 12	
n	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*	*n*	*Vf*	*n*	*Vf*	*n*	*Vf*
	CICT = 4	CICT = 5		CICT = 4	CICT = 6		CICT = 5	CICT = 8								
1,270	5,080	6,350	1,010	4,040	6,060	800	4,000	6,400	640	3,820	510	4,080	400	3,980	320	3,820
							Vc = 200 m/min, *fz* = 1.0 mm/t									
1,270	5,080	6,350	1,010	4,040	6,060	800	4,000	6,400	640	3,820	510	4,080	400	3,980	320	3,820
							Vc = 200 m/min, *fz* = 1.0 mm/t									
950	3,040	3,800	760	2,430	3,650	600	2,400	3,840	480	2,290	380	2,450	300	2,390	240	2,290
							Vc = 150 m/min, *fz* = 0.8 mm/t									
950	3,800	4,750	760	3,040	4,560	600	3,000	4,800	480	2,880	380	3,040	300	3,000	240	2,880
							Vc = 150 m/min, *fz* = 1.0 mm/t									
950	3,040	3,800	760	2,430	3,650	600	2,400	3,840	480	2,290	380	2,450	300	2,390	240	2,290
							Vc = 150 m/min, *fz* = 0.8 mm/t									
760	1,820	2,280	610	1,470	2,200	480	1,440	2,300	380	1,380	310	1,470	240	1,430	190	1,380
							Vc = 120 m/min, *fz* = 0.6 mm/t									
1,270	5,080	6,350	1,010	4,040	6,060	800	4,000	6,400	640	3,820	510	4,080	400	3,980	320	3,820
							Vc = 200 m/min, *fz* = 1.0 mm/t									
950	3,800	4,750	760	3,040	4,560	600	3,000	4,800	480	2,870	380	3,060	300	2,990	240	2,870
							Vc = 150 m/min, *fz* = 1.0 mm/t									
250	500	630	200	400	600	160	400	640	130	380	100	410	80	400	60	380
							Vc = 40 m/min, *fz* = 0.5 mm/t									
190	150	190	150	120	180	120	120	190	100	120	80	120	60	120	50	120
							Vc = 30 m/min, *fz* = 0.2 mm/t									
760	910	1,140	610	730	1,100	480	720	1,150	380	680	310	740	240	720	190	680
							Vc = 120 m/min, *fz* = 0.3mm/t									
510	410	510	400	320	480	320	320	510	250	300	200	320	160	320	130	310
							Vc = 80 m/min, *fz* = 0.2mm/t									
380	150	190	300	120	180	240	120	190	190	110	150	120	120	120	100	120
							Vc = 60 m/min, *fz* = 0.1 mm/t									
380	75	95	300	60	90	240	60	95	190	55	150	60	120	60	100	60
							Vc = 60 m/min, *fz* = 0.05 mm/t									

Applications



Designation	Tool dia. DCX	Max. depth of cut APMX	Max. ramping angle RMPX		Max. plunging depth A		Max. cutting width in plunging *W*	Min.machinable hole dia. *øD1*	Max.machinable hole dia. *øD2*	Max. cutting width in enlarged hole *ae*
			MJ/ML	MH	MJ/ML	MH				
EXN06R032M...	ø32	1.5	2°	1.4°	0.5	0.4	6	47	59	25
EXN06R035M...	ø35	1.5	1.7°	1.1°	0.5	0.4	6	53	65	28
EXN06R040M...	ø40	1.5	1.3°	0.8°	0.5	0.4	6	63	75	33
TXN06R050M...	ø50	1.5	0.9°	0.7°	0.5	0.4	6	83	95	43
TXN06R052M...	ø52	1.5	0.8°	0.6°	0.5	0.4	6	87	99	45
TXN06R063M...	ø63	1.5	0.6°	0.5°	0.5	0.4	6	109	121	56
TXN06R066M...	ø66	1.5	0.5°	0.5°	0.5	0.4	6	115	127	59
TXN06R080M...	ø80	1.5	0.5°	0.3°	0.5	0.4	6	143	155	73
TXN06R100M...	ø100	1.5	0.34°	0.25°	0.5	0.4	6	183	195	93
TXN06R125M...	ø120	1.5	0.26°	0.2°	0.5	0.4	6	233	245	118
TXN06R160M...	ø160	1.5	0.2°	0.15°	0.5	0.4	6	303	315	153
TXN06R200M...	ø200	1.5	0.15°	0.11°	0.5	0.4	6	383	395	193

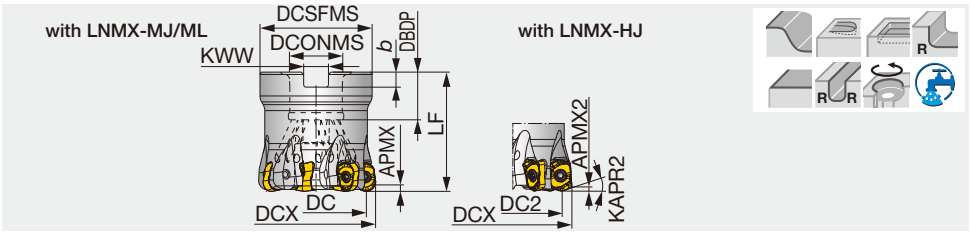
· For ø*D*c above 100 mm, slot milling, ramping or contouring is not recommended as chips may be re-cut.

DO TWIST BALL
TXLN

Radius mill, for 4-corner double sided inserts

GAMP= +3°, GAMF= -13°





Designation	APMX	APMX2	DCX	CICT	DC	DC2	KAPR2	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TXLN04M040B16.0R06	4	1.3	40	6	32.2	31.6	20	35	40	16	18	8.4	5.6	0.21	With	LNMX04...
TXLN04M042B16.0R06	4	1.3	42	6	34.2	33.6	20	35	40	16	18	8.4	5.6	0.21	With	LNMX04...
TXLN04M050B22.0R07	4	1.3	50	7	42.2	41.6	20	47	50	22	20	10.4	6.3	0.45	With	LNMX04...
TXLN04M052B22.0R07	4	1.3	52	7	44.2	43.6	20	47	50	22	20	10.4	6.3	0.47	With	LNMX04...
TXLN04M063B22.0R07	4	1.3	63	7	55.2	54.6	20	59	50	22	20	10.4	6.3	0.76	With	LNMX04...
TXLN05M040B16.0R05	5	-	40	5	29.8	-	-	35	40	16	18	8.4	5.6	0.26	With	LNMX05...
TXLN05M050B22.0R06	5	-	50	6	39.8	-	-	47	50	22	20	10.4	6.3	0.50	With	LNMX05...
TXLN06M050B22.0R05	6	2	50	5	37.6	37.3	25	47	50	22	20	10.4	6.3	0.50	With	LNMX06...
TXLN06M052B22.0R05	6	2	52	5	39.6	39.3	25	49	50	22	20	10.4	6.3	0.55	With	LNMX06...
TXLN06M063B22.0R06	6	2	63	6	50.6	50.3	25	59	50	22	20	10.4	6.3	0.82	With	LNMX06...

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

SPARE PARTS






Designation	Clamping screw	Torx bit	Grip	Shell locking bolt
TXLN04M04*B16.0R06	CSPD-3	BLD IP10/S7	SW6-SD	FSHM8-30H
TXLN04M05*B22.0R07	CSPD-3	BLD IP10/S7	SW6-SD	CM10X30H
TXLN04M063B22.0R07	CSPD-3	BLD IP10/S7	SW6-SD	CM10X30H
TXLN05M040B16.0R05	CSPB-4S	BLDIP15/S7	H-TB2W	FSHM8-30H
TXLN05M050B22.0R06	CSPB-4S	BLDIP15/S7	H-TB2W	CM10X30H
TXLN06M050B22.0R05	CSPB-5	BLDIP20/S7	H-TB2W	FSHM10-40H
TXLN06M052B22.0R05	CSPB-5	BLDIP20/S7	H-TB2W	CM10X30H
TXLN06M063B22.0R06	CSPB-5	BLDIP20/S7	H-TB2W	CM10X30H

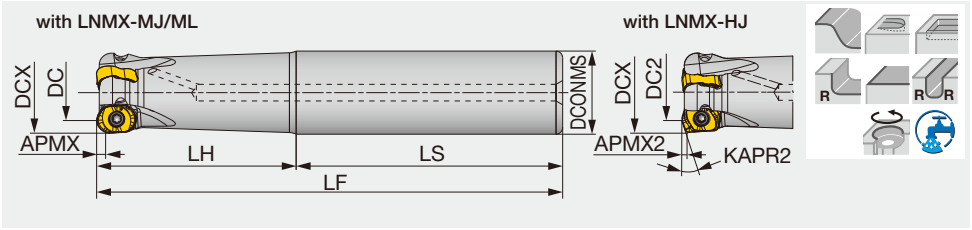
*Recommended clamping torque (N·m): CSPD-3=2.5, CSPB-4S=3.5, CSPB-5=5

Reference pages: Inserts → H036, Standard cutting conditions → H037 - H039

Radius endmill, shank type, for 4-corner double sided inserts

GAMP= +3°, GAMF= -12° ~ -14°





Designation	APMX	APMX2	DCX	CICT	DC	DC2	KAPR2	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EXLN04M020C20.0R02	4	1.3	20	2	12.2	11.6	20°	20	80	50	130	0.28	With	LNMX04...
EXLN04M025C25.0R03	4	1.3	25	3	17.2	16.6	20°	25	80	60	140	0.46	With	LNMX04...
EXLN04M032C32.0R04	4	1.3	32	4	24.2	23.6	20°	32	80	70	150	0.83	With	LNMX04...
EXLN04M032C32.0R05	4	1.3	32	5	24.2	23.6	20°	32	80	70	150	0.83	With	LNMX04...
EXLN05M025C25.0R02	5	-	25	2	15	-	-	25	90	60	150	0.54	With	LNMX05..
EXLN05M032C32.0R04	5	-	32	4	21.9	-	-	32	80	70	150	0.87	With	LNMX05..
EXLN06M032C32.0R02	6	2	32	2	19.6	19.3	25°	32	80	70	150	0.90	With	LNMX06..
EXLN06M040C32.0R04	6	2	40	4	27.6	27.3	25°	32	100	50	150	0.95	With	LNMX06..

SPARE PARTS






Designation	Clamping screw	Mono block wrench	Torx bit	Grip
EXLN04...	CSPD-3	IP-10D	-	-
EXLN05...	CSPB-4S	-	BLDIP15/S7	H-TB2W
EXLN06...	CSPB-5	-	BLDIP20/S7	H-TB2W

*Recommended clamping torque (N·m): CSPD-3=2.5, CSPB-4S=3.5, CSPB-5=5

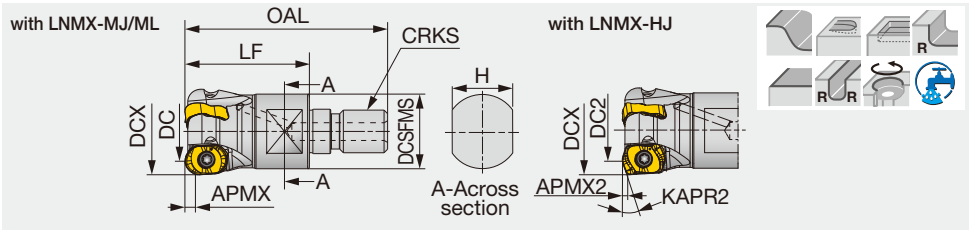
Reference pages: Inserts → H036, Standard cutting conditions → H037 - H039

DO TWIST BALL
HXLN04-M

Radius endmill, modular type, for 4-corner double sided inserts (TungFlex)

GAMP= +3°, GAMF= -12° ~ -14°





Designation	APMX	APMX2	DCX	CICT	DC	DC2	KAPR2	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HXLN04M020M10R02	4	1.3	20	2	12.2	11.6	20°	49	30	15	18	M10	0.07	With	LNMX04...
HXLN04M025M12R03	4	1.3	25	3	17.2	16.6	20°	57	35	17	21	M12	0.16	With	LNMX04...
HXLN04M032M16R04	4	1.3	32	4	24.2	23.6	20°	63	40	22	29	M16	0.20	With	LNMX04...
HXLN05M025M12R02	5	-	25	2	15	-	-	57	35	17	21	M12	0.10	With	LNMX05...
HXLN05M032M16R04	5	-	32	4	21.9	-	-	63	40	22	28.8	M16	0.20	With	LNMX05...
HXLN06M032M16R02	6	2	32	2	19.6	19.3	25°	63	40	22	28.8	M16	0.24	With	LNMX06...

Please see the page **H208** for TungFlex modular shank.

SPARE PARTS

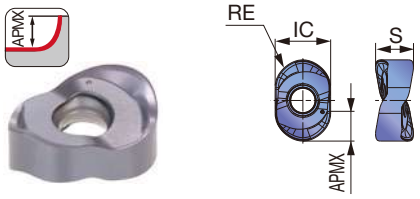
Designation	Clamping screw	Mono block wrench	Torx bit	Grip
HXLN04...	CSPD-3	IP-10D	-	-
HXLN05...	CSPB-4S	-	BLDIP15/S7	H-TB2W
HXLN06...	CSPB-5	-	BLDIP20/S7	H-TB2W

*Recommended clamping torque (N·m): CSPD-3=2.5, CSPB-4S=3.5, CSPB-5=5

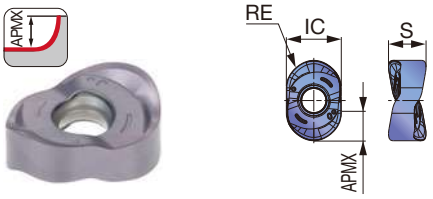
Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

INSERT

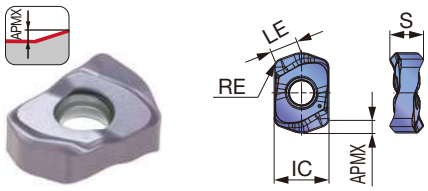
LNMX-MJ



LNMX-ML



LNMX-HJ



P	Steel	☆	★
M	Stainless		★
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	☆
H	Hard materials	★	★

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	Coated AH3135	LE	IC	S
LNMX0405R4-MJ	4	4	●	●	-	8.2	5.6
LNMX0405R4-ML	4	4	●	●	-	8.2	5.6
LNMX0405ZER-HJ	1.3	1.3	●	●	4.3	8.2	5
LNMX0506R5-MJ	5	5	●	●	-	10.4	6.1
LNMX0607R6-MJ	6	6	●	●	-	12.6	7.4
LNMX0607ZER-HJ	2	2	●	●	6.7	12.7	7.2

●: Line up

Reference pages: Standard cutting conditions → H037 - H039, TungFlex → H208

STANDARD CUTTING CONDITIONS

For MJ,ML

ISO	Workpiece material		Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steel C15, C20, etc.		- 200 HB	First choice	AH3135	MJ	100 - 300	0.2 - 0.6
			- 200 HB	Low cutting force	AH3135	ML	100 - 300	0.2 - 0.6
	Carbon steel, Alloy steel C55, 42CrMoS4, etc.		- 300 HB	First choice	AH3135	MJ	100 - 250	0.2 - 0.6
			- 300 HB	Low cutting force	AH3135	ML	100 - 250	0.2 - 0.6
	Prehardened steel NAK80, PX5, etc.		30 - 40 HRC	First choice	AH3135	MJ	100 - 200	0.15 - 0.4
			30 - 40 HRC	Low cutting force	AH3135	ML	100 - 200	0.15 - 0.4
M	Austenitic Stainless steel X5CrNi18-9, X5CrNiMo17-12-2, etc.		- 200 HB	First choice	AH3135	MJ	100 - 200	0.2 - 0.6
			- 200 HB	Low cutting force	AH3135	ML	100 - 200	0.2 - 0.6
	Martensitic Stainless steel X12Cr113, X20Cr13, etc.		- 200 HB	First choice	AH3135	ML	100 - 300	0.2 - 0.6
			- 200 HB	Fracture resistance	AH3135	MJ	100 - 300	0.2 - 0.6
K	Grey cast iron 250, 300, etc.		150 - 250 HB	First choice	AH120	MJ	100 - 300	0.2 - 0.6
			150 - 250 HB	Low cutting force	AH120	ML	100 - 300	0.2 - 0.6
	Ductile cast iron 400-15, 600-3, etc.		150 - 250 HB	First choice	AH120	MJ	80 - 250	0.2 - 0.6
			150 - 250 HB	Low cutting force	AH120	ML	80 - 250	0.2 - 0.6
S	Titanium alloy Ti-6Al-4V, etc.		-	First choice	AH3135	ML	30 - 60	0.15 - 0.6
			-	Fracture resistance	AH3135	MJ	30 - 60	0.15 - 0.6
	Superalloys Inconel718, etc.		-	First choice	AH120	ML	20 - 50	0.05 - 0.3
			-	Fracture resistance	AH120	MJ	20 - 50	0.05 - 0.3
H	Hardened steel	SKD61, etc.	40 - 50 HRC	First choice	AH3135	MJ	50 - 150	0.1 - 0.3
			40 - 50 HRC	Wear resistance	AH120	MJ	50 - 150	0.1 - 0.3
		SKD11, etc.	50 - 60 HRC	First choice	AH120	MJ	50 - 70	0.05 - 0.15

STANDARD CUTTING CONDITIONS

LNMX04-HJ

ISO	Workpiece material		Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steel C15, C20, etc.		- 300HB	First choice	AH3135	HJ	100 - 300	0.5 - 1.3
				Wear resistance	AH120			
	Carbon steel, Alloy steel C55, 42CrMoS4, etc.		- 300HB	First choice	AH3135	HJ	100 - 250	0.5 - 1.3
				Wear resistance	AH120			
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	AH3135	HJ	100 - 200	0.4 - 1
				Wear resistance	AH120			
M	Austenitic Stainless steel X5CrNi18-9, X5CrNiMo17-12-2, etc.		- 200HB	First choice	AH3135	HJ	100 - 200	0.3 - 0.9
	Martensitic Stainless steel X12Cr113, X20Cr13, etc.		- 200HB	First choice	AH3135	HJ	100 - 300	0.3 - 0.9
K	Grey cast iron 250, 300, etc.		150 - 250HB	First choice	AH120	HJ	100 - 300	0.5 - 1.3
				Fracture resistance	AH3135			
	Ductile cast iron 400-15, 600-3, etc.		150 - 250HB	First choice	AH120	HJ	80 - 250	0.5 - 1.3
				Fracture resistance	AH3135			
S	Titanium alloy Ti-6Al-4V, etc.		150 - 250HB	First choice	AH3135	HJ	30 - 60	0.3 - 0.7
	Superalloys Inconel718, etc.		150 - 250HB	First choice	AH120	HJ	20 - 50	0.1 - 0.3
H	Hardened steel	SKD61, etc.	40 - 50HRC	First choice	AH3135	HJ	50 - 150	0.1 - 0.5
				Wear resistance	AH120			
		SKD11, etc.	50 - 60HRC	First choice	AH120	HJ	50 - 70	0.05 - 0.2

LNMX06-HJ

ISO	Workpiece material		Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steel C15, C20, etc.		- 300HB	First choice	AH3135	HJ	100 - 300	0.3 - 1.1
				Wear resistance	AH120			
	Carbon steel, Alloy steel C55, 42CrMoS4, etc.		- 300HB	First choice	AH3135	HJ	100 - 250	0.3 - 1.1
				Wear resistance	AH120			
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	AH3135	HJ	100 - 200	0.2 - 0.7
				Wear resistance	AH120			
M	Austenitic Stainless steel X5CrNi18-9, X5CrNiMo17-12-2, etc.		- 200HB	First choice	AH3135	HJ	100 - 200	0.2 - 0.7
	Martensitic Stainless steel X12Cr113, X20Cr13, etc.		- 200HB	First choice	AH3135	HJ	100 - 300	0.2 - 0.7
K	Grey cast iron 250, 300, etc.		150 - 250HB	First choice	AH120	HJ	100 - 300	0.3 - 1.1
				Fracture resistance	AH3135			
	Ductile cast iron 400-15, 600-3, etc.		150 - 250HB	First choice	AH120	HJ	80 - 250	0.3 - 1.1
				Fracture resistance	AH3135			
S	Titanium alloy Ti-6Al-4V, etc.		150 - 250HB	First choice	AH3135	HJ	30 - 60	0.15 - 0.6
	Superalloys Inconel718, etc.		150 - 250HB	First choice	AH120	HJ	20 - 50	0.05 - 0.3
H	Hardened steel	SKD61, etc.	40 - 50HRC	First choice	AH3135	HJ	50 - 150	0.1 - 0.3
				Wear resistance	AH120			
		SKD11, etc.	50 - 60HRC	First choice	AH120	HJ	50 - 70	0.05 - 0.15

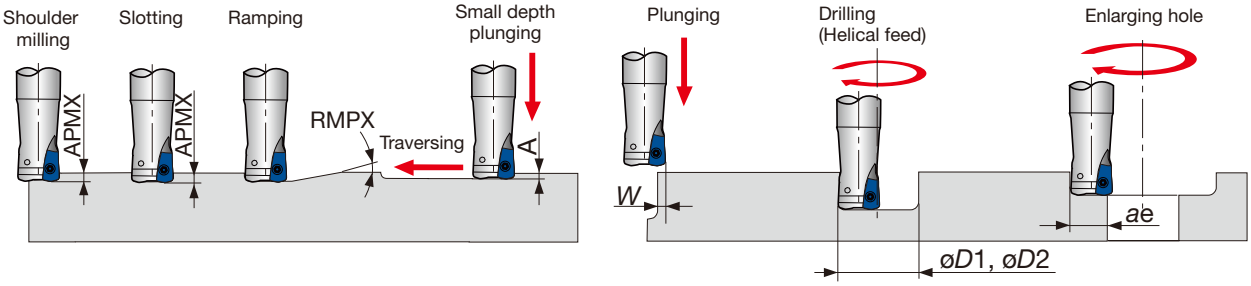
Tool dia: DCX (mm), Number of revolution: *n* (min^{-1}), Feed speed: *Vf* (mm/min), Max. depth of cut: APMX = 1.3 mm, Number of teeth: z

ø20, CICT = 2		ø25, CICT = 3		ø32			ø40, CICT = 6		ø42, CICT = 6		ø50, CICT = 7		ø52, CICT = 7		ø63, CICT = 7	
n	*Vf*	*n*	*Vf*	*n*	*Vf* Coarse pitch (CICT = 4)	*Vf* Close pitch (CICT = 5)	*n*	*Vf*	*n*	*Vf*	*n*	*Vf*	*n*	*Vf*	*n*	*Vf*
3,180	5,720	2,550	6,890	1,990	7,160	8,960	1,590	8,590	1,520	8,210	1,270	8,000	1,220	7,690	1,010	6,360
Vc = 200 m/min, *fz* = 0.9 mm/t																
2,860	5,150	2,290	6,180	1,790	6,440	8,060	1,430	7,720	1,360	7,340	1,150	7,250	1,100	6,930	910	5,730
Vc = 180 m/min, *fz* = 0.9 mm/t																
2,390	3,350	1,910	4,010	1,490	4,170	5,220	1,190	5,000	1,140	4,790	950	4,660	920	4,510	760	3,720
Vc = 150 m/min, *fz* = 0.7 mm/t																
2,390	2,870	1,910	3,440	1,490	3,580	4,470	1,190	4,280	1,140	4,100	950	3,990	920	3,860	760	3,190
Vc = 150 m/min, *fz* = 0.6 mm/t																
3,180	3,820	2,550	4,590	1,990	4,780	5,970	1,590	5,720	1,520	5,470	1,270	5,330	1,220	5,120	1,010	4,240
Vc = 200 m/min, *fz* = 0.6 mm/t																
3,180	5,720	2,550	6,890	1,990	7,160	8,960	1,590	8,590	1,520	8,210	1,270	8,000	1,220	7,690	1,010	6,360
Vc = 200 m/min, *fz* = 0.9 mm/t																
2,550	4,590	2,040	5,510	1,590	5,720	7,160	1,270	6,860	1,210	6,530	1,020	6,430	980	6,170	810	5,100
Vc = 160 m/min, *fz* = 0.9 mm/t																
720	720	570	860	450	900	1,130	360	1,080	340	1,020	290	1,020	280	980	230	810
Vc = 45 m/min, *fz* = 0.5 mm/t																
480	190	380	230	300	240	300	240	290	230	280	190	270	180	250	150	210
Vc = 30 m/min, *fz* = 0.2 mm/t																
1,590	950	1,270	1,140	990	1,190	1,490	800	1,440	760	1,370	640	1,340	610	1,280	510	1,070
Vc = 100 m/min, *fz* = 0.3 mm/t																
950	240	760	290	600	300	380	480	360	450	340	380	330	370	320	300	260
Vc = 60 m/min, *fz* = 0.12 mm/t																

Tool dia: DCX (mm), Number of revolution: *n* (min^{-1}), Feed speed: *Vf* (mm/min), Max. depth of cut: APMX = 2mm, Number of teeth: z

ø32, CICT = 2		ø40, CICT = 4		ø50, CICT = 5		ø52, CICT = 5		ø63, CICT = 6	
n	*Vf*	*n*	*Vf*	*n*	*Vf*	*n*	*Vf*	*n*	*Vf*
1,990	2,790	1,590	4,450	1,270	4,450	1,220	4,270	1,010	4,240
Vc = 200 m/min, *fz* = 0.7 mm/t									
1,790	2,510	1,430	4,000	1,150	4,030	1,100	3,850	910	3,820
Vc = 180 m/min, *fz* = 0.7 mm/t									
1,490	1,340	1,190	2,140	950	2,140	920	2,070	760	2,050
Vc = 150 m/min, *fz* = 0.45 mm/t									
1,490	1,340	1,190	2,140	950	2,140	920	2,070	760	2,050
Vc = 150 m/min, *fz* = 0.45 mm/t									
1,990	1,790	1,590	2,860	1,270	2,860	1,220	2,750	1,010	2,730
Vc = 200 m/min, *fz* = 0.45 mm/t									
1,990	2,790	1,590	4,450	1,270	4,450	1,220	4,270	1,010	4,240
Vc = 200 m/min, *fz* = 0.7 mm/t									
1,590	2,230	1,270	3,560	1,020	3,570	980	3,430	810	3,400
Vc = 160 m/min, *fz* = 0.7 mm/t									
450	320	360	500	290	510	280	490	230	480
Vc = 45 m/min, *fz* = 0.35 mm/t									
300	90	240	140	190	140	180	140	150	140
Vc = 30 m/min, *fz* = 0.15 mm/t									
990	400	800	640	640	640	610	610	510	610
Vc = 100 m/min, *fz* = 0.2 mm/t									
600	120	480	190	380	190	370	190	300	180
Vc = 60 m/min, *fz* = 0.1 mm/t									

MACHINING APPLICATIONS



MJ, ML

Designation	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging A	Max. cutting width in plunging W	Min. machining dia. øD1	Max. machining dia. øD2	Max. cutting width in enlarging ae
E/HXLN04M020…	20	4	4.5°	0.75	4	28	38	15
E/HXLN04M025…	25	4	2.9°	0.75	4	38	48	20
E/HXLN04M032…	32	4	1.9°	0.75	4	52	62	27
TXLN04M040B16.0R06	40	4	1.2°	0.6	4	68	78	35
TXLN04M042B16.0R06	42	4	1.1°	0.6	4	72	82	37
TXLN04M050B22.0R07	50	4	0.9°	0.6	4	88	98	45
TXLN04M052B22.0R07	52	4	0.8°	0.6	4	92	102	47
TXLN04M063B22.0R07	63	4	0.7°	0.7	4	114	124	58
E/HXLN05M025…	25	5	2.3°	0.5	5	35	48	17
E/HXLN05M032…	32	5	2.1°	0.6	5	48	62	24
TXLN05M040B16.0R05	40	5	2°	1	5	64	78	31
TXLN05M050B22.0R06	50	5	1.3°	1	5	84	98	41
E/HXLN06M032…	32	6	3.7°	1	6	52	62	22
EXLN06M040C32.0R04	40	6	3.4°	1	6	60	78	29
TXLN06M050B22.0R05	50	6	2.8°	1.7	6	79	98	39
TXLN06M052B22.0R05	52	6	2.5°	1.6	6	81	102	41
TXLN06M063B22.0R06	63	6	1.8°	1.6	6	105	124	52

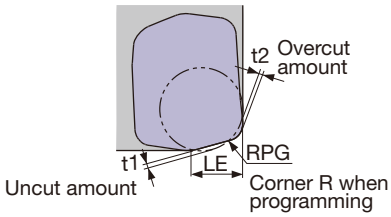
Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

HJ

Designation	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging A	Max. cutting width in plunging W	Min. machining øD1	Max. machining øD2	Max. cutting width in enlarging ae
E/HXLN04M020…	20	1.3	4.9°	0.7	4.1	27	38	15.5
E/HXLN04M025…	25	1.3	3°	0.7	4.1	37	48	20.5
E/HXLN04M032…	32	1.3	2°	0.7	4.1	51	62	27.5
TXLN04M040B16.0R06	40	1.3	1.4°	0.7	4.1	67	78	35.5
TXLN04M042B16.0R06	42	1.3	1.3°	0.7	4.1	71	82	37.5
TXLN04M050B22.0R07	50	1.3	1°	0.7	4.1	87	98	45.5
TXLN04M052B22.0R07	52	1.3	0.9°	0.7	4.1	91	102	47.5
TXLN04M063B22.0R07	63	1.3	0.8°	0.7	4.1	113	124	58.5
E/HXLN06M032…	32	2	5.7°	1.4	6.1	42	62	20
EXLN06M040C32.0R04	40	2	3.8°	1.5	6.1	57	78	28
TXLN06M050B22.0R05	50	2	2.7°	1.6	6.1	77	98	38
TXLN06M052B22.0R05	52	2	2.5°	1.6	6.1	81	102	40
TXLN06M063B22.0R06	63	2	1.8°	1.5	6.1	104	124	51

TOOL GEOMETRY ON PROGRAMMING FOR HIGH FEED

The following table shows the amount left uncut (t1) and overcut (t2).



	Max. depth of cut APMX (mm)	LE (mm)	Programmed corner R (mm)	Amount left uncut t1 (mm)	Amount left overcut t2 (mm)
LNMX04-HJ	1.3	4.1	R1.5	0.8	0
	1.3	4.1	R2.0	0.65	0
	1.3	4.1	R2.5	0.5	0.05
	1.3	4.1	R3.0	0.36	0.2
LNMX06-HJ	2.0	6.1	R2.0	1.4	-
	2.0	6.1	R3.0	1.1	-
	2.0	6.1	R3.5	0.91	-
	2.0	6.1	R4.0	0.74	0.05
	2.0	6.1	R5.0	0.41	0.35

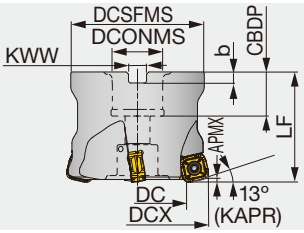
DOFEEDQUAD

TXQ

High feed face mill

GAMP = +7°, GAMF = -8° ~ -4.5°





Designation	APMX	DCX	CICT	DC	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TXQ12R050M22.0E03	2	50	3	33.8	47	50	22	20	10.4	6.3	0.4	With	SQMU12...
TXQ12R050M22.2-03	2	50	3	33.8	47	50	22.225	20	8	5	0.4	With	SQMU12...
TXQ12R052M22.0E03	2	52	3	35.8	49	50	22	20	10.4	6.3	0.5	With	SQMU12...
TXQ12R063M22.0E04	2	63	4	46.8	59	50	22	20	10.4	6.3	0.8	With	SQMU12...
TXQ12R063M22.2-04	2	63	4	46.8	59	50	22.225	20	8	5	0.8	With	SQMU12...
TXQ12R066M27.0E04	2	66	4	49.8	63	50	27	22	12.4	7	0.9	With	SQMU12...
TXQ12R080M27.0E05	2	80	5	63.8	76	63	27	22	12.4	7	1.6	With	SQMU12...
TXQ12R080M31.7-05	2	80	5	63.8	76	63	31.75	32	12.7	8	1.5	With	SQMU12...
TXQ12R100M31.7-06	2	100	6	83.8	96	63	31.75	32	12.7	8	2.6	With	SQMU12...
TXQ12R100M32.0E06	2	100	6	83.8	96	63	32	25	14.4	8	3	With	SQMU12...
TXQ12R125M38.1-07	2	125	7	108.8	98	63	38.1	44	15.9	10	3.3	With	SQMU12...
TXQ12R125M40.0E07	2	125	7	108.8	98	63	40	32	16.4	9	3.2	With	SQMU12...

SPARE PARTS

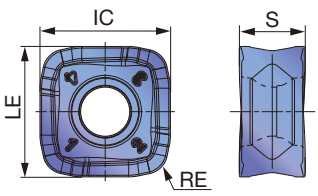
Designation	Clamping screw	Grip	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Torx bit
TXQ12R050, 052M22.0...	CSPB-4	H-TBS	M-1000	-	FSHM10-40H	BLDIP15/S7
TXQ12R063M...	CSPB-4	H-TBS	M-1000	-	CM10X30H	BLDIP15/S7
TXQ12R066, 080M27.0...	CSPB-4	H-TBS	M-1000	-	CM12X30H	BLDIP15/S7
TXQ12R080, 100M31.7...	CSPB-4	H-TBS	M-1000	-	CM16X40H	BLDIP15/S7
TXQ12R100M32.0E06	CSPB-4	H-TBS	M-1000	-	CM16X40H	BLDIP15/S7
TXQ12R125M...	CSPB-4	H-TBS	M-1000	TMBA-M20H	-	BLDIP15/S7

*Recommended clamping torque (N·m):CSPB-4=3.5

INSERT

SQMU-MJ





P	Steel	☆		★	☆	
M	Stainless		★	☆		
K	Cast iron	★		☆		
N	Non-ferrous					
S	Superalloys	★	☆	★		
H	Hard materials			★		

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	Coated AH130	Coated AH725	Coated T3130	LE	S	IC
SQMU1206ZSR-MJ	2	2	●	●	●	●	11.7	6	11.7

●: Line up

Reference pages: Standard cutting conditions → H042 - H043

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grades	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Carbon steels (C45, C55, etc.)	~ 300HB	First choice	AH725	100 - 300	0.5 - 2
			Wear resistance	T3130	100 - 300	0.5 - 2
			Fracture resistance	AH130	100 - 300	0.5 - 2
	Alloy steels (42CrMo4, 17Cr3, etc.)	~ 300HB	First choice	AH725	100 - 200	0.5 - 1.5
			Wear resistance	T3130	100 - 200	0.5 - 1.5
			Fracture resistance	AH130	100 - 200	0.5 - 1.5
	Prehardened steels (NAK80, PX5, etc.)	30 ~ 40HRC	-	AH725	100 - 200	0.5 - 1
M	Stainless steels (X5CrNi18-10, X5CrNiMo17-12-2 etc.)	~ 200HB	-	AH130	100 - 150	0.3 - 0.8
K	Gray cast irons (GG25, GG30, etc.)	-	-	AH120	100 - 300	0.5 - 2
	Ductile cast irons 600-3, etc.	-	-	AH120	80 - 200	0.5 - 2
S	Titanium alloy (Ti-6Al-4V, etc.)	~ 40HRC	-	AH725	30 - 60	0.3 - 0.7
H	Hardened steels X40CrMoV5-1, etc.	40 ~ 50HRC	-	AH725	80 - 130	0.1 - 0.3
		50 ~ 60HRC	-	AH725	50 - 70	0.03 - 0.07

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

· Slot or pocket milling is not recommended, since chip re-cutting easily occurs.
· Tool overhang length must be as short as possible to avoid chatter. When the tool overhang length is long, decrease the number of revolutions and feed.

· Cutting conditions are generally limited by the rigidity and power of the machine and the rigidity of the workpiece. When setting the conditions, start from half of the values of the standard cutting conditions and then increase the value gradually while making sure the machine is running normally.

Tool dia: DCX (mm), Number of revolution: *n* (min-1), Feed speed: *Vf* (mm/min), Max. depth of cut: APMX = 2 mm

ø50		ø63		ø80		ø100		ø125	
n	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***
1,270	4,570	1,010	4,850	790	4,740	630	4,540	500	4,200
				Vc = 200 m/min, *fz* = 1.2 mm/t					
950	2,850	750	3,000	590	2,950	470	2,820	380	2,660
				Vc = 150 m/min, *fz* = 1.0 mm/t					
950	2,280	750	2,400	590	2,360	470	2,260	380	2,130
				Vc = 150 m/min, *fz* = 0.8 mm/t					
760	1,140	600	1,200	470	1,180	380	1,140	300	1,050
				Vc = 120 m/min, *fz* = 0.5 mm/t					
1,270	4,570	1,010	4,850	790	4,740	630	4,540	500	4,200
				Vc = 200 m/min, *fz* = 1.2 mm/t					
950	3,420	750	3,600	590	3,540	470	3,380	380	3,190
				Vc = 150 m/min, *fz* = 1.2 mm/t					
250	370	200	400	150	380	120	360	100	350
				Vc = 40 m/min, *fz* = 0.5 mm/t					
630	380	500	400	390	390	310	370	250	350
				Vc = 100 m/min, *fz* = 0.2 mm/t					
380	60	300	60	235	60	190	60	150	50
				Vc = 60 m/min, *fz* = 0.05 mm/t					

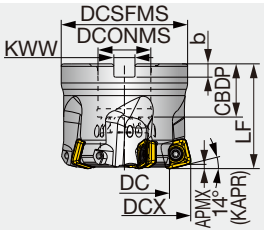
MILLQFEED UAD

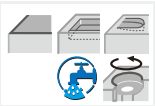
TXSW

High feed mill for large depth of cut

GAMP = +5°, GAMF = 0°







Designation	APMX	DCX	CICT	DC	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TXSW15M050B22.0R03	2.5	50	3	24.1	47	50	22	20	10.4	6.3	0.4	With	SWMT15...
TXSW15M063B22.0R04	2.5	63	4	37.1	59	50	22	20	10.4	6.3	0.66	With	SWMT15...
TXSW15J080B31.7R05	2.5	80	5	54.1	76	63	31.75	32	12.7	8	1.31	With	SWMT15...
TXSW15M080B27.0R05	2.5	80	5	54.1	76	63	27	22	12.4	7	1.41	With	SWMT15...
TXSW15J100B31.7R06	2.5	100	6	74.1	96	63	31.75	32	12.7	8	2.25	With	SWMT15...
TXSW15M100B32.0R06	2.5	100	6	74.1	96	63	32	25	14.4	8	2.26	With	SWMT15...
TXSW15J125B38.1R07	2.5	125	7	99.1	100	63	38.1	43	15.9	10	2.91	With	SWMT15...
TXSW15M125B40.0R07	2.5	125	7	99.1	100	63	40	37	16.4	9	2.83	With	SWMT15...
TXSW15J160B50.8R08	2.5	160	8	134.1	100	63	50.8	46	19	11	3.93	With	SWMT15...
TXSW15M160B40.0R08	2.5	160	8	134.1	100	63	40	37	16.4	9	4.23	With	SWMT15...

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Shell locking bolt	Shell locking bolt 1	Shell locking bolt 2	Torx bit
TXSW15M050B22.0R03	TS50115I	H-TB2W	M-1000	-	-	SR PS 118-0273	BT20S
TXSW15M063B22.0R04	TS50115I	H-TB2W	M-1000	-	FSHM10-40H	-	BT20S
TXSW15J080B31.7R05	TS50115I	H-TB2W	M-1000	-	CM16X40H	-	BT20S
TXSW15M080B27.0R05	TS50115I	H-TB2W	M-1000	-	CM12X30H	-	BT20S
TXSW15*100B...	TS50115I	H-TB2W	M-1000	-	CM16X40H	-	BT20S
TXSW15*125B...	TS50115I	H-TB2W	M-1000	TMBA-M20H	-	-	BT20M
TXSW15J160B50.8R08	TS50115I	H-TB2W	M-1000	TMBA-M24H	-	-	BT20M
TXSW15M160B40.0R08	TS50115I	H-TB2W	M-1000	TMBA-M20H	-	-	BT20M

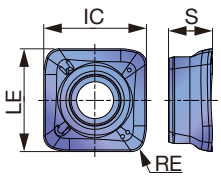
*Recommended clamping torque (N·m):TS50115I=5

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

INSERT

SWMT-MJ





P	Steel	☆	★
M	Stainless		★
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	☆
H	Hard materials	★	★

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	Coated AH3135	LE	IC	S
SWMT1506ZER-MJ	2	2.5	●	●	15.9	15.9	6.8

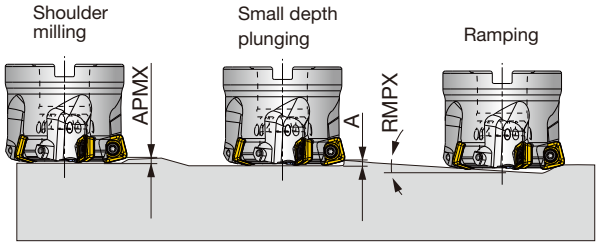
●: Line up

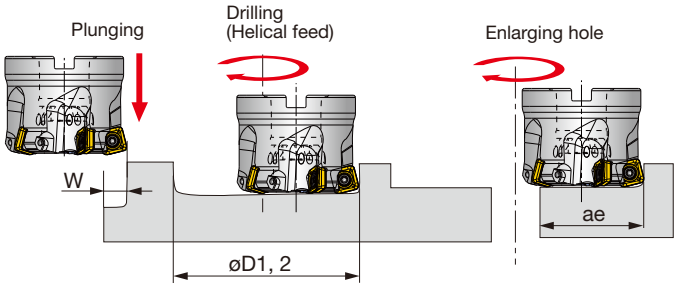
Reference pages: Standard cutting conditions → H045

STANDARD CUTTING CONDITIONS

ISO	Workpiece material		Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steel C15E4, E275A, etc.		- 300 HB	First choice	AH3135	MJ	100 - 300	0.5 - 2
			- 300 HB	Second choice	AH120	MJ	100 - 300	0.5 - 2
	Carbon steel and alloy steel C55, 42CrMo4, etc.		- 300 HB	First choice	AH3135	MJ	100 - 200	0.5 - 2
			- 300 HB	Second choice	AH120	MJ	100 - 200	0.5 - 2
	Prehardened steel NAK80, PX5, etc.		30 - 40 HRC	First choice	AH3135	MJ	100 - 200	0.5 - 1.5
			30 - 40 HRC	Second choice	AH120	MJ	100 - 200	0.5 - 1.5
M	Stainless steel X5CrNi18-9, X5CrNiMo17-12-3, etc.		- 200 HB	First choice	AH3135	MJ	100 - 150	0.3 - 1
K	Grey cast iron 250, 300, etc.		150 -250 HB	First choice	AH120	MJ	100 - 300	0.5 - 2
	Ductile cast iron 600-3, etc.		150 -250 HB	First choice	AH120	MJ	80 - 200	0.5 - 2
S	Titanium alloys Ti-6Al-4V, etc.		- 40 HRC	First choice	AH3135	MJ	30 - 60	0.3 - 0.7
	Superalloys Inconel718, etc.		- 40 HRC	First choice	AH120	MJ	20 - 50	0.1 - 0.3
H	Hardened steel	X40CrMoV5-1, etc.	40 - 50 HRC	First choice	AH3135	MJ	80 - 130	0.1 - 0.3
		X153CrMoV12, etc.	50 - 60 HRC	First choice	AH120	MJ	50 - 70	0.03 - 0.07

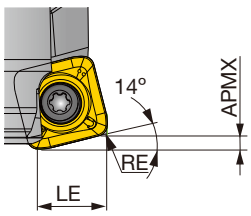
APPLICATION RANGE

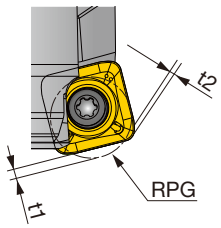




Designation	Tool dia. DCX	Max. depth of cut APMX	Max. plunging depth A	Max. ramping angle RMPX	Max. cutting width in plunging W	Min. machining dia. øD1	Max. machining dia. øD2	Max. cutting width in enlarging ae
TXSW15M050B...	50	2.5	0.7	4.8°	14.5	70	95	36
TXSW15M063B...	63	2.5	0.7	2.9°	14.5	96	121	49
TXSW15J, M080B...	80	2.5	0.7	2°	14.5	130	155	66
TXSW15J, M100B...	100	2.5	0.7	1.4°	14.5	170	195	86
TXSW15J, M125B...	125	2.5	0.7	1°	14.5	220	245	111
TXSW15J, M160B...	160	2.5	0.7	0.7°	14.5	290	315	146

TOOL GEOMETRY FOR PROGRAMMING





APMX (mm)	Actual corner radius RE (mm)	LE (mm)	Programmed corner radius RPG	Uncut amount t1 (mm)	Overcut amount t2 (mm)
2.5	2	12.7	4	1.99	-
2.5	2	12.7	4.5	1.88	-
2.5	2	12.7	5	1.78	0.01

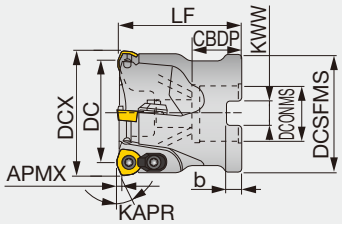
- When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set in R = 4.5 mm.
If a larger radius is used, overcutting may occur. The above table shows the uncut (t1) and overcut (t2) amounts for the programmed corner radius.

MILLFEED
TXP05/06/08/09

High feed mill

GAMP = +5°, GAMF = -4° ~ -6°







Designation	APMX	DCX	CICT	DC	DCSFMS	LF	DCONMS	CBDP	KWW	b	KAPR	WT(kg)	Air hole	Insert
TXP05063RB-E	1.5	63	6	55.4	59	50	22	20	10.4	6.3	15	0.8	with	WPM*05...
TXP05080RB-E	1.5	80	7	72.4	76	63	27	22	12.4	7	15	1.7	with	WPM*05...
TXP06050R	1.5	50	4	41.4	47	50	22	20	10	6	20	0.4	without	WPM*06...
TXP06050R2	1.5	50	4	41.4	47	50	22.225	20	8	5	20	0.4	with	WPM*06...
TXP06050RA	1.5	50	4	41.4	47	50	22	20	10	6	20	0.4	with	WPM*06...
TXP06063RB-E	1.5	63	5	54.4	59	50	22	20	10.4	6.3	20	0.7	with	WPM*06...
TXP06080RB-E	1.5	80	6	71.4	76	63	27	22	12.4	7	20	1.6	with	WPM*06...
TXP08050R	1.5	50	3	38.6	47	50	22	19.5	10	6	10	0.4	with	WPMT08...
TXP08050R2	1.5	50	3	38.6	47	50	22.225	19.5	8	5	10	0.4	with	WPMT08...
TXP08050RA	1.5	50	3	38.6	47	50	22	19.5	10	6	10	0.4	with	WPMT08...
TXP08050R-E	1.5	50	3	38.6	47	50	22	20	10.4	6.3	10	0.4	without	WPMT08...
TXP08052R-E	1.5	52	3	40.6	50	50	22	20	10.4	6.3	10	0.5	without	WPMT08...
TXP08063R	1.5	63	4	51.6	59	50	22	20	10	6	10	0.7	with	WPMT08...
TXP08063R2	1.5	63	4	51.6	59	50	22.225	20	8	5	10	0.7	with	WPMT08...
TXP08063RA	1.5	63	4	51.6	59	50	22	20	10	6	10	0.7	with	WPMT08...
TXP08063R-E	1.5	63	4	51.6	59	50	22	20	10.4	6.3	10	0.7	without	WPMT08...
TXP08066R-E	1.5	66	4	54.6	63	50	27	22	12.4	7	10	0.8	without	WPM*06...
TXP08080R	1.5	80	5	68.6	76	63	31.75	32	12.7	8	10	1.4	with	WPMT08...
TXP08080RA	1.5	80	5	68.6	76	63	31.75	32	12.7	8	10	1.4	with	WPMT08...
TXP08080R-E	1.5	80	5	68.6	76	63	27	22	12.4	7	10	1.5	without	WPM*06...
TXP08100R	1.5	100	6	88.6	96	63	31.75	32	12.7	8	10	2.5	with	WPMT08...
TXP08100RA	1.5	100	6	88.6	96	63	31.75	32	12.7	8	10	2.5	with	WPMT08...
TXP08100R-E	1.5	100	6	88.6	96	63	32	25	14.4	8	10	2.5	without	WPM*06...
TXP08125R	1.5	125	7	113.6	80	63	38.1	45	15.9	10	10	3.1	with	WPMT08...
TXP08125R-E	1.5	125	7	113.6	98	63	40	32	16.4	9	10	3.1	without	WPMT08...
TXP08160R	1.5	160	8	148.6	100	63	50.8	46	19	11	10	5.1	with	WPMT08...
TXP09063R	3	63	3	49.4	59	50	22	20	10	6	20	0.6	with	WPMT09...
TXP09063R2	3	63	3	49.4	59	50	22.225	20	8	5	20	0.6	with	WPMT09...
TXP09063R-E	3	63	3	49.4	59	50	22	20	10.4	6.3	20	0.6	without	WPMT09...
TXP09080R	3	80	4	66.4	76	63	31.75	32	12.7	8	20	1.3	with	WPMT09...
TXP09080R-E	3	80	4	66.4	76	63	27	22	12.4	7	20	1.3	without	WPMT09...
TXP09100R	3	100	5	86.4	96	63	31.75	32	12.7	8	20	2.4	with	WPMT09...
TXP09100R-E	3	100	5	86.4	96	63	32	25	14.4	8	20	2.4	without	WPMT09...
TXP09125R	3	125	6	111.4	98	63	38.1	38	15.9	10	20	3.1	with	WPMT09...
TXP09125R-E	3	125	6	111.4	98	63	40	32	16.4	9	20	2.9	without	WPMT09...
TXP09160R	3	160	7	146.4	100	63	50.8	38	19	11	20	4.7	with	WPMT09...

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

Reference pages: Inserts → H049, Standard cutting conditions → H050 - H051

SPARE PARTS










Designation	Clamp set	Clamping screw	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Shell locking bolt 3	Wrench 1	Wrench 2
TXP05063RB-E	CSY-15	CSPB-3.5S	M-1000	-	CM10X30H	-	IP-15D	-
TXP05080RB-E	CSY-15	CSPB-3.5S	M-1000	-	-	CAP-CM12X1.75X30	IP-15D	-
TXP06050R	CSY-15	CSPB-4S	M-1000	-	-	CAP-CM10X1.5X30	IP-15D	-
TXP06050R2, RA	CSY-15	CSPB-4S	M-1000	-	CM10X30H	-	IP-15D	-
TXP06063RB-E	CSY-15	CSPB-4S	M-1000	-	CM10X30H	-	IP-15D	-
TXP06080RB-E	CSY-15	CSPB-4S	M-1000	-	CM12X30H	-	IP-15D	-
TXP08050R	CSX20	CSTB-5	M-1000	-	-	FSHM10-40	-	T-20T
TXP08050R*	CSX20	CSTB-5	M-1000	-	FSHM10-40H	-	-	T-20T
TXP0805*R-E	CSX20	CSTB-5	M-1000	-	-	FSHM10-40	-	T-20T
TXP08063R	CSX20	CSTB-5	M-1000	-	-	CAP-CM10X1.5X30	-	T-20T
TXP08063R2	CSX20	CSTB-5	M-1000	-	CM10X30H	-	-	T-20T
TXP08063RA	CSX20	CSTB-5	M-1000	-	CM10X30H	-	-	T-20T
TXP08063, 066R-E	CSX20	CSTB-5	M-1000	-	-	-	-	T-20T
TXP08080R	CSX20	CSTB-5	M-1000	-	-	CAP-CM16X2.0X40	-	T-20T
TXP08080RA	CSX20	CSTB-5	M-1000	-	CM16X40H	-	-	T-20T
TXP08080R-E	CSX20	CSTB-5	M-1000	-	-	-	-	T-20T
TXP08100R	CSX20	CSTB-5	M-1000	-	-	CAP-CM16X2.0X40	-	T-20T
TXP08100RA	CSX20	CSTB-5	M-1000	-	CM16X40H	-	-	T-20T
TXP08100R-E	CSX20	CSTB-5	M-1000	-	-	-	-	IP-20T
TXP08125R	CSX20	CSTB-5	M-1000	TMBA-M20H	-	-	-	T-20T
TXP08160R	CSX20	CSTB-5	M-1000	TMBA-M24H	-	-	-	T-20T
TXP09063R*	CSY-20	CSPB-5	M-1000	-	CM10X30H	-	-	IP-20T
TXP09063R-E	CSY-20	CSPB-5	M-1000	-	-	-	-	IP-20T
TXP09080R	CSY-20	CSPB-5	M-1000	-	CM16X40H	-	-	IP-20T
TXP09080R-E	CSY-20	CSPB-5	M-1000	-	-	-	-	IP-20T
TXP09100R	CSY-20	CSPB-5	M-1000	-	CM16X40H	-	-	IP-20T
TXP09100R-E	CSY-20	CSPB-5	M-1000	-	-	-	-	IP-20T
TXP09125R	CSY-20	CSPB-5	M-1000	TMBA-M20H	-	-	-	IP-20T
TXP09125R-E	CSY-20	CSPB-5	M-1000	-	-	-	-	IP-20T
TXP09160R	CSY-20	CSPB-5	M-1000	TMBA-M24H	-	-	-	IP-20T

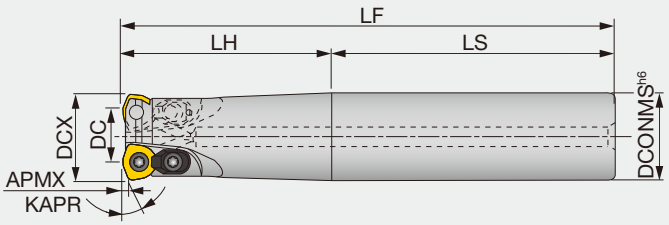
*Recommended clamping torque (N·m)：CSPB-3.5S/CSPB-4S=3.5, CSTB-5=5

MILLFEED
EXP05/06/08/09

High feed endmill, shank type

GAMP = +5°, GAMF = -6°





Designation	APMX	DCX	CICT	DC	DCONMS	LF	LH	LS	KAPR	Air hole	Insert	shank
EXP05020RL	1.5	20	2	12.4	20	180	100	80	15°	with	WPM*05...	Cylindrical
EXP05020RLL	1.5	20	2	12.4	20	250	130	120	15°	with	WPM*05...	Cylindrical
EXP05020RS	1.5	20	2	12.4	20	130	50	80	15°	with	WPM*05...	Cylindrical
EXP05021RL	1.5	21	2	13.4	20	180	100	80	15°	with	WPM*05...	Cylindrical
EXP05021RLL	1.5	21	2	13.4	20	250	50	200	15°	with	WPM*05...	Cylindrical
EXP05021RS	1.5	21	2	13.4	20	130	50	80	15°	with	WPM*05...	Cylindrical
EXP06025RL	1.5	25	2	16.4	25	200	120	80	20°	with	WPM*06...	Cylindrical
EXP06025RLL	1.5	25	2	16.4	25	300	180	120	20°	with	WPM*06...	Cylindrical
EXP06025RS	1.5	25	2	16.4	25	140	60	80	20°	with	WPM*06...	Cylindrical
EXP06026RL	1.5	26	2	17.4	25	200	120	80	20°	with	WPM*06...	Cylindrical
EXP06026RLL	1.5	26	2	17.4	25	300	60	240	20°	with	WPM*06...	Cylindrical
EXP06026RS	1.5	26	2	17.4	25	140	60	80	20°	with	WPM*06...	Cylindrical
EXP06032RL	1.5	32	2	23.4	32	200	120	80	20°	with	WPM*06...	Cylindrical
EXP06032RLB	1.5	32	3	23.4	32	200	120	80	20°	with	WPM*06...	Cylindrical
EXP06032RLL	1.5	32	2	23.4	32	300	180	120	20°	with	WPM*06...	Cylindrical
EXP06032RS	1.5	32	2	23.4	32	150	70	80	20°	with	WPM*06...	Cylindrical
EXP06032RSB	1.5	32	3	23.4	32	150	70	80	20°	with	WPM*06...	Cylindrical
EXP06033RL	1.5	33	2	24.4	32	200	120	80	20°	with	WPM*06...	Cylindrical
EXP06033RLB	1.5	33	3	24.4	32	200	120	80	20°	with	WPM*06...	Cylindrical
EXP06033RLL	1.5	33	2	24.4	32	300	70	230	20°	with	WPM*06...	Cylindrical
EXP06033RS	1.5	33	2	24.4	32	150	70	80	20°	with	WPM*06...	Cylindrical
EXP06033RSB	1.5	33	3	24.4	32	150	70	80	20°	with	WPM*06...	Cylindrical
EXP06040RL	1.5	40	3	31.4	32	250	50	200	20°	with	WPM*06...	Cylindrical
EXP06040RLL	1.5	40	3	31.4	32	300	50	250	20°	with	WPM*06...	Cylindrical
EXP06040RLS42	1.5	40	3	31.4	42	250	50	200	20°	with	WPM*06...	Cylindrical
EXP06040RS	1.5	40	3	31.4	32	150	50	100	20°	with	WPM*06...	Cylindrical
EXP08040RLA	1.5	40	2	28.6	32	250	50	200	10°	with	WPMT08...	Cylindrical
EXP08040RLL	1.5	40	2	28.6	32	300	50	250	10°	with	WPMT08...	Cylindrical
EXP08040RSA	1.5	40	2	28.6	32	150	50	100	10°	with	WPMT08...	Cylindrical
EXP09050RS	3	50	2	36.4	42	150	50	100	20°	with	WPMT09...	Cylindrical
EXP09050RL	3	50	2	36.4	42	250	50	200	20°	with	WPMT09...	Cylindrical

SPARE PARTS







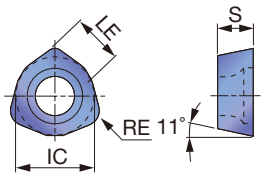
Designation	Clamp set	Clamping screw	Lubricant	Wrench 1	Wrench 2
EXP050...	-	CSPB-3.5S	M-1000	IP-15D	-
EXP060...	CSY-15	CSPB-4S	M-1000	IP-15D	-
EXP080...	CSX20	CSTB-5	M-1000	-	T-20T
EXP090...	CSY-20	CSPB-5	M-1000	-	IP-20T

*Recommended clamping torque (N·m): CSPB-3.5S/CSPB-4S=3.5, CSTB-5=5

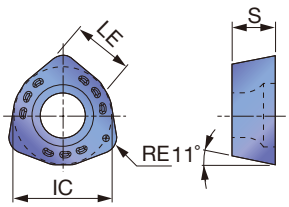
Reference pages: Inserts → H049, Standard cutting conditions → H050 - H051

INSERT

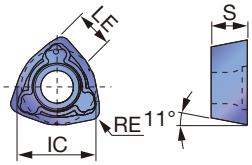
WPMW05/06



WPMT08/09



WPMT05/06/08/09-ML



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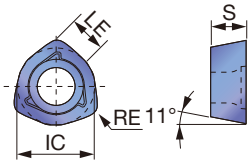
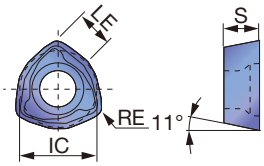


WPMT05/06/08/09-DML



		AH120	AH130	AH140	AH730	T3130	AH3135
P	Steel	☆				☆	★
M	Stainless		★	☆			★
K	Cast iron	★					
N	Non-ferrous						
S	Superalloys	★	☆				
H	Hard materials				★		

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated						LE	IC	S
			AH120	AH130	AH140	AH730	T3130	AH3135			
WPMW05H315ZPR	1.5	1.5	●		●		●	●	5	7.94	3.5
WPMT05H315ZPR-ML	1.5	1.5	●		●		●	●	5	7.94	3.5
WPMT05H315ZPR-MH	1.5	1.5	●		●			●	5	7.94	3.5
WPMT05H315ZPR-DML	1.5	1.5				●			5	7.94	3.5
WPMW06X415ZPR	1.5	1.5	●		●		●	●	6	9.525	4.2
WPMT06X415ZPR-ML	1.5	1.5	●	●	●		●	●	6	9.525	4.2
WPMT06X415ZPR-MH	1.5	1.5	●		●			●	6	9.525	4.2
WPMT06X415ZPR-DML	1.5	1.5				●			6	9.525	4.2
WPMT080615ZSR	1.5	1.5	●	●	●		●	●	8	12.87	6.35
WPMT080615ZPR-ML	1.5	1.5	●	●	●		●	●	8	12.87	6.35
WPMT080615ZSR-MH	1.5	1.5	●		●			●	8	12.87	6.35
WPMT080615ZPR-DML	1.5	1.5				●			8	12.87	6.35
WPMT090725ZSR	2.5	3	●		●		●	●	9	15	7
WPMT090725ZPR-ML	2.5	3	●	●	●		●	●	9	15	7
WPMT090725ZSR-MH	2.5	3	●	●	●			●	9	15	7
WPMT090725ZPR-DML	2.5	3				●			9	15	7

●: Line up

Reference pages: Standard cutting conditions → H050 - H051

STANDARD CUTTING CONDITIONS

05·06 type

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)	ø20, 21 (CICT = 2)	ø25, 26 (CICT = 2)	ø32, 33 (CICT = 2, 3)	ø40 (CICT = 3)	ø50 (CICT = 4)	ø63 (CICT = 5, 6)
P	Carbon Steels S50C, etc. C50, etc. < 300HB	AH3135	100 ~ 250	0.5 ~ 2	*Vc* = 150 m/min, *fz* = 0.8 mm/t *ap* =1 mm, *ae* = 1×DCX mm	*Vc* = 150 m/min, *fz* = 1 mm/t *ap* = 1 mm, *ae* = 1×DCX mm				
					When plunging in small depth: *fz* = 0.2 mm/t					
	Alloy steels SCM440, etc. 42CrMo4etc, etc. < 300 HB	AH3135	100 ~ 200	0.5 ~ 2	*Vc* = 130 m/min, *fz* = 0.8 mm/t *ap* = 1 mm, *ae* = 1×DCX mm	*Vc* = 130 m/min, *fz* = 1 mm/t *ap* = 1 mm, *ae* = 1×DCX mm				
					When plunging in small depth: *fz* = 0.2 mm/t					
	Prehardened steels NAK80, PX5, X96CrMoV12, etc. 30 ~ 40HRC	AH3135	80 ~ 150	0.5 ~ 1	*Vc* = 100 m/min, *fz* = 0.5 mm/t *ap* = 1 mm, *ae* = 1×DCX mm	*Vc* = 100 m/min, *fz* = 0.5 mm/t *ap* = 1 mm, *ae* = 1×DCX mm				
					When plunging in small depth: *fz* = 0.1 mm/t					
M	Stainless steels SUS304, etc. X5CrNi18 9, etc.	AH130 (AH3135)	100 ~ 200	0.5 ~ 2	*Vc* = 130 m/min, *fz* = 0.8 mm/t *ap* = 1 mm, *ae* = 1×DCX mm	*Vc* = 130 m/min, *fz* = 1 mm/t *ap* = 1 mm, *ae* = 1×DCX mm				
					When plunging in small depth: *fz* = 0.2 mm/t					
K	Cast irons FC250, etc. 250, etc.	AH120	100 ~ 250	0.8 ~ 2.5	*Vc* = 150 m/min, *fz* = 1 mm/t *ap* = 1 mm, *ae* = 1×DCX mm	*Vc* = 180 m/min, *fz* = 1.5 mm/t *ap* = 1 mm, *ae* = 1×DCX mm				
					When plunging in small depth: *fz* = 0.2 mm/t					
S	Titanium alloys Ti-6Al-4V, etc.	AH130	30 ~ 60	0.3 ~ 0.7	*Vc* = 50 m/min, *fz* = 0.5 mm/t, *ap* = 0.7 mm, *ae* = 0.5×DCX mm					
					When plunging in small depth: *fz* = 0.1 mm/t					
	Heat-resistant alloys Inconel 718, etc.	AH120	10 ~ 40	0.1 ~ 0.3	*Vc* = 30 m/min, *fz* = 0.2 mm/t, *ap* = 0.7 mm, *ae* = 0.5×DCX mm					
					When plunging in small depth: *fz* = 0.1 mm/t					
H	Hard materials SKD11, etc. X153CrMoV12, etc. 40 ~ 50HRC	AH730	50 ~ 80	0.5 ~ 1	*Vc* = 70 m/min, *fz* = 0.7 mm/t, *ap* = 0.7 mm, *ae* = 1×DCX mm					
					When plunging in small depth: *fz* = 0.1 mm/t					

08 type

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)	ø40 (CICT = 2)	ø50 (CICT = 3)	ø63 (CICT = 4)	ø80 (CICT = 5)	ø100 (CICT = 6)	ø125 (CICT = 7)	ø160 (CICT = 8)
P	Carbon Steels S50C, etc. C50, etc. < 300HB	AH3135	100 ~ 250	0.5 ~ 2	*Vc* = 180 m/min, *fz* = 1 mm/t *ap* = 1 mm, *ae* = 40 mm	*Vc* = 200 m/min, *fz* = 1.5 mm/t *ap* = 1 mm, *ae* = 1×DCX mm					
					When plunging in small depth: *fz* = 0.2 mm/t						
	Alloy steels SCM440, etc. 42CrMo4etc, etc. < 300 HB	AH3135	100 ~ 200	0.5 ~ 2	*Vc* = 130 m/min, *fz* = 1 mm/t *ap* = 1 mm, *ae* = 40 mm	*Vc* = 150 m/min, *fz* = 1.5 mm/t *ap* = 1 mm, *ae* = 1×DCX mm					
					When plunging in small depth: *fz* = 0.2 mm/t						
	Prehardened steels NAK80, PX5, X96CrMoV12, etc. 30 ~ 40HRC	AH3135	80 ~ 150	0.5 ~ 1	*Vc* = 100 m/min, *fz* = 0.5 mm/t *ap* = 1 mm, *ae* = 40 mm	*Vc* = 120 m/min, *fz* = 0.8 mm/t *ap* = 1 mm, *ae* = 1×DCX mm					
					When plunging in small depth: *fz* = 0.1 mm/t						
M	Stainless steels SUS304, etc. X5CrNi18 9, etc.	AH130 (AH3135)	100 ~ 200	0.5 ~ 2	*Vc* = 130 m/min, *fz* = 1 mm/t *ap* = 1 mm, *ae* = 40 mm	*Vc* = 150 m/min, *fz* = 1.5 mm/t *ap* = 1 mm, *ae* = 1×DCX mm					
					When plunging in small depth: *fz* = 0.2 mm/t						
K	Cast irons FC250, etc. 250, etc.	AH120	150 ~ 250	0.8 ~ 2.5	*Vc* = 180 m/min, *fz* = 1.5 mm/t *ap* = 1 mm, *ae* = 40 mm	*Vc* = 200 m/min, *fz* = 2 mm/t *ap* = 1 mm, *ae* = 1×DCX mm					
					When plunging in small depth: *fz* = 0.2 mm/t						
S	Titanium alloys Ti-6Al-4V, etc.	AH130	30 ~ 60	0.3 ~ 0.7	*Vc* = 50 m/min, *fz* = 0.5 mm/t, *ap* = 0.7 mm, *ae* = 0.5×DCX mm						
					When plunging in small depth: *fz* = 0.1 mm/t						
	Heat-resistant alloys Inconel 718, etc.	AH120	10 ~ 40	0.1 ~ 0.3	*Vc* = 30 m/min, *fz* = 0.2 mm/t, *ap* = 0.7 mm, *ae* = 0.5×DCX mm						
					When plunging in small depth: *fz* = 0.1 mm/t						
H	Hard materials SKD11, etc. X153CrMoV12, etc. 40 ~ 50HRC	AH730	50 ~ 80	0.5 ~ 1	*Vc* = 70 m/min, *fz* = 0.7 mm/t, *ap* = 0.7 mm, *ae* = 1×DCX mm						
					When plunging in small depth: *fz* = 0.1 mm/t						

Note: •The above values of cutting speed show the standard speed when overhang length of tool is below 3D. The cutting speed and the feed rate should be set at the lower limit values when overhang length of tool exceeds 3D.
•Thick and heavy chips are discharged by these TAC mills. Use internal air supply or air-blowing in order to prevent tool failure.

STANDARD CUTTING CONDITIONS

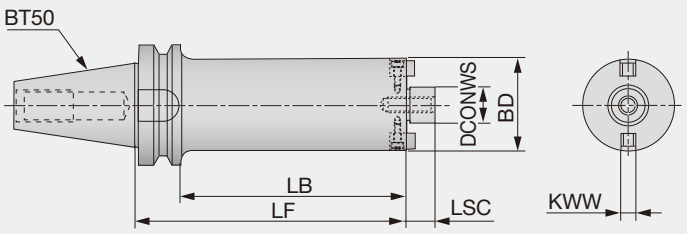
09 type

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)	ø50 (CICT = 2)	ø63 (CICT = 3)	ø80 (CICT = 4)	ø100 (CICT = 5)	ø125 (CICT = 6)	ø160 (CICT = 7)
P	Carbon Steels S50C, etc. C50, etc. < 300HB	AH3135	100 ~ 250	0.5 ~ 2	*Vc* = 200 m/min, *fz* = 1.5 mm/t, *ap* = 2 mm, *ae* = 1×DCX mm					
					When plunging in small depth: *fz* = 0.2 mm/t					
	Alloy steels SCM440, etc. 42CrMo4etc, etc. < 300 HB	AH3135	100 ~ 200	0.5 ~ 2	*Vc* = 150 m/min, *fz* = 1.5 mm/t, *ap* = 2 mm, *ae* = 1×DCX mm					
					When plunging in small depth: *fz* = 0.2 mm/t					
	Prehardened steels NAK80, PX5, X96CrMoV12, etc. 30 ~ 40HRC	AH3135	80 ~ 150	0.5 ~ 1	*Vc* = 120 m/min, *fz* = 0.8 mm/t, *ap* = 2 mm, *ae* = 1×DCX mm					
					When plunging in small depth: *fz* = 0.1 mm/t					
M	Stainless steels SUS304, etc. X5CrNi18 9, etc.	AH130 (AH3135)	100 ~ 200	0.5 ~ 2	*Vc* = 150 m/min, *fz* = 1.5 mm/t, *ap* = 2 mm, *ae* = 1×DCX mm					
					When plunging in small depth: *fz* = 0.2 mm/t					
K	Cast irons FC250, etc. 250, etc.	AH120	150 ~ 250	0.8 ~ 2.5	*Vc* = 200 m/min, *fz* = 2 mm/t, *ap* = 2 mm, *ae* = 1×DCX mm					
					When plunging in small depth: *fz* = 0.2 mm/t					
S	Titanium alloys Ti-6Al-4V, etc.	AH130	30 ~ 60	0.3 ~ 0.7	*Vc* = 50 m/min, *fz* = 0.5 mm/t, *ap* = 1.5 mm, *ae* = 0.5×DCX mm					
					When plunging in small depth: *fz* = 0.1 mm/t					
	Heat-resistant alloys Inconel 718, etc.	AH120	10 ~ 40	0.1 ~ 0.3	*Vc* = 30 m/min, *fz* = 0.2 mm/t, *ap* = 1 mm, *ae* = 0.5×DCX mm					
					When plunging in small depth: *fz* = 0.1 mm/t					
H	Hard materials SKD11, etc. X153CrMoV12, etc. 40 ~ 50HRC	AH730	60 ~ 100	0.5 ~ 1	*Vc* = 70 m/min, *fz* = 0.7 mm/t, *ap* = 0.7 mm, *ae* = 1×DCX mm					
					When plunging in small depth: *fz* = 0.1 mm/t					

Notes : The cutting speed and feed should be set to 70 to 80 % of the value shown in the above table when overhang length of tool exceeds 3D.

MILLFEED
BT50-FMC/FMA

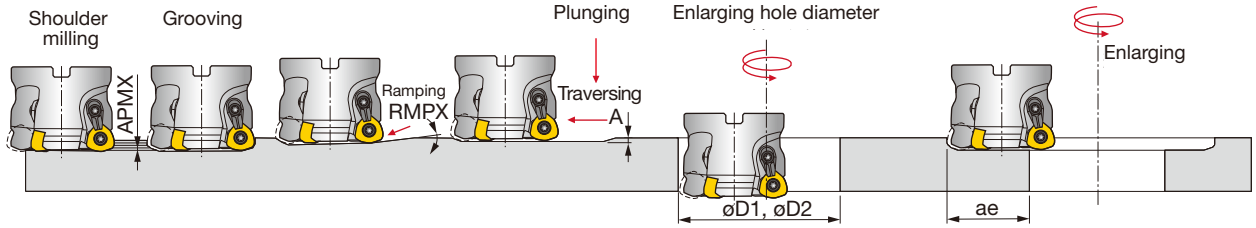
Arbor for TXP mill



*without air hole

Designation	LF	LB	BD	DCONWS	LSC	KWW	WT(kg)	Applicable mill
BT50-FMC22-138-47	138	100	47	22	18	10	5.2	TXP06050R... TXP08050R...
BT50-FMC22-188-47	188	150	47	22	18	10	5.9	
BT50-FMC22-243-47	243	205	47	22	18	10	6.5	
BT50-FMC22-293-47	293	255	47	22	18	10	7.2	
BT50-FMC22-178-59	178	140	59	22	18	10	6.8	TXP08063R... TXP09063R...
BT50-FMC22-238-59	238	200	59	22	18	10	8	
BT50-FMC22-308-59	308	270	59	22	18	10	9.5	
BT50-FMC22-373-59	373	335	59	22	18	10	10.9	
BT50-FMA31.75-215-76	215	177	76	31.75	30	12.7	10	TXP08080R... TXP09080R...
BT50-FMA31.75-295-76	295	257	76	31.75	30	12.7	12.9	
BT50-FMA31.75-375-76	375	337	76	31.75	30	12.7	15.8	
BT50-FMA31.75-275-96	275	237	96	31.75	30	12.7	16.8	TXP08100R... TXP09100R...
BT50-FMA31.75-375-96	375	337	96	31.75	30	12.7	23	

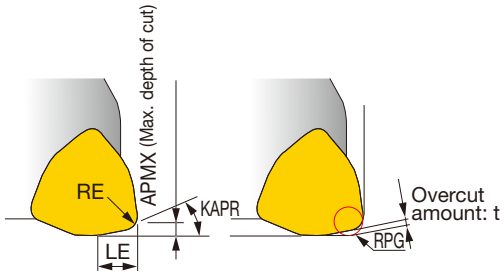
APPLICATION RANGE



Designation	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Min. machining hole dia. øD1	Max. machining hole dia. øD2	Max. cutting width in enlarging hole ae
EXP05020...	20	1.5	3°	0.5	30	37	16
EXP05021...	21	1.5	2.5°	0.5	32	39	17
TXP05063RB-E	63	1.5	1°	0.5	116	123	59
TXP05080RB-E	80	1.5	0.5	0.5	150	157	76
E/HXP06025...	25	1.5	5°	1	33	47	20
E/HXP06026...	26	1.5	4.5°	1	35	49	21
E/HXP06032...	32	1.5	3.5°	1	47	61	27
E/HXP06033...	33	1.5	3°	1	49	63	28
E/HXP06040...	40	1.5	2°	1	63	77	35
T/HXP06050...	50	1.5	1.5°	1	83	97	45
TXP06063RB-E	63	1.5	1°	1	109	123	58
TXP06080RB-E	80	1.5	0.5	1	143	157	75
E/HXP08040...	40	1.5	6°	1	53	77	34
T/HXP08050...	50	1.5	4°	1	72	97	44
TXP08052R-E	52	1.5	4°	1	76	101	46
TXP08063...	63	1.5	2.5°	1	98	123	57
TXP08066R-E	66	1.5	2.5	1	104	129	60
TXP08080...	80	1.5	1.5°	1	132	157	74
TXP08100...	100	1.5	1°	1	172	197	94
TXP08125R	125	1.5	0.75°	1	222	247	119
TXP08160R	160	1.5	0.5°	1	292	317	154
E/HXP09050...	50	3	1.5°	0.8	76	97	43
EXP09050RS/L	50	3	1.5	0.8	76	97	43
TXP09063...	63	3	2°	1.5	98	123	56
TXP09080R	80	3	1.5°	1.5	132	157	73
TXP09100R	100	3	1°	1.5	172	197	93
TXP09125R	125	3	0.75°	1.5	222	247	118
TXP09160R	160	3	0.5°	1.5	292	317	153

TOOL GEOMETRY FOR PROGRAMMING

When programming for CAD/CAM, the tool should be assumed to be a radius cutter shown in the table below. In this case, the amount left as uncut (t) is shown below.



TXP	Max. depth of cut APMX	Corner of insert RE	Cutting edge angle KAPR	LE	t	Corner R when programming RPG
05	1.5	1.5	15°	3.8	0.5	2
06	1.5	1.5	20°	4.3	0.7	2.5
08	1.5	1.5	10°	5.7	0.7	2
09	3	2.5	20°	6.8	1.4	3
09	3	2.5	20°	6.8	1.2	4

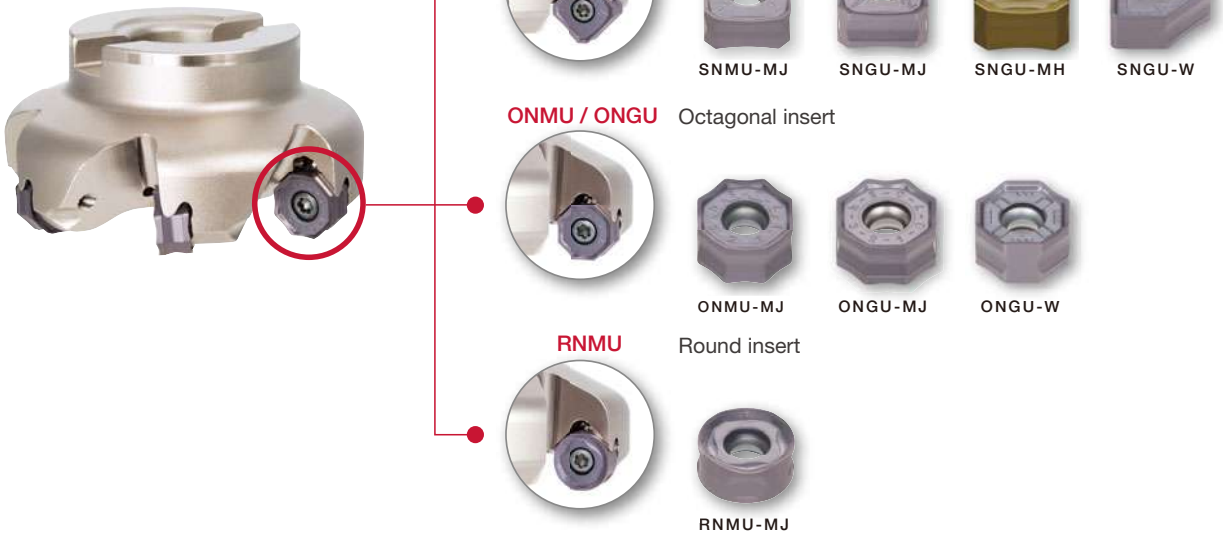
TRIPLE DOTMILL



Brings a top performance in every operation: from high feed milling, scale removing, finish milling … to stainless steel milling

Versatility

3 types of double sided inserts fit in the same pocket



High efficiency with close pitch cutter/Extra-close pitch type available in addition to regular close pitch type

Tool line-up includes extra close pitch cutter maximizing efficiency in cast iron machining.


Standard pitch


Close pitch


Extra-close pitch

Reference pages: H056



Super high density PCD cutter for efficient finishing of aluminum

Super high density cutter

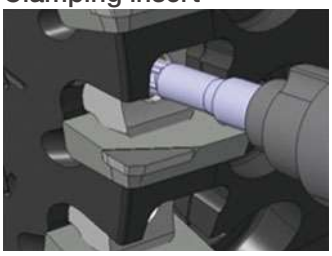


Cutter diameter (mm)	Max num. of teeth	Max. rotation number (min^{-1})	Cutter weight (kg)
50	8	20,000	0.86
63	10	19,000	0.53
80	16	17,000	1.18
100	22	15,000	1.66
125	26	14,000	3.44
160	34	12,000	5.15

Super high density design
High speed cutting more than Vc = 3,000 m/min is possible.

CamAdjust - super simple adjusting mechanism

Clamping insert

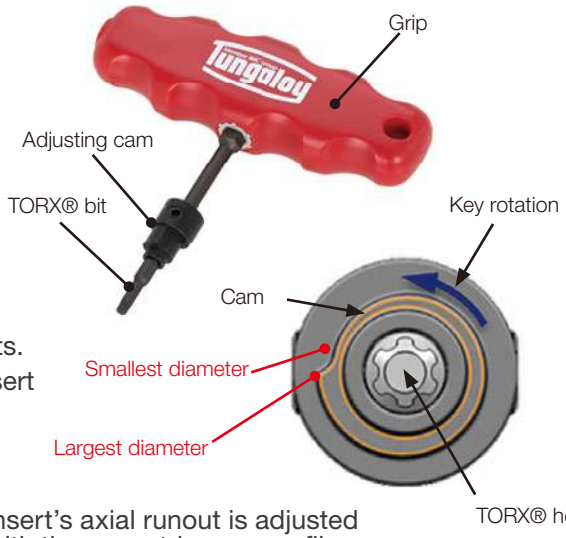


Adjusting axial runout



The same key is used for mounting and adjusting the inserts. The key wrench is operated in a single direction making insert adjustment easy on the pre-setter.

Special key wrench with adjusting cam



Insert's axial runout is adjusted with the eccentric cam profile.

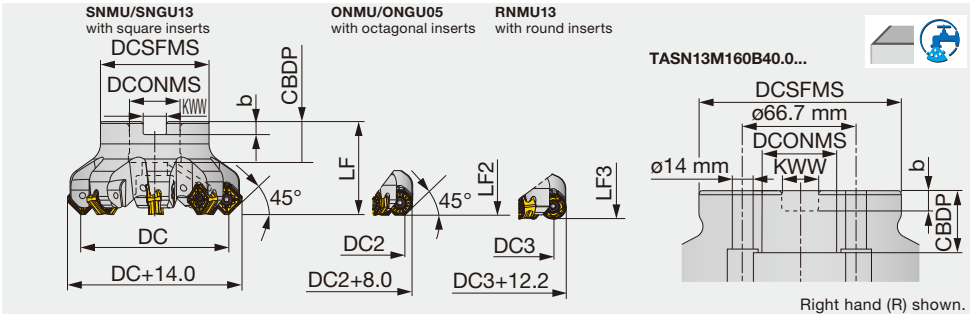
Reference pages: H076

TRIPLE DOTMILL
TASN13

45° face mill, with screw clamp system, for double sided square, octagonal and round inserts

GAMP=+6.0°,GAMF=-6.8°~-6.3°





Right hand (R) shown.

Designation	DC	DC2	DC3	CICT	DCSFMS	LF	LF2	LF3	DCONMS	CBDP	KWW	b	WT(kg)	Air hole
TASN13M050B22.0R04	50	53	48.7	4	41	40	38.5	38.5	22	20	10.4	6.3	0.4	With
TASN13M050B22.0R05	50	53	48.7	5	41	40	38.5	38.5	22	20	10.4	6.3	0.4	With
TASN13M063B22.0R05	63	66	61.7	5	47	40	38.5	38.5	22	20	10.4	6.3	0.7	With
TASN13M063B22.0R06	63	66	61.7	6	47	40	38.5	38.5	22	20	10.4	6.3	0.6	With
TASN13M063B22.0R08	63	66	61.7	8	47	40	38.5	38.5	22	20	10.4	6.3	0.6	With
TASN13M080B27.0R05	80	83	78.7	5	58	50	48.5	48.5	27	22	12.4	7	1.1	With
TASN13M080B27.0R08	80	83	78.7	8	58	50	48.5	48.5	27	22	12.4	7	1.1	With
TASN13M080B27.0R10	80	83	78.7	10	58	50	48.5	48.5	27	22	12.4	7	1.2	With
TASN13J080B25.4R05	80	83	78.7	5	58	50	48.5	48.5	25.4	26	9.5	6	1.2	With
TASN13J080B25.4R08	80	83	78.7	8	58	50	48.5	48.5	25.4	26	9.5	6	1.1	With
TASN13J080B25.4R10	80	83	78.7	10	58	50	48.5	48.5	25.4	26	9.5	6	1.2	With
TASN13M100B32.0R06	100	103	98.7	6	60	50	48.5	48.5	32	28.5	14.4	8	1.4	With
TASN13M100B32.0R08	100	103	98.7	8	60	50	48.5	48.5	32	28.5	14.4	8	1.4	With
TASN13M100B32.0R12	100	103	98.7	12	60	50	48.5	48.5	32	28.5	14.4	8	1.4	With
TASN13J100B31.7R06	100	103	98.7	6	60	50	48.5	48.5	31.75	32	12.7	8	1.4	With
TASN13J100B31.7R08	100	103	98.7	8	60	50	48.5	48.5	31.75	32	12.7	8	1.4	With
TASN13J100B31.7R12	100	103	98.7	12	60	50	48.5	48.5	31.75	32	12.7	8	1.4	With
TASN13M125B40.0R07	125	128	123.7	7	71	63	61.5	61.5	40	32	16.4	9	2.2	With
TASN13M125B40.0R10	125	128	123.7	10	71	63	61.5	61.5	40	32	16.4	9	2.3	With
TASN13M125B40.0R14	125	128	123.7	14	71	63	61.5	61.5	40	32	16.4	9	2.5	With
TASN13J125B38.1R07	125	128	123.7	7	80	63	61.5	61.5	38.1	38	15.9	10	2.6	With
TASN13J125B38.1R10	125	128	123.7	10	80	63	61.5	61.5	38.1	38	15.9	10	2.7	With
TASN13J125B38.1R14	125	128	123.7	14	80	63	61.5	61.5	38.1	38	15.9	10	2.9	With
TASN13M160B40.0R08	160	163	158.7	8	100	63	61.5	61.5	40	29	16.4	9	4.1	Without
TASN13M160B40.0R12	160	163	158.7	12	100	63	61.5	61.5	40	29	16.4	9	4.2	Without
TASN13J160B50.8R08	160	163	158.7	8	100	63	61.5	61.5	50.8	38	19	11	4.1	Without
TASN13J160B50.8R12	160	163	158.7	12	100	63	61.5	61.5	50.8	38	19	11	4.2	Without

Approach angle

10°-20° | 45° | 70° | 85° | 88° | 90° | Others

SPARE PARTS

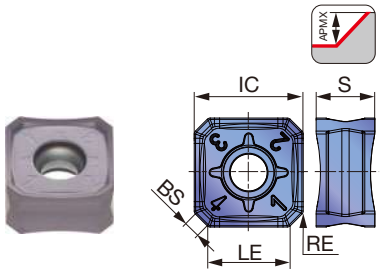
Designation	Clamping screw	Grip	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Torx bit
TASN13M0**B22.0R0*	CSPB-4	H-TB2W	M-1000	-	CM10X30H	BLDIP15/S7
TASN13*080B2*.*R0*	CSPB-4	H-TB2W	M-1000	-	CM12X30H	BLDIP15/S7
TASN13*100B3*.*R0*	CSPB-4	H-TB2W	M-1000	TMBA-M16H	-	BLDIP15/S7
TASN13*125B**.*R**	CSPB-4	H-TB2W	M-1000	TMBA-M20H	-	BLDIP15/S7
TASN13*160B*0.*R**	CSPB-4	H-TB2W	M-1000	-	-	BLDIP15/M7

*Recommended clamping torque (N·m): CSPB-4=3.5

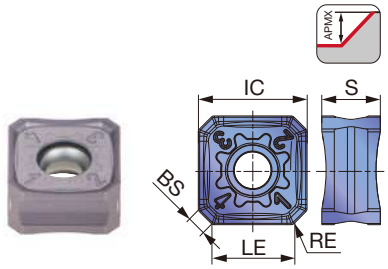
Reference pages: Inserts → H057, Standard cutting conditions → H058

INSERT

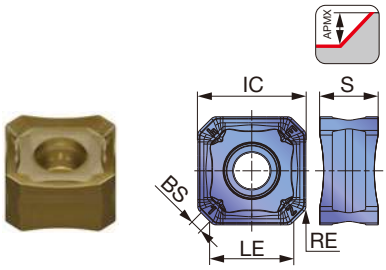
SNMU-MJ



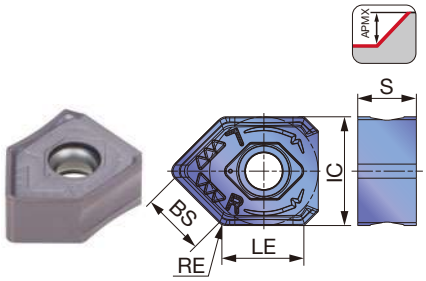
SNGU-MJ



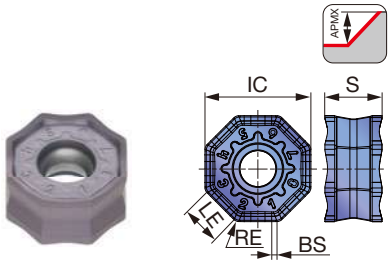
SNGU-MH



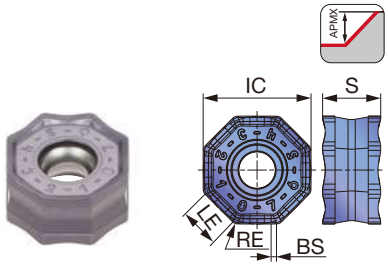
SNGU-W



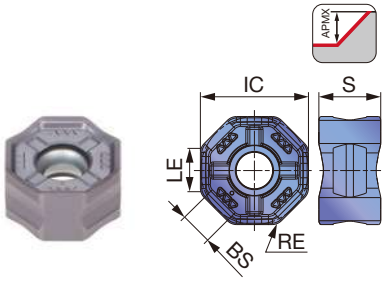
ONMU-MJ



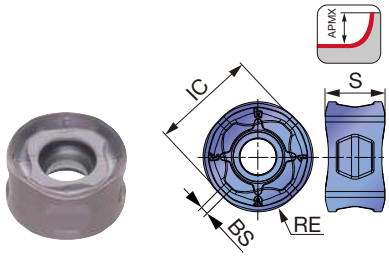
ONGU-MJ



ONGU-W



RNMU-MJ



P	Steel	☆	★	★	
M	Stainless		★	★	
K	Cast iron	★			★
N	Non-ferrous				
S	Superalloys	★	☆		
H	Hard materials	☆	☆		

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated				LE	IC	S	BS
			AH120	AH3135	T3225	T1215				
SNMU1307ANEN-MJ	0.5	6	●	●	●	●	9.4	13	7	2
SNGU1307ANEN-MJ	0.5	6	●	●	●	●	9.4	13	7	2
SNGU1307ANEN-MH	0.8	6			●		9	13	7	2
SNGU1307ANEN-W	1.2	6	●	●			9.6	13	7	7.5
ONMU0507ANEN-MJ	0.8	3.4	●	●	●	●	4.9	13	7	0.7
ONGU0507ANEN-MJ	0.8	3.4	●	●	●	●	4.9	13	7	0.7
ONGU0507ANEN-W	1.6	3.4	●	●			5	13	7.44	3.9
RNMU1307ZNER-MJ	6	6	●	●	●	●	-	13	7.1	1

●: Line up

STANDARD CUTTING CONDITIONS

SNMU / SNGU / ONMU / ONGU

ISO	Workpiece materials		Hardness	Priority	Grades	Chip-breaker	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steel (C15, etc.)		200 - 300HB	First choice	AH3135	MJ	100 - 250	0.1 - 0.5
				Wear resistance	T3225	MJ	200 - 350	0.1 - 0.4
	High carbon and alloy steel (S55C / C55, SCM440 / 42CrMo4, etc.)		150 - 300HB	First choice	AH3135	MJ	100 - 250	0.1 - 0.4
				Wear resistance	T3225	MJ	180 - 300	0.1 - 0.4
	Prehardened steel (NAK80, PX5, etc.)		30 - 40HRC	First choice	AH3135	MJ	100 - 200	0.1 - 0.4
				Wear resistance	T3225	MJ	150 - 250	0.1 - 0.4
M	Stainless steel (SUS304 / X5CrNi18-9, SUS316 / X5CrNiMo17-12-3, etc.)		- 200HB	First choice	AH3135	MJ	100 - 200	0.1 - 0.35
				Wear resistance	T3225	MJ	100 - 250	0.1 - 0.3
	Stainless cast steel (SCH20XNb / 1.4849, etc.)		-	First choice	T3225	MH	60 - 120	0.1 - 0.3
				Low cutting force	AH3135	MJ	60 - 120	0.1 - 0.3
K	Gray cast iron (FC250 / 250 / GG25, etc.)		150 - 250 HB	First choice	T1215	MJ	100 - 300	0.1 - 0.4
					AH120	MJ	100 - 250	0.1 - 0.5
	Ductile cast iron (FCD400 / 400-15, FCD600 / 600-3, etc.)		150 - 250 HB	First choice	T1215	MJ	100 - 300	0.1 - 0.4
					AH120	MJ	80 - 200	0.1 - 0.5
S	Titanium alloys (Ti-6Al-4V, etc.)		- 40HRC	First choice	AH3135	MJ	30 - 60	0.1 - 0.3
	Heat-resistant alloys (Inconel718, etc.)		- 40HRC	First choice	AH120	MJ	10 - 40	0.05 - 0.15
H	Hardened steel	(SKD61/ X40CrMoV5-1, etc.)	40 - 50 HRC	First choice	AH3135	MJ	80 - 130	0.1 - 0.2
		(SKD11/ X153CrMoV12, etc.)	50 - 60 HRC	First choice	AH120	MJ	50 - 70	0.03 - 0.1

RNMU

ISO	Workpiece materials		Hardness	Priority	Grades	Chip-breaker	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steel (C15 etc.)		200 - 300 HB	First choice	AH3135	MJ	100 - 250	※ap=6mm: 0.1 - 0.3 ※ap=2mm: 0.4 - 0.8 ※ap=1mm: 0.8 - 1.5
				Wear resistance	T3225	MJ	200 - 350	
	High carbon and alloy steel (S55C / C55, SCM440 / 42CrMo4, etc.)		150 - 300 HB	First choice	AH3135	MJ	100 - 250	
				Wear resistance	T3225	MJ	180 - 300	
	Prehardened steel (NAK80, PX5 etc.)		30 - 40 HRC	First choice	AH3135	MJ	100 – 200	
				Wear resistance	T3225	MJ	150 - 250	
M	Stainless steel (SUS304 / X5CrNi18-9, SUS316 / X5CrNiMo17-12-3, etc.)		- 200 HB	First choice	AH3135	MJ	100 - 200	※ap = 6 mm : 0.1 - 0.25 ※ap = 2 mm : 0.3 - 0.7 ※ap = 1 mm : 0.6 - 1.3
				Wear resistance	T3225	MJ	100 - 250	
	Stainless cast steel (SCH20XNb / 1.4849, etc.)		-	First choice	T3225	MJ	60 - 120	※ap = 2mm: 0.2 - 0.4 ※ap = 1mm: 0.3 - 0.8
				Fracture resistance	AH3135	MJ	60 - 120	
K	Gray cast iron (FC250 / 250 / GG25, etc.)		150 - 250 HB	First choice	AH120	MJ	100 - 300	※ap=6mm: 0.1 - 0.3 ※ap=2mm: 0.4 - 0.8 ※ap=1mm: 0.8 - 1.5
					T1215	MJ	100 - 250	
	Ductile cast iron (FCD400 / 400-15, FCD600 / 600-3, etc.)		150 - 250 HB	First choice	AH120	MJ	100 - 300	
					T1215	MJ	80 - 200	
S	Titanium alloys (Ti-6Al-4V, etc.)		- 40 HRC	First choice	AH3135	MJ	30 - 60	ap=1mm: 0.15 – 0.8
	Heat-resistant alloys (Inconel718, etc.)		- 40 HRC	First choice	AH120	MJ	10 - 40	ap=1mm: 0.05 - 0.3
H	Hardened steel	(SKD61 / X40CrMoV5-1, etc.)	40 - 50 HRC	First choice	AH3135	MJ	80 - 130	ap=1mm: 0.1 – 0.25
		(SKD11 / X153CrMoV12, etc.)	50 - 60 HRC	First choice	AH120	MJ	50 - 70	ap=0.5mm:0.03–0.1

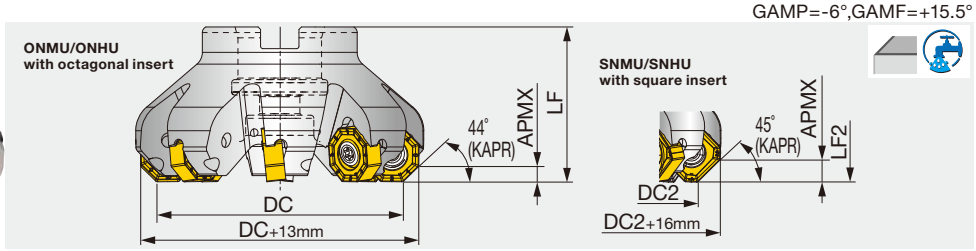
※When using T3225 or T1215, decrease the feed per tooth (fz) to 80% of the abovementioned value.

TAN07

45° face mill, with screw clamp system, for double sided square and octagonal inserts, or single sided octagonal inserts

GAMP=-6°,GAMF=+15.5°

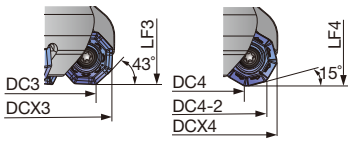




Designation	DC	DC2	CICT	DCSFMS	LF	LF2	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert	Arbor type
TAN07R063M22.0E05	63	60.3	5	41	40	41.4	22	20	10.4	6.3	0.5	with	SN*U/ON*U/OWMT...	A
TAN07R063M22.0E06	63	60.3	6	41	40	41.4	22	20	10.4	6.3	0.5	with	SN*U/ON*U/OWMT...	A
TAN07R080M25.4-06	80	77.3	6	50	50	51.4	25.4	26	9.5	6	1	with	SN*U/ON*U/OWMT...	A
TAN07R080M25.4-08	80	77.3	8	50	50	51.4	25.4	26	9.5	6	1	with	SN*U/ON*U/OWMT...	A
TAN07R080M27.0E06	80	77.3	6	50	50	51.4	27	22	12.4	7	1	with	SN*U/ON*U/OWMT...	A
TAN07R080M27.0E08	80	77.3	8	50	50	51.4	27	22	12.4	7	1	with	SN*U/ON*U/OWMT...	A
TAN07R100M31.7-07	100	97.3	7	60	50	51.4	31.75	32	12.7	8	1.5	with	SN*U/ON*U/OWMT...	B
TAN07R100M31.7-10	100	97.3	10	60	50	51.4	31.75	32	12.7	8	1.5	with	SN*U/ON*U/OWMT...	B
TAN07R100M32.0E07	100	97.3	7	60	50	51.4	32	28.5	14.4	8	1.5	with	SN*U/ON*U/OWMT...	B
TAN07R100M32.0E10	100	97.3	10	60	50	51.4	32	28.5	14.4	8	1.5	with	SN*U/ON*U/OWMT...	B
TAN07R125M38.1-08	125	122.3	8	80	63	64.4	38.1	38	15.9	10	2.5	with	SN*U/ON*U/OWMT...	B
TAN07R125M38.1-12	125	122.3	12	80	63	64.4	38.1	38	15.9	10	2.5	with	SN*U/ON*U/OWMT...	B
TAN07R125M40.0E08	125	122.3	8	71	63	64.4	40	29	16.4	9	2.5	with	SN*U/ON*U/OWMT...	B
TAN07R125M40.0E12	125	122.3	12	71	63	64.4	40	29	16.4	9	2.5	with	SN*U/ON*U/OWMT...	B
TAN07R160M40.0E10	160	157.3	10	100	63	64.4	40	29	16.4	9	4	without	SN*U/ON*U/OWMT...	D
TAN07R160M40.0E15	160	157.3	15	100	63	64.4	40	29	16.4	9	4	without	SN*U/ON*U/OWMT...	D
TAN07R160M50.8-10	160	157.3	10	100	63	64.4	50.8	38	19	11	4	without	SN*U/ON*U/OWMT...	B
TAN07R160M50.8-15	160	157.3	15	100	63	64.4	50.8	38	19	11	4	without	SN*U/ON*U/OWMT...	B
TAN07R200M47.6-12	200	197.3	12	130	63	64.4	47.625	38	25.4	14	6.6	without	SN*U/ON*U/OWMT...	C
TAN07R200M47.6-18	200	197.3	18	130	63	64.4	47.625	38	25.4	14	6.7	without	SN*U/ON*U/OWMT...	C
TAN07R200M60.0E12	200	197.3	12	135	63	64.4	60	38	25.7	14	6.5	without	SN*U/ON*U/OWMT...	C
TAN07R200M60.0E18	200	197.3	18	135	63	64.4	60	38	25.7	14	6.5	without	SN*U/ON*U/OWMT...	C
TAN07R250M47.6-15	250	247.3	15	130	63	64.4	47.625	38	25.4	14	9.3	without	SN*U/ON*U/OWMT...	C
TAN07R250M47.6-21	250	247.3	21	130	63	64.4	47.625	38	25.4	14	9.4	without	SN*U/ON*U/OWMT...	C
TAN07R250M60.0E15	250	247.3	15	130	63	64.4	60	38	25.7	14	9	without	SN*U/ON*U/OWMT...	C
TAN07R250M60.0E21	250	247.3	21	130	63	64.4	60	38	25.7	14	9	without	SN*U/ON*U/OWMT...	C
TAN07R315M47.6-18	315	312.3	18	220	63	64.4	47.625	38	25.4	14	17.9	without	SN*U/ON*U/OWMT...	C
TAN07R315M47.6-24	315	312.3	24	220	63	64.4	47.625	38	25.4	14	18	without	SN*U/ON*U/OWMT...	C
TAN07R315M60.0E18	315	312.3	18	220	80	81.4	60	38	25.7	14	18	without	SN*U/ON*U/OWMT...	E
TAN07R315M60.0E24	315	312.3	24	220	80	81.4	60	38	25.7	14	18	without	SN*U/ON*U/OWMT...	E

Dimension when using positive type inserts (OWMT)

OWMT-ML OWMT-HJ

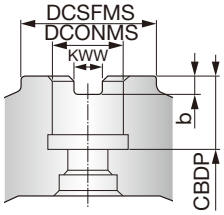


Designation	OWMT-ML			OWMT-HJ			
	DC3	DCX3	LF3	DC4	DC4-2	DCX4	LF4
TAN07R063M...	63.5	76	41	55.7	67.2	76.4	41.4
TAN07R080M...	80.5	93	51	72.7	84.2	93.4	51.4
TAN07R100M...	100.5	113	51	92.7	104.2	113.4	51.4
TAN07R125M...	125.5	138	64	117.7	129.2	138.4	64.4
TAN07R160M...	160.5	173	64	152.7	164.2	173.4	64.4
TAN07R200M...	200.5	213	64	192.7	204.2	213.4	64.4
TAN07R250M...	250.5	263	64	242.7	254.2	263.4	64.4
TAN07R315M...	315.5	328	64	307.7	319.2	328.4	64.4

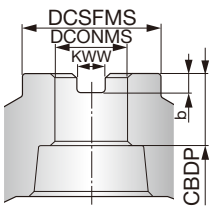
Note: OWMT08 inserts can be only used with screw on type cutters.

Arbor type

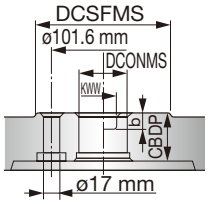
Arbor type A



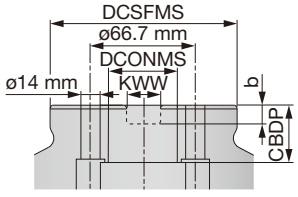
Arbor type B



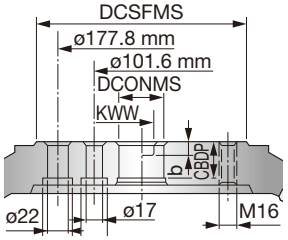
Arbor type C



Arbor type D



Arbor type E

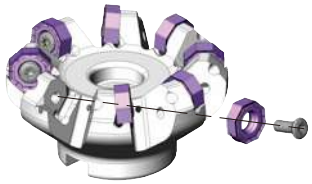


SPARE PARTS



Designation	Clamping screw	Grip	Shell locking bolt 1	Shell locking bolt 2	Torx bit
TAN07R063M22.0...	SRM5X0.8IP20X+ACROLYTE	H-TB	-	CM10X30H	BLDIP20/S7
TAN07R080M25.4...	SRM5X0.8IP20X+ACROLYTE	H-TB	-	CM12X30H	BLDIP20/S7
TAN07R100M31.7...	SRM5X0.8IP20X+ACROLYTE	H-TB	TMBA-M16H	-	BLDIP20/S7
TAN07R125M38.1...	SRM5X0.8IP20X+ACROLYTE	H-TB	TMBA-M20H	-	BLDIP20/S7
TAN07R160 - 315...	SRM5X0.8IP20X+ACROLYTE	H-TB	-	-	BLDIP20/M7

*Recommended clamping torque (N·m): SRM5X0.8IP20X+ACROLYTE=7.5



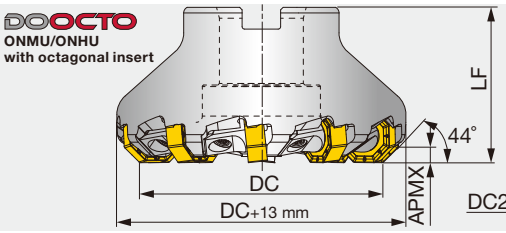
Reference pages: Inserts → H061, Standard cutting conditions → H062

DOOCTO

TAN07-W

High density 45° face mill, with wedge clamp system, for double sided square and octagonal inserts



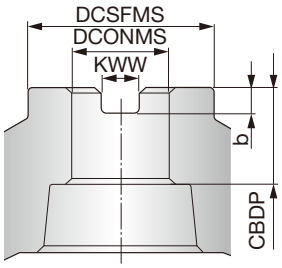


Designation	øDc1	øDc2	z	øDb	Lf1	Lf2	ød	ℓ	a	b	Kg	Air hole	Insert	Arbor type
TAN07R063M22.0E08W	63	60.3	8	41	40	41.4	22	20	10.4	6.3	0.6	Without	SN*U/ON*U/OWMT...	B
TAN07R080M25.4-10W	80	77.3	10	50	50	51.4	25.4	26	9.5	6	1	Without	SN*U/ON*U/OWMT...	B
TAN07R080M27.0E10W	80	77.3	10	50	50	51.4	27	25	12.4	7	1.1	Without	SN*U/ON*U/OWMT...	B
TAN07R100M31.7-14W	100	97.3	14	60	50	51.4	31.75	32	12.7	8	1.3	Without	SN*U/ON*U/OWMT...	B
TAN07R100M32.0E14W	100	97.3	14	60	50	51.4	32	28.5	14.4	8	1.6	Without	SN*U/ON*U/OWMT...	B
TAN07R125M38.1-18W	125	122.3	18	80	63	64.4	38.1	38	15.9	10	2.8	Without	SN*U/ON*U/OWMT...	B
TAN07R125M40.0E18W	125	122.3	18	71	63	64.4	40	29	16.4	9	2.5	Without	SN*U/ON*U/OWMT...	B
TAN07R160M50.8-22W	160	157.3	22	100	63	64.4	50.8	38	19	11	4	Without	SN*U/ON*U/OWMT...	B
TAN07R160M40.0E22W	160	157.3	22	100	63	64.4	40	29	16.4	9	3.6	Without	SN*U/ON*U/OWMT...	D
TAN07R200M60.0E28W	200	197.3	28	135	63	64.4	60	39	25.7	14	5.8	Without	SN*U/ON*U/OWMT...	C

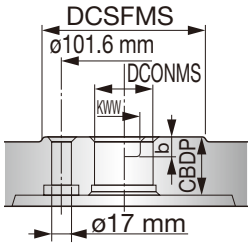
Note: OWMT insert cannot be used with a wedge clamp type cutter.

Arbor type

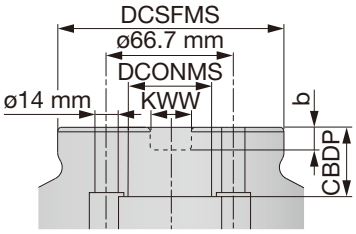
Arbor type B



Arbor type C



Arbor type D



SPARE PARTS

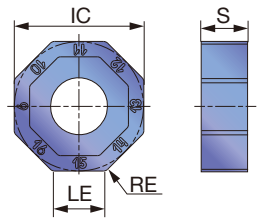
Designation	Grip	Wedge	Wedge fixing screw	Torx bit
TAN07-W	H-TBS	CLARM-10-TUNG1	DS-6P	BLDIP15/S7



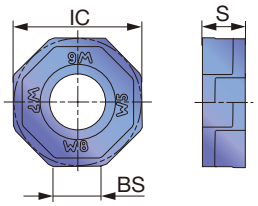
Reference pages: Inserts → H061, Standard cutting conditions → H062

INSERT

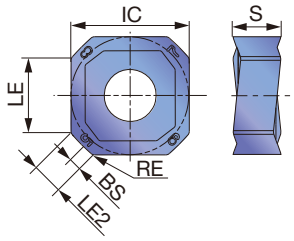
ONMU/ONHU0705-MJ / -ML



ONHU0705-W



SNMU/SNHU1706 -MJ / -ML



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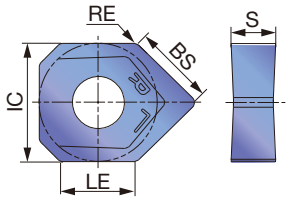
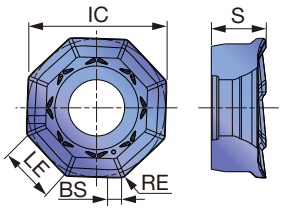
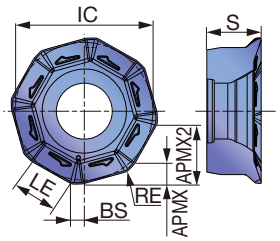


OWMT0807-ML



OWMT0807-HJ



P	Steel			☆	★	★			★
M	Stainless		☆			★			★
K	Cast iron	★			☆			★	
N	Non-ferrous								
S	Superalloys		☆			☆			
H	Hard materials					☆			

★ : First choice
☆ : Second choice

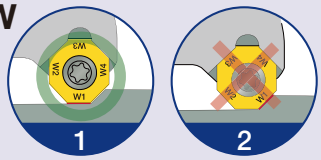
Designation	RE	APMX	Coated								LE	S	LE2	IC	BS	APMX2
			AH120	AH130	AH140	AH725	AH3135	T1115	T1215	T3225						
ONMU0705ANPN-MJ	0.8	4.75			●	●	●	●	●	●	7.2	6.2	-	17.3	-	-
ONHU0705ANPN-MJ	0.8	4.75			●	●					7.2	6.2	-	17.3	-	-
ONMU0705ANPN-ML	0.8	4.75	●				●				7.2	6.2	-	17.3	-	-
ONHU0705ANTN-ML	0.8	4.75	●		●	●					7.2	6.2	-	17.3	-	-
ONHU0705ANPR-W *	-	4.75	●								7.2	5.8	-	17.5	6.4	-
OWMT0807ZNER-HJ	1.2	1.5					●				-	7.4	-	19	1	7.5
OWMT0807AAER-ML	0.8	3.5		●			●				5.2	7.4	-	-	1.2	-
SNMU1706ANPR-MJ	0.8	7.5			●	●	●		●	●	11	6.98	4.4	17.3	1.8	-
SNHU1706ANPR-MJ	0.8	7.5			●	●					11	6.98	4.4	17.3	1.8	-
SNMU1706ANTR-ML	0.8	7.5	●				●				11	6.98	4.4	17.3	1.8	-
SNHU1706ANTR-ML	0.8	7.5	●								11	6.98	4.4	17.3	1.8	-
SNHU1706ANFN-W *	0.4	7.5	●								17.3	6.5	-	17.3	11	-

* Pay attention to the wiper insert installation procedure below.

●: Line up

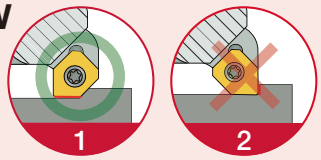
Attention for wiper inserts

ONHU0705ANPR-W



Attach only one wiper insert on the cutter and make sure the wiper edge faces the machining surface.
Feed rate: f < 5.5 mm/rev

SNHU1706ANFN-W



Attach only one wiper insert on the cutter and make sure the wiper edge faces the machining surface.
Feed rate: f < 9.5 mm/rev

STANDARD CUTTING CONDITIONS

Negative type

ISO	Workpiece material	Hardness	Priority	Recommendation		Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
				Grade	Chipbreaker		
P	Low carbon steel C15E, etc.	- 200 HB	First choice	AH3135	MJ	100 - 250	0.2 - 0.5
		- 200 HB	Wear resistance	T3225	MJ	200 - 350	0.2 - 0.4
		- 200 HB	Low cutting force	AH3135	ML	100 - 250	0.2 - 0.4
	High carbon steel C45E, C55E, etc.	200 - 300 HB	First choice	AH3135	MJ	100 - 230	0.2 - 0.4
		200 - 300 HB	Wear resistance	T3225	MJ	180 - 300	0.2 - 0.4
		200 - 300 HB	Low cutting force	AH3135	ML	100 - 230	0.2 - 0.4
	Alloy steel 42CrMo4, 17Cr3, etc.	150 - 330 HB	First choice	AH3135	MJ	100 - 200	0.2 - 0.4
		150 - 330 HB	Wear resistance	T3225	MJ	150 - 250	0.2 - 0.4
		150 - 330 HB	Low cutting force	AH3135	ML	100 - 200	0.2 - 0.4
M	Stainless steel X5CrNi18-9, etc.	- 200 HB	First choice	AH3135	MJ	100 - 200	0.1 - 0.3
		- 200 HB	Wear resistance	T3225	MJ	100 - 250	0.1 - 0.3
K	Grey cast iron 250, 300, etc.	150 - 250 HB	First choice	T1215	MJ	150 - 300	0.1 - 0.5
		150 - 250 HB	Fracture resistance	AH725	MJ	100 - 250	0.1 - 0.5
		150 - 250 HB	Low cutting force	AH120	ML	100 - 250	0.1 - 0.5
	Ductile cast iron 600-3, etc.	150 - 300 HB	First choice	T1215	MJ	100 - 300	0.1 - 0.5
		150 - 300 HB	Fracture resistance	AH725	MJ	80 - 200	0.1 - 0.5
		150 - 300 HB	Low cutting force	AH120	ML	80 - 200	0.1 - 0.5
H	Hardened steel	40 - 50 HRC	First choice	AH725	MJ	80 - 130	0.1 - 0.2
		50 - 60 HRC	First choice	AH725	MJ	50 - 70	0.05 - 0.1

Positive type

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (m/min)	Feed per tooth : *fz* (mm/t)	
						ML	HJ*
P	Low carbon steel C15E, etc.	- 200 HB	First choice	AH3135	100 - 300	0.1 - 0.4	0.5 - 1.5
		- 200 HB	Fracture resistance	AH130	100 - 300	0.1 - 0.4	-
	High carbon steel C45E, C55E, etc.	200 - 300 HB	First choice	AH3135	100 - 230	0.1 - 0.3	0.5 - 1.5
		200 - 300 HB	Fracture resistance	AH130	100 - 230	0.1 - 0.3	-
	Alloy steel 42CrMo4, 17Cr3, etc.	150 - 330 HB	First choice	AH3135	100 - 200	0.1 - 0.3	0.5 - 1.5
		150 - 330 HB	Fracture resistance	AH130	100 - 200	0.1 - 0.3	-
M	Stainless steel X5CrNi18-9, etc.	- 200 HB	First choice	AH3135	100 - 150	0.1 - 0.3	0.3 - 0.7
		- 200 HB	Fracture resistance	AH130	100 - 150	0.1 - 0.3	-
K	Grey cast iron 250, 300, etc.	150 - 250 HB	First choice	AH3135	100 - 250	0.1 - 0.4	0.5 - 1.5
		150 - 250 HB	Fracture resistance	AH130	100 - 250	0.1 - 0.4	-
	Ductile cast iron 600-3, etc.	150 - 250 HB	First choice	AH3135	80 - 200	0.1 - 0.3	0.5 - 1.5
		150 - 250 HB	Fracture resistance	AH130	80 - 200	0.1 - 0.3	-
S	Titanium alloy Ti-6Al-4V, etc.	- HRC 40	First choice	AH3135	30 - 60	0.1 - 0.3	0.3 - 0.7
		- HRC 40	Fracture resistance	AH130	30 - 60	0.1 - 0.3	-
	Heat resistant alloy Inconel718, etc.	- HRC 40	First choice	AH3135	10 - 40	0.05 - 0.15	0.1 - 0.3
		- HRC 40	Fracture resistance	AH130	10 - 40	0.05 - 0.15	-
H	Hardened steel	40 - 50 HRC	First choice	AH3135	80 - 130	-	0.1 - 0.3
		50 - 60 HRC	First choice	AH3135	50 - 70	-	0.03 - 0.07

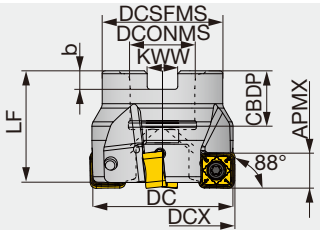
* Apply 20% of recommended feed when using HJ insert with ap over 1.5 mm.

THSN12

88° face mill, with screw clamp system, for double sided square inserts

GAMP = +3°, GAMF = -11°





Designation	APMX	DC	DCX	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
THSN12M050B22.0R04	9.5	50	50.6	4	41	40	22	20	10.4	6.3	0.32	With	SNMU1206...
THSN12M050B22.0R05	9.5	50	50.6	5	41	40	22	20	10.4	6.3	0.32	With	SNMU1206...
THSN12M063B22.0R04	9.5	63	63.6	4	47	40	22	20	10.4	6.3	0.54	With	SNMU1206...
THSN12M063B22.0R06	9.5	63	63.6	6	47	40	22	20	10.4	6.3	0.52	With	SNMU1206...
THSN12J080B25.4R05	9.5	80	80.6	5	58	50	25.4	26	8.5	6	1.13	With	SNMU1206...
THSN12J080B25.4R08	9.5	80	80.6	8	58	50	25.4	26	8.5	6	1.15	With	SNMU1206...
THSN12M080B27.0R05	9.5	80	80.6	5	58	50	27	22	12.4	7	1.17	With	SNMU1206...
THSN12M080B27.0R08	9.5	80	80.6	8	58	50	27	22	12.4	7	1.14	With	SNMU1206...
THSN12J100B31.7R06	9.5	100	100.6	6	60	50	31.75	32	12.7	8	1.43	With	SNMU1206...
THSN12J100B31.7R08	9.5	100	100.6	8	60	50	31.75	32	12.7	8	1.39	With	SNMU1206...
THSN12M100B32.0R06	9.5	100	100.6	6	60	50	32	28.5	14.4	8	1.4	With	SNMU1206...
THSN12M100B32.0R08	9.5	100	100.6	8	60	50	32	28.5	14.4	8	1.38	With	SNMU1206...

SPARE PARTS





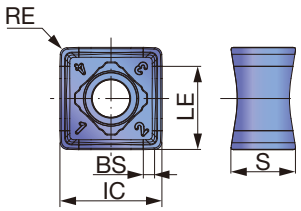

Designation	Clamping screw	Torx bit	Grip	Shell locking bolt
THSN12M050...	CSPB-4	BLDIP15/S7	H-TB2W	CM10x30H
THSN12M063...	CSPB-4	BLDIP15/S7	H-TB2W	CM10x30H
THSN12J080...	CSPB-4	BLDIP15/S7	H-TB2W	CM12X30H
THSN12M080...	CSPB-4	BLDIP15/S7	H-TB2W	CM12X30H
THSN12J100...	CSPB-4	BLDIP15/S7	H-TB2W	TMBA-M16H
THSN12M100...	CSPB-4	BLDIP15/S7	H-TB2W	TMBA-M16H

*Recommended clamping torque (N·m): CSPB-4=3.5

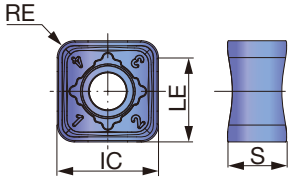
Reference pages: Inserts → H064, Standard cutting conditions → H065

INSERT

SNMU120608HNEN-MM



SNMU120612/20EN-MM



		Coated			
		AH120	AH3135	T1215	T3225
P	Steel	☆	★		★
M	Stainless		★		★
K	Cast iron	★		★	
N	Non-ferrous				
S	Superalloys	★	☆		
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	Coated AH3135	Coated T1215	Coated T3225	LE	S	IC	BS
SNMU120608HNEN-MM	0.8	9.5	●	●	●	●	9.8	7.5	12	1.4
SNMU120612EN-MM	1.2	9.5		●	●		10.8	7.25	12	-
SNMU120620EN-MM	2.0	9.5		●	●		10	7	12	-

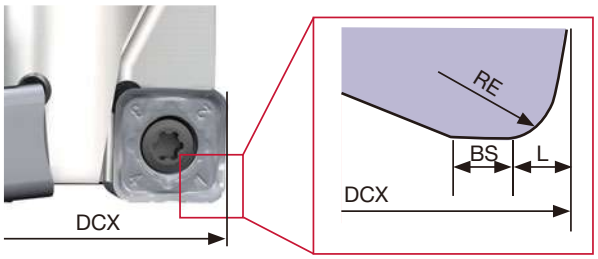
●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness HB	Selection criteria	Recommended grade	Chip-breaker	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steels (S15C / C15E4 / C15E, etc.)	- 200 HB	First choice	AH3135	MJ	100 - 250	0.06 - 0.3
		- 200 HB	Wear resistance	T3225	MJ	200 - 350	0.06 - 0.25
	High carbon steels, alloyed steels (S55C / C55, SCM440 / 42CrMo4, etc.)	- 300 HB	First choice	AH3135	MJ	100 - 250	0.06 - 0.3
		- 300 HB	Wear resistance	T3225	MJ	180 - 300	0.06 - 0.25
	Prehardened steel (NAK80, PX5, etc.)	30 - 40 HRC	First choice	AH3135	MJ	100 - 200	0.06 - 0.25
		30 - 40 HRC	Wear resistance	T3225	MJ	150 - 250	0.06 - 0.2
M	Austenitic stainless steel (SUS304 / X5CrNi18-9, SUS316 / X5CrNiMo17-12-3, etc.)	- 200 HB	First choice	AH3135	MJ	100 - 200	0.06 - 0.25
		- 200 HB	Wear resistance	T3225	MJ	100 - 250	0.06 - 0.2
	Stainless cast steel (SCH20XNb / 1.4849, etc.)	-	First choice	T3225	MJ	60 - 120	0.06 - 0.2
		-	Fracture resistance	AH3135	MJ	60 - 120	0.06 - 0.2
K	Grey cast iron (FC250 / 250 / GG25, etc.)	150 - 250 HB	First choice	T1215	MJ	100 - 350	0.06 - 0.3
		150 - 250 HB	Fracture resistance	AH120	MJ	100 - 250	0.06 - 0.3
	Ductile cast iron (FCD600 / 600-3 / GGG60, etc.)	150 - 250 HB	First choice	T1215	MJ	100 - 350	0.06 - 0.25
		150 - 250 HB	Fracture resistance	AH120	MJ	80 - 200	0.06 - 0.3
S	Titanium alloy (Ti-6Al-4V, etc.)	- 40 HRC	First choice	AH3135	MJ	30 - 60	0.06 - 0.2
	Heat resistant alloy (Inconel718, etc.)	- 40 HRC	First choice	AH120	MJ	10 - 40	0.04 - 0.16
H	Hardened steel (SKD61 / X40CrMoV5-1, etc.)	40 - 50 HRC	First choice	AH3135	MJ	80 - 130	0.04 - 0.16
	Hardened steel (SKD11 / X153CrMoV12, etc.)	50 - 60 HRC	First choice	AH120	MJ	50 - 70	0.02 - 0.08

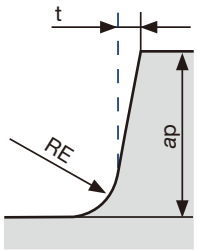
Tool offset

To eliminate uncut amount in face milling operation, adjust the programming according to the offset (L) listed below.



Designation	RE	BS	L
SNMU120608HNEN-MM	0.8	1.4	1.3
SNMU120612EN-MM	1.2	-	1.7
SNMU120620EN-MM	2	-	2.5

The following table shows the amount left over cut (t) when the cutter is considered as a shoulder milling cutter.



Designation / *ap* (mm)	1	2	3	4	5	6	7	8	9	9.5
SNMU120608HNEN-MM	0.01	0.04	0.05	0.05	0.07	0.09	0.14	0.2	0.27	0.27
SNMU120612EN-MM	-	0	0	0.01	0.02	0.05	0.09	0.15	0.22	0.25
SNMU120620EN-MM	-	0	0	0	0.02	0.05	0.09	0.15	0.22	0.25

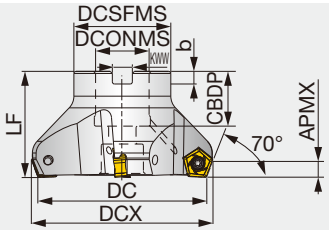
DOPENT

TEN09R/L

70° face mill, with screw clamp system, for double sided pentagonal inserts

GAMP=-6°,GAMF=-10°~-2°





Right hand (R) shown.

Designation	APMX	DC	DCX	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TEN09R050M22.0-03	6.4	50	3	56	41	40	22	20	10	6	0.3	with	PN*U0905...
TEN09R050M22.0-04	6.4	50	4	56	41	40	22	20	10	6	0.3	with	PN*U0905...
TEN09R050M22.0-06	6.4	50	6	56	41	40	22	20	10	6	0.3	with	PN*U0905...
TEN09R050M22.0E04	6.4	50	4	56	41	40	22	20	10.4	6.3	0.3	with	PN*U0905...
TEN09R050M22.0E06	6.4	50	6	56	41	40	22	20	10.4	6.3	0.3	with	PN*U0905...
TEN09R063M22.0-04	6.4	63	4	69	41	40	22	20	10	6	0.5	with	PN*U0905...
TEN09R063M22.0-06	6.4	63	6	69	41	40	22	20	10	6	0.5	with	PN*U0905...
TEN09R063M22.0-08	6.4	63	8	69	41	40	22	20	10	6	0.5	with	PN*U0905...
TEN09R063M22.0E06	6.4	63	6	69	41	40	22	20	10.4	6.3	0.5	with	PN*U0905...
TEN09R063M22.0E08	6.4	63	8	69	41	40	22	20	10.4	6.3	0.5	with	PN*U0905...
TEN09R080M25.4-04	6.4	80	4	86	46	50	25.4	26	9.5	6	0.9	with	PN*U0905...
TEN09R080M25.4-07	6.4	80	7	86	46	50	25.4	26	9.5	6	0.9	with	PN*U0905...
TEN09R080M25.4-10	6.4	80	10	86	46	50	25.4	26	9.5	6	0.9	with	PN*U0905...
TEN09R080M27.0E07	6.4	80	7	86	50	50	27	22	12.4	7	0.9	with	PN*U0905...
TEN09R080M27.0E10	6.4	80	10	86	50	50	27	22	12.4	7	1	with	PN*U0905...
TEN09R100M31.7-05	6.4	100	5	106	60	50	31.75	32	12.7	8	1.3	with	PN*U0905...
TEN09R/L100M31.7-08*	6.4	100	8	106	60	50	31.75	32	12.7	8	1.3	with	PN*U0905...
TEN09R100M31.7-12	6.4	100	12	106	60	50	31.75	32	12.7	8	1.4	with	PN*U0905...
TEN09R/L100M32.0E08*	6.4	100	8	106	60	50	32	28.5	14.4	8	1.3	with	PN*U0905...
TEN09R100M32.0E12	6.4	100	12	106	60	50	32	28.5	14.4	8	1.4	with	PN*U0905...
TEN09R125M38.1-06	6.4	125	6	131	80	63	38.1	38	15.9	10	2.6	with	PN*U0905...
TEN09R/L125M38.1-10*	6.4	125	10	131	80	63	38.1	38	15.9	10	2.7	with	PN*U0905...
TEN09R125M38.1-16	6.4	125	16	131	80	63	38.1	43	15.9	10	2.9	with	PN*U0905...
TEN09R/L125M40.0E10*	6.4	125	10	131	71	63	40	32	16.4	9	2.3	with	PN*U0905...
TEN09R125M40.0E16	6.4	125	16	131	71	63	40	32	16.4	9	2.5	with	PN*U0905...
TEN09R160M50.8-07	6.4	160	7	166	100	63	50.8	46	19	11	4.4	without	PN*U0905...
TEN09R/L160M40.0E12*	6.4	160	12	166	100	63	40	29	16.4	9	4	without	PN*U0905...
TEN09R160M40.0E20	6.4	160	20	166	100	63	40	29	16.4	9	4.3	without	PN*U0905...
TEN09R/L160M50.8-12*	6.4	160	12	166	100	63	50.8	46	19	11	4.6	without	PN*U0905...
TEN09R160M50.8-20	6.4	160	20	166	100	63	50.8	46	19	11	4.9	without	PN*U0905...

*Please use neutral hand inserts for TEN09L (left hand cutter).

Approach angle

10°-20° 45° 70° 85° 88° 90° Others

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Torx bit
TEN09R050 - 063...	CSTR-4L100	H-TBS	M-1000	-	CM10X30H	BT15S
TEN09R080...	CSTR-4L100	H-TBS	M-1000	-	CM12X30H	BT15S
TEN09R/L100...	CSTR-4L100	H-TBS	M-1000	TMBA-M16H	-	BT15S
TEN09R125...06	CSTR-4L100	H-TBS	M-1000	TMBA-M20H	-	BT15M
TEN09R/L125M...10	CSTR-4L100	H-TBS	M-1000	TMBA-M20H	-	BT15M
TEN09R125M...16	CSTR-4L100	H-TBS	M-1000	TMBA-M20H	-	BT15S
TEN09R160M...07	CSTR-4L100	H-TBS	M-1000	-	-	BT15M
TEN09R/L160M...12	CSTR-4L100	H-TBS	M-1000	-	-	BT15M
TEN09R160M...20	CSTR-4L100	H-TBS	M-1000	-	-	BT15S

*Recommended clamping torque (N·m): CSTR-4L100=3.5

Reference pages: Inserts → H067, Standard cutting conditions → H068

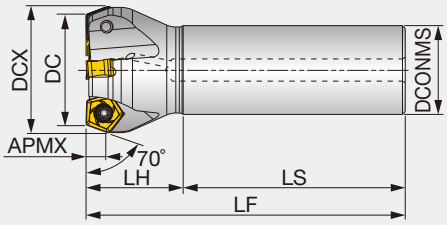
DOPENT

EEN09

70° face endmill, shank type, with screw clamp system, for double sided pentagonal inserts

GAMP=-6°,GAMF=-2°~-10°



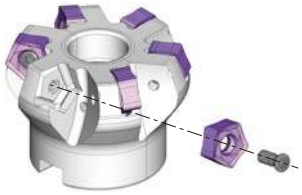


Designation	APMX	DC	DCX	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EEN09R032M32.0-03	6.4	32	38	3	32	80	35	115	0.7	With	PN*U0905...
EEN09R040M32.0-04	6.4	40	46	4	32	80	35	115	0.7	With	PN*U0905...
EEN09R050M32.0-04	6.4	50	56	4	32	80	40	120	0.9	With	PN*U0905...
EEN09R063M32.0-06	6.4	63	69	6	32	80	40	120	1	With	PN*U0905...
EEN09R080M32.0-07	6.4	80	86	7	32	80	40	120	1.3	With	PN*U0905...

SPARE PARTS

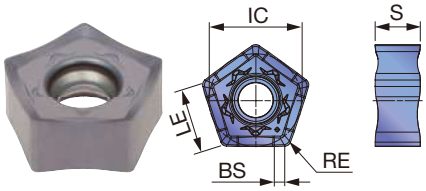
Designation	Clamping screw	Lubricant	Wrench
EEN09	CSTR-4L100	M-1000	T-15D

*Recommended clamping torque (N·m): CSTR-4L100=3.5

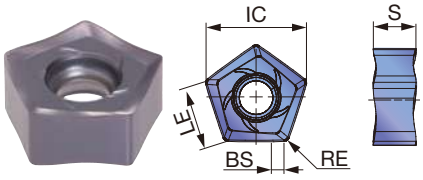


INSERT

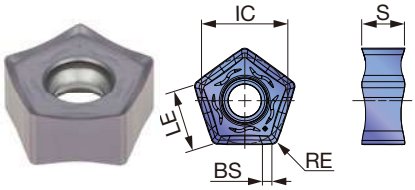
PN*U0905GNEN-MJ (Neutral)



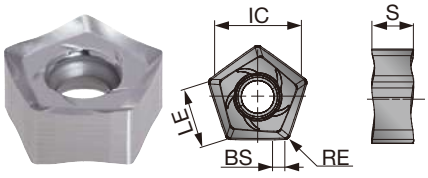
PNCU0905GNER-MJ (Right hand)



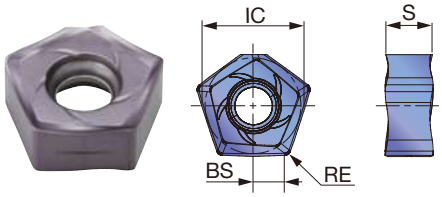
PNCU0905-ML (Neutral)



PNCU0905-AJ (Right hand)



PNCU0905-W (Right hand)



		AH120	AH140	AH725	AH3135	T1115	T1215	T3130	T3225	NS740	TH10
P	Steel	☆		★	★			☆	☆	★	
M	Stainless		☆	☆	★				☆		
K	Cast iron	★		☆		★	★				
N	Non-ferrous										★
S	Superalloys	☆		★	☆						
H	Hard materials										

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated								Cermet	Uncoated	LE	S	IC	BS
			AH120	AH140	AH725	AH3135	T1115	T1215	T3130	T3225	NS740	TH10				
PNMU0905GNEN-MJ	0.8	6.4	●			●		●		●			8.9	6	12.2	1.4
PNCU0905GNEN-MJ	0.8	6.4	●			●		●		●			8.9	6	12.2	1.4
PNCU0905GNER-MJ	0.8	6.4	●	●	●		●		●		●		8.9	5.93	12.2	1.4
PNCU0905GNEN-ML	0.8	6.4				●							8.9	5.96	12.2	1.4
PNCU0905GNFR-AJ	0.8	6.4										●	8.9	6.25	12.2	1.4
PNCU0905GNER-W	0.8	2			●								-	5.93	12.2	3.8

●: Line up

Reference pages: Standard cutting conditions → H068

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness HB	Selection criteria	Recommended grade	Chip-breaker	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steels (S15C, etc.)	200 - 300 HB	First choice	AH3135	MJ	100 - 250	0.1 - 0.4
		200 - 300 HB	Low cutting force	AH3135	ML	100 - 250	0.1- 0.3
		200 - 300 HB	Wear resistance	T3225	MJ	200 - 350	0.1- 0.3
		200 - 300 HB	Surface quality	NS740	MJ	100 - 250	0.1- 0.3
	High carbon steels, alloyed steels (S55C, SCM440, etc.)	150 - 300 HB	First choice	AH3135	MJ	100 - 250	0.1- 0.35
		150 - 300 HB	Low cutting force	AH3135	ML	100 - 250	0.1- 0.3
		150 - 300 HB	Wear resistance	T3225	MJ	180 - 300	0.1- 0.3
		150 - 300 HB	Surface quality	NS740	MJ	100 - 250	0.1- 0.3
	Prehardened steel (NAK80, PX5, etc.)	30 - 40 HRC	First choice	AH3135	MJ	100 - 200	0.1- 0.3
		30 - 40 HRC	Low cutting force	AH3135	ML	100 - 200	0.1- 0.25
		30 - 40 HRC	Wear resistance	T3225	MJ	150 - 250	0.1- 0.25
M	Stainless steel (SUS304 / X5CrNi18-9, etc.)	- 200 HB	First choice	AH3135	ML	100 - 200	0.1 - 0.3
		- 200 HB	Fracture resistance	AH3135	MJ	100 - 200	0.1 - 0.35
		- 200 HB	Wear resistance	T3225	MJ	100 - 250	0.1 - 0.3
K	Ductile cast iron (FCD400 / GGG40, etc.)	150 - 250 HB	First choice	T1215	MJ	100 - 300	0.1 - 0.35
		150 - 250 HB	Fracture resistance	AH120	MJ	100 - 250	0.1 - 0.4
	Ductile cast iron (FCD400 / GGG40, etc.)	150 - 250 HB	First choice	T1215	MJ	100 - 300	0.1 - 0.35
		150 - 250 HB	Fracture resistance	AH120	MJ	80 - 200	0.1 - 0.4
N	Aluminium alloys (Si < 13%)	-	First choice	TH10	AJ	500 - 1500	0.1 - 0.5
	Aluminium alloys (Si ≥ 13%)	-	First choice	TH10	AJ	150 - 500	0.1 - 0.5
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	First choice	AH3135	ML	30 - 60	0.1 - 0.3
		- 40 HRC	Fracture resistance	AH3135	MJ	30 - 60	0.1 - 0.3
	Heat-resistance alloys Inconel 718, etc.	- 40 HRC	First choice	AH725	MJ	10 - 40	0.04 - 0.1

· Remove excessive chip with an air blast to prevent chip jamming.
· Use water-soluble coolant to avoid built-up edge in case extreme welding occurs on cutting edges. (ex. aluminium machining).
· For the operation with depth of cut which varies (ex. casting skin) and machining of workpiece materials with interrupted surface, the feed (*fz*) should be set to the lower recommened value shown in the above table.
· Cutting conditions may be limited depending on machine power, workpiece rigidity, and spindle output. When the cutting width, depth or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

Installation of inserts on an extra close-pitch cutter

- On an extra close-pitch cutter, the screw hole of an insert pocket is placed at an angle.
- Leave a gap between the insert and pocket when starting to fasten the screw on the cutter body as shown in Fig. A.
- After fastening the screw, please ensure that there is no gap between the cutter body and insert. (Fig. B)

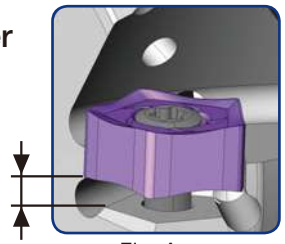


Fig. A

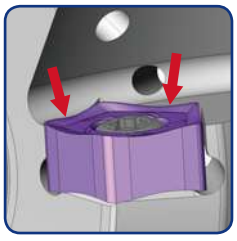


Fig. B

Notes for using wiper inserts

- When fine surface finish is required, wiper insert PNCU0905GNER-W is recommended.
- Attach the insert with its notch on the top, as shown in Fig. C.
- Also, make sure that the mark of the insert is located at the bottom of the cutter body, as shown in Fig. D.
- The wiper insert has two corners available (Fig. D). Do not use the other corners as the cutter body may be broken.

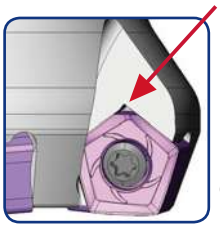


Fig. C

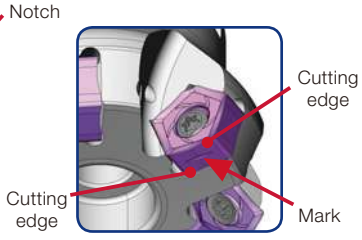


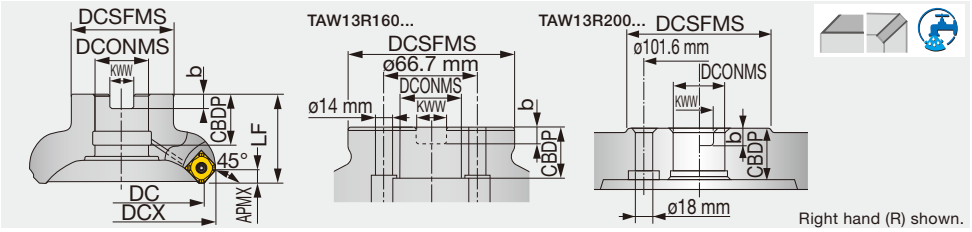
Fig. D

TAW13

30° - 45° face mill, with screw clamp system, for SWMT/SWGT13 inserts

GAMP=+17°~+20°,GAMF=-16°~-11°





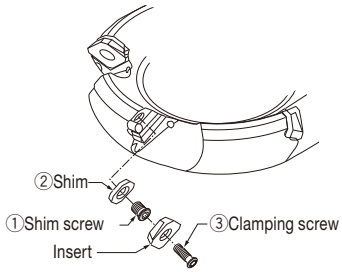
Right hand (R) shown.

Designation	øDc	z	øD1	øDb	Lf	ød	ℓ	a	b	Kg	Air hole	Insert
TAW13R050M22.0-03	50	3	63	41	40	22	20	10	6	0.4	With	SW*T13...
TAW13R050M22.0-04	50	4	63	41	40	22	20	10	6	0.4	With	SW*T13...
TAW13R050M22.0E04	50	4	63	41	40	22	20	10.4	6.3	0.4	With	SW*T13...
TAW13R050M22.0E05	50	5	63	41	40	22	20	10.4	6.3	0.4	With	SW*T13...
TAW13R063M22.0-04	63	4	76	41	40	22	20	10	6	0.5	With	SW*T13...
TAW13R063M22.0-05	63	5	76	41	40	22	20	10	6	0.6	With	SW*T13...
TAW13R063M22.0E05	63	5	76	41	40	22	20	10.4	6.3	0.6	With	SW*T13...
TAW13R063M22.0E06	63	6	76	41	40	22	20	10.4	6.3	0.6	With	SW*T13...
TAW13R080M25.4-04	80	4	94	50	50	25.4	26	9.5	6	1	With	SW*T13...
TAW13R080M25.4-06	80	6	94	50	50	25.4	26	9.5	6	1	With	SW*T13...
TAW13R080M27.0E06	80	6	94	50	50	27	22	12.4	7	1	With	SW*T13...
TAW13R080M27.0E08	80	8	94	50	50	27	22	12.4	7	1	With	SW*T13...
TAW13R100M31.7-05	100	5	114	60	50	31.75	32	12.7	8	1.5	With	SW*T13...
TAW13R100M31.7-07	100	7	114	60	50	31.75	32	12.7	8	1.5	With	SW*T13...
TAW13R100M32.0E07	100	7	114	60	50	32	28.5	14.4	8	1.5	With	SW*T13...
TAW13R100M32.0E10	100	10	114	60	50	32	28.5	14.4	8	1.5	With	SW*T13...
TAW13R125M38.1-06	125	6	139	80	63	38.1	38	15.9	10	2.8	With	SW*T13...
TAW13R125M38.1-08	125	8	139	80	63	38.1	38	15.9	10	2.7	With	SW*T13...
TAW13R125M40.0E08	125	8	139	80	63	40	32	16.4	9	2.7	With	SW*T13...
TAW13R125M40.0E12	125	12	139	80	63	40	32	16.4	9	3	With	SW*T13...
TAW13R160M40.0E10	160	10	174	100	63	40	29	16.4	9	4.4	Without	SW*T13...
TAW13R160M40.0E16	160	16	174	100	63	40	29	16.4	9	4.4	Without	SW*T13...
TAW13R160M50.8-07	160	7	174	100	63	50.8	40	19	11	4.4	Without	SW*T13...
TAW13R160M50.8-10	160	10	174	100	63	50.8	40	19	11	4.4	Without	SW*T13...
TAW13R200M47.6-08	200	8	213	130	63	47.625	38	25.4	14	8	Without	SW*T13...

*Recommended clamping torque (N·m): CSPB-3.5=3.5

SPARE PARTS

Designation	③Clamping screw	Lubricant	①Shim screw	Shell locking bolt 1	Shell locking bolt 2	②Shim	Wrench	Wrench 1
TAW13R050 - 063...	CSPB-3.5	M-1000	DTS5-3.5SS	-	CM10X30H	FSSA1102	IP-15D	P-3.5
TAW13R080...	CSPB-3.5	M-1000	DTS5-3.5SS	-	CM12X30H	FSSA1102	IP-15D	P-3.5
TAW13R100...	CSPB-3.5	M-1000	DTS5-3.5SS	TMBA-M16H	-	FSSA1102	IP-15D	P-3.5
TAW13R125...	CSPB-3.5	M-1000	DTS5-3.5SS	TMBA-M20H	-	FSSA1102	IP-15D	P-3.5
TAW13R160...	CSPB-3.5	M-1000	DTS5-3.5SS	-	-	FSSA1102	IP-15D	P-3.5
TAW13R200...	CSPB-3.5	M-1000	DTS5-3.5SS	-	-	FSSA1102	IP-15D	P-3.5



Reference pages: Inserts → H071, Standard cutting conditions → H072 - H073

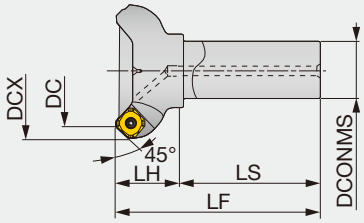
TUNGMILL

EAW13

30° - 45° face endmill, shank type, with screw clamp system, for SWMT/SWGT13 inserts

GAMP=+17°~+20°,GAMF=-16°~-11°





Right hand (R) shown.

Designation	DC	DCX	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EAW13R025M25.0-02	25	39	2	25	80	35	115	0.4	With	SW*T13...
EAW13R032M32.0-02	32	46	2	32	80	35	115	0.7	With	SW*T13...
EAW13R040M32.0-03	40	54	3	32	80	35	115	0.8	With	SW*T13...
EAW13R050M32.0-03	50	63	3	32	80	40	120	1	With	SW*T13...
EAW13R050M32.0-04	50	63	4	32	80	40	120	0.9	With	SW*T13...
EAW13R063M32.0-04	63	76	4	32	80	40	120	1.1	With	SW*T13...
EAW13R063M32.0-05	63	76	5	32	80	40	120	1.1	With	SW*T13...
EAW13R080M32.0-04	80	94	4	32	80	40	120	1.5	With	SW*T13...
EAW13R080M32.0-06	80	94	6	32	80	40	120	1.4	With	SW*T13...

SPARE PARTS

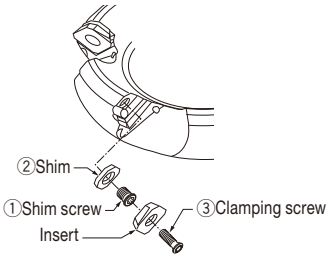







Designation	③Clamping screw	Lubricant	①Shim screw	②Shim	Wrench	Wrench 1
EAW13R025**~040**	CSPB-3.5	M-1000	-	-	IP-15D	-
EAW13R050**~080**	CSPB-3.5	M-1000	DTS5-3.5SS	FSSA1102	IP-15D	P-3.5

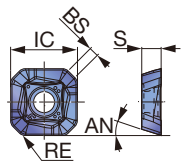
*Recommended clamping torque (N·m): CSPB-3.5=3.5



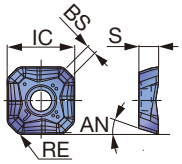
Reference pages: Inserts → H071, Standard cutting conditions → H072 - H073

INSERT

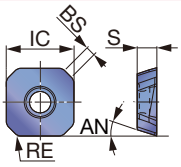
SWMT13T3-MJ



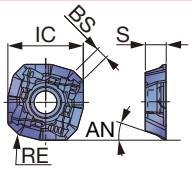
SWMT13T3-ML



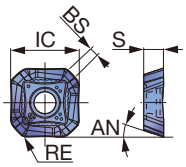
SWMW13T3 (Flat)



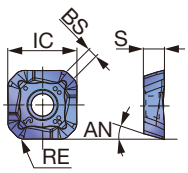
SWMT13T3-HJ



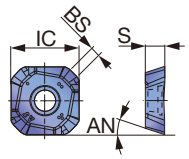
SWMT13T3-MS



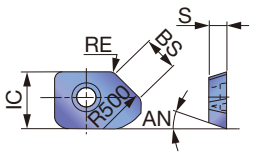
SWGT13T3-MJ



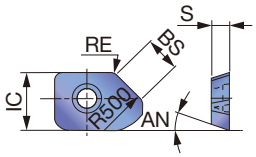
SWGT13T3-AJ



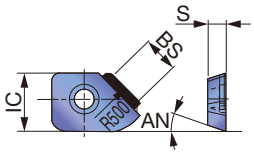
WWCW13T3AFER-WS



WWCW13T3AFFR-WS



WWCW13T3AFFR-WD



P	Steel	☆			★				★	☆			★						
M	Stainless		★	☆	★					☆									
K	Cast iron	★				★	★	★											
N	Non-ferrous										★				★		★		
S	Superalloys	★	☆		☆														
H	Hard materials																		

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated										Cermet		Uncoated		PCD		IC	S	AN	BS
			AH120	AH130	AH140	AH3135	GH110	T1115	T1215	T3130	T3225	DS1100	NS740		KS05F		DX140					
SWMT13T3AFPR-MJ	1.5	4	●	●	●	●		●	●	●	●		●						13.9	4	18.5°	2
SWMT13T3AFER-ML	1.5	2.5	●			●													13.9	4	18.5°	2
SWMW13T3AFTR	1.5	5	●			●		●	●	●	●		●						13.9	4	18.5°	2
SWMT13T3AFPR-HJ	1.5	2	●	●	●	●		●	●	●	●								14.7	4	18.5°	2.3
SWMT13T3AFPR-MS	1	4		●	●	●													14.1	4	18.5°	2
SWGT13T3AFPR-MJ	1.5	4	●			●							●						13.9	4	18.5°	2
SWGT13T3AFFR-AJ	-	4										●			●				14.1	4	18.5°	2
WWCW13T3AFER-WS	1.5	-					●						●						12.8	4	18.5°	7.8
WWCW13T3AFFR-WS	1.5	-										●			●				12.8	4	18.5°	7.8
WWCW13T3AFFR-WD	-	-															●		12.8	4	18.5°	7.8

●: Line up

DX140 : Packing Quantity = 1 pc.

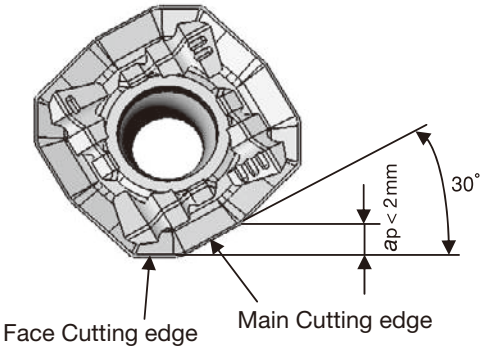
STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Priority	Grade	Cutting speed v_c (m/min)	Roughing (Depth of cut: > 1.0 mm) Feed per tooth: f_z (mm/t) MJ	ML	HJ	MS	Flat	AJ
P	Mild and low carbon steels SS400, etc. E275A, etc. < 180 HB	First choice	AH3135	100 - 270	0.05 - 0.3	0.05 - 0.25	0.2 - 0.6	-	0.05 - 0.3	-
		Wear resistance	T3225	150 - 300	0.05 - 0.3	-	0.2 - 0.6	-	0.05 - 0.3	-
		Surface quality	NS740	100 - 300	0.05 - 0.23	-	-	-	0.05 - 0.23	-
	Carbon and alloy steels S45C, SCM440, etc. C45, 42CrMo4, etc. < 300 HB	First choice	AH3135	100 - 230	0.05 - 0.25	0.05 - 0.2	0.2 - 0.5	-	0.05 - 0.25	-
		Wear resistance	T3225	150 - 280	0.05 - 0.25	-	0.2 - 0.5	-	0.05 - 0.25	-
		Surface quality	NS740	100 - 230	0.05 - 0.2	-	-	-	0.05 - 0.2	-
	Die steels X96CrMoV12, etc. < 30 HRC	First choice	AH3135	100 - 180	0.05 - 0.2	0.05 - 0.2	0.2 - 0.4	-	0.05 - 0.2	-
		Wear resistance	T3225	100 - 180	0.05 - 0.2	-	0.2 - 0.4	-	0.05 - 0.2	-
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc. < 250 HB	First choice	AH3135	80 - 200	0.1 - 0.25	0.1 - 0.2	0.2 - 0.5	0.1 - 0.2	-	-
		Wear resistance	T3225	150 - 250	0.1 - 0.25	0.1 - 0.2	0.2 - 0.5	-	0.1 - 0.25	-
K	Grey cast irons FC25, FC300, etc. 250, 300, etc.	First choice	T1215	180 - 300	0.05 - 0.25	-	0.2 - 0.6	-	0.05 - 0.25	-
		Fracture resistance	AH120	150 - 250	0.05 - 0.25	0.05 - 0.2	0.2 - 0.6	-	0.05 - 0.25	-
	Ductile cast irons FCD400, FCD600, etc. 400-15S, 600-3, etc.	First choice	T1215	120 - 200	0.05 - 0.25	-	0.2 - 0.6	-	0.05 - 0.25	-
		Fracture resistance	AH120	100 - 180	0.05 - 0.25	0.05 - 0.2	0.2 - 0.6	-	0.05 - 0.25	-
S	Titanium alloys Ti-6Al-4V, etc.	First choice	AH130	30 - 60	0.1 - 0.25	-	0.2 - 0.5	0.1 - 0.2	-	-
	Heat-resistance alloys Inconel 718, etc.	First choice	AH120	10 - 40	0.05 - 0.15	-	0.1 - 0.3	-	-	-
N	Aluminium alloys Si < 13 %	-	DS1100 KS05F	300 - 1000	-	-	-	-	-	0.05 - 0.2
	Aluminium alloys Si ≥ 13%	-	DS1100 KS05F	80 - 300	-	-	-	-	-	0.05 - 0.2
	Copper alloys	-	DS1100 KS05F	200 - 500	-	-	-	-	-	0.05 - 0.2

Notes for use of HJ-type inserts

HJ-type inserts can be used for high feed machining.
When using the insert, care should be taken with the following:

- The maximum depth of cut is *ap* = 2 mm. Select feeds within the above value.
- Do not use the HJ-type inserts with other types (such as MJ- and MS-types) in the same body.
- The outer shape of the HJ-type insert is different from those of other types (such as MJ- and MS-types), but the insert can be held in the same insert pocket.



Notes on use of wiper insert

- When requiring good surface finishes, use of a wiper insert (WWCW13T3AF_ R-W_) is recommended. In general, installing one wiper insert delivers superior surface finishes.
- When using the wiper insert, install the insert as shown in Fig. A. If the insert is installed as shown in Fig. B, breakage of the insert is inevitable and normal surface finish can not be obtained.
- The wiper insert must not be used together with HJ-type inserts
- The wiper insert has one wiping corner.
- The peripheral cutting edge of the wiper insert is retracted from the edge of the normal inserts. Therefore, the feed per tooth (*fz* mm/t) of the normal insert following the wiper insert is double that of other inserts.
- When using the wiper insert, depth of cut (*ap*) less than 1 mm is recommended.

Fig. A

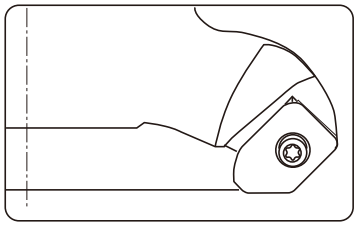
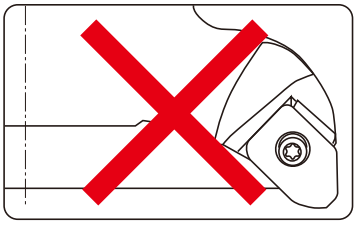


Fig. B



ISO	Workpiece materials	Priority	Grade	Cutting speed *vc* (m/min)	Light cutting to finishing (Depth of cut: ≤ 1.0 mm) Feed per tooth: *fz* (mm/t)					
					MJ	ML	HJ	MS	Flat	AJ
P	Mild and low carbon steels SS400, etc. E275A, etc. < 180 HB	First choice	AH3135	100 - 270	0.05 - 0.25	0.05 - 0.2	0.2 - 0.6	-	0.05 - 0.25	-
		Wear resistance	T3225	150 - 300	0.05 - 0.25	-	0.2 - 0.6	-	0.05 - 0.25	-
		Surface quality	NS740	100 - 300	0.05 - 0.2	-	-	-	0.05 - 0.2	-
	Carbon and alloy steels S45C, SCM440, etc. C45, 42CrMo4, etc. < 300 HB	First choice	AH3135	100 - 230	0.05 - 0.2	0.05 - 0.15	0.2 - 0.5	-	0.05 - 0.2	-
		Wear resistance	T3225	150 - 280	0.05 - 0.2	-	0.2 - 0.5	-	0.05 - 0.2	-
		Surface quality	NS740	100 - 230	0.05 - 0.18	-	-	-	0.05 - 0.18	-
	Die steels X96CrMoV12, etc. < 30 HRC	First choice	AH3135	100 - 180	0.05 - 0.18	0.05 - 0.12	0.2 - 0.4	-	0.05 - 0.18	-
		Wear resistance	T3225	100 - 180	0.05 - 0.18	-	0.2 - 0.4	-	0.05 - 0.18	-
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc. < 250 HB	First choice	AH3135	80 - 200	0.1 - 0.2	0.1 - 0.18	0.2 - 0.5	0.1 - 0.18	-	-
		Wear resistance	T3225	150 - 250	0.1 - 0.2	0.1 - 0.18	0.2 - 0.5	-	0.1 - 0.2	-
K	Grey cast irons FC25, FC300, etc. 250, 300, etc.	First choice	T1215	180 - 300	0.1 - 0.2	-	0.2 - 0.6	-	0.1 - 0.2	-
		Fracture resistance	AH120	150 - 250	0.1 - 0.2	0.05 - 0.18	0.2 - 0.6	-	0.1 - 0.2	-
	Ductile cast irons FCD400, FCD600, etc. 400-15S, 600-3, etc.	First choice	T1215	120 - 200	0.1 - 0.2	-	0.2 - 0.6	-	0.1 - 0.2	-
		Fracture resistance	AH120	100 - 180	0.1 - 0.2	0.05 - 0.18	0.2 - 0.6	-	0.1 - 0.2	-
S	Titanium alloys Ti-6Al-4V, etc.	-	AH130	30 - 60	0.1 - 0.2	-	0.2 - 0.5	0.1 - 0.2	-	-
	Heat-resistance alloys Inconel 718, etc.	-	AH120	10 - 40	0.05 - 0.15	-	0.1 - 0.3	-	-	-
N	Aluminium alloys Si < 13 %	-	DS1100 KS05F	300 - 1000	-	-	-	-	-	0.05 - 0.2
	Aluminium alloys Si ≥ 13%	-	DS1100 KS05F	80 - 300	-	-	-	-	-	0.05 - 0.2
	Copper alloys	-	DS1100 KS05F	200 - 500	-	-	-	-	-	0.05 - 0.2

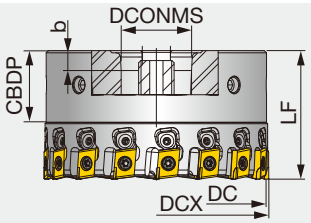
Notes:
- When cutting at a large depth of cut or a large cutting width, the cutting speed (*vc*) and feed (*fz*) should be set to the lower side of the values shown in the above table.
- Dry cutting (or air-blowing) is generally recommended. However, when chips tend to excessively adhere to the cutting edges when machining stainless steel, use a water soluble cutting fluid. In this case, use the AH130 grade at speeds lower than *vc* = 100 m/min.
- When wet machining mild steels, carbon steels and alloy steels, use T3130 at lower cutting conditions.
- TAW13 type TAC mills cannot be used for axial-feed cutting such as ramping, plunging and drilling.

TUNGSMILL FEED

TPYP12

High speed PCD mill for non ferrous metal





Designation	DC	DCX	CICT	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TPYP12M050B22.0R08	50	51.4	8	55	22	20	10.4	6.3	0.9	With	YPEB12X3-*P...
TPYP12M063B22.0R10	63	64.4	10	55	22	20	10.4	6.3	1.3	With	YPEB12X3-*A...
TPYP12M080B27.0R12	80	81.4	12	58	27	22	12.4	7	2.2	With	YPEB12X3-*A...
TPYP12J080B25.4R12	80	81.4	12	58	25.4	26	9.5	6	2.2	With	YPEB12X3-*A...
TPYP12M100B32.0R16	100	101.4	16	58	32	25	14.4	8	1.9	With	YPEB12X3-*A...
TPYP12J100B31.7R16	100	101.4	16	58	31.75	32	12.7	8	1.9	With	YPEB12X3-*A...
TPYP12M125B40.0R20	125	126.4	20	58	40	28	16.4	9	2.9	With	YPEB12X3-*A...
TPYP12J125B38.1R20	125	126.4	20	58	38.1	38	15.9	10	2.9	With	YPEB12X3-*A...

*D1: Outside diameter
DCX: Diameter with 01 type insert

SPARE PARTS

Designation	Clamping screw	Wrench	Wedge fixing screw	Wedge	Wrench	Cover	Shell locking bolt
TPYP12M050B22.0R08	VX040024A	T-15F	RSRGR5M40	RSFTC1008	T-8F	-	RSFTS-050M
TPYP12M063B22.0R10	VX040024A	T-15F	RSRGR5M40	RSFTC1008	T-8F	RSFTS6063M	VC004762I10035F
TPYP12M080B27.0R12	VX040024A	T-15F	RSRGR5M40	RSFTC1008	T-8F	RSFTS6080	VC00TEDI12040F
TPYP12J080B25.4R12	VX040024A	T-15F	RSRGR5M40	RSFTC1008	T-8F	RSFTS6080	VC00TEDI12040F
TPYP12M100B32.0R16	VX040024A	T-15F	RSRGR5M40	RSFTC1008	T-8F	RSFTS6100	VC00TANG16040F
TPYP12J100B31.7R16	VX040024A	T-15F	RSRGR5M40	RSFTC1008	T-8F	RSFTS6100	VC00TANG16040F
TPYP12M125B40.0R20	VX040024A	T-15F	RSRGR5M40	RSFTC1008	T-8F	RSFTS6125	VC00TEDI20040F
TPYP12J125B38.1R20	VX040024A	T-15F	RSRGR5M40	RSFTC1008	T-8F	RSFTS6125	VC00TEDI20040F

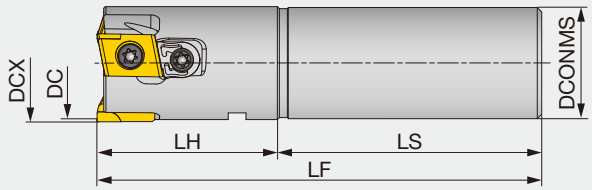
*Recommended clamping torque (N·m): VX040024A=4.5

TUNGSMILL FEED

EPYP12

High speed PCD endmill for non ferrous metal





Designation	DC	DCX	CICT	DCONMS	LF	LH	LS	WT(kg)	Air hole	Insert
EPYP12M025C25.0R03	25	26.4	3	25	100	50	50	0.4	With	YPEB12X3-*P...
EPYP12M032C25.0R05	32	33.4	5	25	100	45	55	0.5	With	YPEB12X3-*P...

*D1: Outside diameter
DCX: Diameter with 01 type insert

SPARE PARTS

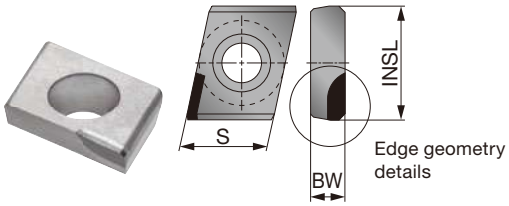
Designation	Clamping screw	Wrench	Wedge fixing screw	Wedge	Wrench
EPYP12M025C25.0R03	VX040024A	T-15F	VX040028A	RSFTC1011	T-8F
EPYP12M032C25.0R05	VX040024A	T-15F	RSRGR5M40	RSFTC1009	T-8F

*Recommended clamping torque (N·m): VX040024A=4.5

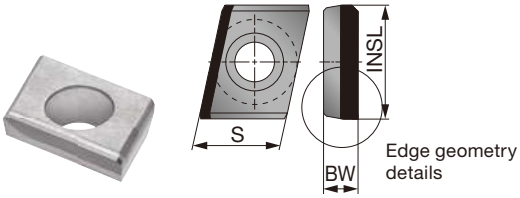
Reference pages: Inserts, Standard cutting conditions → H075

INSERT

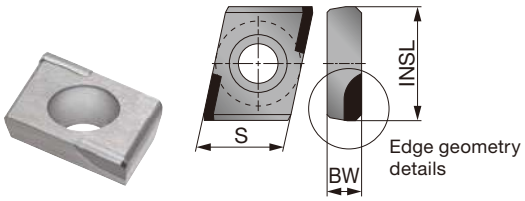
YPEB12X3-1A



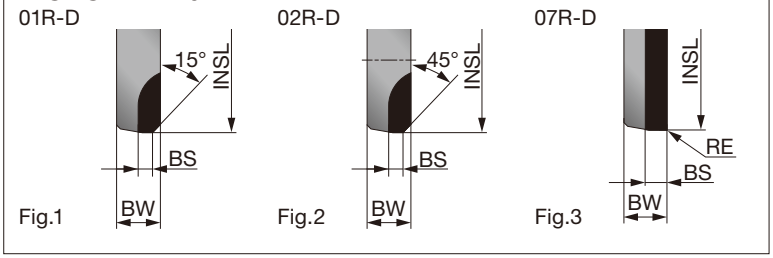
YPEB12X-FP



YPEB12X3-2A/P



Edge geometry details



P	Steel		
M	Stainless		
K	Cast iron		
N	Non-ferrous	★	
S	Superalloys		
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	No. of corner	RE	APMX	PCD DX160	INSL	S	BW	BS	Applicable cutter diameter	Fig.
YPEB12X3-1A01R-D	1	-	4	●	12.77	9.525	3.85	1.59	*Dc*>ϕ50mm	1
YPEB12X3-1A02R-D	1	-	4	●	12.756	9.525	3.85	1.29	*Dc*>ϕ50mm	2
YPEB12X3-1A07R-D	1	0.4	4	●	12.756	9.525	3.85	1.34	*Dc*>ϕ50mm	3
YPEB12X3-1P02R-D	1	-	4	●	12.817	9.525	3.85	1.37	*Dc*≦ϕ50mm	2
YPEB12X3-1P07R-D	1	0.4	4	●	12.817	9.525	3.85	1.37	*Dc*≦ϕ50mm	3
YPEB12X3-FP02R-D	1	-	11	●	12.817	9.525	3.85	1.37	*Dc*≦ϕ50mm	2
YPEB12X3-FP07R-D	1	0.4	11	●	12.817	9.525	3.85	1.37	*Dc*≦ϕ50mm	3
YPEB12X3-2A01R-D	2	-	4	●	12.8	9.525	3.868	1.59	*Dc*>ϕ50mm	1
YPEB12X3-2A02R-D	2	-	4	●	12.8	9.525	3.868	2.07	*Dc*>ϕ50mm	2
YPEB12X3-2A07R-D	2	0.4	4	●	12.8	9.525	3.868	2.07	*Dc*>ϕ50mm	3
YPEB12X3-2P07R-D	2	0.4	4	●	12.876	9.525	3.85	2.07	*Dc*≦ϕ50mm	3

●: Line up

2 pieces per package

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/z)
N	Aluminum cast (Si < 13%)	DX160	≦ 6000	0.05 - 0.25
	Aluminum cast (Si ≥ 13%)	DX160	≦ 1500	0.05 - 0.25
	Copper, brass, etc	DX160	≦ 2000	0.05 - 0.25
	Non metalic material	DX160	≦ 3000	0.05 - 0.25

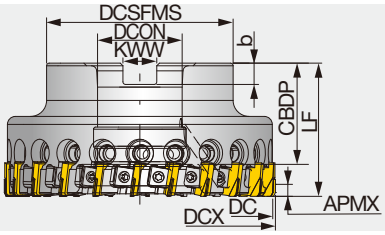
TUNGSMILL FEED

TPYD06

Face mill for aluminium machining, for PCD inserts

GAMP = +9°, GAMF = +4°





Designation	APMX	DC	DCX	CICT	DCSFMS	LF	DCON	CBDP	KWW	b	WT(kg)	Air hole	RPMX	Insert
TPYD06M063B22.0R10	4.5	63	65	10	45	40	22	20	10.4	6.3	0.57	With	19,000	YDEN0603...
TPYD06M080B27.0R16	4.5	80	82	16	60	50	27	22	12.4	7	1.24	With	17,000	YDEN0603...
TPYD06J080B25.4R16	4.5	80	82	16	60	50	25.4	26	9.5	6	1.26	With	15,000	YDEN0603...
TPYD06M100B32.0R22	4.5	100	102	22	70	50	32	25	14.4	8	1.78	With	14,000	YDEN0603...
TPYD06J100B31.7R22	4.5	100	102	22	70	50	31.7	32	12.7	8	1.76	With	12,000	YDEN0603...
TPYD06M125B40.0R26	4.5	125	127	26	90	60	40	32	16.4	9	3.48	With	17,000	YDEN0603...
TPYD06J125B38.1R26	4.5	125	127	26	90	60	38.1	38	15.9	10	3.56	With	15,000	YDEN0603...
TPYD06M160B40.0R34	4.5	160	162	34	90	60	40	32	16.4	9	5.2	With	14,000	YDEN0603...
TPYD06J160B38.1R34	4.5	160	162	34	90	60	38.1	38	15.9	10	5.29	With	12,000	YDEN0603...

SPARE PARTS

Designation	Clamping screw	Wedge fixing screw	Adjusting cam	Torx bit	Cam tightening screw	Wrench	Grip	Shell locking bolt
TPYD06M063B22.0R10	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	CM10X30H
TPYD06*080B2*.*R16	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	CM12X30H
TPYD06*100B32.0R22	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	CM16X40H
TPYD06*100B31.7R22	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	TMBA-M16H
TPYD06*125B**.*R26	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	TMBA-M20H
TPYD06*160B**.*R34	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	TMBA-M20H

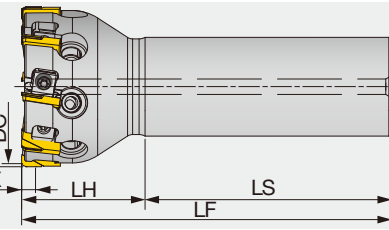
TUNGSMILL FEED

EPYD06

Face endmill for aluminium machining, shank type, for PCD inserts

GAMP = +9°, GAMF = +4°





Designation	APMX	DC	DCX	CICT	DCONMS	LF	LH	LS	WT(kg)	Air hole	RPMX	Insert
EPYD06M050C32.0R08	4.5	50	52	8	32	120	40	80	0.57	With	22,000	YDEN0603...

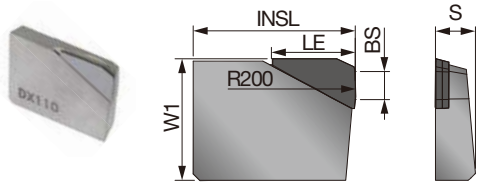
SPARE PARTS

Designation	Clamping screw	Wedge fixing screw	Adjusting cam	Torx bit	Cam tightening screw	Wrench	Grip
EPYD06M050C32.0R08	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W

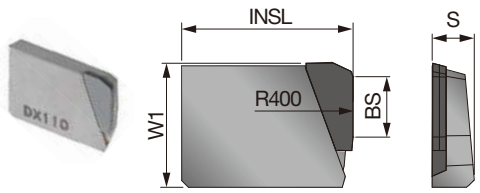
Reference pages: Inserts, Standard cutting conditions → H077

INSERT

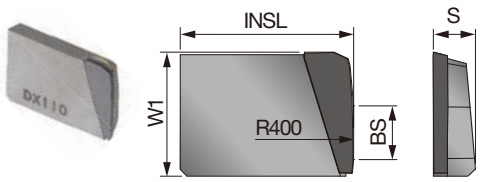
YDEN0603PD(F/S)R-D



YDEN0603PDFR-WD



YDEN0603PDFR-BD



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	APMX	Edge prep.	PCD DX110	W1	INSL	S	BS	LE
YDEN0603PDFR-D	4.5	Without	●	9.5	12.7	3.1	2.2	6.5
YDEN0603PDSR-D	4.5	With	●	9.5	12.7	3.1	2.2	6.5
YDEN0603PDFR-WD	-	Without	●	9.2	12.8	3.1	4.5	-
YDEN0603PDFR-BD	-	With	●	9.2	12.9	3.1	4	-

Note: Tungaloy provides refurbishing service for these inserts upon request.

●: Line up

1 piece per package

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Designation	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
N	Cast aluminum alloy / Die-cast (Si < 13%)	DX110	YDEN0603PDFR-D	500 - 4,000	0.05 - 0.20
	Cast aluminum alloy / Die-cast (Si > 13%)	DX110	YDEN0603PDFR-D	200 - 800	0.05 - 0.20
	Aluminum alloy	DX110	YDEN0603PDFR-D	500 - 4,000	0.05 - 0.20
	Copper alloy	DX110	YDEN0603PDFR-D	200 - 500	0.05 - 0.20

- The values in the above list are of standard recommendations and may require adjustments in consideration with cutting depths and/or workpiece/machine rigidity.
- Use wiper inserts (-WD) for better surface requirements and deburring inserts (-BD) to remove burrs.
- Always use wet cutting (emulsion coolant) for machining aluminum or copper alloys.

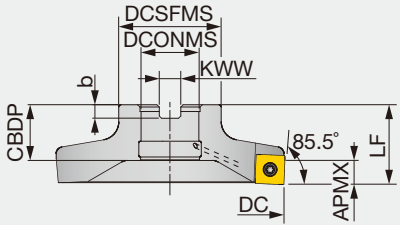
TFE

TFE12R

86° face mill for aluminium machining, with screw clamp system, for positive square inserts

GAMP = +13°, GAMP = +7°





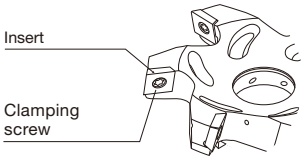
Air through type

Designation	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TFE12063R	8	63	3	45	35	22	19	10	6	0.34	With	SEG*12X4...
TFE12080R	8	80	4	50	35	25.4	24.5	9.5	6	0.45	With	SEG*12X4...
TFE12100R	8	100	6	50	35	25.4	24.5	9.5	6	0.59	With	SEG*12X4...
TFE12125R	8	125	6	50	35	25.4	24.5	9.5	6	0.9	With	SEG*12X4...

SPARE PARTS

Designation	Clamping screw	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Wrench
TFE12063R	CSPB-4S	M-1000	-	CM10X30H	IP-15D
TFE12080R	CSPB-4S	M-1000	TMBA-M12H	-	IP-15D
TFE12100R	CSPB-4S	M-1000	TMBA-M12H	-	IP-15D
TFE12125R	CSPB-4S	M-1000	TMBA-M12H	-	IP-15D

*Recommended clamping torque (N·m): CSPB-4S=3.5



Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

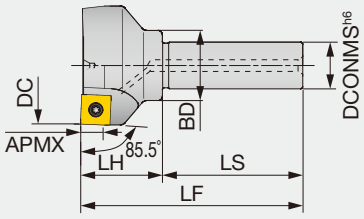
EFE

EFE12R

86° face endmill for aluminium machining, shank type, with screw clamp system, for positive square inserts

GAMP = +13°, GAMP = +7°





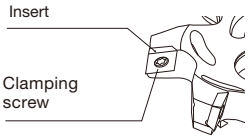
Air through type

Designation	APMX	DC	CICT	DCONMS	BD	LS	LH	LF	WT(kg)	Air hole	Insert
EFE12050R	8	50	3	20	30	60	35	95	0.37	With	SEG*12X4...

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
EFE12000R	CSPB-4S	M-1000	IP-15D

*Recommended clamping torque (N·m): CSPB-4S=3.5



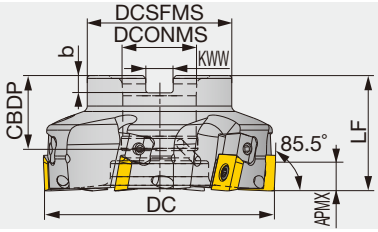
Reference pages: Inserts → H080, Standard cutting conditions → H081

TFE12R...-...A

86° face mill for aluminium machining, with screw clamp system, for positive square inserts

GAMP = +13°, GAMF = +7°





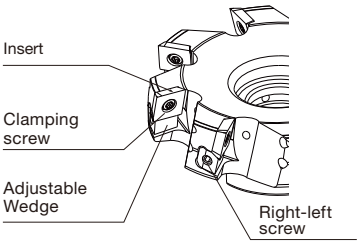
Air through type

Designation	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TFE12R080M25.4-06A	8	80	6	50	40	25.4	26	9.5	6	0.70	With	SEG*12X4...
TFE12R080M27.0E06A	8	80	6	55	40	27	22	12.4	7	0.69	With	SEG*12X4...
TFE12R100M25.4-08A	8	100	8	50	40	25.4	26	9.5	6	1.15	With	SEG*12X4...
TFE12R100M27.0E08A	8	100	8	55	40	27	22	12.4	7	1.11	With	SEG*12X4...
TFE12R125M31.7-10A	8	125	10	70	50	31.7	32	12.7	8	2.24	With	SEG*12X4...
TFE12R125M32.0E10A	8	125	10	70	50	32	28.5	14.4	8	2.14	With	SEG*12X4...

SPARE PARTS

Designation	Clamping screw	Adjustable Wedge	Lubricant	Shell locking bolt	Right-left screw	Wrench	Wrench
TFE12R**A	CSTB-4	FW-701R	M-1000	TMBA-M12H	MCS520-2.5	P-2.5T	T-15LB

*Recommended clamping torque (N·m): CSTB-4=3.5



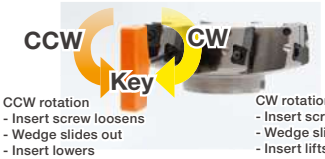
Insert setting procedure – adjustable-type TFE face milling cutter

① Cleaning insert pockets



Remove all the inserts. Use air pressure to thoroughly clean the pockets of dust and chips.

② Loosening wedges



CCW rotation
- Insert screw loosens
- Wedge slides out
- Insert lowers

CW rotation
- Insert screw tightens
- Wedge slides in
- Insert lifts up

Use the included key for wedge adjustment to loosen all the wedges so that they do not exceed the cutter's outer diameter.

③ Clamping inserts for adjustments





Place the insert in the pocket and lightly tighten the clamping screw with the included key. Suggested method: Tighten the screw first with the straight end of the key (Fig A) until finger tight, then use the angled end to further tighten the screw for insert steadiness (Fig B). Do NOT fully tighten the screw at this moment as this procedure is prior to insert adjustment. Repeat the procedure for all inserts.

④ Axial height adjustment of inserts



Mount the cutter in Step ③ on the setting fixture of the pre-setter. Determine the highest insert, and, while carefully monitoring each insert's axial position, rotate the wedge screw in the CW direction to raise the insert in the axial direction, as close as possible to that of the highest insert. Repeat this procedure for all inserts.

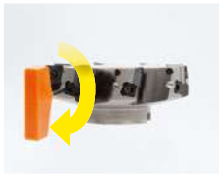
Note:
Since the insert is clamped, loosening the wedge screw will not bring down the insert. To lower insert height, both the insert and wedge screws need to be loosened. Start the adjusting procedure for this insert again from Step 1.

⑤ Tighten insert screws



Tighten the insert clamping screw at 3.5 Nm, using the key as shown to the left. Repeat the procedure for all inserts.

⑥ Final adjustments



After final tightening of all insert screws, measure to ensure all inserts are at the desired axial heights. If necessary, further tighten any wedge screws in the CW direction for the final few microns. For inserts exceeding the required runout, re-start the adjustment procedure from Step ① .

Note:
Do not re-tighten the insert screw after insert adjustment is completed. Additional tightening may weaken wedge clamping torque.

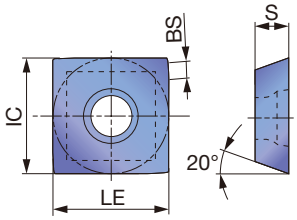
Cautions:

① Always clean all the insert pockets thoroughly of dust and chips. Any objects present in the pocket may shift the insert's position during machining and cause poor surface finishing quality.
② Always loosen the wedge screw before installing the insert as described in Step ② . If the wedge is left tightened in the cutter, the adjustment range of the wedge will be limited, and insert height may not be as freely adjustable as possible.
③ With a finger, firmly press and hold the insert into the wedge while tightening the insert screw. If the insert is not in contact, the wedge has to be driven until the gap in between is closed, with no actual insert movement.
④ Loosening the wedge will not lower the insert. When the insert height exceeds the desired setting during adjustment, loosen both the insert and wedge screws and re-start the adjustment procedure from Step ① . If the insert slides downward when the wedge screw is loosened, the clamping torque of the insert screw is too low. Tighten the insert screw with a slightly higher torque. Suggested clamping method: First use the straight end of the key to tighten the screw until finger tight, then switch the key to the angled side and turn an additional 45°.
⑤ Do not exceed the recommended clamping torque when fixing the insert. This may damage or fracture the insert screw.

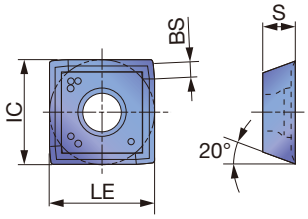
Reference pages: Inserts → H080, Standard cutting conditions → H081

INSERT

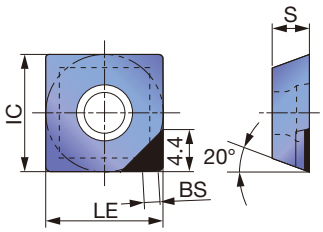
SEGW12X4ZEPR / ZEFR



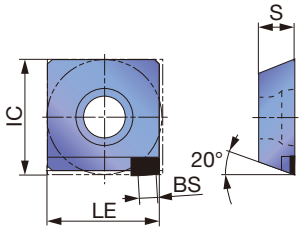
SEGT12X4-AJ



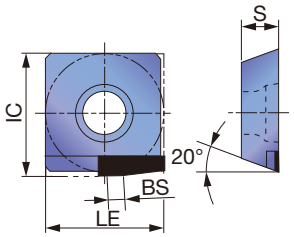
SEGW12X4ZEFR-D



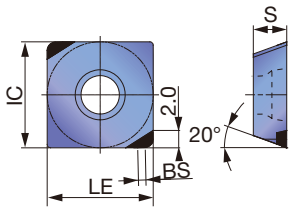
SEGW12X4ZEFR-WD



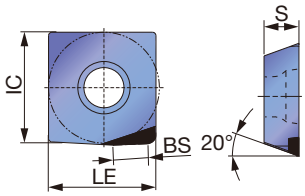
SEGW12X4ZEFR-BD



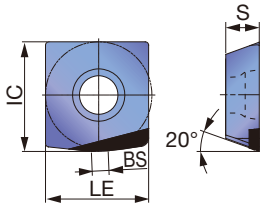
2QP-SECW12X412ZETR



1QP-SECW12X4ZETR-W



1QP-SECW12X4ZETR-B



P	Steel	★			★							
M	Stainless		★									
K	Cast iron	★								★		
N	Non-ferrous			★		★		★				
S	Superalloys											
H	Hard materials											

★ : First choice

Designation	Max. ap	Coated			Cermet	Uncoated	PCD	CBN		IC	LE	S	BS
		AH120	AH140	DS1100	NS740	KS05F	DX140	BX480					
SEGW12X4ZEFR	8					●				12.7	12.7	4	1.8
SEGW12X4ZEPR	8	●	●		●					12.7	12.7	4	1.4
SEGT12X4ZEFR-AJ	8			●		●				12.7	12.7	4	1.8
SEGW12X4ZEFR-D	3.5						●			12.7	12.7	4	1.8
SEGW12X4ZEFR-WD	-						●			12.8	12.4	4	2
SEGW12X4ZEFR-BD	-						●			13.1	12.4	4	1.8
2QP-SECW12X412ZETR	1.5							●		12.7	12.7	4	0.9
1QP-SECW12X4ZETR-W	-							●		12.9	12.3	4	4
1QP-SECW12X4ZETR-B	-							●		13.1	12.3	4	2

●: Line up

DX140: 2 pieces per package

BX480: 1 piece per package

How to put each insert together

			For general	Accuracy of machining surface priority	Burr reduction priority
Applicable insert	General insert	SEGW12X4ZEFR-D DX140 2QP-SECW12X412ZETR BX480	◎	◎	◎
	Wiper insert	SEGW12X4ZEFR-WD DX140 1QP-SECW12X4ZETR-W BX480	–	◎	–
	Wiper insert for burr reduction	SEGW12X4ZEFR-BD DX140 1QP-SECW12X4ZETR-B BX480	–	–	◎
	Number of Inserts by type		All general	1 or 2 wiper inserts in cutter body	General insert : Burr wiper insert = 1 : 1
Accuracy of machining surface (roughness and undulation)			△	◎	○
Burr of machining surface			△	○	◎

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Designation	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Carbon steels and alloy steels < 300HB	AH120	SEGW12X4ZEPR	100 - 180	0.03 - 0.15
		NS740	SEGW12X4ZEPR	100 - 180	0.03 - 0.15
M	Stainless steels < 250HB	AH140	SEGW12X4ZEPR	80 - 180	0.03 - 0.15
K	Grey and ductile cast irons	AH120	SEGW12X4ZEPR	100 - 200	0.03 - 0.15
	Grey cast iron	BX480	2QP-SECW12X412ZETR	800 - 1500	0.05 - 0.3
	Ductile cast irons	BX480	2QP-SECW12X412ZETR	500 - 800	0.05 - 0.2
N	Cast aluminium alloy / Die-cast Si < 13%	KS05F	SEGT12X4ZEFR-AJ	200 - 1500	0.05 - 0.2
		DX140	SEGW12X4ZEFR-D	200 - 1500	0.05 - 0.2
	Cast aluminium alloy / Die-cast Si ≥ 13%	KS05F	SEGT12X4ZEFR-AJ	80 - 200	0.05 - 0.2
		DX140	SEGW12X4ZEFR-D	200 - 500	0.05 - 0.2
	Aluminium alloy Tensile strength < 350 N/mm^2	KS05F	SEGT12X4ZEFR-AJ	200 - 1500	0.05 - 0.2
		DX140	SEGW12X4ZEFR-D	200 - 1500	0.05 - 0.2
	Aluminium alloy Tensile strength > 350 N/mm^2	KS05F	SEGW12X4ZEFR	200 - 1500	0.05 - 0.2
		DX140	SEGW12X4ZEFR-D	200 - 1500	0.05 - 0.2
	Copper alloy	KS05F	SEGT12X4ZEFR-AJ	200 - 500	0.05 - 0.2
		DX140	SEGW12X4ZEFR-D	200 - 500	0.05 - 0.2

Notes:
- In milling aluminium and copper alloys:
  (1) For improved surface finish, use together with wiper insert SEGW12X4ZEFR-WD
  (2) For reducing burr occurrence, use together with deburring inserts SEGW12X4ZEFR-BD
- When milling aluminium and copper alloys, use of a water soluble cutting fluid is recommended. When milling steels, cast irons, and stainless steels, dry cutting is recommended.
- When the length-to-diameter overhang ratio of the tool (L/D) exceeds 3, reduce cutting speed and feed to 70 to 80% of the values given in the table.

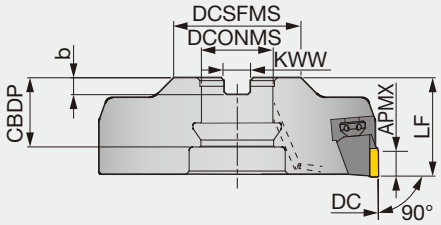
DPD

DPD09

Light weight mill for aluminium machining, for PCD inserts

GAMP = +8.5°, GAMF = +3° ~ +5°



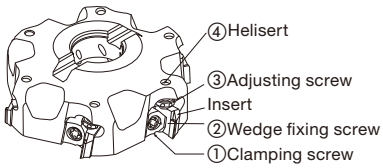


Designation	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
DPD09080R	7	80	4	50	41	25.4	23	9.5	6	0.8	With	YDEN0905...
DPD09080RB	7	80	6	50	41	25.4	28.5	9.5	6	0.82	With	YDEN0905...
DPD09100R	7	100	6	50	35	25.4	24.5	9.5	6	1.13	With	YDEN0905...
DPD09100RB	7	100	8	50	35	25.4	24.5	9.5	6	1.17	With	YDEN0905...
DPD09125R	7	125	6	50	35	25.4	24.5	9.5	6	1.7	With	YDEN0905...
DPD09125RB	7	125	10	50	35	25.4	24.5	9.5	6	1.77	With	YDEN0905...
DPD09160R	7	160	8	60	52	31.75	40	12.7	8	3.28	With	YDEN0905...
DPD09160RB	7	160	12	60	52	31.75	40	12.7	8	3.25	With	YDEN0905...

SPARE PARTS

Designation	① Clamping screw	② Wedge fixing screw	③ Adjusting screw	④ Helisert	Shell locking bolt 1	Shell locking bolt 2	Wrench1	Wrench 2
DPD09080R*	FW-304R-T	FDS-8ST-18	AJM5	LM5-0.8X1DNS	-	CM12X30H	T-27T	T-7F
DPD09100R*	FW-304R-T	FDS-8ST-18	AJM5	LM5-0.8X1DNS	TMBA-M12H	-	T-27T	T-7F
DPD09125R*	FW-304R-T	FDS-8ST-18	AJM5	LM5-0.8X1DNS	TMBA-M12H	-	T-27T	T-7F
DPD09160R*	FW-304R-T	FDS-8ST-18	AJM5	LM5-0.8X1DNS	TMBA-M16H	-	T-27T	T-7F

*Recommended clamping torque (N·m): FDS-8ST-18=10



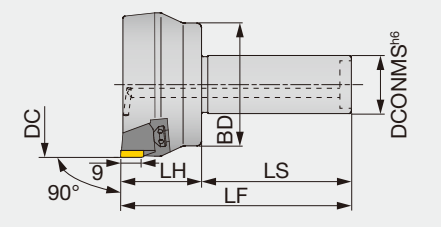
EDPD

EDPD09

Light weight endmill for aluminium machining, shank type, for PCD inserts

GAMP = +8.5°, GAMF = +3°



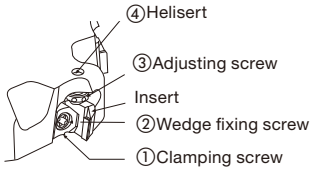


Designation	APMX	DC	CICT	DCONMS	BD	LS	LH	LF	WT(kg)	Air hole	Insert
EDPD09063R	7	63	3	25	37	60	40	100	0.75	With	YDEN0905...

SPARE PARTS

Designation	① Clamping screw	② Wedge fixing screw	③ Adjusting screw	④ Helisert	Wrench1	Wrench 2
EDPD09063R	FW-304R-T	FDS-8SST	AJM5	LM5-0.8X1DNS	T-27T	T-7F

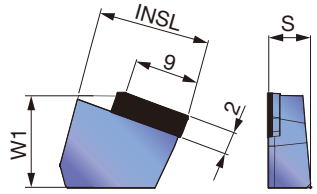
*Recommended clamping torque (N·m): FDS-8SST=10



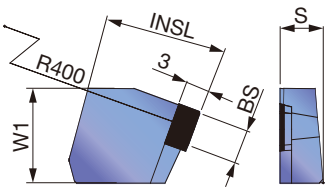
Reference pages: Inserts → H083, Standard cutting conditions → H084

INSERT

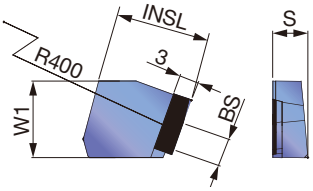
YDEN0905PDFR-D



YDEN0905PDFR-WD



YDEN0905PDFR-BD



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	APMX	PCD	W1	INSL	S	BS
		DX140				
YDEN0905PDFR-D	7	●	12.4	15.1	5.7	-
YDEN0905PDFR-WD	-	●	12.4	15.2	5.7	4.5
YDEN0905PDFR-BD	-	●	12.4	15.2	5.7	4.5

Note: Tungaloy provides refurbishing service for these inserts upon request.

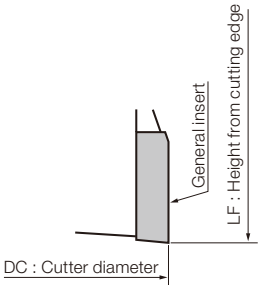
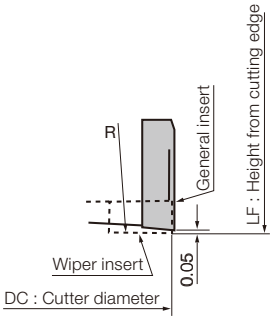
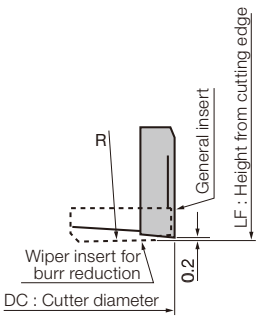
●: Line up
1 piece per package

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Designation	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
N	Aluminium alloy castings & die castings Si < 13%	DX140	YDEN0905PDFR-D	500 ~ 4000	0.05 ~ 0.2
	Aluminium alloy castings & die castings Si ≥ 13%	DX140	YDEN0905PDFR-D	200 ~ 500	0.05 ~ 0.2
	Rolled aluminium alloys	DX140	YDEN0905PDFR-D	500 ~ 4000	0.05 ~ 0.2
	Copper alloys	DX140	YDEN0905PDFR-D	200 ~ 500	0.05 ~ 0.2

Notes:
(1) When requiring improved surface finish, use the wiper insert together with regular inserts YDEN0905PDFR-WD.
(2) When requiring reduced burr occurrence, use the deburring inserts together with regular inserts YDEN0905PDFR-BD.
(3) When using the cutter at speeds over 1500m/min, use an arbor or tool-holder balanced to within G16.
(4) Wet cutting, using a water soluble cutting fluid, is recommended.
(5) When the length-to-diameter overhang ratio of the tool (L/D) exceeds 3, reduce cutting speed and feed to 70 to 80% of the values given in the table.

How to put each insert together

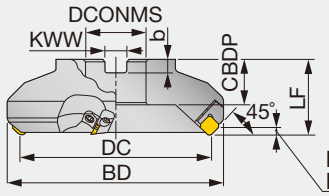
			For general	Accuracy of machining surface priority	Burr reduction priority
Applicable insert	General insert	YDEN0905PDFR-D	◎	◎	◎
	Wiper insert	YDEN0905PDFR-WD	–	◎	–
	Wiper insert for burr reduction	YDEN0905PDFR-BD	–	–	◎
Number of Inserts by type			All general	1 or 2 wiper inserts in cutter body	General insert : Burr wiper insert = 1 : 1
Specification of insert setting					
Accuracy of machining surface (roughness and undulation)			△	◎	○
Burr of machining surface			△	○	◎

TME4400R/LI

45° face mill, with wedge clamp system, for positive square inserts

GAMP = +24°, GAMF = -8° ~ -6°





E class insert: ≤ 4.6 mm
K class insert: ≤ 5.3 mm

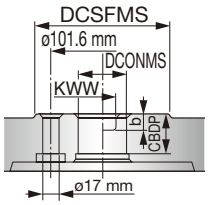
Right hand (R) shown.

Designation	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TME4403R/LI	4	80	4	101.5	50	25.4	26	9.5	6	1.43	SE*N1203
TME4403RI-E	4	80	4	101.5	50	27	26	12.4	7	1.43	SE*N1203
TME4404R/LI	4	100	5	120.2	63	31.75	32	12.7	8	2.74	SE*N1203
TME4404RI-E	4	100	5	120.2	63	32	32	14.4	8	2.74	SE*N1203
TME4405R/LI	4	125	6	145.2	63	38.1	38	15.9	10	4.04	SE*N1203
TME4405RI-E	4	125	6	145.2	63	40	32	16.4	9	4.04	SE*N1203
TME4406R/LI	4	160	8	181.2	63	50.8	38	19	11	5.82	SE*N1203
TME4406RI-E	4	160	8	181.2	63	40	29	16.4	9	5.82	SE*N1203
TME4408R/LI	4	200	10	220.5	63	47.625	38	25.4	14	9.18	SE*N1203
TME4410R/LI	4	250	12	269.8	63	47.625	38	25.4	14	16.64	SE*N1203
TME4412RI	4	315	14	334.4	63	47.625	38	25.4	14	25.72	SE*N1203

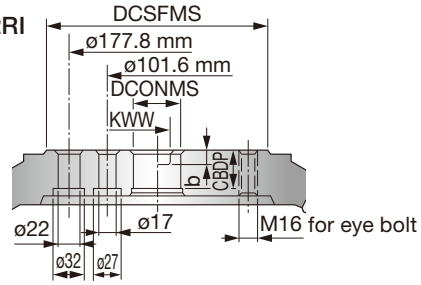
Note: Cutting edge height (LF) is for when SEEN1203AG*N type inserts are used.

Arbor type

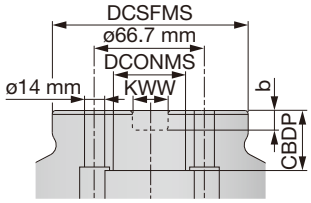
TME4408/10R/LI



TME4412RI



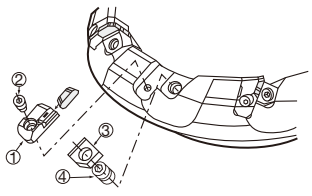
TME4406RI-E



SPARE PARTS

Designation	① Locator	④ Wedge fixing screw	② Locator fixing screw	③ Wedge	Wrench
TME4403RI	LE444R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4403LI	LE444L	FDS-8S	CM4X0.7X14	WF444L	TP-4
TME4403RI-E	LE444R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4404RI	LE444R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4404LI	LE444L	FDS-8S	CM4X0.7X14	WF444L	TP-4
TME4404RI-E	LE444R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4405RI	LE444R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4405LI	LE444L	FDS-8S	CM4X0.7X14	WF444L	TP-4
TME4405RI-E	LE444R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4406RI	LE446R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4406LI	LE446L	FDS-8S	CM4X0.7X14	WF444L	TP-4
TME4406RI-E	LE446R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4408RI	LE446R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4408LI	LE446L	FDS-8S	CM4X0.7X14	WF444L	TP-4
TME4410RI	LE446R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4410LI	LE446L	FDS-8S	CM4X0.7X14	WF444L	TP-4
TME4412RI	LE446R	FDS-8S	CM4X0.7X14	WF444R	TP-4

*Recommended clamping torque (N·m): FDS-8S=10



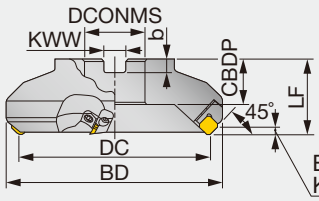
Reference pages: Inserts → H088, Standard cutting conditions → H089

TME4400RB

High density 45° face mill, with wedge clamp system, positive square inserts

GAMP = +24°, GAMF = -8° ~ -6°





E class insert: ≤ 4.6 mm
K class insert: ≤ 5.3 mm

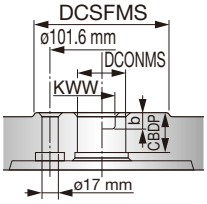
Right hand (R) shown.

Designation	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TME4463RB-E	4	63	5	87.2	40	22	20	10.4	6.3	1.0	SE*N1203
TME4403RB	4	80	6	101.5	50	25.4	26	9.5	6	1.43	SE*N1203
TME4403RB-E	4	80	6	101.5	50	27	26	12.4	7	1.43	SE*N1203
TME4404RB	4	100	7	120.2	63	31.75	32	12.7	8	2.77	SE*N1203
TME4404RB-E	4	100	7	120.2	63	32	32	14.4	8	2.77	SE*N1203
TME4405RB	4	125	9	145.2	63	38.1	38	15.9	10	4.06	SE*N1203
TME4405RB-E	4	125	9	145.2	63	40	32	16.4	9	4.06	SE*N1203
TME4406RB	4	160	12	181.2	63	50.8	38	19	11	5.86	SE*N1203
TME4406RB-E	4	160	12	181.2	63	40	29	16.4	9	5.86	SE*N1203
TME4408RB	4	200	15	220.5	63	47.625	38	25.4	14	9.24	SE*N1203

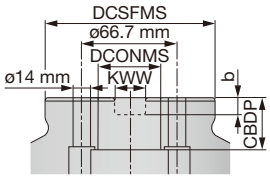
Note: Cutting edge height (LF) is the value when using SEEN1203AG*N inserts.

Arbor type

TME4408RB



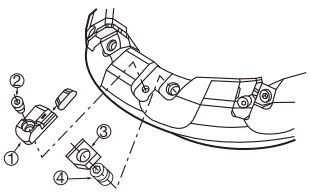
TME4406RB-E



SPARE PARTS

Designation	① Locator	④ Wedge fixing screw	② Locator fixing screw	③ Wedge	Wrench
TME4463RB-E	LE444R	DS-8	CM4X0.7X14	WT402R	TP-4
TME4403RB	LE444R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4404RB	LE444R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4405RB	LE444R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4406RB	LE446R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4403 - 06RB-E	LE446R	FDS-8S	CM4X0.7X14	WF444R	TP-4
TME4408RB	LE446R	FDS-8S	CM4X0.7X14	WF444R	TP-4

*Recommended clamping torque (N·m): DS-8/FDS-8S=8

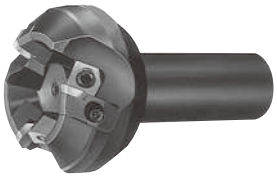


Reference pages: Inserts → H088, Standard cutting conditions → H089

EME4400

45° face endmill, shank type, with wedge clamp system, for positive square inserts

GAMP = +24°, GAMF = -13° ~ -8°



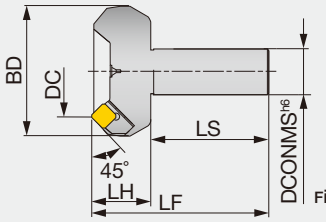


Fig.1

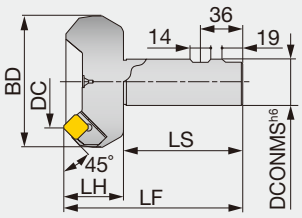


Fig.2

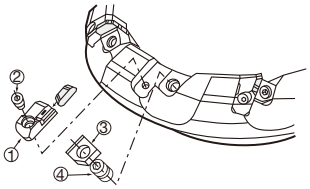
Right hand (R) shown.

Designation	APMX	DC	CICT	BD	DCONMS	LS	LH	LF	Fig.	Insert
EME4450R	4	50	3	73.4	32	80	40	120	1	SE*N1203...
EME4463R	4	63	4	87.2	32	80	40	120	1	SE*N1203...
EME4403RI	4	80	5	101.5	32	80	40	120	2	SE*N1203...
EME4404RI	4	100	5	120.2	32	80	40	120	2	SE*N1203...

SPARE PARTS

Designation	① Locator	④ Wedge fixing screw	② Locator fixing screw	③ Wedge	Wrench
EME4400	LE444R	FDS-8S	CM4X0.7X14	WF444R	TP-4

*Recommended clamping torque (N·m): FDS-8S=8

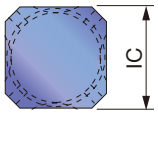


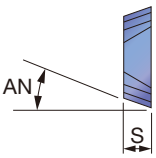
Reference pages: Inserts → H088, Standard cutting conditions → H089

INSERT

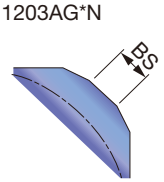
SECN/SEEN/SEKN /SEKR 1203

SE*N1203AG*N (-T)

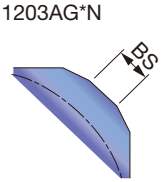




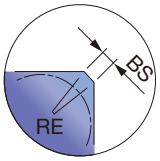
SEE/CN 1203AG*N



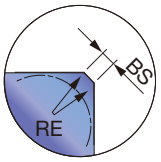
SEE/CN 1203AG*N



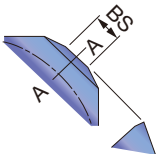
SEEN 1203AGTNCR



SEEN 1203AGTNCR-14

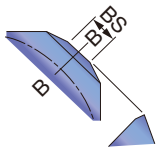


SEKN 1203AG*N-T



A-A cross section

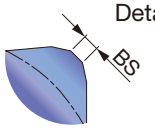
SEEN 1203AG*N-T



B-B cross section

SEKR1203AGSR-MJ
SEKR1203AGPN-MS

Details of edge



P	Steel	☆	☆	☆	★	☆		★		★		☆		
M	Stainless		★	☆		☆								
K	Cast iron	★					★							
N	Non-ferrous											★		
S	Superalloys	☆	☆											
H	Hard materials													

★ : First choice
☆ : Second choice

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

Designation	APMX	Coated							Cermet	Uncoated				IC	S	AN	BS
		AH120	AH130	AH140	AH330	GH330	T1115	T3130	NS740	UX30	TH10						
SECN1203AGFN	4										●			12.7	3.18	20	2.4
SEEN1203AGFN	4										●			12.7	3.18	20	2.4
SEEN1203AGTN	4	●	●	●		●	●		●	●				12.7	3.18	20	2.4
SEEN1203AGTN-T	4							●	●	●				12.7	3.18	20	2.4
SEEN1203AGTNCR	4	●	●	●	●			●						12.7	3.18	20	1.6
SEEN1203AGTNCR-14	4								●					12.7	3.18	20	1.4
SEKN1203AGFN-T	4										●			12.7	3.18	20	1.6
SEKN1203AGTN	4	●	●	●	●	●		●	●	●				12.7	3.18	20	1.6
SEKN1203AGTN-T	4					●	●	●	●	●				12.7	3.18	20	1.6
SEKN1203AGTNCR	4								●					12.7	3.18	20	1.6
SEKR1203AGSR-MJ	4	●			●	●		●						12.7	3.18	20	1.6
SEKR1203AGPN-MS	4		●	●										12.7	3.18	20	1.6

●: Line up

STANDARD CUTTING CONDITIONS

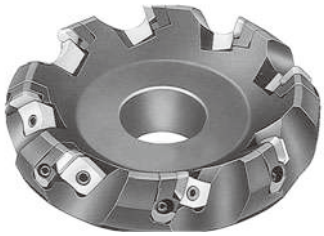
ISO	Workpiece material	Grade	Roughing (Depth of cut: APMX 1.5 ~ 4 mm)		Finishing (Depth of cut: APMX 0.3 ~ 0.7 mm)	
			Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Mild steels Unhardened steels < 180 HB	NS740	150 ~ 250	0.1 ~ 0.2	150 ~ 250	0.1 ~ 0.25
		AH330	150 ~ 400	0.1 ~ 0.25	150 ~ 400	0.1 ~ 0.28
		AH120	150 ~ 250	0.1 ~ 0.25	150 ~ 250	0.1 ~ 0.28
		T3130	150 ~ 300	0.1 ~ 0.28	180 ~ 300	0.1 ~ 0.3
		AH130 · AH140	100 ~ 180	0.1 ~ 0.28	130 ~ 200	0.1 ~ 0.3
	Carbon steels Alloy steels < 300 HB	T3130	150 ~ 280	0.1 ~ 0.25	180 ~ 280	0.1 ~ 0.28
		NS740	100 ~ 180	0.1 ~ 0.18	150 ~ 200	0.1 ~ 0.23
		AH330	100 ~ 320	0.1 ~ 0.23	150 ~ 320	0.1 ~ 0.25
		AH120	100 ~ 200	0.1 ~ 0.23	150 ~ 200	0.1 ~ 0.25
	Die steels < 30 HRC	AH120 · T3130	100 ~ 150	0.1 ~ 0.15	100 ~ 150	0.1 ~ 0.2
		AH330	100 ~ 250	0.1 ~ 0.15	100 ~ 250	0.1 ~ 0.2
M	Stainless steels < 250 HB	AH130 · AH140	80 ~ 180	0.15 ~ 0.25	100 ~ 200	0.15 ~ 0.28
		AH120 · GH330	150 ~ 230	0.15 ~ 0.23	200 ~ 250	0.15 ~ 0.25
K	Cast irons Ductile cast irons	T1115	100 ~ 200	0.1 ~ 0.2	100 ~ 200	0.1 ~ 0.25
		AH120	100 ~ 200	0.1 ~ 0.2	100 ~ 200	0.1 ~ 0.25
S	Titanium alloys Ti-6Al-4V, etc.	AH130	30 ~ 60	0.1 ~ 0.2	30 ~ 60	0.1 ~ 0.2
	Superalloys Inconel718, etc.	AH120	10 ~ 40	0.05 ~ 0.15	10 ~ 40	0.05 ~ 0.1
N	Aluminium alloys Si < 13%	TH10	200 ~ 1000	0.05 ~ 0.2	350 ~ 1000	0.1 ~ 0.3
	Copper alloy	TH10	200 ~ 500	0.1 ~ 0.2	200 ~ 500	0.1 ~ 0.25

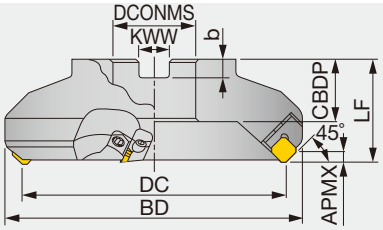
Note: The above are the values for dry cutting of all materials except aluminium alloy.

TME5400RI

45° face mill, with wedge clamp system, for positive square inserts

GAMP = +24°, GAMF = -8° ~ -6°





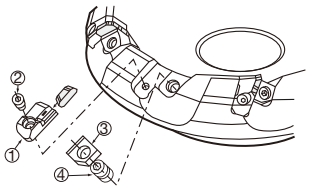
Right hand (R) shown.

Designation	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TME5404RI	6	100	5	123.6	63	31.75	32	12.7	8	2.82	SE**1504...
TME5405RI	6	125	6	148.6	63	38.1	38	15.9	10	4.08	SE**1504...
TME5406RI	6	160	8	183	63	50.8	38	19	11	5.99	SE**1504...
TME5408RI	6	200	10	223	63	47.625	38	25.4	14	9.23	SE**1504...
TME5410RI	6	250	12	273	63	47.625	38	25.4	14	16.94	SE**1504...
TME5412RI	6	315	14	338	63	47.625	38	25.4	14	25.94	SE**1504...

SPARE PARTS

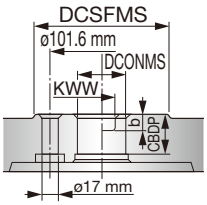
Designation	① Locator	④ Wedge fixing screw	② Locator fixing screw	③ Wedge	Wrench
TME5400RI	LE540R	FDS-8S	CM4X0.7X14	WF540R	TP-4

*Recommended clamping torque (N·m): FDS-8S=8

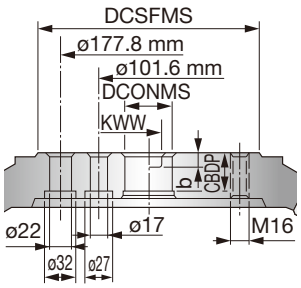


Arbor type

TME5408/10RI



TME5412RI



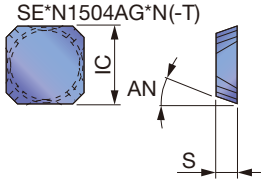
for eye bolt

Reference pages: Inserts, Standard cutting conditions → H091

INSERT

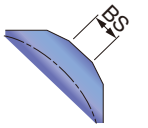
SECN/SEEN/SEKN 1504

SE*N1504AG*N(-T)

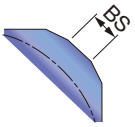


Details of edge

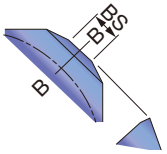
SEKN1504AG*N



SEEN1504AGTN



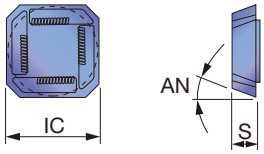
SEKN1504AGTN-T



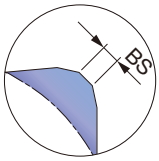
B-B cross section

SEKR1504-MJ

SEKR1504AGSR-MJ
with 3-dimensional chipbreaker



Details of edge



		Coated				Cermet	Uncoated						
		AH120	AH140	GH330	T3130	NS740	TH10	UX30					
P	Steel	☆		★	★	★		☆					
M	Stainless		★										
K	Cast iron	★											
N	Non-ferrous						★						
S	Superalloys	★											
H	Hard materials												

★ : First choice
☆ : Second choice

Designation	APMX	AH120	AH140	GH330	T3130	NS740	TH10	UX30	IC	S	AN	BS
SEEN1504AGTN	6					●		●	15.875	4.76	20°	2.4
SEKN1504AGFN	6						●		15.875	4.76	20°	1.6
SEKN1504AGTN	6	●	●	●	●	●		●	15.875	4.76	20°	1.6
SEKN1504AGTN-T	6				●	●			15.875	4.76	20°	1.6
SEKR1504AGSR-MJ	6			●	●				15.875	4.76	20°	1.6

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Roughing (Depth of cut: APMX 1.5 ~ 6 mm) Cutting speed *Vc* (m/min)	Roughing (Depth of cut: APMX 1.5 ~ 6 mm) Feed per tooth *fz* (mm/t)	Finishing (Depth of cut: APMX 0.3 ~ 0.7 mm) Cutting speed *Vc* (m/min)	Finishing (Depth of cut: APMX 0.3 ~ 0.7 mm) Feed per tooth *fz* (mm/t)
P	Mild steels Unhardened steels < 180 HB	NS740	150 ~ 250	0.1 ~ 0.25	150 ~ 250	0.1 ~ 0.3
		AH120	150 ~ 250	0.1 ~ 0.3	150 ~ 250	0.1 ~ 0.33
		T3130	150 ~ 300	0.1 ~ 0.35	180 ~ 300	0.1 ~ 0.35
	Carbon steels Alloy steels < 300 HB	T3130	150 ~ 280	0.1 ~ 0.35	180 ~ 280	0.1 ~ 0.35
		AH120 · GH330	100 ~ 200	0.1 ~ 0.3	150 ~ 250	0.1 ~ 0.33
		NS740	100 ~ 180	0.1 ~ 0.25	150 ~ 200	0.1 ~ 0.3
	Die steels < 30 HRC	T3130 · AH120	100 ~ 150	0.1 ~ 0.2	100 ~ 150	0.1 ~ 0.2
M	Stainless steels < 250 HB	AH140	80 ~ 180	0.15 ~ 0.3	100 ~ 200	0.15 ~ 0.33
		AH120	150 ~ 230	0.15 ~ 0.3	200 ~ 250	0.15 ~ 0.3
K	Cast irons Ductile cast irons	AH120	100 ~ 200	0.1 ~ 0.3	100 ~ 200	0.1 ~ 0.3
N	Aluminium alloys Si < 13%	TH10	200 ~ 1000	0.05 ~ 0.3	350 ~ 1000	0.1 ~ 0.3
	Copper alloy	TH10	200 ~ 500	0.1 ~ 0.2	200 ~ 500	0.1 ~ 0.25
S	Titanium alloys Ti-6Al-4V, etc.	AH140	20 ~ 60	0.05 ~ 0.15	20 ~ 60	0.05 ~ 0.15
	Superalloys Inconel718, etc.	AH120	20 ~ 40	0.05 ~ 0.1	20 ~ 40	0.05 ~ 0.1

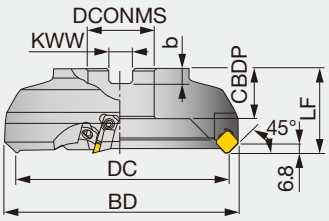
Note: The above are the values for dry cutting of all materials except aluminium alloy.

TMD4400R/LI

45° face mill, with wedge clamp system, for positive square inserts

GAMP = +15°, GAMF = -3°



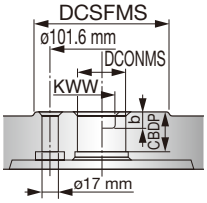


Right hand (R) shown.

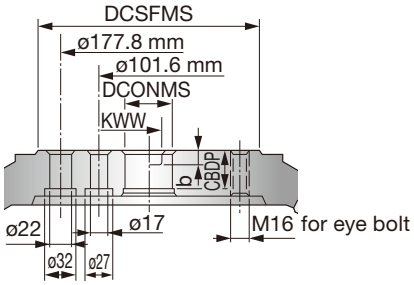
Designation	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TMD4403R/LI	4	80	4	96	50	25.4	26	9.5	6	1.4	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TMD4404R/LI	4	100	5	115	63	31.75	32	12.7	8	2.5	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TMD4405R/LI	4	125	6	139	63	38.1	38	15.9	10	3.60	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TMD4406R/LI	4	160	8	173	63	50.8	38	19	11	5.6	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TMD4408R/LI	4	200	10	213	63	47.625	38	25.4	14	8.7	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TMD4410R/LI	4	250	12	263	63	47.625	38	25.4	14	16.3	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
TMD4412RI	4	315	14	327	63	47.625	38	25.4	14	25.2	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA

Arbor type

TMD4408/10R/LI



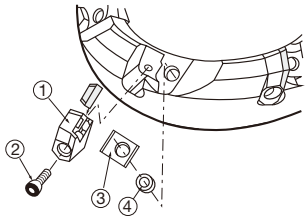
TMD4412RI



SPARE PARTS

Designation	① Locator	④ Wedge fixing screw	② Locator fixing screw	③ Wedge	Wrench
TMD4403RI	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4
TMD4403LI	LD440L	FDS-8S	CM4X0.7X14	WP440L	TP-4
TMD4404RI	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4
TMD4404LI	LD440L	FDS-8S	CM4X0.7X14	WP440L	TP-4
TMD4405RI	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4
TMD4405LI	LD440L	FDS-8S	CM4X0.7X14	WP440L	TP-4
TMD4406RI	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4
TMD4406LI	LD440L	FDS-8S	CM4X0.7X14	WP440L	TP-4
TMD4408RI	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4
TMD4408LI	LD440L	FDS-8S	CM4X0.7X14	WP440L	TP-4
TMD4410RI	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4
TMD4410LI	LD440L	FDS-8S	CM4X0.7X14	WP440L	TP-4
TMD4412RI	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4

*Recommended clamping torque (N·m): FDS-8S=8



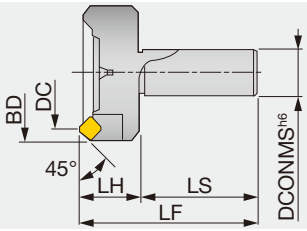
Reference pages: Inserts → H094, Standard cutting conditions → H095

EMD4400RI

45° endmill, shank type, with wedge clamp system, for positive square inserts

GAMP = +15°, GAMF = -3°





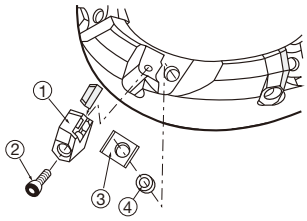
Right hand (R) shown.

Designation	APMX	DC	CICT	BD	DCONMS	LS	LH	LF	WT(kg)	Insert
EMD4403RI-S32	4	80	4	95	32	80	40	120	2	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA

SPARE PARTS

Designation	① Locator	④ Wedge fixing screw	② Locator fixing screw	③ Wedge	Wrench
EMD4403RI-S32	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4

*Recommended clamping torque (N·m): FDS-8S=8

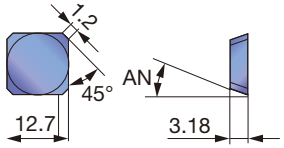


Reference pages: Inserts → H094, Standard cutting conditions → H095

INSERT

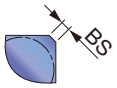
SDCN/SDEN/SDKN 42Z

Regular edge
SD*N42Z*N

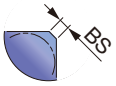


Details of edge

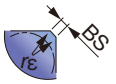
SDKN42ZTN16



SD*N42ZTN20

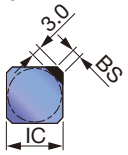


SDKN42ZTNCR
SDEN42ZTNCR



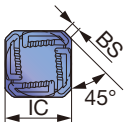
SDCN42ZFN-DIA

SDCN42ZFN-DIA

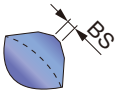


SDKR42Z-MJ

SDKR42ZSR-MJ
with 3-dimensional chipbreaker

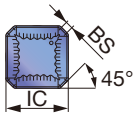


Details of edge



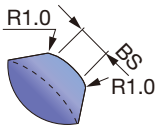
SDMR/SDKR 1203-MJ

SD*R1203AETN-MJ
with 3-dimensional chipbreaker

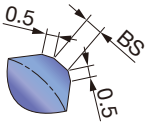


Details of edge

SDMR1203AETN-MJ

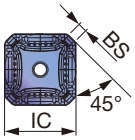


SDKR1203AETN-MJ

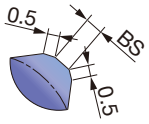


SDKR42Z-MS

SDKR42ZPN-MS

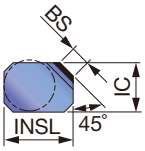


Details of edge



WDCN42ZFR-DIA

Wiper edge
WDCN42ZFR-DIA



		AH3135	AH120	AH130	AH140	AH330	GH330	T1115	T1215	T3130	T3225	NS740	N308	UX30	TH10	DX140
P	Steel	★	★			☆	☆			☆	☆	★	☆		☆	
M	Stainless	★		★	☆						☆					
K	Cast iron		★					☆	★							
N	Non-ferrous														★	★
S	Superalloys		★	☆												
H	Hard materials															

★ : First choice
☆ : Second choice

Designation	APMX	Coated										Cermet		Uncoated		PCD	IC	INSL	S	AN	BS
		AH3135	AH120	AH130	AH140	AH330	GH330	T1115	T1215	T3130	T3225	NS740	N308	UX30	TH10	DX140					
SDCN42ZFN	4														●		12.7	-	3.18	15°	1.2
SDCN42ZTN	4											●	●	●			12.7	-	3.18	15°	1.2
SDCN42ZTN20	4											●					12.7	-	3.18	15°	2
SDEN42ZFN	4														●		12.7	-	3.18	15°	1.2
SDEN42ZTN	4	●	●		●		●	●	●			●	●	●			12.7	-	3.18	15°	1.2
SDEN42ZTNCR	4	●	●		●	●						●					12.7	-	3.18	15°	1.6
SDEN42ZTN20	4									●	●						12.7	-	3.18	15°	2
SDKN42ZFN	4														●		12.7	-	3.18	15°	1.2
SDKN42ZTN	4	●	●	●	●	●	●	●	●			●	●	●			12.7	-	3.18	15°	1.2
SDKN42ZTNCR	4											●					12.7	-	3.18	15°	1.6
SDKN42ZTN16	4									●	●						12.7	-	3.18	15°	1.6
SDCN42ZFN-DIA	2															●	12.7	-	3.18	15°	1.2
SDKR42ZSR-MJ	4	●	●			●	●			●	●						12.7	-	3.18	15°	1.6
SDMR1203AETN-MJ	4											●					12.7	-	3.18	15°	1.6
SDKR1203AETN-MJ	4											●					12.7	-	3.18	15°	1.6
SDKR42ZPN-MS	4	●		●	●												12.7	-	3.18	15°	1.6
WDCN42ZFR-DIA	0.5															●	12.2	15.64	3.18	15°	4.9

●: Line up

DX140: 1 piece per package

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Roughing (Depth of cut: APMX 1.5 ~ 4 mm)		Finishing (Depth of cut: APMX 0.3 ~ 0.7 mm)	
			Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Mild steels Unhardened steels < 180 HB	NS740	150 ~ 250	0.1 ~ 0.2	150 ~ 250	0.1 ~ 0.25
		T3225	150 ~ 350	0.1 ~ 0.25	150 ~ 350	0.1 ~ 0.28
		AH3135	150 ~ 300	0.1 ~ 0.28	180 ~ 300	0.1 ~ 0.3
	Carbon steels Alloy steels < 300 HB	NS740	100 ~ 180	0.1 ~ 0.18	150 ~ 200	0.1 ~ 0.23
		T3225	100 ~ 320	0.1 ~ 0.23	150 ~ 320	0.1 ~ 0.25
		AH3135	100 ~ 200	0.1 ~ 0.25	150 ~ 200	0.1 ~ 0.3
	Die steels < 30 HRC	AH3135	100 ~ 150	0.1 ~ 0.15	100 ~ 150	0.1 ~ 0.2
		T3225	100 ~ 250	0.1 ~ 0.15	100 ~ 250	0.1 ~ 0.2
M	Stainless steels < 250 HB	AH3135	80 ~ 180	0.15 ~ 0.25	100 ~ 200	0.15 ~ 0.28
		T3225	150 ~ 230	0.15 ~ 0.23	200 ~ 250	0.15 ~ 0.25
K	Cast irons Ductile cast irons	T1215	100 ~ 250	0.1 ~ 0.2	100 ~ 250	0.1 ~ 0.25
		AH120	100 ~ 200	0.1 ~ 0.25	100 ~ 200	0.1 ~ 0.3
S	Titanium alloys Ti-6Al-4V, etc.	AH130	30 ~ 60	0.1 ~ 0.2	30 ~ 60	0.1 ~ 0.2
	Superalloys Inconel718, etc.	AH120	10 ~ 40	0.05 ~ 0.15	10 ~ 40	0.05 ~ 0.1
N	Aluminium alloys Si < 13%	TH10	200 ~ 1000	0.05 ~ 0.2	350 ~ 1000	0.1 ~ 0.3
		DX140	200 ~ 1000	0.05 ~ 0.18	350 ~ 1000	0.1 ~ 0.2
	Copper alloy	TH10	200 ~ 500	0.1 ~ 0.2	200 ~ 500	0.1 ~ 0.25

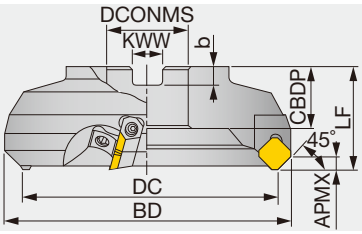
Note: The above are the values for dry cutting of all materials except aluminium alloy.
Maximum depth of cut for DX140 SDCN42ZFN-DIA is 2 mm.

TMD5400RI

45° face mill, with wedge clamp system, for positive square inserts

GAMP = +15°, GAMF = -3°



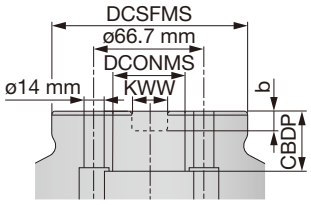


Right hand (R) shown.

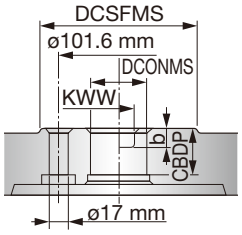
Designation	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TMD5404RI	6	100	4	118	63	31.75	32	12.7	8	2.5	SD*N53Z...
TMD5404RI-E	6	100	4	118	63	32	32	14.4	8	2.5	SD*N53Z...
TMD5405RI	6	125	6	142	63	38.1	38	15.9	10	2.5	SD*N53Z...
TMD5405RI-E	6	125	6	142	63	40	32	16.4	9	3.7	SD*N53Z...
TMD5406RI	6	160	6	176	63	50.8	38	19	11	5.8	SD*N53Z...
TMD5406RI-E	6	160	6	176	63	40	29	16.4	9	5.8	SD*N53Z...
TMD5408RI	6	200	8	216	63	47.625	38	25.4	14	9	SD*N53Z...
TMD5408RI-E	6	200	8	216	63	60	38	25.7	14	9	SD*N53Z...
TMD5410RI	6	250	10	265	63	47.625	38	25.4	14	16.3	SD*N53Z...
TMD5410RI-E	6	250	10	265	63	60	38	25.7	14	16.3	SD*N53Z...
TMD5412RI	6	315	12	330	63	47.625	38	25.4	14	25.2	SD*N53Z...
TMD5412RI-E	6	315	12	330	63	60	38	25.7	14	25.2	SD*N53Z...

Arbor type

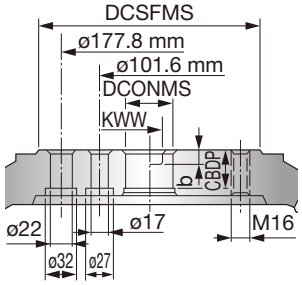
TMD5406RI-E



TMD5408/10...



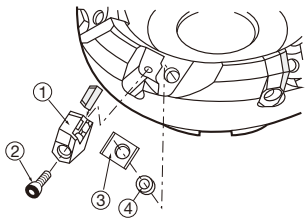
TMD5412RI



SPARE PARTS

Designation	① Locator	④ Wedge fixing screw	② Locator fixing screw	③ Wedge	Wrench
TMD54**RI*	LD540R	FDS-8S	CM4X0.7X20	WF500R	TP-4

*Recommended clamping torque (N·m): FDS-8S=8

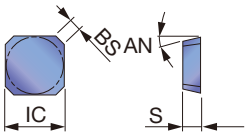


Reference pages: Inserts, Standard cutting conditions → H097

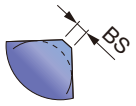
INSERT

SDCN/SDEN 53Z

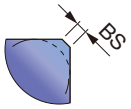
SD*N53Z*N



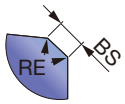
SDEN53ZTN20
Details of edge



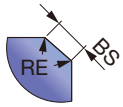
SDKN53ZTN16
Details of edge



SDEN53ZTNCR
Details of edge

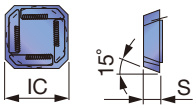


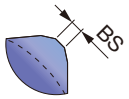
SDKN53ZTNCR
Details of edge



SDKR53-MJ

SDKR53ZSR-MJ
with 3-dimensional chipbreaker





P	Steel	☆				★		★	☆		☆	
M	Stainless		★	☆	☆							
K	Cast iron	★										
N	Non-ferrous										★	
S	Superalloys											
H	Hard materials											

★ : First choice
☆ : Second choice

Designation	APMX	Coated					Cermet		Uncoated		IC	S	AN	BS
		AH120	AH130	AH140	GH330	T3130	NS740	N308	UX30	TH10				
SDCN53ZTN	6						●	●			15.875	4.76	15°	1.2
SDEN53ZFN	6									●	15.875	4.76	15°	1.2
SDEN53ZTN	6				●		●		●		15.875	4.76	15°	1.2
SDEN53ZTNCR	6						●				15.875	4.76	15°	1.4
SDEN53ZTN20	6					●					15.875	4.76	15°	2
SDKN53ZFN	6									●	15.875	4.76	15°	1.2
SDKN53ZTN	6	●	●	●	●		●	●	●		15.875	4.76	15°	1.2
SDKN53ZTNCR	6						●				15.875	4.76	15°	1.6
SDKN53ZTN16	6					●					15.875	4.76	15°	1.6
SDKR53ZSR-MJ	6				●	●					15.875	4.76	15°	2

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Roughing (Depth of cut: APMX 1.5 ~ 6 mm) Cutting speed *Vc* (m/min)	Roughing (Depth of cut: APMX 1.5 ~ 6 mm) Feed per tooth *fz* (mm/t)	Finishing (Depth of cut: APMX 0.3 ~ 0.7 mm) Cutting speed *Vc* (m/min)	Finishing (Depth of cut: APMX 0.3 ~ 0.7 mm) Feed per tooth *fz* (mm/t)
P	Mild steels Unhardened steels < 180 HB	NS740	150 ~ 250	0.1 ~ 0.25	150 ~ 250	0.1 ~ 0.3
		AH120	150 ~ 250	0.1 ~ 0.35	150 ~ 250	0.1 ~ 0.35
		T3130	150 ~ 300	0.1 ~ 0.35	180 ~ 300	0.1 ~ 0.35
		AH130	100 ~ 180	0.1 ~ 0.35	130 ~ 200	0.1 ~ 0.35
	Carbon steels Alloy steels < 300 HB	T3130	150 ~ 280	0.1 ~ 0.35	180 ~ 280	0.1 ~ 0.35
		NS740	100 ~ 180	0.1 ~ 0.25	150 ~ 200	0.1 ~ 0.3
		AH120	100 ~ 200	0.1 ~ 0.3	150 ~ 200	0.1 ~ 0.35
	Die steels < 30 HRC	T3130 · AH120	100 ~ 150	0.1 ~ 0.2	100 ~ 150	0.1 ~ 0.2
M	Stainless steels < 250 HB	AH130 · AH140	80 ~ 180	0.15 ~ 0.3	100 ~ 200	0.15 ~ 0.33
		GH330	150 ~ 230	0.15 ~ 0.3	200 ~ 250	0.15 ~ 0.3
K	Cast irons Ductile cast irons	AH120	100 ~ 200	0.1 ~ 0.3	100 ~ 200	0.1 ~ 0.3
N	Aluminium alloys Si < 13%	TH10	200 ~ 1000	0.05 ~ 0.3	350 ~ 1000	0.1 ~ 0.3
	Copper alloy	TH10	200 ~ 500	0.1 ~ 0.2	200 ~ 500	0.1 ~ 0.25

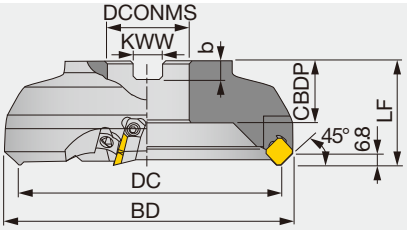
Note: The above are the values for dry cutting of all materials except aluminium alloy.

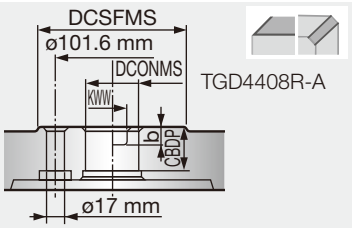
TGD4400-A

45° face mill, with wedge clamp system, for positive square inserts

GAMP = +15°, GAMF = -3°





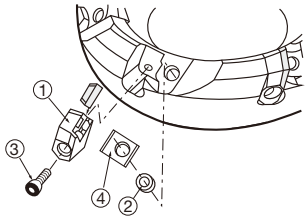


Designation	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TGD4403R-A	4	80	6	96	50	25.4	26	9.5	6	1.4	SD*N42.../SD*R1203.../WDCN42ZFR-DIA
TGD4404R-A	4	100	6	115	63	31.75	32	12.7	8	2.5	SD*N42.../SD*R1203.../WDCN42ZFR-DIA
TGD4405R-A	4	125	8	139	63	38.1	38	15.9	10	3.6	SD*N42.../SD*R1203.../WDCN42ZFR-DIA
TGD4406R-A	4	160	8	173	63	50.8	38	19	11	5.6	SD*N42.../SD*R1203.../WDCN42ZFR-DIA
TGD4408R-A	4	200	10	213	63	47.625	38	25.4	14	8.7	SD*N42.../SD*R1203.../WDCN42ZFR-DIA

SPARE PARTS

Designation	① Locator	② Wedge fixing screw	③ Locator fixing screw	④ Wedge	Wrench
TGD4400-A	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4

*Recommended clamping torque (N·m):FDS-8S=8



Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

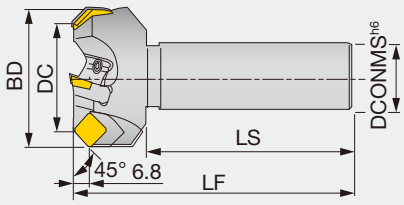
Reference pages: Inserts → H100, Standard cutting conditions → H101

EGD4400

45° face endmill, shank type, with wedge clamp system, for positive square inserts

GAMP = +15˚, GAMF = -3˚



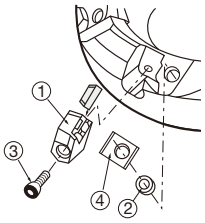


Designation	APMX	DC	CICT	BD	DCONMS	LS	LH	LF	WT(kg)	Insert
EGD4450R	4	50	4	67	32	80	35	115	1.1	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA
EGD4463R	4	63	4	79	32	80	35	115	1.4	SD*N42.../SD*R1203.../ WDCN42ZFR-DIA

SPARE PARTS

Designation	① Locator	② Wedge fixing screw	③ Locator fixing screw	④ Wedge	Wrench
EGD4400	LD442R	DS-8	BM3X0.5X6	WP193TR	TP-4

*Recommended clamping torque (N·m): DS-8=8

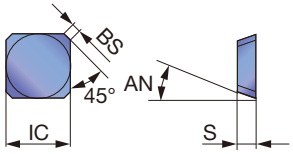


Reference pages: Inserts → H100, Standard cutting conditions → H101

INSERT

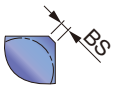
SDCN/SDEN/SDKN 42Z

Regular edge
SD*N42Z*N

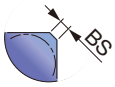


Details of edge

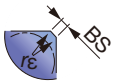
SDKN42ZTN16



SD*N42ZTN20

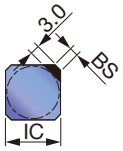


SDKN42ZTNCR
SDEN42ZTNCR



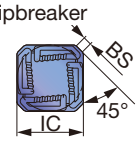
SDCN42ZFN-DIA

SDCN42ZFN-DIA

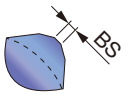


SDKR42Z-MJ

SDKR42ZSR-MJ
with 3-dimensional
chipbreaker

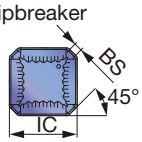


Details of edge



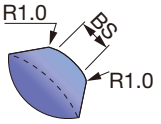
SDMR/SDKR 1203-MJ

SD*R1203AETN-MJ
with 3-dimensional
chipbreaker

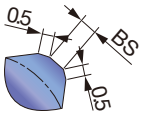


Details of edge

SDMR1203AETN-MJ

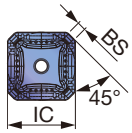


SDKR1203AETN-MJ

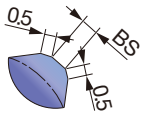


SDKR42Z-MS

SDKR42ZPN-MS

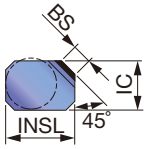


Details of edge



WDCN42ZFR-DIA

Wiper edge
WDCN42ZFR-DIA



Approach angle

10°-20°
45°
70°
85°
88°
90°
Others

		AH3135	AH120	AH130	AH140	AH330	GH330	T1115	T1215	T3130	T3225	NS740	N308	UX30	TH10	DX140
P	Steel	★	★			☆	☆			☆	☆	★	☆		☆	
M	Stainless	★		★	☆						☆					
K	Cast iron		★					☆	★							
N	Non-ferrous														★	★
S	Superalloys		★	☆												
H	Hard materials															

★ : First choice
☆ : Second choice

Designation	APMX	Coated										Cermet		Uncoated		PCD	IC	INSL	S	AN	BS
		AH3135	AH120	AH130	AH140	AH330	GH330	T1115	T1215	T3130	T3225	NS740	N308	UX30	TH10	DX140					
SDCN42ZFN	4														●		12.7	-	3.18	15°	1.2
SDCN42ZTN	4											●	●	●			12.7	-	3.18	15°	1.2
SDCN42ZTN20	4											●					12.7	-	3.18	15°	2
SDEN42ZFN	4														●		12.7	-	3.18	15°	1.2
SDEN42ZTN	4	●	●		●		●	●	●			●	●	●			12.7	-	3.18	15°	1.2
SDEN42ZTNCR	4	●	●		●	●						●					12.7	-	3.18	15°	1.6
SDEN42ZTN20	4									●	●						12.7	-	3.18	15°	2
SDKN42ZFN	4														●		12.7	-	3.18	15°	1.2
SDKN42ZTN	4	●	●	●	●	●	●	●	●			●	●	●			12.7	-	3.18	15°	1.2
SDKN42ZTNCR	4											●					12.7	-	3.18	15°	1.6
SDKN42ZTN16	4									●	●						12.7	-	3.18	15°	1.6
SDCN42ZFN-DIA	2															●	12.7	-	3.18	15°	1.2
SDKR42ZSR-MJ	4	●	●			●	●			●	●						12.7	-	3.18	15°	1.6
SDMR1203AETN-MJ	4											●					12.7	-	3.18	15°	1.6
SDKR1203AETN-MJ	4											●					12.7	-	3.18	15°	1.6
SDKR42ZPN-MS	4	●		●	●												12.7	-	3.18	15°	1.6
WDCN42ZFR-DIA	0.5															●	12.2	15.64	3.18	15°	4.9

●: Line up

DX140: Packing Quantity = 1 pc.

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Roughing (Depth of cut: APMX 1.5 ~ 4 mm)		Finishing (Depth of cut: APMX 0.3 ~ 0.7 mm)	
			Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Mild steels Unhardened steels < 180 HB	NS740	150 ~ 250	0.1 ~ 0.2	150 ~ 250	0.1 ~ 0.25
		T3225	150 ~ 350	0.1 ~ 0.25	150 ~ 350	0.1 ~ 0.28
		AH3135	150 ~ 300	0.1 ~ 0.28	180 ~ 300	0.1 ~ 0.3
	Carbon steels Alloy steels < 300 HB	NS740	100 ~ 180	0.1 ~ 0.18	150 ~ 200	0.1 ~ 0.23
		T3225	100 ~ 320	0.1 ~ 0.23	150 ~ 320	0.1 ~ 0.25
		AH3135	100 ~ 200	0.1 ~ 0.25	150 ~ 200	0.1 ~ 0.3
	Die steels < 30 HRC	AH3135	100 ~ 150	0.1 ~ 0.15	100 ~ 150	0.1 ~ 0.2
		T3225	100 ~ 250	0.1 ~ 0.15	100 ~ 250	0.1 ~ 0.2
M	Stainless steels < 250 HB	AH3135	80 ~ 180	0.15 ~ 0.25	100 ~ 200	0.15 ~ 0.28
		T3225	150 ~ 230	0.15 ~ 0.23	200 ~ 250	0.15 ~ 0.25
K	Cast irons Ductile cast irons	T1215	100 ~ 250	0.1 ~ 0.2	100 ~ 250	0.1 ~ 0.25
		AH120	100 ~ 200	0.1 ~ 0.25	100 ~ 200	0.1 ~ 0.25
S	Titanium alloys Ti-6Al-4V, etc.	AH130	30 ~ 60	0.1 ~ 0.2	30 ~ 60	0.1 ~ 0.2
	Superalloys Inconel718, etc.	AH120	10 ~ 40	0.05 ~ 0.15	10 ~ 40	0.05 ~ 0.1
N	Aluminium alloys Si < 13%	TH10	200 ~ 1000	0.05 ~ 0.2	350 ~ 1000	0.1 ~ 0.3
		DX140	200 ~ 1000	0.05 ~ 0.18	350 ~ 1000	0.1 ~ 0.2
	Copper alloy	TH10	200 ~ 500	0.1 ~ 0.2	200 ~ 500	0.1 ~ 0.25

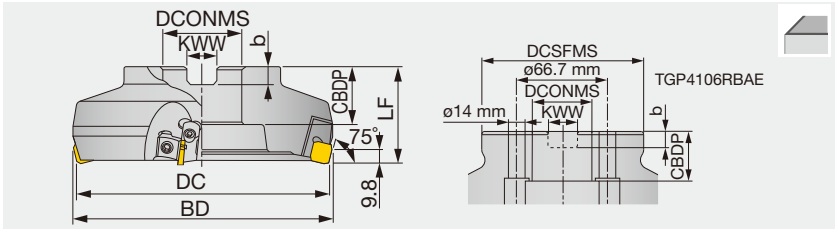
Note: The above are the values for dry cutting of all materials except aluminium alloy.
Maximum depth of cut for DX140 SDCN42ZFN-DIA is 2 mm.

TGP4100RIA/BAA/RBAE

75° face mill, with wedge clamp system, for positive square inserts

GAMP = +7°, GAMF = +1°





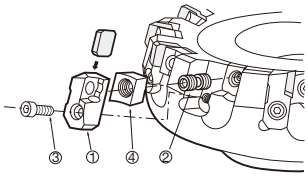
Designation	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TGP4103RIA	7	80	5	89	50	25.4	26	9.5	6	1.3	SP*N42.../ WPAN42...
TGP4104RIA	7	100	6	108	63	31.75	32	12.7	8	2.4	SP*N42.../ WPAN42...
TGP4104RBA	7	100	8	108	63	31.75	32	12.7	8	2.4	SP*N42.../ WPAN42...
TGP4104RBAE	7	100	8	108	63	32	25	14.4	8	2.4	SP*N42.../ WPAN42...
TGP4105RIA	7	125	8	132	63	38.1	38	15.9	10	3.6	SP*N42.../ WPAN42...
TGP4105RBA	7	125	10	132	63	38.1	38	15.9	10	3.6	SP*N42.../ WPAN42...
TGP4105RBAE	7	125	10	132	63	40	32	16.4	9	3.6	SP*N42.../ WPAN42...
TGP4106RIA	7	160	8	167	63	50.8	38	19	11	5.9	SP*N42.../ WPAN42...
TGP4106RBA	7	160	12	167	63	50.8	38	19	11	5.8	SP*N42.../ WPAN42...
TGP4106RBAE	7	160	12	167	63	40	29	16.4	9	5.8	SP*N42.../ WPAN42...

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

SPARE PARTS

Designation	① Locator	② Wedge fixing screw	③ Locator fixing screw	④ Wedge	Wrench
TGP4103RIA	LP413R	FDS-8S	CM4X0.7X14	WF310R	TP-4
TGP4104, 05, 06RIA	LP413R	FDS-8S	CM4X0.7X14	WP440R	TP-4
TGP4104, 05, 06RBA	LP413R	FDS-8S	CM4X0.7X14	WF310R	TP-4
TGP4104, 05, 06RBAE	LP413R	FDS-8S	CM4X0.7X14	WF310R	TP-4

*Recommended clamping torque (N·m):FDS-8S=8



Reference pages: Inserts, Standard cutting conditions → H103

INSERT

SPCN/SPEN/SPKN 42S

SP*N42S*R/L

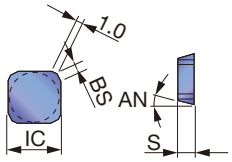


Fig.1

SPEN423*N
Details of edge

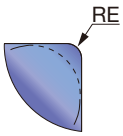


Fig.2

SPKR42SSR-MJ
with 3-dimensional chipbreaker

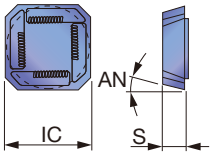
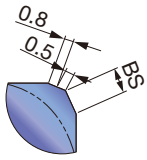


Fig.3

Details of edge



WPAN42SFRS
Wiper edge 1 corner

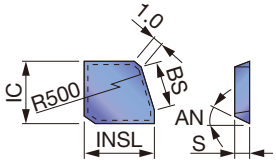


Fig.4

WPAN42SFR
2 corner

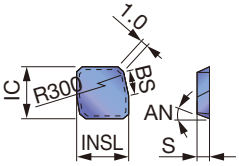


Fig.5

Right hand (R) shown.

		Coated					Cermet		Ceramic	Uncoated								
		AH120	AH140	GH330	T1115	T3130	NS740	N308	FX105	UX30	TH10							
P	Steel	☆		☆		★	★	☆			☆							
M	Stainless	☆	★								☆							
K	Cast iron				★				★		☆	☆						
N	Non-ferrous																	
S	Superalloys																	
H	Hard materials																	

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated					Cermet		Ceramic	Uncoated		IC	INSL	S	AN	BS	Fig.
			AH120	AH140	GH330	T1115	T3130	NS740	N308	FX105	UX30	TH10						
SPCN42STR	0	7						●	●		●		12.7	-	3.18	11°	1.4	1
SPCN42SFR	0	7										●	12.7	-	3.18	11°	1.4	1
SPEN42STR	0	7						●					12.7	-	3.18	11°	1.4	1
SPKN42STR	0	7	●	●	●	●	●	●	●	●*	●		12.7	-	3.18	11°	1.4	1
SPKN42STL	0	7						●			●		12.7	-	3.18	11°	1.4	1
SPKN42SFR	0	7										●	12.7	-	3.18	11°	1.4	1
SPKN42SFL	0	7										●	12.7	-	3.18	11°	1.4	1
SPKR42SSR-MJ	0	7			●	●	●						12.7	-	3.18	11°	0	3
WPAN42SFRS	0	-										●	12.4	14.9	3.18	11°	9.7	4
WPAN42SFR	0	-							●			●	12.4	13.8	3.18	11°	5.2	5
SPGN120312TN	1.2	7								●*			12.7	-	3.18	11°	-	2
SPEN423TN	1.2	7					●	●			●		12.7	-	3.18	11°	-	2
SPEN423FN	1.2	7										●	12.7	-	3.18	11°	-	2

Note: Insert marked with * and a wiper insert should not be used together.

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Roughing (Depth of cut: APMX 1.5 ~ 4 mm) Cutting speed *Vc* (m/min)	Roughing (Depth of cut: APMX 1.5 ~ 4 mm) Feed per tooth *fz* (mm/t)	Finishing (Depth of cut: APMX 0.3 ~ 0.7 mm) Cutting speed *Vc* (m/min)	Finishing (Depth of cut: APMX 0.3 ~ 0.7 mm) Feed per tooth *fz* (mm/t)
P	Mild steels Unhardened steels < 180 HB	NS740 · N308	150 ~ 250	0.1 ~ 0.18	150 ~ 250	0.1 ~ 0.23
		AH120 · GH330	150 ~ 250	0.1 ~ 0.23	150 ~ 250	0.1 ~ 0.25
		T3130	150 ~ 300	0.1 ~ 0.25	180 ~ 300	0.1 ~ 0.28
		UX30	100 ~ 180	0.1 ~ 0.25	130 ~ 200	0.1 ~ 0.28
	Carbon steels Alloy steels < 300 HB	T3130	150 ~ 280	0.1 ~ 0.23	180 ~ 280	0.1 ~ 0.25
		NS740 · N308	100 ~ 180	0.1 ~ 0.18	150 ~ 200	0.1 ~ 0.23
		AH330 · AH120	100 ~ 200	0.1 ~ 0.2	150 ~ 200	0.1 ~ 0.23
		UX30	80 ~ 130	0.1 ~ 0.23	100 ~ 150	0.1 ~ 0.25
	Carbon steels Alloy steels < 300 HB	T3130 · GH330	150 ~ 230	0.1 ~ 0.23	180 ~ 280	0.1 ~ 0.25
		NS740 · N308	100 ~ 180	0.1 ~ 0.18	150 ~ 200	0.1 ~ 0.23
		UX30	80 ~ 130	0.1 ~ 0.23	100 ~ 150	0.1 ~ 0.25
	Die steels < 30 HRC	T3130	100 ~ 150	0.1 ~ 0.15	100 ~ 150	0.1 ~ 0.2
		UX30	80 ~ 130	0.1 ~ 0.15	80 ~ 130	0.1 ~ 0.2
M	Stainless steels < 250 HB	AH120 · AH140	150 ~ 230	0.15 ~ 0.2	200 ~ 250	0.15 ~ 0.23
		UX30	150 ~ 180	0.15 ~ 0.2	180 ~ 200	0.15 ~ 0.23
K	Cast irons Ductile cast irons	T1115	100 ~ 200	0.1 ~ 0.2	100 ~ 200	0.1 ~ 0.23
		TH10 · UX30	80 ~ 130	0.1 ~ 0.2	80 ~ 130	0.1 ~ 0.23
		FX105	200 ~ 500	0.1 ~ 0.2	200 ~ 600	0.1 ~ 0.3

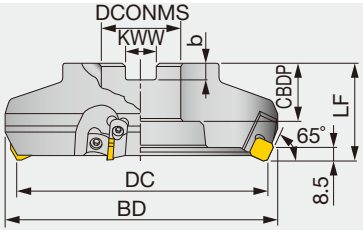
Note: Dry cutting is recommended for the above materials.

TGP4200R-A

65° face mill, with wedge clamp system, for positive square inserts

GAMP = +5°,GAMF = +1°





Right hand (R) shown.

Designation	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TGP4203R-A	6	80	5	95	50	25.4	26	9.5	6	1.4	SP*N42.../ WPAN42ZFR
TGP4204R-A	6	100	6	114	63	31.75	32	12.7	8	2.4	SP*N42.../ WPAN42ZFR
TGP4205R-A	6	125	8	139	63	38.1	38	15.9	10	3.9	SP*N42.../ WPAN42ZFR
TGP4206R-A	6	160	10	174	63	50.8	38	19	11	6.1	SP*N42.../ WPAN42ZFR

SPARE PARTS

Designation	Locator	Wedge fixing screw	Locator fixing screw	Wedge	Wrench
TGP42**R-A	LP413R	FDS-8S	CM4X0.7X14	WP440R	TP-4

*Recommended clamping torque (N·m):FDS-8S=8

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

INSERT

SPAN/SPCN/SPEN/SPKN 42Z

Regular edge
SP*N42Z*R/L

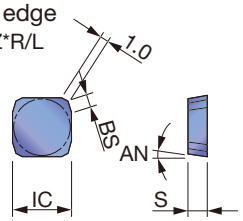


Fig.1

SPEN423*N

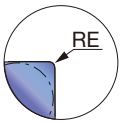


Fig.2

Wiper edge 2 corners
WPAN42Z*R/L

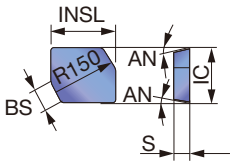


Fig.3

Right hand (R) shown.

P	Steel		★		★	☆	☆	☆				
M	Stainless											
K	Cast iron	★							★			
N	Non-ferrous											
S	Superalloys											
H	Hard materials											

★ : First choice
☆ : Second choice

Designation	APMX	Coated		Cermet			Uncoated		IC	INSL	S	AN	BS	RE	Fig.
		T1115	T3130	NS740	X407	N308	UX30	TH10							
SPAN42ZFR	6							●	12.7	-	3.18	11°	2	-	1
SPCN42ZFL	6							●	12.7	-	3.18	11°	2	-	1
SPCN42ZFR	6							●	12.7	-	3.18	11°	2	-	1
SPCN42ZTR	6			●	●	●			12.7	-	3.18	11°	2	-	1
SPEN423TN	6		●	●			●		12.7	-	3.18	11°	-	1.2	2
SPEN423FN	6							●	12.7	-	3.18	11°	-	1.2	2
SPEN42ZTR	6			●					12.7	-	3.18	11°	2	-	1
SPKN42ZFL	6							●	12.7	-	3.18	11°	2	-	1
SPKN42ZFR	6							●	12.7	-	3.18	11°	2	-	1
SPKN42ZTR	6	●	●	●	●	●	●		12.7	-	3.18	11°	2	-	1
WPAN42ZFR	6							●	12.2	14.28	3.18	11°	4.5	-	3

●: Line up

Reference pages: Standard cutting conditions → H105

STANDARD CUTTING CONDITIONS

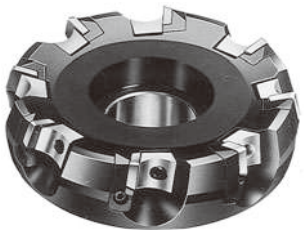
ISO	Workpiece material	Grade	Roughing (Depth of cut: APMX 1.5 ~ 4 mm)		Finishing (Depth of cut: APMX 0.3 ~ 0.7 mm)	
			Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Mild steels Unhardened steels < 180 HB	T3130	150 ~ 250	0.1 ~ 0.25	180 ~ 250	0.1 ~ 0.28
		NS740	100 ~ 250	0.1 ~ 0.18	150 ~ 250	0.1 ~ 0.23
	Carbon steels Alloy steels < 300 HB	T3130	130 ~ 250	0.1 ~ 0.23	150 ~ 250	0.1 ~ 0.25
		NS740	100 ~ 180	0.1 ~ 0.18	150 ~ 200	0.1 ~ 0.23
K	Cast irons Ductile cast irons	T1115	100 ~ 200	0.1 ~ 0.2	100 ~ 200	0.1 ~ 0.23
M	Stainless steels < 250 HB	T3130	150 ~ 250	0.15 ~ 0.2	200 ~ 250	0.15 ~ 0.23
		UX30	150 ~ 180	0.15 ~ 0.2	180 ~ 200	0.15 ~ 0.23

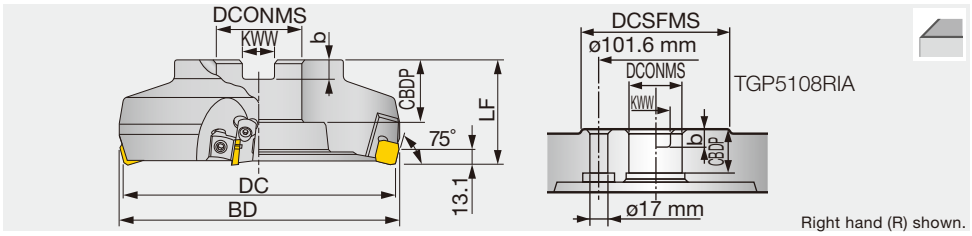
Note: Dry cutting is recommended for the above materials.

TGP5100RIA

75° face mill, with wedge clamp system, for positive square inserts

GAMP = +7°,GAMF = +1°





Right hand (R) shown.

Designation	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TGP5104RIA	10	100	5	109	63	31.75	32	12.7	8	2.3	SP*N53...
TGP5105RIA	10	125	6	133	63	38.1	38	15.9	10	3.5	SP*N53...
TGP5106RIA	10	160	8	167	63	50.8	38	19	11	5.7	SP*N53...
TGP5108RIA	10	200	10	207	63	47.625	38	25.4	14	8.4	SP*N53...

SPARE PARTS

Designation	Locator	Wedge fixing screw	Locator fixing screw	Wedge	Wrench
TGP51**RIA	LP514R	FDS-8S	CM4X0.7X14	WF500R	TP-4

*Recommended clamping torque (N·m):FDS-8S=8

INSERT

SPCN/SPKN 53S

Approach angle: 10°-20° | 45° | 70° | 85° | 88° | 90° | Others

SP*N53S*R/L

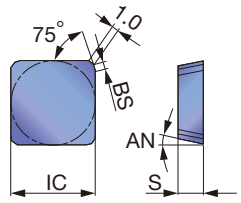


Fig.1

SPKN53STR20

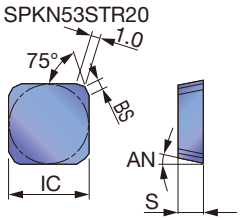


Fig.2

SPKR53SSR-MJ
with 3-dimensional chipbreaker

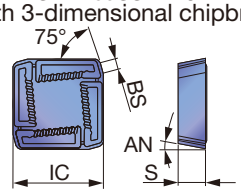


Fig.3

Right hand (R) shown.

		Coated			Cermet		Uncoated	
P	Steel	★		★	★	☆	☆	
M	Stainless	★		☆			☆	
K	Cast iron		★					☆
N	Non-ferrous							
S	Superalloys							
H	Hard materials							

★ : First choice
☆ : Second choice

Designation	APMX	Coated GH330	Coated T1115	Coated T3130	Cermet NS740	Cermet N308	Uncoated UX30	Uncoated TH10	IC	S	AN	BS	Fig.
SPCN53SFR	10							●	15.875	4.76	11°	1.2	1
SPCN53STR	10					●	●		15.875	4.76	11°	1.2	1
SPKN53SFR	10							●	15.875	4.76	11°	1.2	1
SPKN53STL	10						●		15.875	4.76	11°	1.2	1
SPKN53STR	10	●	●		●		●		15.875	4.76	11°	1.2	1
SPKN53STR20	10			●					15.875	4.76	11°	2	2
SPKR53SSR-MJ	10	●		●					15.875	4.76	11°	2	3

●: Line up

Reference pages: Standard cutting conditions → H107

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Roughing (Depth of cut: APMX 1.5 ~ 8 mm) Cutting speed *Vc* (m/min)	Roughing (Depth of cut: APMX 1.5 ~ 8 mm) Feed per tooth *fz* (mm/t)	Finishing (Depth of cut: APMX 0.3 ~ 0.7 mm) Cutting speed *Vc* (m/min)	Finishing (Depth of cut: APMX 0.3 ~ 0.7 mm) Feed per tooth *fz* (mm/t)
P	Mild steels Unhardened steels < 180 HB	T3130	150 ~ 300	0.1 ~ 0.35	180 ~ 300	0.1 ~ 0.35
		NS740 · N308	100 ~ 250	0.1 ~ 0.3	150 ~ 250	0.1 ~ 0.3
		GH330	150 ~ 250	0.1 ~ 0.3	150 ~ 250	0.1 ~ 0.33
	Carbon steels Alloy steels < 300 HB	T3130	150 ~ 280	0.1 ~ 0.3	180 ~ 280	0.1 ~ 0.35
		NS740 · N308	100 ~ 180	0.1 ~ 0.25	150 ~ 200	0.1 ~ 0.3
		GH330	100 ~ 200	0.1 ~ 0.28	150 ~ 200	0.1 ~ 0.33
K	Cast irons Ductile cast irons	TH10	80 ~ 130	0.1 ~ 0.3	80 ~ 130	0.1 ~ 0.3
		T1115	100 ~ 200	0.1 ~ 0.3	100 ~ 200	0.1 ~ 0.3
M	Stainless steels < 250 HB	T3130	150 ~ 250	0.15 ~ 0.25	200 ~ 250	0.15 ~ 0.28
		GH330	150 ~ 230	0.15 ~ 0.3	200 ~ 250	0.15 ~ 0.3

Note: Dry cutting is recommended for the above materials.

S-TAQ System

The world's highest level repeatability

S-TAQ System

● Improved surface quality and increased tool life

- Two-face restricted (1/10 short taper and flange face) coupling.
- High-level coupling performance contributes to high accuracy and excellent rigidity.
- Excellent dynamic balance reduces vibration, chatter, and cutting noise at high speeds.

● Improved productivity

- High speed machining can reduce machining time.
- High repeatability can eliminate trial cut.



● Labor-saving tool change

- Can eliminate detaching the toolholder from the main spindle.
- Can eliminate the brakes for the main spindle.
- Labor-saving clamping by only one T-wrench.

Performance

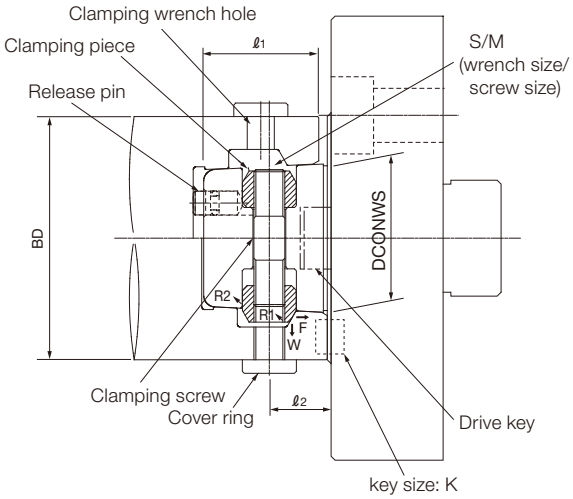
Original clamp system provides high rigidity, accuracy and operating speed.

● Clamping force (Strong clamp system)

· Lubricant coating on clamping piece.
· 4-points balancing clamp.
· Sufficient clamping for the smaller diameter part of taper.

Designation	Dimensions (mm)				S/M	K	Recommend clamping torque (N·m)	Clamping force (N)
	DCONWS	BD	ℓ1	ℓ2				
TAQ32	19	32	18	8.5	3/M6	8	3	4×10^3
TAQ40	24	40	21	10	3/M6	10	5	5.5×10^3
TAQ50	30	50	25	12	4/M8	12	8	9×10^3
TAQ63	38	63	32	15	4/M8	16	10	12×10^3
TAQ80	48	80	40	18	5/M10	18	20	18×10^3
TAQ100	60	100	50	22	6/M12	20	30	23×10^3

Part assembly



W: Driving force by clamping screw
F: Clamping force
R1 = R2: Receiving force of clamping piece

DATA

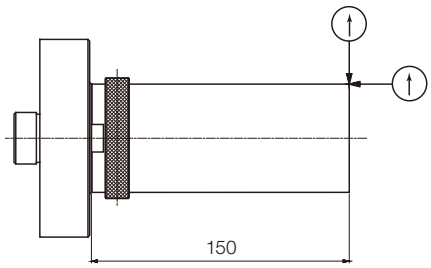
Comparison of clamping force

	Taper	Taper dia.(mm)/holder dia.(mm)	Recommend clamping torque (N/m)	Draw-in force (N)	Draw-in force / Torque (m-1)
TAQ63	1 / 10	38 / 63	10	12×10^3	1200
QC adapter	10°	35 / 70	20	9.8×10^3	490
Other makes A	4°	35 / 62	22.5	9.8×10^3	436

●Repeatability for accuracy

Radial run out	Within 0.003 mm
Axial run out	Within 0.002 mm

Note: Measured at 150 mm far from end face.

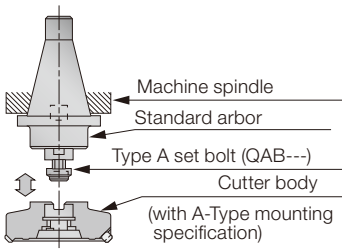


QC system for TAC Mills

TAC mills QC system facilitate easy and quick mounting of the cutter body (face milling cutter, etc.) to the machine tools.

Small dia. TAC mills QC system Dia. ø80 ~ 160

Type A QC system



Features

- Cutter body replacement is possible without removing the bolt.
- A QC system is made up only by installing the Type A set bolt to our standard arbor. (The cutter body is made to A-Type mounting specification.)
- Standard arbor used ensures superior economy and rigidity.

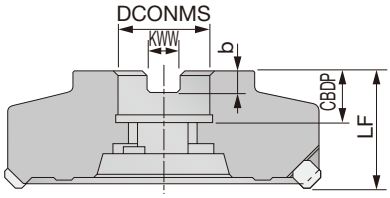
Replacement method

Mounting - Direct the set bolt direction to align with the cutter spot facing hole, then mount the cutter. Turn the set bolt one to two turns for tightening.

Removal - Loosen the bolt one turn, press the cutter to the spindle, and turn the set bolt one to two turns. The cutter can now be removed.

A-type QC Mounting System for Small Diameter TAC Mills

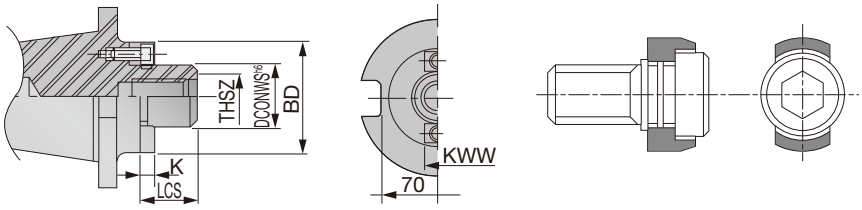
● Dimensional details of mount (For ø80 to ø160 dia. TAC mills)



Cutter dia. (mm)	Dimensions (mm) DCONMS	b	KWW	CBDP	LF
ø80	25.4	6	9.5	20	50
ø100	31.75	8	12.7	22	50
ø125	38.1	10	15.9	27	63
ø160	50.8	11	19	27	63

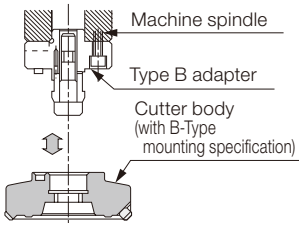
● Arbors

Standard arbors (FMA, FMC type) can't be used. Special arbors applicable for bellow dimensions can be made to order on request.



Dimensions (mm) DCONWS	BD	THSZ	LCS	KWW	K	Cutter fixing screw for A-type		Hex wrench size(mm)
25.4	50	M12	18	9.5	5	QAB-3 (R/L)	Hex. Socket-head screw M12 × 30	10
31.75	60	M16	20	12.7	7	QAB-4 (R/L)	Hex. Socket-head screw M12 × 30	14
38.1	80	M20	25	15.9	9	QAB-5 (R/L)		17
50.8	100	M24	25	19.05	10	QAB-6 (R/L)		19

Type B QC system



Features

- Cutter body replacement is possible without removing the bolt.
- Loosening of the adapter is not enough to remove the cutter. This is to prevent the cutter from falling.
- Type B QC adapter and Type B cutter installation are necessary.
- It is not necessary to set the set bolt direction with that of the cutter hole. The cutter is fit into the adapter only by aligning the match marks.

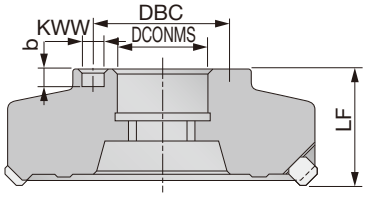
Replacement method

Mounting - Set the cutter into the adapter. Direct the cutter match mark to align with that of adapter, then the cutter enters the adapter. Turn the cutter by 90° and turn adapter bolt one to two turns for tightening.

Removal - Loosen adapter bolt by one or two turns and turn the cutter by 90°. The cutter can now be removed.

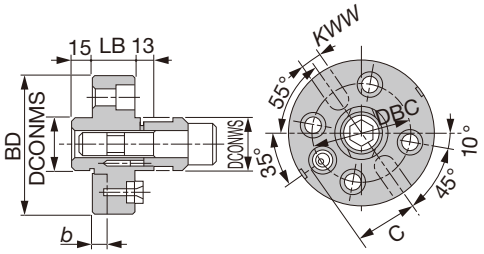
B-type QC Mounting System for Small Diameter TAC Mills

● Dimensional details of mount (For ø80 to ø160 dia. TAC mills)



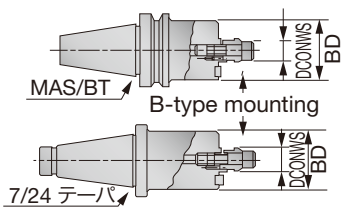
Cutter dia. (mm)	Dimensions (mm) DCONMS	b	KWW	LF	DBC
ø80	25.4	7	10	50	45
ø100	31.75	7	12	63	55
ø125	38.1	7	15	63	70
ø160	50.8	7	18	63	85

● Dimensional details of B-type adapters



Cutter dia. (mm)	Dimensions (mm) DCONWS	c	BD	DCONMS	KWW	b	DBC	S	LB
ø80	25.4	22.5	80	25.4	9.5	7	45	M10	25
ø100	31.75	27.5	100	31.75	12.7	8	55	M10	25
ø125	38.1	35	100	38.1	15.9	10	70	M12	30
ø160	50.8	42.5	125	50.8	19	11	85	M16	30

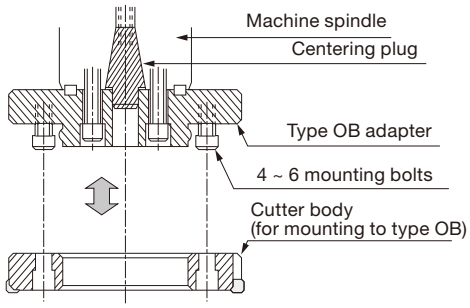
Instead of the above B-type adapters, BT- and T-type arbors can be also used for B-type QC mount cutters. These arbors are made to order on request.



QC system for TAC Mills

Large dia. TAC mills QC system Dia. ø200 ~

Type OB QC system (Elongated mounting hole type)



Features

- The cutter body can be replaced without removing bolt.
- Cutter does not fall when only the bolt is removed.
- The cutter body weight is about one half of usual cutter.
- The cutter bolt is fixed to the adapter with four to six large bolts, ensuring high rigidity.

Replacement method

Mounting - Align the adapter tightening bolts (4 ~ 6) to the cutter mounting holes, turn the cutter whilst pressing it against the adapter, and turn the bolt to tighten.

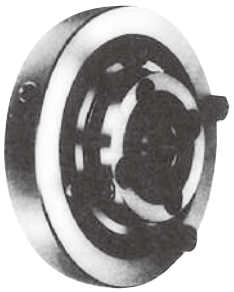
Removal - Loosen the bolt slightly, and by one turn, turn the cutter to remove it from the adapter.

OB-type QC Mounting System for Large Diameter TAC Mills (Elongated mounting hole type)

Cutter body (ø200 ~ ø400 mm)

This system is applied to “flush edge-top” Standard type TAC mills with OB mount.
For the details of the OB-type cutter bodies.

OB type adapter

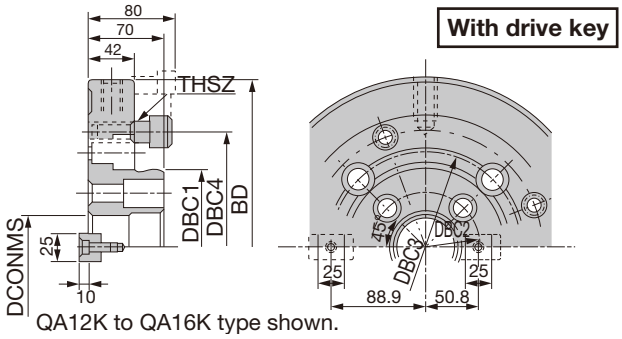


OB type cutter body



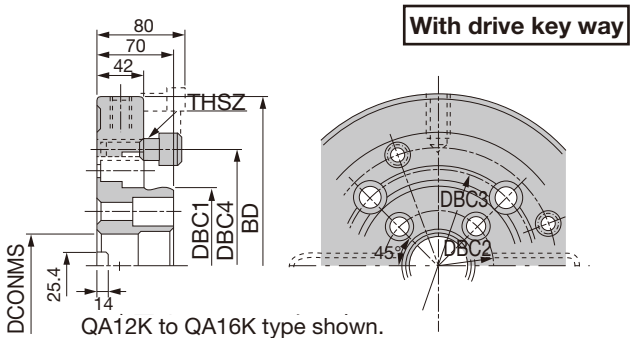
● Dimensional details of mount of OB-type adapters

With drive key



QA12K to QA16K type shown.

With drive key way



QA12K to QA16K type shown.

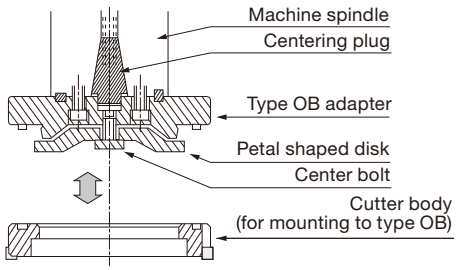
Adapter Designation	Dimensions (mm)							
	BD	DCONMS	DBC1	DBC2	DBC3	DBC4	THSZ	Bolts
QA08K/M	198	47.625	63.5	101.6	-	114.3	M16×40	4
QA10K/M	248	60	133.35	101.6	-	177.8	M16×50	4
QA12K/M	313	60	146.05	101.6	177.8	215.9	M20×50	4
QA14K/M	353	60	215.9	101.6	177.8	260.4	M20×50	6
QA16K/M	398	60	254	101.6	177.8	304.8	M20×50	6

Notes: • Dimension ød can be made to customer’s specifications.
• Special centering plugs for ø60 mm hole are made to order.

Notes: In Designation, K indicates “with drive key” type, and M indicates “with drive key way” type.
(“N” shows number of tapped holes.)

Large dia. TAC mills QC system Dia. ø200 ~

Type CB QC system (center bolt type)



Features

- Move the petal-shaped disk up and down with one center bolt in the adapter, removing the cutter. Since only one bolt is used, replacement takes only one half of the time required by Type CB.
- The cutter body is lighter by 20% than that of OB type and easy to handle.
- Compatible with auto clamp unit.
- The cutter does not fall when the center bolt only is loosened.

Replacement method

Mounting - Align the cutter notch with the adapter clamper and turn the cutter whilst pressing it against the adapter. Tighten with the center bolt.

Removal - Loosen the center bolt once and lift the cutter upward in the spindle direction. Turn the cutter further slightly, and the cutter can be removed from the adapter.

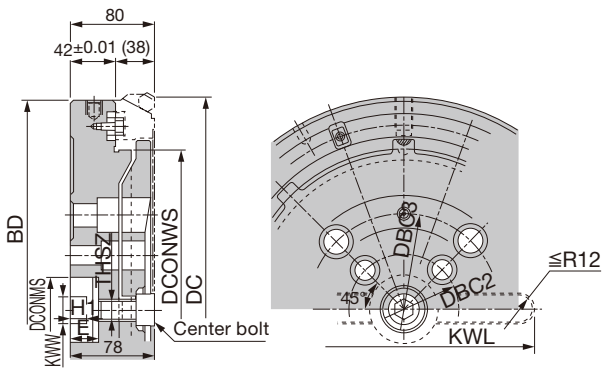
CB-type QC Mounting System for Large Diameter TAC Mills (Center bolt type)

Cutter body (ø200 ~ ø400 mm)

CB type adapter **CB type cutter body**

This system is applied to "flush edge-top" type TAC mills with CB mount.

● Dimensional details of mount of CB-type adapters







Adapter Designation	Dimensions (mm)											
	DC	DCONMS	BD	DCONWS	DBC2	DBC3	KWW	H1	KWL	THSZ	E	Center bolt
QACB-08MR/L	200	47.625	195	119.97	101.6	-	25.4	14	150	M20	25	TMBA-M20
QACB-10MR/L	250	60	245	159.97	101.6	-	25.4	14	150	M20	25	TMBA-M20
QACB-12MR/L	315	60	310	214.97	101.6	-	25.4	14	150	M20	25	TMBA-M20
QACB-14MR/L	355	60	350	254.97	-	177.8	25.4	14	245	M20	25	TMBA-M20
QACB-16MR/L	400	60	395	299.95	-	177.8	25.4	14	245	M20	25	TMBA-M20

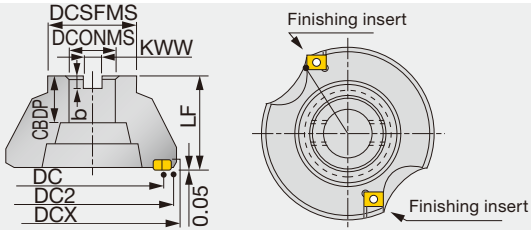
Note: • Dimension ød can be made to customer's specifications.
• Because of the dimensional restriction of "E", standard CO- type centering plugs can not be used for the adapters shown in the above table. Special centering plugs applicable for the above adapters can be made to order on request.

NMS09

High precision finishing face mill, for negative rectangular inserts

GAMP = 10°, GAMF = -30°





Designation	APMX	DC	CICT	DC2	DCX	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
NMS09080R	0.2	80	2	92	100.7	50	25.4	26	9.5	6	1.49	LNCQ0906...
NMS09100R	0.2	100	2	112	120.7	50	31.75	32	12.7	8	2.1	LNCQ0906...
NMS09125R	0.2	125	2	137	145.7	63	38.1	38	15.9	10	4.07	LNCQ0906...
NMS09160R	0.2	160	2	172	180.7	63	50.8	38	19	11	6.15	LNCQ0906...
NMS09200R	0.2	200	2	212	220.7	63	47.625	38	25.4	14	9.67	LNCQ0906...

SPARE PARTS




Designation	Clamping screw	Wedge
NMS09...	CSTB-4	T-15D

*Recommended clamping torque (N·m): CSTB-4=3.5

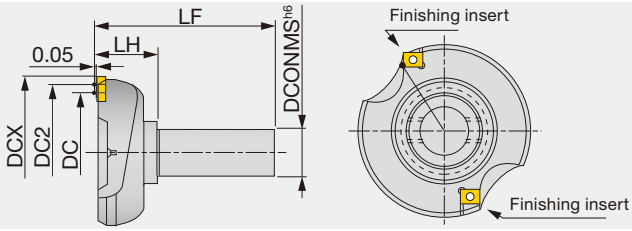
Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

EMS09

High precision finishing endmill, shank type, for negative rectangular inserts

GAMP = +10°, GAMF = -30°





Designation	APMX	DC	CICT	DC2	DCX	DCONMS	LH	LF	Insert
EMS09080R	0.2	80	2	92	100.7	32	40	120	LNCQ0906...

SPARE PARTS




Designation	Clamping screw	Wedge
EMS09080R	CSTB-4	T-15D

*Recommended clamping torque (N·m): CSTB-4=3.5

Reference pages: Inserts, Standard cutting conditions → H113

INSERT

LNCQ0906N-100(50)L

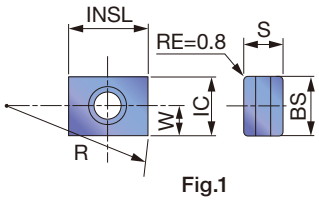


Fig.1

LNCQ0906-50S

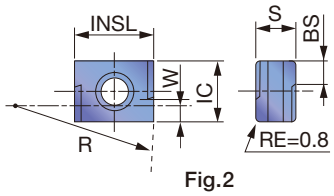


Fig.2

		Coated		Cermet
		AH120	GH110	NS740
P	Steel	☆		★
M	Stainless	★		★
K	Cast iron	★	★	
N	Non-ferrous			
S	Superalloys			
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	APMX	Coated AH120	Coated GH110	Cermet NS740	IC	INSL	S	R	W	BS	Fig.
LNCQ0906N-100L	0.2	●	●	●	9.525	12.7	6.35	100	4.763	7.9	1
LNCQ0906N-50L	0.2	●	●	●	9.525	12.7	6.35	50	4.763	7.9	1
LNCQ0906R-50S	0.2	●	●	●	-	12.7	6.35	50	2.3	4	2

●: Line up

STANDARD CUTTING CONDITIONS

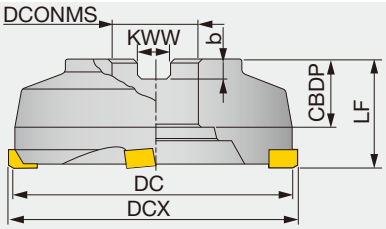
ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	LNCQ0906N-100(50)L Depth of cut APMX (mm)	LNCQ0906N-100(50)L Feed per tooth *f* (mm/rev)	LNCQ0906R-50S Depth of cut APMX (mm)	LNCQ0906R-50S Feed per tooth *f* (mm/rev)
P	Mild steels SS400, etc. E275A, etc. < 180 HB	NS740	200 ~ 300	< 0.2	2 ~ 6	≦ 0.2	1 ~ 2.5
	Carbon steels S55C, etc. C55, etc. < 300 HB	NS740	150 ~ 250				
	Alloy steels SCM440, etc. 42CrMo4, etc. < 300 HB	NS740	120 ~ 200				
	Die steels SKD61, etc. X40CrMoV5-1, etc. < 300 HB	NS740	100 ~ 150				
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-3, etc.	AH120 NS740	150 ~ 220	< 0.2	2 ~ 6	≦ 0.2	1 ~ 2.5
K	Cast irons FC250, etc. 250, etc.	GH110 AH120	120 ~ 200	< 0.2	2 ~ 6	≦ 0.2	1 ~ 2.5

MS

High precision finishing face mill, with adjustable structure

GAMP = -5°,GAMF = -30°





Right hand (R) shown.

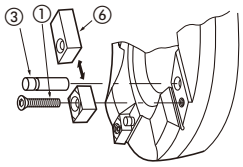
Designation	APMX	DC	CICT	DCX	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
MS04R/L	0.1	100	2	105	55	31.75	32	12.7	8	3	SN**56...
MS05R/L	0.1	125	2	130	60	38.1	38	15.9	10	4	SN**56...
MS06R/L	0.1	150	4	155	60	50.8	38	19	11	5	SN**56...
MS08R/L	0.1	200	4	205	60	47.625	38	25.4	14	8.5	SN**56...
MS10R/L	0.1	250	4	255	60	47.625	38	25.4	14	14	SN**56...
MS12R/L	0.1	300	4	305	60	47.625	38	25.4	14	23	SN**56...

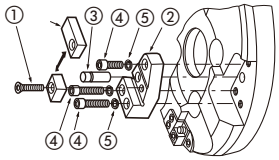
SPARE PARTS

Designation	① Clamping screw	② Locator	③ Pin	④ Locator fixing screw	⑤ Washer	⑥ Protector	Wrench
MS04R/L	CST-5	-	SP-8	-	-	PMS4R/L	T-25D
MS05R/L, MS06R/L	CST-5	-	SP-8	-	-	PMS5R/L	T-25D
MS08R/L, MS12R/L	CST-5	LMS56R/L	SP-8	CM6x25, CM6x16	VA6	PMS5R/L	T-25D

*Recommended clamping torque (N·m):CST-5=3.5

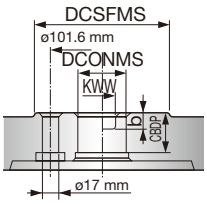
Approach angle
10°-20°
45°
70°
85°
88°
90°
Others



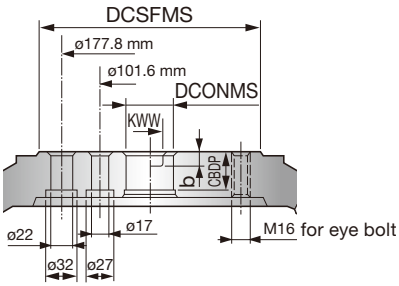


Arbor type

MS08, 10R/L



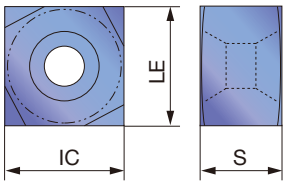
MS12R/L



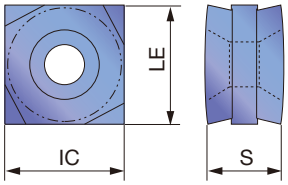
Reference pages: Inserts, Standard cutting conditions → H115

INSERT

SNAA/SNCC56FTR



SNAG/SNCJ56FTR



P	Steel	★	
M	Stainless		
K	Cast iron		
N	Non-ferrous		
S	Superalloys		
H	Hard materials	☆	

★ : First choice
☆ : Second choice

Designation	APMX	Cermet	LE	IC	S
		X407			
SNAA56FTR	0.1	●	7.85	15.875	9.52
SNAG56FTR	0.1		7.85	15.875	9.52
SNCC56FTR	0.1		7.85	15.875	9.52
SNCJ56FTR	0.1		7.85	15.875	9.52

●: Line up

STANDARD CUTTING CONDITIONS

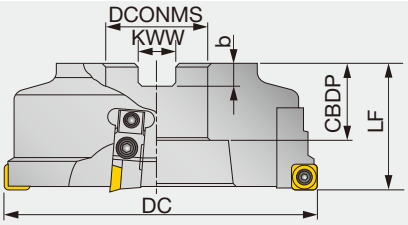
ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)	Depth of cut APMX (mm)
P	Mild steels	X407	260 ~ 300	≦ 6	≦ 0.1
P	Carbon steels	X407	120 ~ 180	≦ 6	≦ 0.1
P	Alloy steels	X407	120 ~ 180	≦ 6	≦ 0.1
P	Die steels	X407	120 ~ 180	≦ 6	≦ 0.1
H	Carbon steel (> 40HRC)	X407	150 ~ 200	≦ 3	≦ 0.05

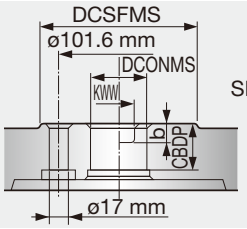
SFP4000R

High precision finishing face mill, with adjustable structure

GAMP = +5°,GAMF = -20°







SFP4008R

Designation	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
SFP4004R	0.1	100	2	63	31.75	32	12.7	8	2.3	SPHA435FNW
SFP4005R	0.1	125	2	63	38.1	38	15.9	10	3.5	SPHA435FNW
SFP4006R	0.1	160	4	63	50.8	38	19	11	5.8	SPHA435FNW
SFP4008R	0.1	200	4	63	47.625	38	25.4	14	9	SPHA435FNW
SFP4004R-E	0.1	100	2	63	32	32	14.4	8	2.3	SPHA435FNW
SFP4005R-E	0.1	125	2	63	40	32	16.4	9	3.5	SPHA435FNW
SFP4006R-E	0.1	160	4	63	40	29	16.4	9	5.8	SPHA435FNW

SPARE PARTS

Designation	Clamping screw	Locator	Adjusting screw	Locator fixing screw1	Locator fixing screw2	Wedge	Wrench	Washer1	Washer2	Wrench
SFP40...	CSTA-5S	LW400R	FDS-8S	CM5X0.8X16	CM5X0.8X8	FW-305	T-15D	5S	L5	P-4

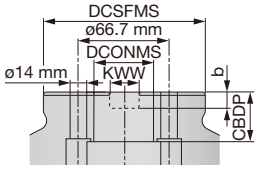
*Recommended clamping torque (N·m):CSTA-5S=3.5

Approach angle

10°-20°
45°
70°
85°
88°
90°
Others

Arbor type

SFP4006R-E

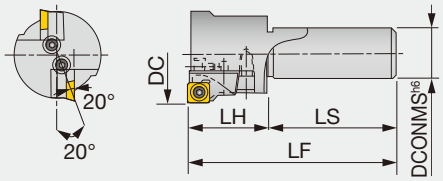


EFP4000R

High precision finishing endmill, shank type, with adjustable structure

GAMP = +5°, GAMF = -20°





Designation	APMX	DC	CICT	DCONMS	LS	LF	LH	Insert
EFP4050R	0.1	50	1	32	80	120	40	SPHA435FNW
EFP4063R	0.1	63	2	32	80	130	50	SPHA435FNW

Note: EFP4050R does not have the adjustable structure.

SPARE PARTS

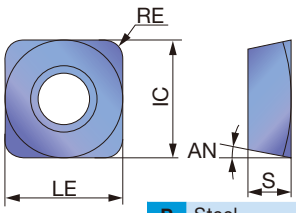
Designation	Clamping screw	Locator	Adjusting screw	Locator fixing screw1	Locator fixing screw2	Wedge	Wrench	Washer1	Washer2	Wrench
EFP4050R	CSTA-5S	LW402R	-	CM5X0.8X16	-	-	T-15D	-	-	-
EFP4063R	CSTA-5S	LW400R	FDS-8S	CM5X0.8X16	CM5X0.8X18	FW-305	T-15D	5S	L5	P-4

*Recommended clamping torque (N·m):CSTA-5S=3.5

Reference pages: Inserts, Standard cutting conditions → H117

INSERT

SPHA435



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	RE	APMX	Cermet N308	Uncoated TH10	IC	LE	S	AN
SPHA435FNW	2	0.1	●	●	12.7	12.7	4.76	11°

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed per revolution *f* (mm/rev) SFP	Feed per revolution *f* (mm/rev) EFP	Depth of cut APMX (mm)
P	Mild steels	N308	180 ~ 250	≦ 6	≦ 4	≦ 0.1
P	Carbon steels	N308	150 ~ 200	≦ 6	≦ 4	≦ 0.1
P	Alloy steels	N308	150 ~ 200	≦ 6	≦ 4	≦ 0.1
M	Stainless steels	N308	160 ~ 200	≦ 4	≦ 3	≦ 0.1
K	Cast irons	TH10	100 ~ 150	≦ 5	≦ 3	≦ 0.2
N	Non-ferrous metals	TH10	200 ~ 500	≦ 6	≦ 4	≦ 0.1

Note: Under the above conditions, attainable surface roughness is 3 to 4 µm RzJIS for steel and 6 to 12 µm RzJIS for cast iron.

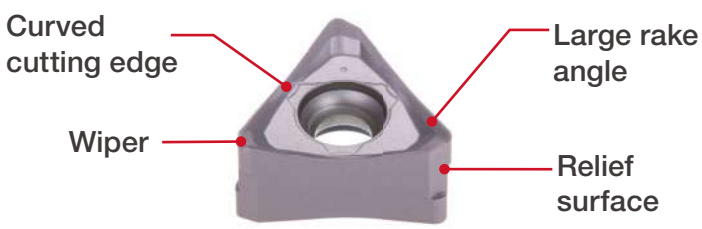
DOFORCE TRI



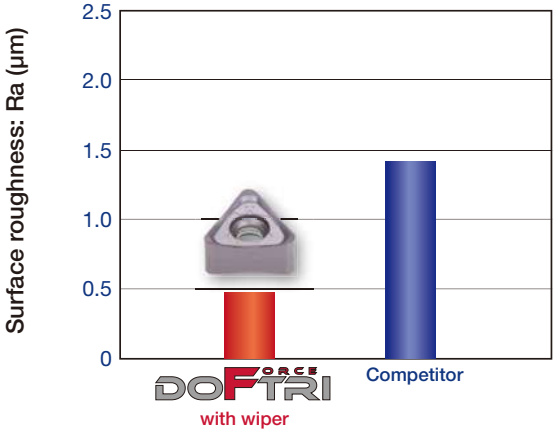
High precision shoulder mill series with economical double-sided triangular inserts

Innovative insert

- Highly economical 6-corner double sided inserts.
- Long effective cutting edge allows shoulder milling with large depth of cut.
- Low cutting force at low depth of cut, and high machining stability at large depth of cut.
  - Concave cutting edge and large rake angle produce barrel-shape chips, resulting in excellent chip evacuation.
  - The design with wiper edge (front cutting edge) is also suitable for face milling.



Comparison of surface roughness



Reference pages: H120

TUNG-TRI

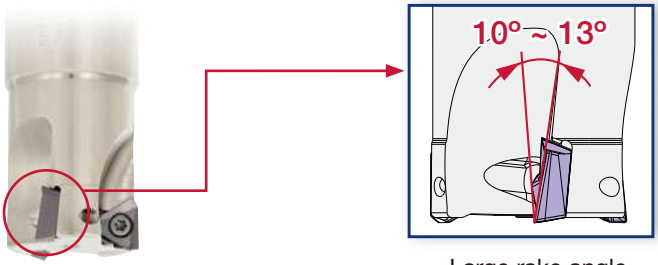


Excellent cutting performance with improved profitability

Economical 3 cutting-edge inserts



Drastically reduced cutting force



Large rake angle

Low cutting force for all depths of cut due to helical cutting edge with large rake angle.



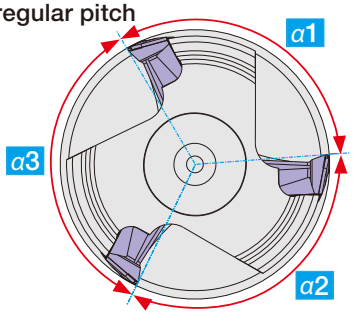
Good surface finish due to positive inclination on wiper edge

Uniquely designed flank face with built-in "margin" that prevents chattering and chipping.

Applicable for a wide range of cutting conditions

Insert positioning in irregular pitch, combined with uniquely designed flank face of inserts, prevents chattering during machining.

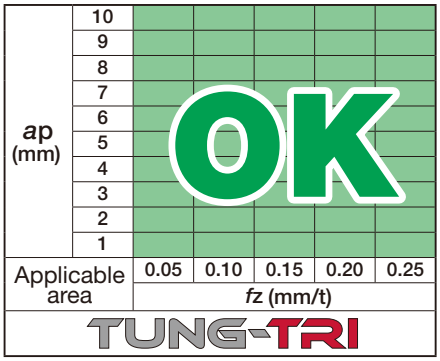
Irregular pitch

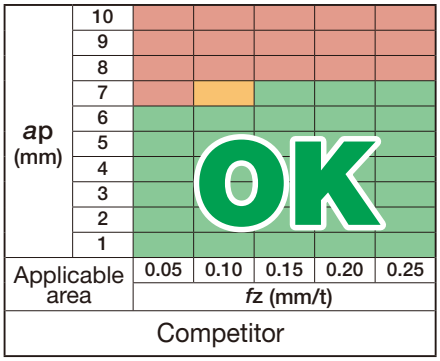


$\alpha 1 \neq \alpha 2 \neq \alpha 3$

■Cutting performance

○ OK　△ Chatter　× Strong chatter





Cutter	: EPA10R032M32.0-03N (DC = 32 mm, CICT = 3)
Insert	: TOMT100404PDER-MJ
Grade	: AH3135
Workpiece	: S55C (200 HB)
Cutting speed	: *Vc* = 150 m/min
Width of cut	: *ae* = 32 mm
Machine	: Vertical M/C, BT50

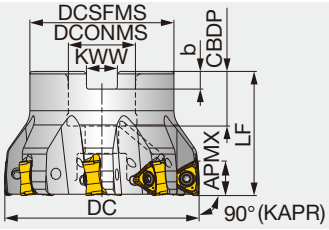
Reference pages: H123

TPTN12

Square shoulder mill, with screw clamp system, for double sided triangular inserts

GAMP = +4.2°~ +4.7°, GAMF = -15.4°~ -11.2°





Designation	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Shell locking bolt	Insert
TPTN12M050B22.0R04	11	50	4	47	40	22	20	10.4	6.3	0.4	With	CM10X30H	TN*U12...
TPTN12M050B22.0R05	11	50	5	47	40	22	20	10.4	6.3	0.4	With	CM10X30H	TN*U12...
TPTN12M063B22.0R05	11	63	5	47	40	22	20	10.4	6.3	0.6	With	CM10X30H	TN*U12...
TPTN12M063B22.0R06	11	63	6	47	40	22	20	10.4	6.3	0.6	With	CM10X30H	TN*U12...
TPTN12J080B25.4R06	11	80	6	58	50	25.4	26	9.5	6	1.1	With	CM12X30H	TN*U12...
TPTN12J080B25.4R08	11	80	8	58	50	25.4	26	9.5	6	1.1	With	CM12X30H	TN*U12...
TPTN12M080B27.0R06	11	80	6	58	50	27	22	12.4	7	1.1	With	CM12X30H	TN*U12...
TPTN12M080B27.0R08	11	80	8	58	50	27	22	12.4	7	1.1	With	CM12X30H	TN*U12...
TPTN12J100B31.7R07	11	100	7	67	50	31.75	32	12.7	8	1.4	With	TMBA-M16H	TN*U12...
TPTN12J100B31.7R10	11	100	10	67	50	31.75	32	12.7	8	1.4	With	TMBA-M16H	TN*U12...
TPTN12M100B32.0R07	11	100	7	67	50	32	28.5	14.4	8	1.4	With	TMBA-M16H	TN*U12...
TPTN12M100B32.0R10	11	100	10	67	50	32	28.5	14.4	8	1.4	With	TMBA-M16H	TN*U12...
TPTN12J125B38.1R08	11	125	8	71	63	38.1	38	15.9	10	2.4	With	TMBA-M20H	TN*U12...
TPTN12J125B38.1R12	11	125	12	71	63	38.1	38	15.9	10	2.5	With	TMBA-M20H	TN*U12...
TPTN12M125B40.0R08	11	125	8	71	63	40	32	16.4	9	2.3	With	TMBA-M20H	TN*U12...
TPTN12M125B40.0R12	11	125	12	71	63	40	32	16.4	9	2.4	With	TMBA-M20H	TN*U12...

SPARE PARTS

Designation	Clamping screw	Grip	Torx bit	Lubricant	Shell locking bolt 1	Shell locking bolt 2
TPTN12M050, 063B...	CSPB-3.5	H-TB2W	BLDIP15/S7	M-1000	-	CM10X30H
TPTN12*080B...	CSPB-3.5	H-TB2W	BLDIP15/S7	M-1000	-	CM12X30H
TPTN12*100B...	CSPB-3.5	H-TB2W	BLDIP15/S7	M-1000	TMBA-M16H	-
TPTN12*125B...	CSPB-3.5	H-TB2W	BLDIP15/S7	M-1000	TMBA-M20H	-

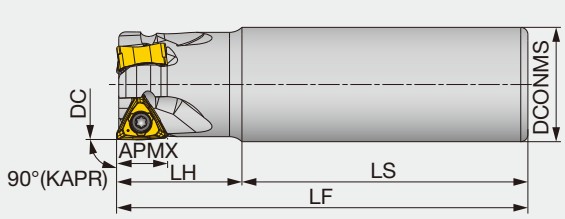
*Recommended clamping torque (N·m): CSPB-3.5=3.5

EPTN12

Square shoulder endmill, shank type, with screw clamp system, for double sided triangular inserts

GAMP = +4.2°~ +4.7°, GAMF = -15.4°~ -11.2°





Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPTN12M032C32.0R02N	11	32	2	32	80	35	115	0.7	Withouut	TN*U12...
EPTN12M032C32.0R03N	11	32	3	32	80	35	115	0.7	Withouut	TN*U12...
EPTN12M040C32.0R03N	11	40	3	32	80	35	115	0.8	Withouut	TN*U12...
EPTN12M040C32.0R04N	11	40	4	32	80	35	115	0.8	Withouut	TN*U12...

SPARE PARTS

Designation	Clamping screw	Grip	Torx bit	Lubricant
EPTN12...	CSPB-3.5	H-TB2W	BLDIP15/S7	M-1000

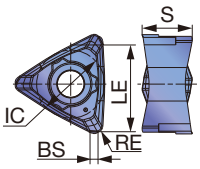
*Recommended clamping torque (N · m) : CSPB-3.5=3.5

Reference pages: Inserts → H121, Standard cutting conditions → H122

INSERT

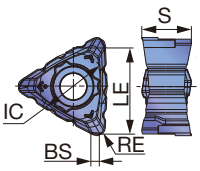
TNGU-MJ/TNMU-MJ





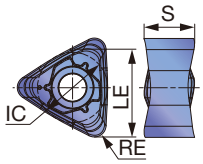
TNMU-NMJ





TNMU-R-MJ





P	Steel	☆	★		☆
M	Stainless		★		☆
K	Cast iron	★		☆	
N	Non-ferrous				
S	Superalloys	★	☆		
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated				LE	IC	S	BS
			AH120	AH3135	T1215	T3225				
TNGU120708PER-MJ	0.8	11	●	●	●		12	9.525	7.04	1.16
TNMU120708PER-MJ	0.8	11	●	●	●	●	12	9.525	7.04	1.16
TNMU120708PER-NMJ	0.8	11	●	●			12	9.525	7.04	1.16
TNMU1207R16PER-MJ	1.6	11	●	●			12	9.525	7.04	-

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness	Priority	Grades	Chip-breaker	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steel (S15C / C15E4, SS400 / E275A, etc.)	- 300 HB	First choice	AH3135	MJ	100 - 250	0.08 - 0.3
		- 300 HB	Wear resistance	T3225	MJ	100 - 300	0.08 - 0.3
		- 300 HB	Low cutting force	AH3135	NMJ	100 - 250	0.08 - 0.14
	Carbon steel and alloy steel (S55C / C55, SCM440 / 42CrMo4, etc.)	- 300 HB	First choice	AH3135	MJ	100 - 230	0.08 - 0.3
		- 300 HB	Wear resistance	T3225	MJ	100 - 280	0.08 - 0.3
		- 300 HB	Low cutting force	AH3135	NMJ	100 - 230	0.08 - 0.14
	Prehardened steel (NAK80, PX5, etc.)	30 - 40 HRC	First choice	AH3135	MJ	100 - 180	0.08 - 0.25
		30 - 40 HRC	Wear resistance	T3225	MJ	100 - 200	0.08 - 0.25
		30 - 40 HRC	Low cutting force	AH3135	NMJ	100 - 180	0.08 - 0.14
M	Stainless steel (SUS304 / X5CrNi18-9, SUS316 / X5CrNiMo17-12-3, etc.)	-	First choice	AH3135	MJ	90 - 200	0.08 - 0.25
		-	Wear resistance	T3225	MJ	90 - 250	0.08 - 0.25
		-	Low cutting force	AH3135	NMJ	90 - 200	0.08 - 0.14
K	Grey cast iron (FC250 / GG25 / 250, FC300 / GG30 / 300, etc.)	150 - 250 HB	First choice	AH120	MJ	140 - 250	0.08 - 0.3
		150 - 250 HB	Wear resistance	T1215	MJ	140 - 300	0.08 - 0.3
		150 - 250 HB	Low cutting force	AH120	NMJ	140 - 250	0.08 - 0.14
	Ductile cast iron (FCD400, FCD600 / GGG60 / 600-3, etc.)	150 - 250 HB	First choice	AH120	MJ	110 - 200	0.08 - 0.25
		150 - 250 HB	Wear resistance	T1215	MJ	110 - 250	0.08 - 0.25
		150 - 250 HB	Low cutting force	AH120	NMJ	110 - 200	0.08 - 0.14
S	Titanium alloys (Ti-6Al-4V, etc.)	-	First choice	AH120	MJ	20 - 60	0.08 - 0.2
		-	Low cutting force	AH120	NMJ	20 - 60	0.08 - 0.14
	Heat-resistant alloys (Inconel718, etc.)	-	First choice	AH120	MJ	20 - 40	0.07 - 0.18
		-	Low cutting force	AH120	NMJ	20 - 40	0.07 - 0.14

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

When using NMJ chipbreaker, please set up the feed not to exceed the value below.

Designation	Chip thickness (mm)
TNMU120708PER-NMJ	< 0.2

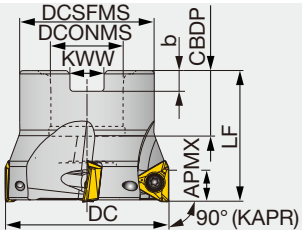
TUNG-TRI

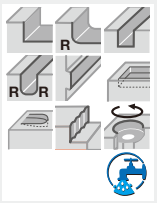
TPA06

High precision square shoulder mill, with screw clamp system, for triangular inserts

GAMP = +8.5°~ +11.5°, GAMF = -5.5°~ -12.5°







Designation	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Insert
TPA06R032M16.0E05	6	32	5	30	16	18	40	5.6	8.4	0.14	With	TOMT06...
TPA06R040M16.0E06	6	40	6	35	16	18	40	5.6	8.4	0.22	With	TOMT06...
TPA06R050M22.0E08	6	50	8	41	22	20	40	6.3	10.4	0.31	With	TOMT06...

SPARE PARTS

Designation	Clamping screw	Lubricant	Shell locking bolt	Wrench
TPA06R032M16.0E05	CSTB-2.5	M-1000	FSHM8-30H	T-8D
TPA06R040M16.0E06	CSTB-2.5	M-1000	CM8X30H	T-8D
TPA06R050M22.0E08	CSTB-2.5	M-1000	CM10X30H	T-8D

*Recommended clamping torque (N·m): CSTB-2.5=1.3

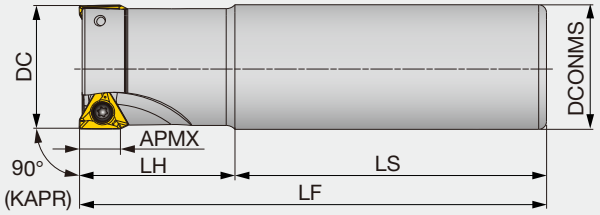
TUNG-TRI

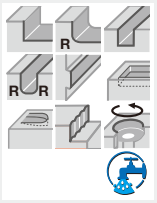
EPA06

High precision square shoulder endmill, shank type, with screw clamp system, for triangular inserts

GAMP = +8.5°~ +11.5°, GAMF = -5.5°~ -12.5°







Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPA06R012M16.0-01N	6	12	1	16	50	18	68	0.09	Without	TOMT06...
EPA06R016M16.0-02N	6	16	2	16	60	24	84	0.12	Without	TOMT06...
EPA06R016M16.0-02L	6	16	2	16	105	40	145	0.2	With	TOMT06...
EPA06R018M16.0-02N	6	18	2	16	60	24	84	0.13	Without	TOMT06...
EPA06R018M16.0-02L	6	18	2	16	115	30	145	0.21	With	TOMT06...
EPA06R020M16.0-02N	6	20	2	16	60	30	90	0.14	Without	TOMT06...
EPA06R020M20.0-02N	6	20	2	20	70	30	100	0.23	Without	TOMT06...
EPA06R020M20.0-03N	6	20	3	20	70	30	100	0.22	Without	TOMT06...
EPA06R020M20.0-02L	6	20	2	20	135	50	185	0.41	With	TOMT06...
EPA06R022M20.0-02N	6	22	2	20	70	30	100	0.23	Without	TOMT06...
EPA06R022M20.0-03N	6	22	3	20	70	30	100	0.23	Without	TOMT06...
EPA06R022M20.0-02L	6	22	2	20	145	40	185	0.42	With	TOMT06...
EPA06R025M25.0-03N	6	25	3	25	80	35	115	0.41	Without	TOMT06...
EPA06R025M25.0-04N	6	25	4	25	80	35	115	0.41	Without	TOMT06...
EPA06R025M25.0-02L	6	25	2	25	150	70	220	0.78	With	TOMT06...
EPA06R028M25.0-03N	6	28	3	25	80	35	115	0.42	Without	TOMT06...
EPA06R028M25.0-04N	6	28	4	25	80	35	115	0.42	Without	TOMT06...
EPA06R028M25.0-02L	6	28	2	25	180	40	220	0.8	With	TOMT06...

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
EPA06R012 - 018M...	CSTB-2.5S	M-1000	T-8D
EPA06R020 - 028M...	CSTB-2.5	M-1000	T-8D

*Recommended clamping torque (N·m): CSTB-2.5S/CSTB-2.5=1.3

Reference pages: Inserts → H129, Standard cutting conditions → H131

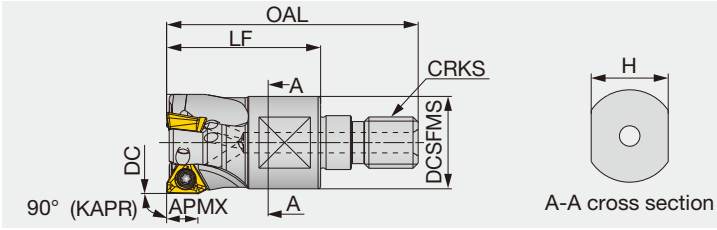
TUNG-TRI

HPA06-M

High precision square shoulder endmill, modular type, for triangular inserts (TungFlex)

GAMP = +8.5°~ +11.5°, GAMF = -12.5°~ -5.5°





Designation	APMX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HPA06R016MM08-02	6	16	2	42	25	10	13	M8	0.03	With	TOMT06...
HPA06R020MM10-03	6	20	3	49	30	15	18	M10	0.06	With	TOMT06...
HPA06R025MM12-04	6	25	4	57	35	17	21	M12	0.1	With	TOMT06...
HPA06R032MM16-05	6	32	5	63	40	22	29	M16	0.20	With	TOMT06...

Please see the page **H208** for TungFlex modular shank.

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
HPA06R016MM08-02	CSTB-2.5S	M-1000	T-8D
HPA06R020 - 032MM...	CSTB-2.5	M-1000	T-8D

*Recommended clamping torque (N·m): CSTB-2.5S/CSTB-2.5=1.3

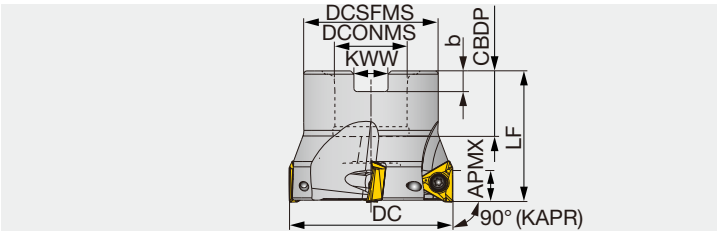
TUNG-TRI

TPA10

High precision square shoulder mill, with screw clamp system, for triangular inserts

GAMP = +9.5°~ +11°, GAMF = -4.5°~ -0.5°





Designation	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Insert
TPA10R040M16.0E04	10	40	4	35	16	18	40	5.6	8.4	0.2	With	TO*T10...
TPA10R050M22.0E04	10	50	4	41	22	20	40	6.3	10.4	0.31	With	TO*T10...
TPA10R063M22.0E06	10	63	6	41	22	20	40	6.3	10.4	0.51	With	TO*T10...
TPA10R080M25.4-07	10	80	7	58	25.4	26	50	6	9.5	1.04	With	TO*T10...
TPA10R080M27.0E07	10	80	7	58	27	22	50	7	12.4	1.04	With	TO*T10...
TPA10R100M31.7-08	10	100	8	70	31.75	32	63	8	12.7	2.02	With	TO*T10...
TPA10R100M32.0E08	10	100	8	60	32	28.5	50	8	14.4	2.02	With	TO*T10...

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Shell locking bolt	Torx bit
TPA10R040M16.0E04	SR14-562/S	SW6-SD	M-1000	CM8X30H	BLDT10/S7
TPA10R050, 063M...	SR14-562/S	SW6-SD	M-1000	CM10X30H	BLDT10/S7
TPA10R080M...	SR14-562/S	SW6-SD	M-1000	CM12X30H	BLDT10/S7
TPA10R100M...	SR14-562/S	SW6-SD	M-1000	CM16X40H	BLDT10/S7

*Recommended clamping torque (N·m): SR14-562/S=3.5

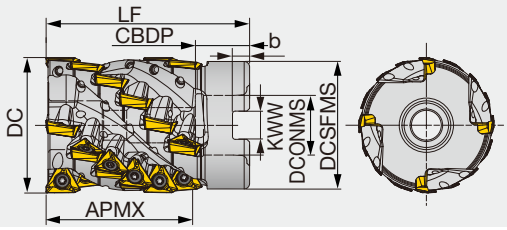
Reference pages: Inserts → H129, Standard cutting conditions → H131, TungFlex → H208

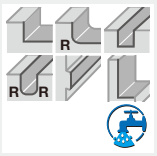
TUNG-TRI
TLA10

Square shoulder mill for roughing, with screw clamp system, for triangular inserts

GAMP = +9.5°~ +11°, GAMF = -4.5°~ -0.5°







Designation	APMX	DC	ZEFP	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Insert
TLA10R050L054M22.0E04	54	50	4	24	47	22	20	75	6.3	10.4	0.64	With	TO*T10...
TLA10R063L054M25.4-04	54	63	4	24	60	25.4	26	80	6	9.5	1.26	With	TO*T10...
TLA10R063L054M27.0E04	54	63	4	24	60	27	22	80	7	12.4	1.25	With	TO*T10...

Note: Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS







Designation	Clamping screw	Lubricant	Shell locking bolt1	Shell locking bolt2	Wrench
TLA10R050L054M22.0E04	SR14-562	M-1000	CAP-CM10X1.5X55-H	-	T-10D
TLA10R063L...	SR14-562	M-1000	-	CAP-CM12X1.75X50	T-10D

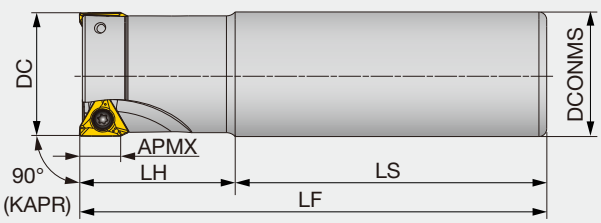
*Recommended clamping torque (N·m): SR14-562=2.5

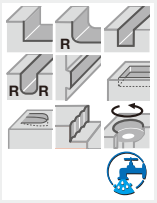
TUNG-TRI
EPA10

High precision square shoulder endmill, shank type, with screw clamp system, for triangular inserts

GAMP = +9.5°~ +11°, GAMF = -4.5°~ -0.5°







Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPA10R025M25.0-02N	10	25	2	25	80	35	115	0.38	Without	TO*T10...
EPA10R025M25.0-02L	10	25	2	25	150	70	220	0.75	With	TO*T10...
EPA10R028M25.0-02N	10	28	2	25	80	35	115	0.39	Without	TO*T10...
EPA10R028M25.0-02L	10	28	2	25	185	35	220	0.78	With	TO*T10...
EPA10R032M32.0-02N	10	32	2	32	80	40	120	0.66	Without	TO*T10...
EPA10R032M32.0-03N	10	32	3	32	80	40	120	0.65	Without	TO*T10...
EPA10R032M32.0-02L	10	32	2	32	175	80	255	1.46	With	TO*T10...
EPA10R035M32.0-02N	10	35	2	32	80	40	120	0.7	Without	TO*T10...
EPA10R035M32.0-03N	10	35	3	32	80	40	120	0.68	Without	TO*T10...
EPA10R035M32.0-02L	10	35	2	32	215	40	255	1.52	With	TO*T10...
EPA10R040M32.0-03N	10	40	3	32	80	40	120	0.72	Without	TO*T10...
EPA10R040M32.0-04N	10	40	4	32	80	40	120	0.73	Without	TO*T10...
EPA10R040M32.0-02L	10	40	2	32	205	50	255	1.57	With	TO*T10...

SPARE PARTS






Designation	Clamping screw	Grip	Lubricant	Torx bit
EPA10...	SR14-562/S	SW6-SD	M-1000	BLDT10/S7

*Recommended clamping torque (N·m): SR14-562/S=2.5

Reference pages: Inserts → H129, Standard cutting conditions → H131

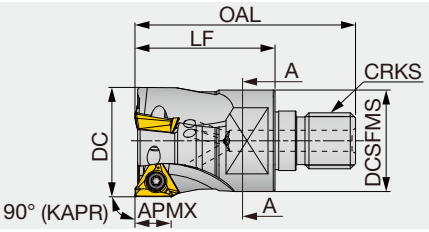
TUNG-TRI

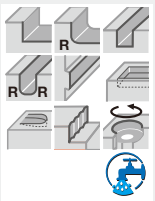
HPA10-M

High precision square shoulder endmill, modular type, for triangular inserts (TungFlex)

GAMP = +9.5°~ +11°, GAMF = -4.5°~ -0.5°







Designation	APMX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HPA10R025MM12-02	10	25	2	57	35	17	21	M12	0.08	With	TO*T10...
HPA10R032MM16-03	10	32	3	63	40	22	29	M16	0.18	With	TO*T10...

Please see the page **H208** for TungFlex modular shank.

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Torx bit
HPA10...	SR14-562/S	SW6-SD	M-1000	BLDT10/S7

*Recommended clamping torque (N·m): SR14-562/S=2.5

TUNG-TRI

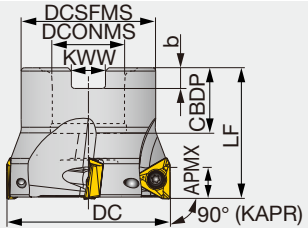
TPA15

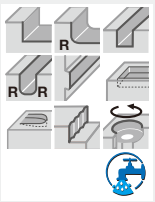
Approach angle: 10°-20°, 45°, 70°, 85°, 88°, **90°**, Others

High precision square shoulder mill, with screw clamp system, for triangular inserts

GAMP = +12°~ +13.5°, GAMF = -6°~ -3.5°







Designation	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Insert
TPA15R050M22.0E04	15	50	4	41	22	20	40	6.3	10.4	0.27	With	TOMT15...
TPA15R063M22.0E05	15	63	5	41	22	20	40	6.3	10.4	0.41	With	TOMT15...
TPA15R080M25.4-06	15	80	6	46	25.4	26	50	6	9.5	0.83	With	TOMT15...
TPA15R080M27.0E06	15	80	6	50	27	22	50	7	12.4	0.86	With	TOMT15...
TPA15R100M31.7-07	15	100	7	60	31.75	32	50	8	12.7	1.3	With	TOMT15...
TPA15R100M32.0E07	15	100	7	60	32	28.5	50	8	14.4	1.27	With	TOMT15...
TPA15R125M38.1-08	15	125	8	80	38.1	38	63	10	15.9	2.7	With	TOMT15...
TPA15R125M40.0E08	15	125	8	71	40	32	63	9	16.4	2.47	With	TOMT15...
TPA15R160M40.0E10N	15	160	10	100	40	32	63	9	16.4	4.77	Without	TOMT15...
TPA15R160M50.8-10N	15	160	10	100	50.8	46	63	11	19	4.4	Without	TOMT15...

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Shell locking bolt 1	Shell locking bolt 2	Torx bit
TPA15R050M22.0E04	TS45120I	H-TB2W	M-1000	-	FSHM10-40H	BT20S
TPA15R063M22.0E05	TS45120I	H-TB2W	M-1000	-	CM10X30H	BT20S
TPA15R080M...	TS45120I	H-TB2W	M-1000	-	CM12X30H	BT20S
TPA15R100M...	TS45120I	H-TB2W	M-1000	TMBA-M16H	-	BT20S
TPA15R125M...	TS45120I	H-TB2W	M-1000	TMBA-M20H	-	BT20M
TPA15R160M...	TS45120I	H-TB2W	M-1000	-	-	BT20M

*Recommended clamping torque (N·m): TS45120I=5

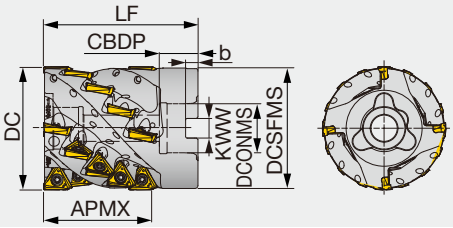
Reference pages: Inserts → **H129**, Standard cutting conditions → **H131**, TungFlex → **H208**

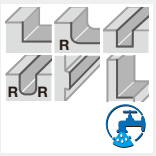
TUNG-TRI
TLA15-M

Square shoulder mill for roughing, with screw clamp system, for triangular inserts

GAMP = +12°~ +13.5°, GAMF = -6°~ -3.5°







Designation	APMX	DC	ZEFP	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Insert
TLA15R080L070M31.7-04M	70	80	4	20	78	31.75	32	100	8	12.7	2.29	With	TOMT15...
TLA15R080L070M32.0E04M	70	80	4	20	78	32	25	100	8	14.4	2.38	With	TOMT15...
TLA15R100L083M38.1-05M	83	100	5	30	98	38.1	38	110	10	15.9	4.24	With	TOMT15...
TLA15R100L083M40.0E05M	83	100	5	30	98	40	32	110	9	16.4	4.26	With	TOMT15...

Note: Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS



Designation	Clamping screw	Grip	Torx bit	Lubricant	Shell locking bolt
TLA15R080...	TS45120I	H-TB2W	BT20S	M-1000	CM16X75
TLA15R100...	TS45120I	H-TB2W	BT20S	M-1000	CM20X80

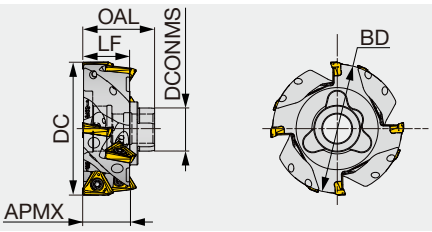
*Recommended clamping torque (N·m): TS45120I=5

TUNG-TRI
TLA15-S

Subunit for TLA15-M, square shoulder mill for roughing, with screw clamp system, for triangular inserts

GAMP = +12°~ +13.5°, GAMF = -6°~ -3.5°







Designation	APMX	DC	ZEFP	CICT	BD	DCONMS	OAL	LF	WT(kg)	Air hole	Insert
TLA15R080L028-04S	28	80	4	8	77.6	27	43	28.2	0.65	With	TOMT15...
TLA15R100L028-05S	28	100	5	10	97.2	33	46	28	1.05	With	TOMT15...

Note: Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS



Designation	Clamping screw	Grip	Lubricant	Torx bit
TLA15...	TS45120I	H-TB2W	M-1000	BT20S

*Recommended clamping torque (N·m): TS45120I=5

CENTER BOLT
(Optional parts)



No. of subunits	1 pc	2 pcs
TLA15R080L028-04S	CM16x120	CM16x140
TLA15R100L028-05S	CM20x120	CM20x150

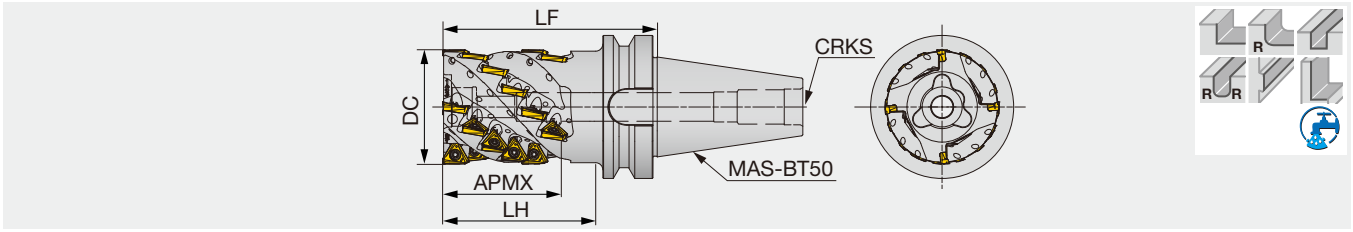
Reference pages: Inserts → H129, Standard cutting conditions → H131

TUNG-TRI

TLA15-BT

Square shoulder mill for roughing, with BT tapered shank, for triangular inserts

GAMP = +12°~ +13.5°, GAMF = -6°~ -3.5°



Designation	APMX	DC	ZEFP	CICT	LF	LH	WT(kg)	Air hole	CRKS	Insert
TLA15R080L083BT50-04M	83	80	4	24	150	107	6.29	With	M24	TOMT15...
TLA15R100L097BT50-05M	97	100	5	35	165	126.5	8.92	With	M24	TOMT15...

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Torx bit	Shell locking bolt
TLA15R080L083BT50-04M	TS45120I	H-TB2W	M-1000	BT20S	CAP-CM16×2.0×55
TLA15R100L097BT50-05M	TS45120I	H-TB2W	M-1000	BT20S	CAP-CM20×2.5×50

*Recommended clamping torque (N·m): TS45120I=5

CENTER BOLT
(Optional parts)

No. of subunits	1 pc	2 pcs
TLA15R080L083BT50-04M	CAP-CM16×2.0×55	CM16x120
TLA15R100L097BT50-05M	CAP-CM20×2.5×50	CM20x80

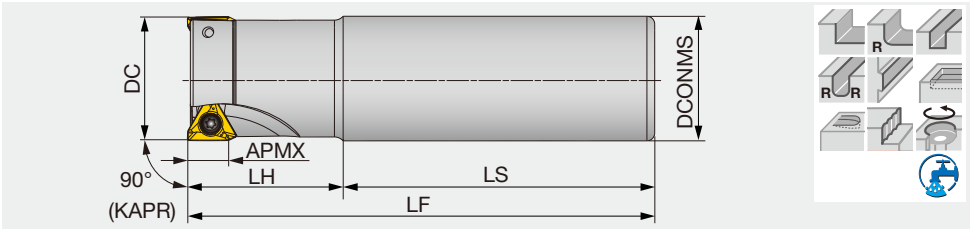
TUNG-TRI

EPA15

High precision square shoulder endmill, shank type, with screw clamp system, for triangular inserts

GAMP = +12°~ +13.5°, GAMF = -6°~ -3.5°





Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPA15R040M32.0-03N	15	40	3	32	80	40	120	0.73	Without	TOMT15...
EPA15R040M32.0-02L	15	40	2	32	205	50	255	1.56	With	TOMT15...
EPA15R050M32.0-04N	15	50	4	32	80	40	120	0.83	Without	TOMT15...
EPA15R050M42.0-02L	15	50	2	42	310	50	360	3.84	With	TOMT15...

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Torx bit
EPA15...	TS45120I	H-TB2W	M-1000	BT20S

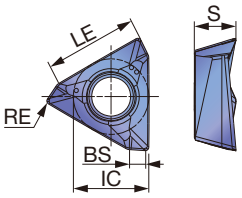
*Recommended clamping torque (N·m): TS45120I=5

Reference pages: Inserts → H129, Standard cutting conditions → H131

INSERT

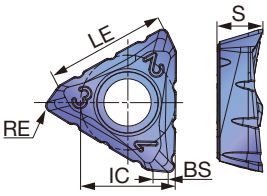
TOMT-MJ





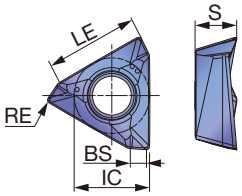
TOMT-NMJ





TOGT-AJ





		Coated				Uncoated	
P	Steel	☆	★		☆		
M	Stainless		★		☆		
K	Cast iron	★		★			
N	Non-ferrous					★	
S	Superalloys	★	☆				
H	Hard materials						

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	Coated AH3135	Coated T1215	Coated T3225	Uncoated KS05F	LE	IC	S	BS
TOMT060302PDER-MJ	0.2	6	●	●				6.2	5.6	3.2	1.4
TOMT060304PDER-MJ	0.4	6	●	●		●		6.2	5.6	3.2	1.2
TOMT060308PDER-MJ	0.8	6	●	●	●	●		6.2	5.6	3.2	0.8
TOMT100404PDER-MJ	0.4	10	●	●		●		10.5	8.6	4.7	1.5
TOMT100408PDER-MJ	0.8	10	●	●	●	●		10.5	8.6	4.7	1.1
TOMT100416PDER-MJ	1.6	10	●	●				10.5	8.6	4.7	0.2
TOMT150604PDER-MJ	0.4	15	●	●		●		15.7	12.7	6	2.2
TOMT150608PDER-MJ	0.8	15	●	●	●	●		15.7	12.7	6	1.9
TOMT150616PDER-MJ	1.6	15	●	●				15.7	12.7	6	1.1
TOMT150620PDER-MJ	2	15	●	●				15.7	12.7	6	0.7
TOMT150608PDER-NMJ	0.8	15	●	●		●		15.7	12.7	6	1.9
TOGT100404PDFR-AJ	0.4	10					●	10.5	8.6	5.2	1.5
TOGT100408PDFR-AJ	0.8	10					●	10.5	8.6	5.1	1.1

●: Line up

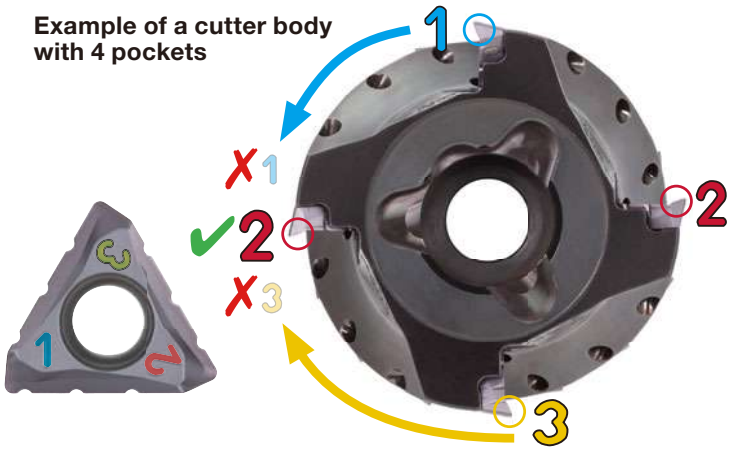
Caution for using NMJ chipbreaker

⚠ Insert with NMJ chipbreaker has a number marked on each corner.
DO NOT place the corners with the same number in adjacent flute as the cutter may be damaged.

For example, if you place the corner #1 in one flute, be sure to use #2 or #3 (and avoid #1) in the next one.

Item: TOMT150608PDER-NMJ

Example of a cutter body with 4 pockets

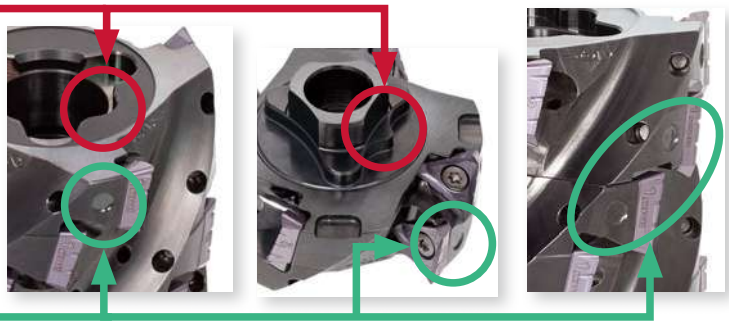


How to set a sub-unit

When setting a sub-unit on the main unit or another sub-unit, be sure to match the markings on the units. Sub-unit has a projection for error-proofing (Poka-yoke) to avoid setting error.

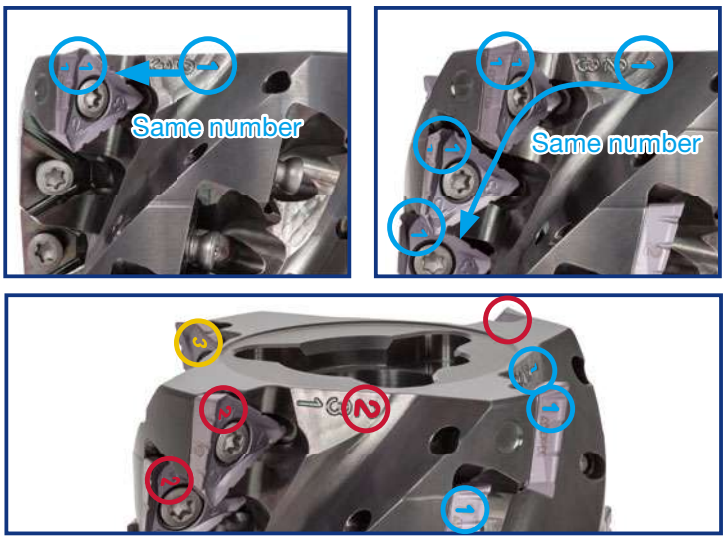
Projection for error-proofing (Poka-yoke)

Marking



Directions for setting NMJ inserts on roughing type bodies

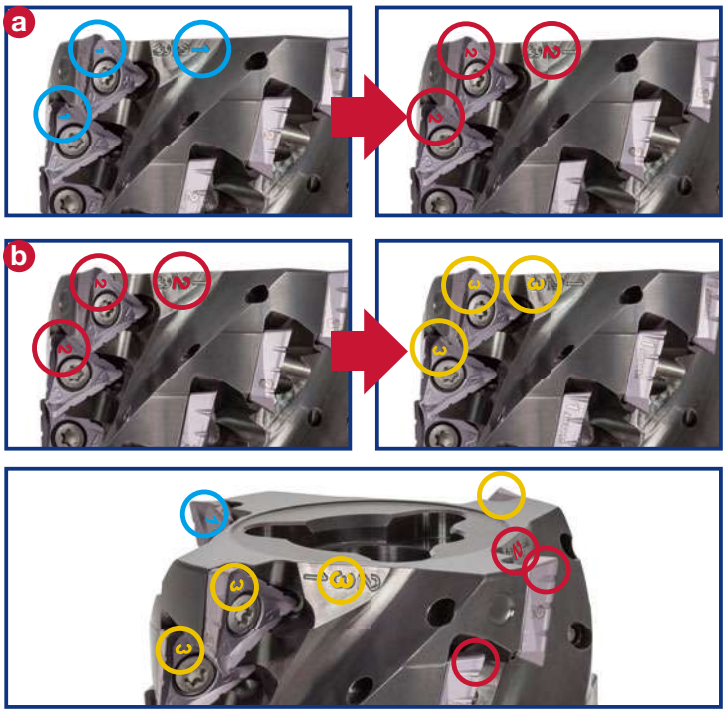
1. Attach the insert on the cutter body so that the number on the working cutting edge matches the first number marked on the cutter body. (See the image on the right.)
2. Attach the remaining inserts on the same flute with the same number marked on the working cutting edge.
3. Repeat steps 1 and 2 for the other flutes.
4. Make sure the number on the working cutting edge is different from the number used on the adjacent flutes.



Directions for changing corners for inserts on roughing type bodies

1. a First time to change the corner rotate the insert clock-wise to match the number on the working cutting edge with the second number marked on the cutter body. (See the image on the right.)
   Ex: 1 ➡ 2
   2 ➡ 3
   3 ➡ 1

   b Second time to change the corner rotate the insert clock-wise to match the number on the working cutting edge with the last number marked on the cutter body. (See the image on the right.)
   Ex: 2 ➡ 3
   3 ➡ 1
   1 ➡ 2
2. Repeat step 1 for all inserts.
3. Make sure the number on the working cutting edge is different from the number used on the adjacent flutes.



STANDARD CUTTING CONDITIONS

TPA/EPA/HPA

	Workpiece materials	Hard-ness HB	Grades	Cutting speed *Vc* (m/min)			Feed per tooth: *fz* (mm/t)				
							MJ			NMJ	AJ
				T/E/HPA06	T/E/HPA10	T/EPA15	T/E/HPA06	T/E/HPA10	T/EPA15	T/EPA15	T/E/HPA10
P	Low carbon steel (SS400 / E275A, S15C / C15E4, etc.)	- 200	AH3135	100 - 220	100 - 250	100 - 250	0.05 - 0.15	0.08 - 0.2	0.08 - 0.25	0.08 - 0.15	-
P	High carbon steel (S45C / C45, etc.)	200 - 300	AH3135	100 - 170	100 - 200	100 - 230	0.05 - 0.12	0.08 - 0.15	0.08 - 0.2	0.08 - 0.15	-
P	Alloy steel (SCM440, etc. / 42CrMo4, etc.)	150 - 300	AH3135	100 - 170	100 - 200	100 - 230	0.05 - 0.12	0.08 - 0.15	0.08 - 0.2	0.08 - 0.15	-
P	Tool steel (SKD61 / X40CrMoV5-1, etc.)	30 - 40 HRC	AH3135	100 - 120	100 -150	100 - 180	0.05 - 0.12	0.08 - 0.15	0.08 - 0.2	0.08 - 0.15	-
M	Stainless steel (SUS304 / X5CrNi18-9, etc.)	-	AH3135	80 - 150	80 - 200	90 - 200	0.05 - 0.15	0.08 - 0.2	0.08 - 0.2	0.08 - 0.15	-
K	Grey cast iron (FC250 / GG25 / 250, etc.)	150 - 250	AH120	100 - 200	100 - 250	140 - 250	0.05 - 0.15	0.08 - 0.2	0.08 - 0.25	0.08 - 0.15	-
K			T1215	150 - 250	150 - 300	200 - 300	0.05 - 0.12	0.08 - 0.15	0.08 - 0.18	-	-
K	Ductile cast iron (FCD450 / GGG45 / 450-10S, etc.)	150 - 250	AH120	80 - 150	80 - 200	110 - 200	0.05 - 0.15	0.08 - 0.2	0.08 - 0.25	0.08 - 0.15	-
K			T1215	100 - 200	130 - 250	150 - 250	0.05 - 0.12	0.08 - 0.15	0.08 - 0.18	-	-
N	Aluminium (Si < 13%)	-	KS05F	-	300 - 1000	-	-	-	-	-	0.08 - 0.22
N	Aluminium (Si ≥ 13%)	-	KS05F	-	100 - 200	-	-	-	-	-	0.08 - 0.22
S	Titanium alloys (Ti-6Al-4V, etc.)	-	AH120	20 - 50	20 - 60	20 - 60	0.05 - 0.1	0.08 - 0.15	0.08 - 0.18	0.08 - 0.15	-
S	Heat-resistant alloys (Inconel 718, etc.)	-	AH120	20 - 35	20 - 40	20 - 40	0.03 - 0.08	0.05 - 0.13	0.07 - 0.15	0.07 - 0.15	-

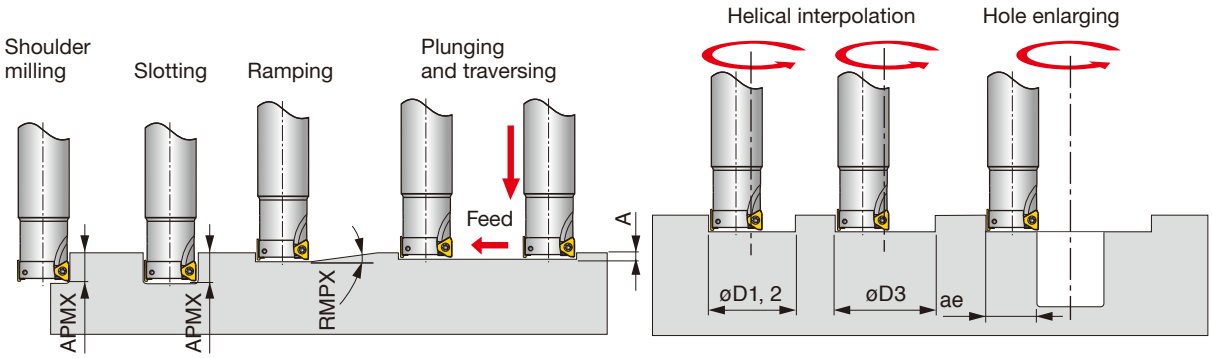
· When you use the NMJ chipbreaker, please set up the feed less than 0.15 mm/t.
· Remove excessive chip accumulation with an air blast.
· For the operation with depth of cut which varies (ex.casting skin) and machining of workpiece materials with interrupted surface, the feed per tooth (*fz*) should be set to the lower recommended value shown in the above table.
· Cutting conditions maybe limited depending on machine power, workpiece rigidity, and spindle output. When the cutting width, depth, or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

TLA (Roughing type)

ISO	Workpiece materials	Hardness HB	Grades	Cutting speed *Vc* (m/min)		Feed per tooth: *fz* (mm/t)				
						MJ		NMJ	AJ	
				TLA10	TLA15	TLA10	TLA15	TLA15	TLA10	
P	Low carbon steel (SS400 / E275A, S15C / C15E4, etc.)	- 200	AH3135	100 - 250	100 - 250	0.08 - 0.18	0.08 - 0.22	0.08 - 0.15	-	
P	High carbon steel (S45C / C45, etc.)	200 - 300	AH3135	100 - 200	100 - 270	0.08 - 0.14	0.08 - 0.18	0.08 - 0.15	-	
P	Alloy steel (SCM440, etc. / 42CrMo4, etc.)	30 - 40 HRC	AH3135	100 - 150	100 - 180	0.08 - 0.14	0.08 - 0.18	0.08 - 0.15	-	
M	Stainless steel (SUS304 / X5CrNi18-9, etc.)	-	AH3135	80 - 200	90 - 200	0.08 - 0.15	0.08 - 0.18	0.08 - 0.15	-	
K	Grey cast iron (FC250 / GG25 / 250, etc.)	150 - 250	AH120	100 - 250	140 - 250	0.08 - 0.18	0.08 - 0.25	0.08 - 0.15	-	
K			T1215	150 - 250	150 - 250	0.08 - 0.15	0.08 - 0.18	-	-	
K	Ductile cast iron (FCD450 / GGG45 / 450-10S, etc.)	150 - 250	AH120	80 - 200	110 - 200	0.08 - 0.18	0.08 - 0.25	0.08 - 0.15	-	
K			T1215	150 - 250	150 - 250	0.08 - 0.15	0.08 - 0.18	-	-	
N	Aluminium (Si < 13%)	-	KS05F	300 - 1000	-	-	-	-	0.08 - 0.22	
N	Aluminium (Si ≥ 13%)	-	KS05F	100 - 200	-	-	-	-	0.08 - 0.22	
S	Titanium alloys (Ti-6Al-4V, etc.)	-	AH120	20 - 60	20 - 60	0.08 - 0.15	0.08 - 0.18	0.08 - 0.15	-	
S	Heat-resistant alloys (Inconel 718, etc.)	-	AH120	20 - 40	20 - 40	0.05 - 0.13	0.07 - 0.15	0.07 - 0.15	-	

· When using NMJ chipbreaker, please set up the feed not to exceed 0.15 mm/t.

APPLICATION RANGE



Designation	DC	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Min. machining depth øD1	Max. machining diameter øD2	Max. machining diameter øD3 *	Max. cutting width in enlarging ae
EPA06R012…	12	6	5°	0.6	18	23.6	21	11.5
E/HPA06R016…	16	6	4.3°	0.6	25	31.6	29	15.5
EPA06R018…	18	6	3.5°	0.6	29.5	35.6	33	17.5
E/HPA06R020…	20	6	2.8°	0.6	33.5	39.6	37	19.5
EPA06R022…	22	6	2.5°	0.6	37.5	43.6	41	21.5
E/HPA06R025…	25	6	2°	0.6	43.5	49.6	47	24.5
E/HPA10R025…	25	10	2°	0.6	42.1	49.6	47	24.5
EPA06R028…	28	6	1.8°	0.6	49.5	55.6	53	27.5
EPA10R028…	28	10	2°	0.6	48.1	55.6	53	27.5
H/TPA06R032…	32	6	1.5°	0.6	57.5	63.6	61	31.5
E/HPA10R032…	32	10	2°	0.6	56.1	63.6	61	31.5
EPA10R035…	35	10	1.7°	0.6	62.1	69.6	67	34.5
TPA06R040…	40	6	1°	0.6	73.5	79.6	77	39.5
E/TPA10R040…	40	10	1.4°	0.6	72.1	79.6	77	39.5
EPA15R040…	40	15	2.3°	0.8	68.5	79.2	75.5	39
TPA06R050…	50	6	0.7°	0.6	94	99.6	97	49.5
TPA10R050…	50	10	0.9°	0.6	92.1	99.6	97	49.5
E/TPA15R050…	50	15	1.7°	0.8	88.5	99.2	95.5	49
TPA10R063…	63	10	0.8°	0.6	118.1	125.6	123	62.5
TPA15R063…	63	15	1.4°	0.8	114.5	125.2	121.5	62
TPA10R080…	80	10	0.6°	0.6	152.1	159.6	157	79.5
TPA15R080…	80	15	1°	0.8	148.5	159.2	155.5	79
TPA10R100…	100	10	0.5°	0.6	192.1	199.6	197	99.5
TPA15R100…	100	15	0.8°	0.8	188.5	199.2	195.5	99
TPA15R125…	125	15	0.6°	0.8	238.5	249.2	245.5	124
TPA15R160…	160	15	0.5°	0.8	308.5	319.2	315.5	159

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

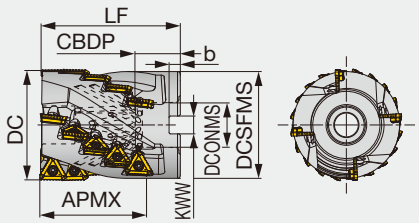
* Flat bottom hole
Note: Corner RE for dimensions of øD1, øD2 and øD3: RE = 0.4 for E/TPA06, E/TPA10 and RE = 0.8 for E/TPA15.

LPTC16

Square shoulder mill for roughing, with screw clamp system, for shred inserts

GAMP = +5.5°~ +6.5°, GAMF = -11.5°~ -11.3°





Designation	APMX	DC	ZEFP	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
LPTC16J063B25.4L061R03	61	63	3	12	59	85	25.4	26	9.5	6	1.25	TC*T16...
LPTC16M063B27.0L061R03	61	63	3	12	59	85	27	22	12.4	7	1.24	TC*T16...
LPTC16J080B31.7L076R04	76	80	4	20	76	100	31.75	32	12.7	8	2.44	TC*T16...
LPTC16M080B32.0L076R04	76	80	4	20	76	100	32	25	14.4	8	2.46	TC*T16...

Note: Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Shell locking bolt	Torx bit
LPTC16*063B...	TS 40B100I	H-TB2W	M-1000	CAP-CM12X1.75X50	BT15S
LPTC16*080B...	TS 40B100I	H-TB2W	M-1000	CM16X75	BT15S

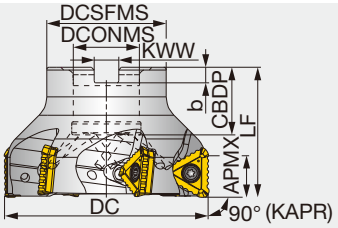
*Recommended clamping torque (N·m): TS 40B100I=3.5

TPTC16

Square shoulder mill, with screw clamp system, for shred inserts

GAMP = +5.5°~ +6.5°, GAMF = -11.5°~ -11.3°





Designation	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TPTC16M050B22.0R04	16	50	4	41	40	22	20	10.4	6.3	0.29	TC*T16...
TPTC16M063B22.0R05	16	63	5	41	40	22	20	10.4	6.3	0.44	TC*T16...
TPTC16J080B25.4R06	16	80	6	46	50	25.4	26	9.5	6	0.88	TC*T16...
TPTC16M080B27.0R06	16	80	6	50	50	27	22	12.4	7	0.9	TC*T16...
TPTC16J100B31.7R07	16	100	7	60	50	31.75	32	12.7	8	1.38	TC*T16...
TPTC16M100B32.0R07	16	100	7	60	50	32	28.5	14.4	8	1.35	TC*T16...

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Shell locking bolt1	Shell locking bolt2	Torx bit
TPTC16M050B22.0R04	TS 40B100I	H-TB2W	M-1000	-	FSHM10-40H	BT15S
TPTC16M063B22.0R05	TS 40B100I	H-TB2W	M-1000	-	CM10X30H	BT15S
TPTC16*080B...	TS 40B100I	H-TB2W	M-1000	-	CM12X30H	BT15S
TPTC16*100B...	TS 40B100I	H-TB2W	M-1000	TMBA-M16H	-	BT15S

*Recommended clamping torque (N·m): TS 40B100I=3.5

Reference pages: Inserts → H134, Standard cutting conditions → H135

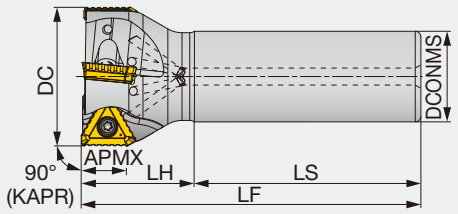
TUNGTSHRED

EPTC16

Square shoulder endmill, shank type, with screw clamp system, for shred inserts

GAMP = +5.5°~ +6.5°, GAMF = -11.5°~ -11.3°





Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Insert
EPTC16M050C32.0R04	16	50	4	32	80	40	120	0.8	TC*T16...
EPTC16M050C42.0R02L	16	50	2	42	310	50	360	3.8	TC*T16...

SPARE PARTS

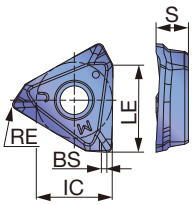
Designation	Clamping screw	Grip	Lubricant	Torx bit
EPTC16...	TS 40B100I	H-TB2W	M-1000	BT15S

*Recommended clamping torque (N·m): TS 40B100I=3.5

INSERT

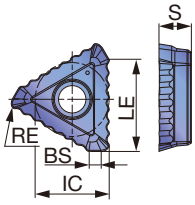
TCGT-MJ





TCMT-NMJ





Approach angle: 10°-20° | 45° | 70° | 85° | 88° | 90° | Others

P	Steel	☆	★		☆
M	Stainless		★		
K	Cast iron	★		☆	
N	Non-ferrous				
S	Superalloys	★	☆		
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	Coated AH3135	Coated T1215	Coated T3225	LE	IC	S	BS
TCGT160608PDER-MJ	0.8	16	●	●			16	13.7	5.8	1
TCMT160620PDER-NMJ	2	16	●	●	●	●	16	13.3	5.8	2

●: Line up

Reference pages: Standard cutting conditions → H135

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steel (C15, C20, etc.)	- 300 HB	First choice	AH3135	NMJ*	100 - 250	0.08 - 0.15
		- 300 HB	Wear resistance	T3225	NMJ*	100 - 300	0.08 - 0.15
		- 300 HB	For finishing	AH3135	MJ	100 - 250	0.08 - 0.20
	Carbon steel and alloy steel (S55C / C55, SCM440 / 42CrMo4, etc.)	- 300 HB	First choice	AH3135	NMJ*	100 - 230	0.08 - 0.15
		- 300 HB	Wear resistance	T3225	NMJ*	100 - 280	0.08 - 0.15
		- 300 HB	For finishing	AH3135	MJ	100 - 230	0.08 - 0.20
	Prehardened steel (NAK80, PX5, etc.)	30 - 40 HRC	First choice	AH3135	NMJ*	100 - 180	0.08 - 0.15
		30 - 40 HRC	Wear resistance	T3225	NMJ*	100 - 200	0.08 - 0.15
		30 - 40 HRC	For finishing	AH3135	MJ	100 - 180	0.08 - 0.20
M	Stainless steel (SUS304 / X5CrNi18-9, SUS316 / X5CrNiMo17-12-3, etc.)	-	First choice	AH3135	NMJ*	90 - 200	0.08 - 0.15
		-	Wear resistance	T3225	NMJ*	90 - 250	0.08 - 0.15
		-	For finishing	AH3135	MJ	90 - 200	0.08 - 0.20
K	Grey cast iron (FC250 / 250, FC300 / 300, etc.)	150 - 250 HB	First choice	AH120	NMJ*	140 - 250	0.08 - 0.15
		150 - 250 HB	Wear resistance	T1215	NMJ*	150 - 300	0.08 - 0.15
		150 - 250 HB	For finishing	AH120	MJ	140 - 250	0.08 - 0.25
	Ductile cast iron (400-15, FCD600 / 600-3, etc.)	150 - 250 HB	First choice	AH120	NMJ*	140 - 250	0.08 - 0.15
		150 - 250 HB	Wear resistance	T1215	NMJ*	150 - 300	0.08 - 0.15
		150 - 250 HB	For finishing	AH120	MJ	140 - 250	0.08 - 0.25
S	Titanium alloys (Ti-6Al-4V, etc.)	-	First choice	AH120	NMJ*	20 - 60	0.08 - 0.15
		-	For finishing	AH120	MJ	20 - 60	0.08 - 0.18
	Heat-resistant alloys (Inconel718, etc.)	-	First choice	AH120	NMJ*	20 - 40	0.08 - 0.13
		-	For finishing	AH120	MJ	20 - 40	0.08 - 0.15

* When using the -NMJ chipbreaker, do not feed higher than 0.15 mm/t.

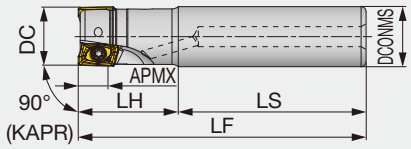
TUNGFORCE TUNGFREC

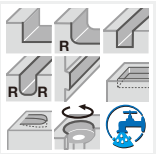
EPAV06

Mini square shoulder endmill, shank type, with screw clamp system

GAMP = +6.0°~ +7.6°, GAMF = -37.1°~ -32.4°







Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Insert
EPAV06M008C10.0R01	6	8	1	10	60	20	80	0.04	AVGT06...
EPAV06M010C10.0R02	6	10	2	10	60	20	80	0.04	AVGT06...
EPAV06M010C10.0R02L	6	10	2	10	65	35	100	0.06	AVGT06...
EPAV06M010C08.0R02L	6	10	2	8	80	20	100	0.04	AVGT06...
EPAV06M012C12.0R02	6	12	2	12	60	20	80	0.06	AVGT06...
EPAV06M012C12.0R03	6	12	3	12	60	20	80	0.06	AVGT06...
EPAV06M012C12.0R02L	6	12	2	12	85	35	120	0.09	AVGT06...
EPAV06M012C10.0R02L	6	12	2	10	100	20	120	0.07	AVGT06...
EPAV06M012C10.0R03	6	12	3	10	60	20	80	0.04	AVGT06...
EPAV06M014C12.0R03	6	14	3	12	60	20	80	0.07	AVGT06...
EPAV06M014C12.0R03L	6	14	3	12	120	20	140	0.11	AVGT06...
EPAV06M016C16.0R03	6	16	3	16	70	20	90	0.12	AVGT06...
EPAV06M016C16.0R04	6	16	4	16	70	20	90	0.12	AVGT06...
EPAV06M016C16.0R03L	6	16	3	16	105	35	140	0.20	AVGT06...
EPAV06M018C16.0R04	6	18	4	16	70	20	90	0.13	AVGT06...
EPAV06M018C16.0R03	6	18	3	16	70	20	90	0.13	AVGT06...
EPAV06M018C16.0R03L	6	18	3	16	160	20	180	0.26	AVGT06...
EPAV06M020C20.0R05	6	20	5	20	70	30	100	0.21	AVGT06...
EPAV06M020C20.0R04	6	20	4	20	70	30	100	0.23	AVGT06...
EPAV06M020C20.0R04L	6	20	4	20	165	35	200	0.45	AVGT06...
EPAV06M020C16.0R04	6	20	4	16	80	30	110	0.17	AVGT06...
EPAV06M025C25.0R06	6	25	6	25	80	35	115	0.4	AVGT06...
EPAV06M025C25.0R05	6	25	5	25	80	35	115	0.4	AVGT06...
EPAV06M025C25.0R04L	6	25	4	25	160	40	200	0.72	AVGT06...
EPAV06M025C20.0R06	6	25	6	20	80	35	115	0.27	AVGT06...
EPAV06M032C32.0R08	6	32	8	32	80	40	120	0.7	AVGT06...
EPAV06M032C32.0R06L	6	32	6	32	155	45	200	1.2	AVGT06...

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

SPARE PARTS





Designation	Clamping screw	Lubricant	Wrench
EPAV06M...	CSPB-2H	M-1000	IP-6DB

*Recommended clamping torque (N·m): CSPB-2H=0.7

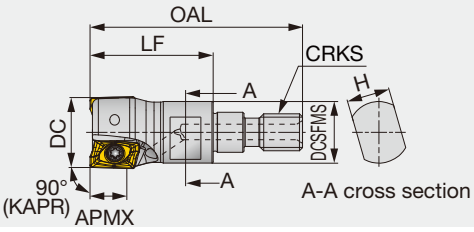
Reference pages: Inserts, Standard cutting conditions → H139

HPAV06-M

Mini square shoulder endmill, modular type (TungFlex)

GAMP = +6.0°~ +7.6°, GAMF = -37.1°~ -32.4°







Designation	APMX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Insert
HPAV06M010M06R02	6	10	2	34.5	20	7	9.5	M6	0.01	AVGT06...
HPAV06M012M06R02	6	12	2	34.5	20	7	10	M6	0.01	AVGT06...
HPAV06M012M06R03	6	12	3	34.5	20	7	10	M6	0.01	AVGT06...
HPAV06M016M08R03	6	16	3	42	25	10	13	M8	0.03	AVGT06...
HPAV06M016M08R04	6	16	4	42	25	10	13	M8	0.03	AVGT06...

Please see the page **H208** for TungFlex modular shank.

SPARE PARTS





Designation	Clamping screw	Lubricant	Wrench
HPAV06M...	CSPB-2H	M-1000	IP-6DB

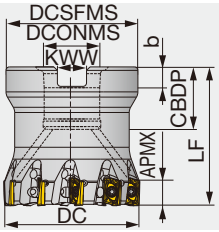
*Recommended clamping torque (N·m): CSPB-2H=0.7

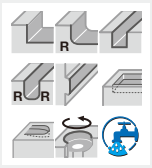
TPAV06

High feed endmill, modular type, with coolant directly to the tool tips (TungFlex)

GAMP = +6.0°~ +7.6°, GAMF = -37.1°~ -32.4°







Designation	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	KWW	b	WT(kg)	Insert
TPAV06M040B16.0R10	6	40	10	38	16	18	40	8.4	5.6	0.24	AVGT06...

SPARE PARTS






Designation	Clamping screw	Lubricant	Wrench	Shell locking bolt
TPAV06M040B16.0R10	CSPB-2H	M-1000	IP-6DB	CM8X30H

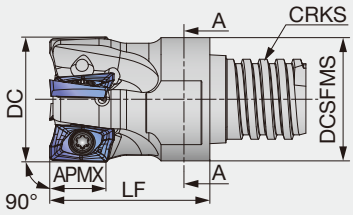
*Recommended clamping torque (N·m): CSPB-2H=0.7

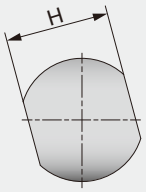
Reference pages: Inserts, Standard cutting conditions → **H139**, TungFlex → **H208**

TUNGFORCE TUNGFREC

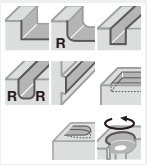
HPAV06-S

Mini square shoulder endmill, modular type (TungMeister)





A-A cross section



Designation	APMX	DC	CICT	LF	H	DCSFMS	CRKS	WT (kg)	Insert
HPAV06M010S05R02	6	10	2	10	8	8	S05	0.01	AVGT06...
HPAV06M010S06R02	6	10	2	16	8	9.8	S06	0.01	AVGT06...
HPAV06M012S08R02	6	12	2	18	10	11.7	S08	0.02	AVGT06...
HPAV06M012S08R03	6	12	3	18	10	11.7	S08	0.02	AVGT06...
HPAV06M016S10R03	6	16	3	20	13	15.4	S10	0.03	AVGT06...
HPAV06M016S10R04	6	16	4	20	13	15.4	S10	0.03	AVGT06...

- Applicable shank: VSSD, VTSD, VSC, VSTD
Please see the page **I094** for the types and the selection of TungMeister shank.
Please use VAD-M adapter to connect TungMeister with a metric thread shank.

Spanner*	Designation	Connection screw size
	KEYV-S05	S05
	KEYV-S06	S06
	KEYV-S08	S08
	KEYV-S10	S10

*sold separately

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

SPARE PARTS





Designation	Clamping screw	Lubricant	Wrench
HPAV06M...	CSPB-2H	M-1000	IP-6DB

*Recommended clamping torque (N·m): CSPB-2H=0.7

Reference pages: Inserts, Standard cutting conditions → H139, TungMeister shank → I086 - I089

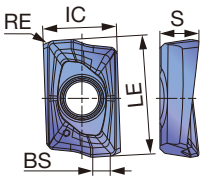
INSERT

AVGT-MJ



AVGT-AJ





P	Steel	★		★		
M	Stainless		☆	★		
K	Cast iron	★				
N	Non-ferrous				★	
S	Superalloys	★	★	☆		
H	Hard materials	★				

★ : First choice
☆ : Second choice

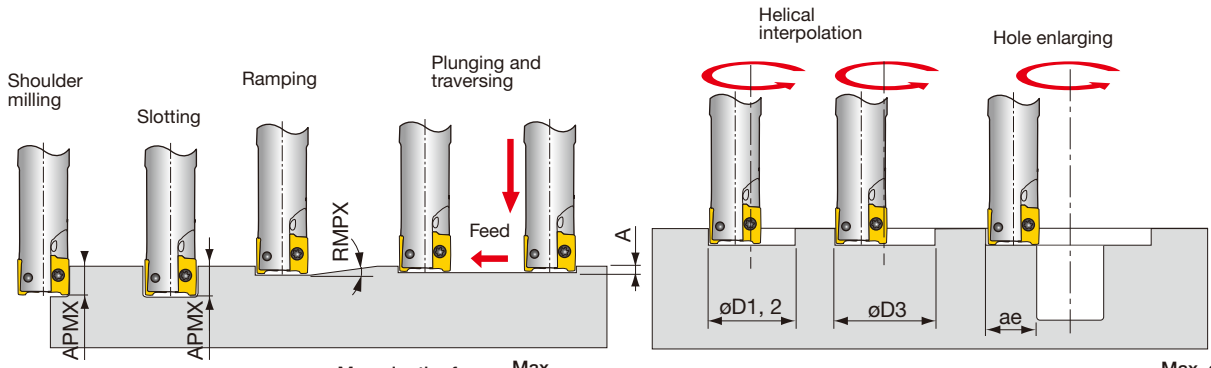
Designation	RE	APMX	Coated			Uncoated	LE	IC	S	BS
			AH120	AH130	AH3135	KS05F				
AVGT060300PBER-MJ	0.0	6			●		8	5	2.7	1.6
AVGT060302PBER-MJ	0.2	6	●	●	●		8	5	2.7	1.5
AVGT060304PBER-MJ	0.4	6	●	●	●		8	5	2.7	1.3
AVGT060308PBER-MJ	0.8	6	●	●	●		8	5	2.6	0.9
AVGT060300PBFR-AJ	0.0	6				●	8	5	2.7	1.6
AVGT060302PBFR-AJ	0.2	6				●	8	5	2.7	1.5
AVGT060304PBFR-AJ	0.4	6				●	8	5	2.7	1.3
AVGT060308PBFR-AJ	0.8	6				●	8	5	2.6	0.9

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steel (S15C / C15E / C15E4, SS400 / E275A, etc.)		- 200 HB	First choice	AH3135	230 - 430	0.07 - 0.12
	Carbon steel and alloy steel (S55C / C55, SCM440 / 42CrMo4, etc.)		- 300 HB	First choice	AH3135	150 - 350	0.07 - 0.12
	Prehardend steel (NAK80, PX5, etc.)		30 - 40 HRC	First choice	AH3135	100 - 230	0.07 - 0.12
M	Stainless steel (SUS304 / X5CrNi18-9, SUS316 / X5CrNiMo17-12-3, etc.)		-	First choice	AH3135	150 - 220	0.06 - 0.1
K	Grey cast iron (FC250 / GG25 / 250, FC300 / GG30 / 300, etc.)		150 - 250 HB	First choice	AH120	200 - 330	0.07 - 0.12
	Ductile cast iron (FCD400, FCD600 / GGG60 / 600-3, etc.)		150 - 250 HB	First choice	AH120	150 - 240	0.07 - 0.12
N	Aluminium alloys (Si < 13%)		-	First choice	KS05F	650 - 1000	0.07 - 0.12
	Aluminium alloys (Si ≥ 13%)		-	First choice	KS05F	100 - 230	0.04 - 0.12
S	Titanium alloys (Ti-6Al-4V, etc.)		-	First choice	AH130	40 - 90	0.04 - 0.1
	Superalloys (Inconel718, etc.)		-	First choice	AH130	45 - 65	0.04 - 0.09
H	Hardened steel	(SKD61 / X40CrMoV5-1, etc.)	40 - 50 HRC	First choice	AH120	45 - 70	0.04 - 0.08
		(SKD11 / X153CrMoV12, etc.)	50 - 60 HRC	First choice	AH120	40 - 65	0.04 - 0.06

MACHINING APPLICATIONS

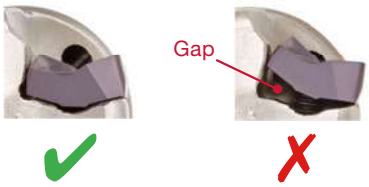


Designation	DC	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging A	Min. machining øD1	Max. machining øD2	Max. machining øD3*	Max. cutting width in enlarging ae
EPAV06_008…	8	6	-	-	-	-	-	-
EPAV/HPAV06_010…	10	6	3°	0.3	15	19	18	9.5
EPAV/HPAV06_012…	12	6	3°	0.3	18	23	22	11.5
EPAV/HPAV06_014…	14	6	2.3°	0.3	22	27	26	13.5
EPAV/HPAV06_016…	16	6	2°	0.3	28	31	30	15.5
EPAV/HPAV06_018…	18	6	1.6°	0.3	30	35	34	17.5
EPAV/HPAV06_020…	20	6	1.4°	0.3	34	39	38	19.5
EPAV/HPAV06_025…	25	6	1.1°	0.3	44	49	48	24.5
EPAV/HPAV06_032…	32	6	0.8°	0.3	58	63	62	31.5
TPAV06_040…	40	6	0.6°	0.3	74	79	78	39.5

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

*Flat bottom hole

When clamping the insert, please confirm that there is no gap between the cutter body and the insert as shown in the picture.

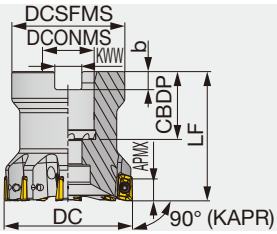


TUNGREC
TPO07

High precision square shoulder mill, with screw clamp system, for AOMT/AOGT07 inserts

GAMP = +7°, GAMF = +13°~ +18°





Designation	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TPO07R032M16.0E08	32	8	30	40	16	21	8.4	5.6	0.1	With	AO*T0702...
TPO07R040M16.0E10	40	10	35	40	16	21	8.4	5.6	0.2	With	AO*T0702...
TPO07R050M22.0E12	50	12	41	40	22	22	10.4	6.3	0.3	With	AO*T0702...

SPARE PARTS

Designation	Clamping screw	Shell locking bolt	Wrench
TPO07R032, 040...	CSTB-2.5L046	CM8X30H	T-7DB
TPO07R050M22.0E12	CSTB-2.5L046	CM10X30H	T-7DB

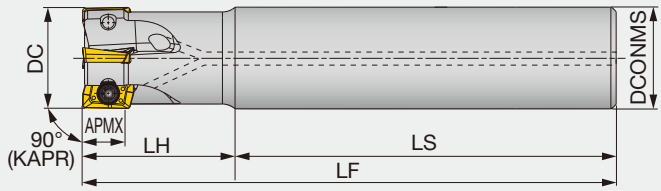
*Recommended clamping torque (N·m): CSTB-2.5L046=1.3

TUNGREC
EPO07

High precision square shoulder endmill, shank type, with screw clamp system, for AOMT/AOGT07 inserts

GAMP = +7°, GAMF = +13°~ +18°





Designation	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPO07R012M12.0-02	12	2	12	50	18	68	0.1	With	AO*T0702...
EPO07R012M12.0-02L	12	2	12	95	30	125	0.1	With	AO*T0702...
EPO07R016M12.0-02	16	2	12	50	20	70	0.1	With	AO*T0702...
EPO07R016M16.0-02L	16	2	16	105	40	145	0.2	With	AO*T0702...
EPO07R016M16.0-04	16	4	16	60	24	84	0.1	With	AO*T0702...
EPO07R018M16.0-02L	18	2	16	105	40	145	0.2	With	AO*T0702...
EPO07R018M16.0-04	18	4	16	60	24	84	0.1	With	AO*T0702...
EPO07R020M16.0-03	20	3	16	60	30	90	0.1	With	AO*T0702...
EPO07R020M20.0-03L	20	3	20	135	50	185	0.4	With	AO*T0702...
EPO07R020M20.0-05	20	5	20	70	30	100	0.2	With	AO*T0702...
EPO07R022M20.0-03L	22	3	20	135	50	185	0.4	With	AO*T0702...
EPO07R022M20.0-05	22	5	20	70	30	100	0.2	With	AO*T0702...
EPO07R025M20.0-03	25	3	20	60	35	95	0.3	With	AO*T0702...
EPO07R025M25.0-03L	25	3	25	150	70	220	0.7	With	AO*T0702...
EPO07R025M25.0-07	25	7	25	80	35	115	0.4	With	AO*T0702...
EPO07R028M25.0-03L	28	3	25	150	70	220	0.7	With	AO*T0702...
EPO07R028M25.0-07	28	7	25	80	35	115	0.4	With	AO*T0702...

*The øDc above is the diameter when using MJ or AJ chipbreaker.
With HJ chipbreaker, the tool diameter is (øDc above + 0.6 mm).
**The Lf and L above are the lengths when using MJ chipbreaker.
With AJ chipbreaker, the length is (Lf, L + 0.1 mm). With HJ chipbreaker, the length is (Lf, L + 0.5 mm).

SPARE PARTS

Designation	Clamping screw	Wrench
EPO07R012...	SR-10503833-S	T-7DB
EPO07R016 - 028...	CSTB-2.5L046	T-7DB

*Recommended clamping torque (N·m): SR-10503833-S=0.9 , CSTB-2.5L046=1.3

Reference pages: Inserts → H142, Standard cutting conditions → H143

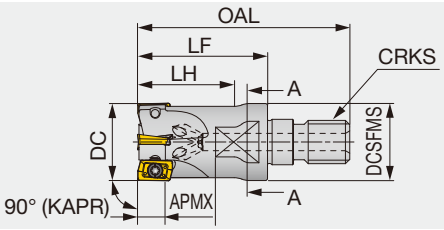
TUNGREC

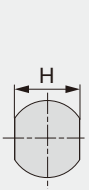
HPO07-M

High precision square shoulder endmill, modular type, for AOMT/AOGT07 inserts (TungFlex)

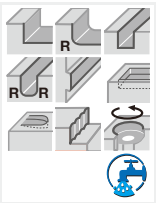
GAMP = +7°, GAMF = +13°~ +18°







A-A cross section



Designation	DC	CICT	OAL	LF	LH	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HPO07R012MM06-02	12	2	39.5	25	-	7	9.8	M6	0.01	With	AO*T0702...
HPO07R012MM08-02	12	2	42	25	20	10	12.8	M8	0.02	With	AO*T0702...
HPO07R016MM08-04	16	4	42	25	-	10	12.8	M8	0.03	With	AO*T0702...
HPO07R016MM10-04	16	4	49	30	20	15	17.8	M10	0.05	With	AO*T0702...
HPO07R020MM10-05	20	5	49	30	-	15	17.8	M10	0.06	With	AO*T0702...
HPO07R025MM12-07	25	7	57	35	-	17	20.8	M12	0.1	With	AO*T0702...

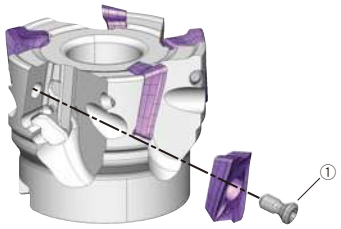
SPARE PARTS





Designation	①Clamping screw	Lubricant	Wrench
HPO07R012MM0*-02	SR-10503833-S	M-1000	T-7DB
HPO07R016 - 025...	CSTB-2.5L046	M-1000	T-7DB

*Recommended clamping torque (N·m): SR-10503833-S=0.9 , CSTB-2.5L046=1.3



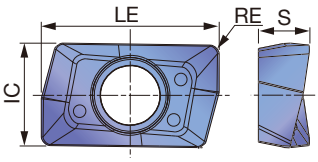
Approach angle

10°-20°
45°
70°
85°
88°
90°
Others

INSERT

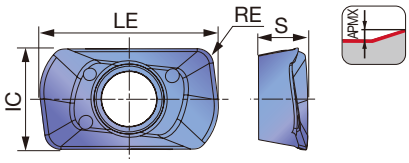
AOMT07-MJ





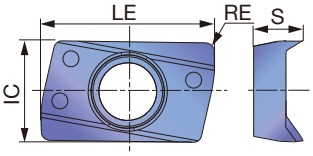
AOMT07-HJ





AOGT07-AJ





P	Steel		★	
M	Stainless	★	☆	
K	Cast iron		★	
N	Non-ferrous			★
S	Superalloys		★	
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH140	Coated AH725	Uncoated KS15F	LE	IC	S
AOMT070202PDPR-MJ	0.2	7	●	●		8	4.7	2.3
AOMT070204PDPR-MJ	0.4	7	●	●		8	4.7	2.3
AOMT070208PDPR-MJ	0.8	7	●	●		8	4.7	2.3
AOMT070216PDPR-MJ	1.6	7	●	●		8	4.7	2.3
AOMT070208PDPR-HJ	0.8	0.8	●	●		8.8	4.9	2.4
AOGT070204PDFR-AJ	0.4	6.4			●	8.1	4.7	2.3

●: Line up

Reference pages: Standard cutting conditions → H143, TungFlex → H208

STANDARD CUTTING CONDITIONS

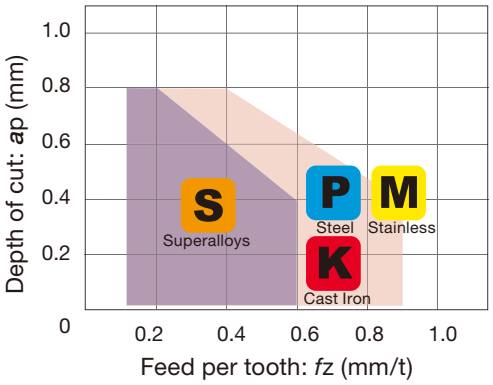
ISO	Workpiece materials	Hardness HB	Grades	Cutting speed *Vc* (m/min)	Feed per tooth: *fz* (mm/t)		
					MJ	HJ	AJ
P	Low carbon steel S15C, etc. C15E4, etc.	< 200	AH725	90 - 200	0.05 - 0.1	0.4 - 0.9	-
P	High carbon steel and alloy steel S55C, SCM440, etc. C55, 42CrMo4, etc.	200 - 300	AH725	90 - 150	0.05 - 0.1	0.4 - 0.9	-
P	Tool steel SKD11, etc. X153CrMoV12, etc.	150 - 300	AH725	80 - 120	0.05 - 0.1	0.4 - 0.9	-
M	Stainless steel SUS304, etc. X5CrNi18-9, etc.	-	AH140	90 - 150	0.05 - 0.1	0.4 - 0.9	-
K	Grey cast irons FC250, etc. 250, etc.	150 - 250	AH725	100 - 180	0.05 - 0.1	0.4 - 0.9	-
K	Ductile cast irons FCD450, etc. 450-10S, etc.	150 - 250	AH725	80 - 150	0.05 - 0.1	0.4 - 0.9	-
N	Aluminium alloys Si < 13%	-	KS15F	300 - 1000	-	-	0.08 - 0.2
N	Aluminium alloys Si ≥ 13%	-	KS15F	100 - 200	-	-	0.08 - 0.2
S	Titanium alloys Ti-6Al-4V, etc.	-	AH725	20 - 50	0.05 - 0.1	0.4 - 0.9	-
S	Superalloys Inconel 718, etc.	-	AH725	20 - 35	0.05 - 0.08	0.2 - 0.6	-

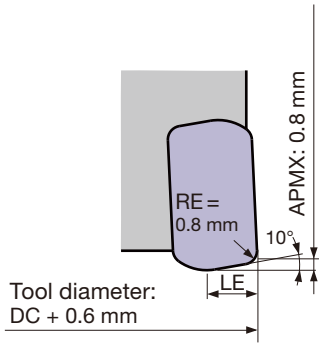
· To remove excessive chip accumulation use an air blast.
· To avoid build up edge on the cutting edges (aluminium machining), use a water soluble coolant.
· When cutting an interrupted surface or a casted skin, the feed per tooth (*fz*) should be reduced to the lower recommended value shown in the above table.
· Cutting conditions are limited by machine power, workpiece rigidity, and spindle output. When the cutting width, depth, or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

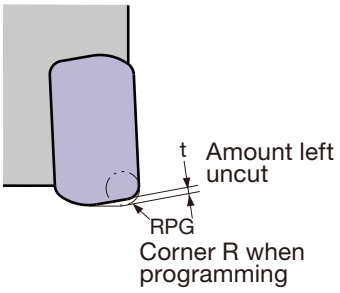
CAUTIONARY POINTS WHEN USING HJ INSERTS

HJ type inserts are designed for high feed machining.
Please note the following when using HJ inserts:
1. The shape of HJ insert differs from that of other inserts (MJ, AJ). However the same insert pocket can be used.
2. When using HJ inserts, all the inserts on the cutter body must be HJ type. Do not use other types of inserts (MJ and AJ types) with HJ inserts on the same cutter body.
3. When using CAD/CAM, please program it as a radius cutter. The table below shows the corner R when programming and the uncut area (t).
4. With HJ inserts, the tool diameter increases by 0.6 mm over the diameter DC shown in the table.

TungRec 07 type HJ inserts Standard conditions







Max. depth of cut APMX (mm)	Main cutting edge length LE (mm)	Corner R when programming	Amount left uncut t (mm)
0.8	3	R 0.5	0.4
		R 1	0.3

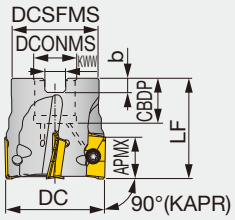
TUNGREC

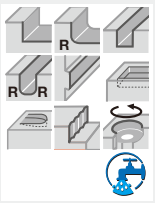
TPO11

Square shoulder mill, with screw clamp system, for double sided triangular inserts

GAMP = +8.7°~ +18°, GAMF = –5.3°~ –19.4°







Designation	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Insert
TPO11R040M16.0E06	10.6	40	6	35	16	18	40	5.6	8.4	0.21	With	AS*T11T3...
TPO11R050M22.0E07	10.6	50	7	45	22	20	40	6.3	10.4	0.35	With	AS*T11T3...
TPO11R063M22.0E08	10.6	63	8	47	22	20	45	6.3	10.4	0.59	With	AS*T11T3...
TPO11R080M25.4-10	10.6	80	10	58	25.4	26	50	6	9.5	1.07	With	AS*T11T3...
TPO11R100M31.75-11	10.6	100	11	70	31.75	32	63	8	12.7	1.95	With	AS*T11T3...
TPO11R080M27.0E10	10.6	80	10	58	27	22	50	7	12.4	1.05	With	AS*T11T3...
TPO11R100M32.0E11	10.6	100	11	70	32	25	63	8	14.4	2.01	With	AS*T11T3...

SPARE PARTS

Designation	Clamping screw	Lubricant	Shell locking bolt	Wrench
TPO11R040M16.0E06	CSPB-2.5	M-1000	CM8X30H	IP-8D
TPO11R050, 063...	CSPB-2.5	M-1000	CM10X30H	IP-8D
TPO11R080M25.4-10	CSPB-2.5	M-1000	CM12X30H	IP-8D
TPO11R100M31.75-11	CSPB-2.5	M-1000	CM16X40H	IP-8D
TPO11R080M27.0E10	CSPB-2.5	M-1000	CM12X30H	IP-8D
TPO11R100M32.0E11	CSPB-2.5	M-1000	CM16X40H	IP-8D

*Recommended clamping torque (N・m) : CSPB-2.5=1.3

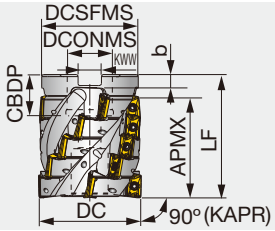
TUNGREC

TLS11

High efficiency square shoulder mill for roughing, for ASMT/ASGT11 inserts

GAMP = +8.7°~ +18°, GAMF = –5.3°~ –19.4°







Designation	APMX	DC	ZEFP	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TLS11R050M22.0E04	48.8	50	4	20	47	60	22	20	10.4	6.3	0.5	With	AS*T11T3...

Note: Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS

Designation	Clamping screw	Lubricant	Shell locking bolt	Wrench
TLS11R050M22.0E04	CSPB-2.5	M-1000	CM10X40H	IP-8D

*Recommended clamping torque (N・m) : CSPB-2.5=1.3

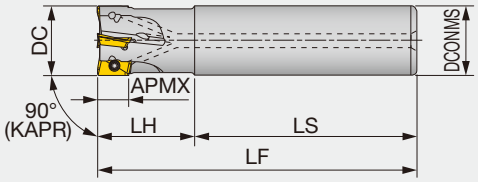
Reference pages: Inserts → H147, Standard cutting conditions → H148 - H149

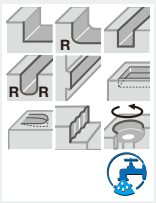
EPO11

High precision square shoulder endmill, shank type, with screw clamp system, for ASMT/ASGT11 inserts

GAMP = +8.7°~ +18°, GAMF = −5.3°~ −19.4°







Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPO11R012M16.0-01	10.6	12	1	16	60	25	85	0.11	With	AS*T11T3...
EPO11R012M16.0-01L	10.6	12	1	16	95	30	125	0.16	With	AS*T11T3...
EPO11R016M16.0-02	10.6	16	2	16	60	25	85	0.12	With	AS*T11T3...
EPO11R016M16.0-02L	10.6	16	2	16	105	40	145	0.2	With	AS*T11T3...
EPO11R018M16.0-02	10.6	18	2	16	60	25	85	0.12	With	AS*T11T3...
EPO11R018M16.0-02L	10.6	18	2	16	105	40	145	0.21	With	AS*T11T3...
EPO11R020M20.0-02	10.6	20	2	20	70	30	100	0.22	With	AS*T11T3...
EPO11R020M20.0-02L	10.6	20	2	20	135	50	185	0.41	With	AS*T11T3...
EPO11R020M20.0-03	10.6	20	3	20	70	30	100	0.21	With	AS*T11T3...
EPO11R022M20.0-02	10.6	22	2	20	70	30	100	0.22	With	AS*T11T3...
EPO11R022M20.0-02L	10.6	22	2	20	155	30	185	0.42	With	AS*T11T3...
EPO11R022M20.0-03	10.6	22	3	20	70	30	100	0.22	With	AS*T11T3...
EPO11R025M25.0-02L	10.6	25	2	25	150	70	220	0.76	With	AS*T11T3...
EPO11R025M25.0-03	10.6	25	3	25	80	35	115	0.39	With	AS*T11T3...
EPO11R025M25.0-04	10.6	25	4	25	80	35	115	0.38	With	AS*T11T3...
EPO11R028M25.0-02L	10.6	28	2	25	185	35	220	0.8	With	AS*T11T3...
EPO11R028M25.0-03	10.6	28	3	25	80	35	115	0.4	With	AS*T11T3...
EPO11R028M25.0-04	10.6	28	4	25	80	35	115	0.39	With	AS*T11T3...
EPO11R030M25.0-02L	10.6	30	2	25	180	40	220	0.8	With	AS*T11T3...
EPO11R030M25.0-03	10.6	30	3	25	80	40	120	0.43	With	AS*T11T3...
EPO11R030M25.0-04	10.6	30	4	25	80	40	120	0.42	With	AS*T11T3...
EPO11R032M32.0-02L	10.6	32	2	32	175	80	255	1.48	With	AS*T11T3...
EPO11R032M32.0-03	10.6	32	3	32	80	40	120	0.68	With	AS*T11T3...
EPO11R032M32.0-05	10.6	32	5	32	80	40	120	0.67	With	AS*T11T3...
EPO11R035M32.0-02L	10.6	35	2	32	215	40	255	1.49	With	AS*T11T3...
EPO11R035M32.0-03	10.6	35	3	32	80	40	120	0.69	With	AS*T11T3...
EPO11R035M32.0-05	10.6	35	5	32	80	40	120	0.67	With	AS*T11T3...
EPO11R040M32.0-02L	10.6	40	2	32	205	50	255	1.53	With	AS*T11T3...
EPO11R040M32.0-04	10.6	40	4	32	80	40	120	0.72	With	AS*T11T3...
EPO11R040M32.0-06	10.6	40	6	32	80	40	120	0.71	With	AS*T11T3...
EPO11R050M32.0-05	10.6	50	5	32	80	40	120	0.83	With	AS*T11T3...
EPO11R050M32.0-07	10.6	50	7	32	80	40	120	0.82	With	AS*T11T3...
EPO11R050M42.0-03L	10.6	50	3	42	310	50	360	3.78	With	AS*T11T3...

SPARE PARTS





Designation	Clamping screw	Lubricant	Wrench
EPO11R012 - 022...	CSPB-2.5S	M-1000	IP-8D
EPO11R025 - 050...	CSPB-2.5	M-1000	IP-8D

*Recommended clamping torque (N・m) : CSPB-2.5/CSPB-2.5S=1.3

Reference pages: Inserts → H147, Standard cutting conditions → H148 - H149

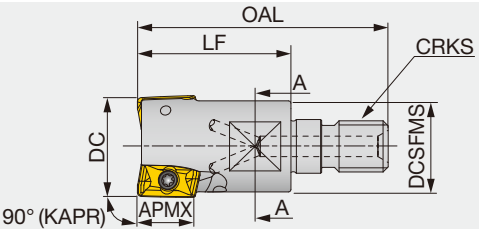
TUNGREC

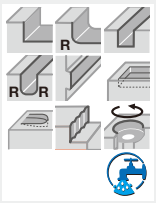
HPO11-M

High precision square shoulder endmill, modular type, for ASMT/ASGT11 inserts (TungFlex)

GAMP = +8.7° ~ +18°, GAMF = -5.3° ~ -19.4°







Designation	APMX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HPO11R020MM10-02	10.6	20	2	49	30	15	17.8	M10	0.06	With	AS*T11T3...
HPO11R025MM12-03	10.6	25	3	57	35	17	20.8	M12	0.1	With	AS*T11T3...
HPO11R032MM16-03	10.6	32	3	63	40	22	28.8	M16	0.2	With	AS*T11T3...

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
HPO11R020MM10-02	CSPB-2.5S	M-1000	IP-8D
HPO11R025, 032...	CSPB-2.5	M-1000	IP-8D

*Recommended clamping torque (N·m)：CSPB-2.5/CSPB-2.5S=1.3

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

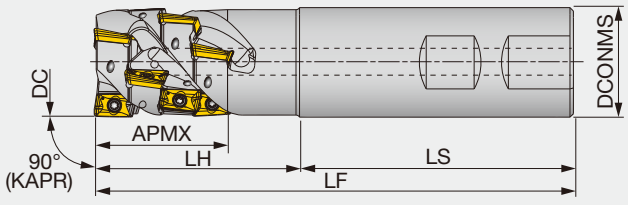
TUNGREC

ELS11

High efficiency roughing endmill, shank type, for ASMT/ASGT11 inserts

GAMP = +8.7° ~ +18°, GAMF = -5.3° ~ -19.4°







Designation	APMX	DC	ZEFP	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
ELS11R025M25.0W02	30.4	25	2	6	25	80	40	120	0.4	With	AS*T11T3...
ELS11R032M32.0W03	39.4	32	3	12	32	80	60	140	0.8	With	AS*T11T3...
ELS11R040M42.0W03	40	40	3	12	42	90	60	150	1.4	With	AS*T11T3...

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
ELS11...	CSPB-2.5	M-1000	IP-8D

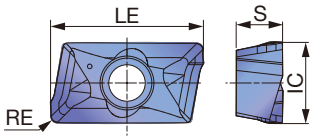
*Recommended clamping torque (N·m)：CSPB-2.5=1.3

Reference pages: Inserts → H147, Standard cutting conditions → H148 - H149, Tung Flex → H206

INSERT

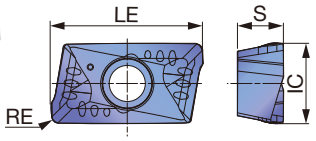
ASMT11-MJ





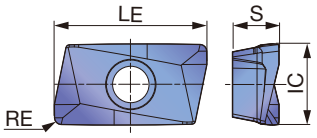
ASMT11-MS





ASGT11-AJ





		Coated							Cermet		Uncoated					
		AH120	AH130	AH140	AH725	T1115	T1215	T3130	DS1100	NS740		KS05F				
P	Steel	☆			★			★		★						
M	Stainless		★	★	☆											
K	Cast iron	★			☆	☆	★									
N	Non-ferrous								★			★				
S	Superalloys	★	★		★											
H	Hard materials															

★ : First choice
☆ : Second choice

Designation	RE	APMX	LE	IC	S
ASMT11T304PDPR-MJ	0.4	10.6	12.3	6.7	3.7
ASMT11T308PDPR-MJ	0.8	10.6	12.3	6.7	3.7
ASMT11T312PDPR-MJ	1.2	10.6	12.3	6.7	3.7
ASMT11T316PDPR-MJ	1.6	10.6	12.3	6.7	3.7
ASMT11T320PDPR-MJ	2	10.6	12.3	6.7	3.7
ASMT11T330PDPR-MJ	3	10.6	12.3	6.7	3.7
ASMT11T304PDPR-MS	0.4	10.6	12.3	6.7	3.7
ASGT11T304PDFR-AJ	0.4	10.6	12.3	6.7	3.7
ASGT11T308PDFR-AJ	0.8	10.6	12.3	6.7	3.7

●: Line up

STANDARD CUTTING CONDITIONS

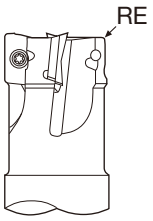
TPO11/EPO11/HPO11 type

ISO	Workpiece material	Brinell hardness HB	Priority	Grade	Cutting speed: *Vc* (m/min)	Feed per tooth: *fz* (mm/t) MJ	MS	AJ
P	Low carbon steel S15C, etc. C15E4, etc.	~ 200	First choice	AH725	100 - 250	0.1 - 0.2	-	-
		~ 200	Wear resistance	T3130	100 - 250	0.1 - 0.2	-	-
		~ 200	Surface quality	NS740	100 - 250	0.05 - 0.15	-	-
	High carbon steel and alloy steel S55C, SCM440, etc. C55, 42CrMo4, etc.	200 ~ 300	First choice	AH725	100 - 200	0.1 - 0.15	-	-
		200 ~ 300	Wear resistance	T3130	100 - 200	0.1 - 0.15	-	-
		200 ~ 300	Surface quality	NS740	100 - 200	0.05 - 0.12	-	-
	Tool steel SKD11, etc. X153CrMoV12, etc.	150 ~ 300	First choice	AH725	100 - 150	0.1 - 0.15	-	-
		150 ~ 300	Wear resistance	T3130	100 - 150	0.1 - 0.15	-	-
M	Stainless steel SUS304, etc. X5CrNi18-9, etc.	-	-	AH130	80 - 200	-	0.08 - 0.2	-
K	Grey cast irons FC250, etc. 250, etc.	150 ~ 250	First choice	AH120	100 - 250	0.12 - 0.2	-	-
		150 ~ 250	Wear resistance	T1215 T1115	100 - 250	0.12 - 0.2	-	-
	Ductile cast irons FCD450, etc. 450-10S, etc.	150 ~ 250	First choice	AH120	80 - 200	0.12 - 0.2	-	-
		150 ~ 250	Wear resistance	T1215 T1115	80 - 200	0.12 - 0.2	-	-
N	Aluminium alloys Si < 13%	-	-	DS1100	300 - 1000	-	-	0.05 - 0.2
	Aluminium alloys Si ≥ 13%	-	-	DS1100	100 - 200	-	-	0.05 - 0.2
	Copper alloys	-	-	KS05F	200 - 500	-	-	0.05 - 0.2
S	Titanium alloys Ti-6Al-4V, etc.	-	-	AH130	20 - 60	-	0.08 - 0.15	-
	Superalloys Inconel 718, etc.	-	-	AH725	20 - 40	0.08 - 0.13	-	-

CAUTIONARY POINT IN MODIFYING CUTTER BODIES

When using inserts with corner radius RE ≥ 2.0 mm, standard cutter bodies have to be modified “R”. (Only for TPO11, EPO11, TLS11, ELS11, HPO11)

About roughing type TLS11, ELS11
From 2nd row onwards, please use insert with RE= 0.4 or 0.8 mm



Corner radius RE (mm)	The dimension of modifying (mm)
0.4 ~ 1.6	Unnecessary
2.0 ~ 3.2	2

STANDARD CUTTING CONDITIONS

Roughing type TLS11 / ELS11

ISO	Workpiece material	Brinell hardness HB	Priority	Grade	Cutting speed: *Vc* (m/min)	Feed per tooth: *fz* (mm/t) MJ	MS	AJ
P	Low carbon steel S15C, etc. C15E4, etc.	~ 200	First choice	AH725	100 - 250	0.10 - 0.18	-	-
		~ 200	Wear resistance	T3130	100 - 250	0.10 - 0.18	-	-
	High carbon steel and alloy steel S55C, SCM440, etc. C55, 42CrMo4, etc.	200 ~ 300	First choice	AH725	100 - 200	0.08 - 0.14	-	-
		200 ~ 300	Wear resistance	T3130	100 - 200	0.08 - 0.14	-	-
	Tool steel SKD11, etc. X153CrMoV12, etc.	150 ~ 300	First choice	AH725	100 - 200	0.08 - 0.14	-	-
		150 ~ 300	Wear resistance	T3130	100 - 200	0.08 - 0.14	-	-
M	Stainless steel SUS304, etc. X5CrNi18-9, etc.	-	-	AH130	100 - 150	-	0.08 - 0.15	-
K	Grey cast irons FC250, etc. 250, etc.	150 ~ 250	First choice	AH120	100 - 250	0.10 - 0.18	-	-
		150 ~ 250	Wear resistance	T1215 T1115	100 - 250	0.10 - 0.18	-	-
	Ductile cast irons FCD450, etc. 450-10S, etc.	150 ~ 250	First choice	AH120	80 - 200	0.10 - 0.18	-	-
		150 ~ 250	Wear resistance	T1215 T1115	80 - 200	0.10 - 0.18	-	-
N	Aluminium alloys Si < 13%	-	-	DS1100	200 - 500	-	-	0.05 - 0.18
	Aluminium alloys Si ≥ 13%	-	-	DS1100	100 - 200	-	-	0.05 - 0.18
S	Titanium alloys Ti-6Al-4V, etc.	-	-	AH130	20 - 60	-	0.08 - 0.14	-
	Superalloys Inconel718, etc.	-	-	AH725	20 - 40	0.06 - 0.12	-	-

· To remove excessive chip accumulation use an air blast.
· To avoid build up edge on the cutting edges (aluminium machining), use a water soluble coolant.
· When cutting an interrupted surface or a casted skin, the feed per tooth (*fz*) should be reduced to the lower recommended value shown in the above table.
· Cutting conditions are limited by machine power, workpiece rigidity, and spindle output. When the cutting width, depth, or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

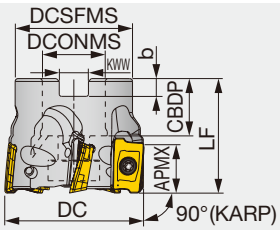
TUNGREC

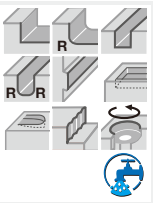
TPO18

High precision square shoulder mill, with screw clamp system, for AOMT/AOGT18 inserts

GAMP = +14° ~ +17°, GAMF = +22° ~ +31°







Designation	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TPO18R040M16.0-04	16.7	40	4	35	40	16	18	8.2	5.6	0.2	With	AO*T1805...
TPO18R040M16.0E04	16.7	40	4	35	40	16	18	8.4	5.6	0.2	With	AO*T1805...
TPO18R050M22.0-05	16.7	50	5	41	40	22	20	10	6	0.2	With	AO*T1805...
TPO18R050M22.0E05	16.7	50	5	41	40	22	20	10.4	6.3	0.3	With	AO*T1805...
TPO18R063M22.0-06	16.7	63	6	41	40	22	20	10	6	0.4	With	AO*T1805...
TPO18R063M22.0E06	16.7	63	6	41	40	22	20	10.4	6.3	0.5	With	AO*T1805...
TPO18R080M25.4-07	16.7	80	7	46	50	25.4	26	9.5	6	0.8	With	AO*T1805...
TPO18R080M27.0E07	16.7	80	7	50	50	27	22	12.4	7	10	With	AO*T1805...
TPO18R100M31.7-08	16.7	100	8	60	50	31.75	32	12.7	8	1.2	With	AO*T1805...
TPO18R100M32.0E08	16.7	100	8	60	50	32	28.5	14.4	8	1.4	With	AO*T1805...
TPO18R125M38.1-09	16.7	125	9	80	63	38.1	38	15.9	10	2.8	With	AO*T1805...
TPO18R125M40.0E09	16.7	125	9	71	63	40	32	16.4	9	2.8	With	AO*T1805...
TPO18R160M40.0E10	16.7	160	10	100	63	40	29	16.4	9	4.9	Without	AO*T1805...
TPO18R160M50.8-10	16.7	160	10	100	63	50.8	46	19	11	4.9	Without	AO*T1805...

Approach angle

10°-20°
45°
70°
85°
88°
90°
Others

SPARE PARTS







Designation	Clamping screw	Grip	Shell locking bolt 1	Shell locking bolt 2	Torx bit
TPO18R040M...	CSTB-4L093	H-TBS	-	FSHM8-30H	BT15M
TPO18R050M...	CSTB-4L093	H-TBS	-	CM10X30H	BT15M
TPO18R063M...	CSTB-4L093	H-TBS	-	CM10X30H	BT15M
TPO18R080M...	CSTB-4L120	H-TBS	-	CM12X30H	BT15M
TPO18R100M...	CSTB-4L120	H-TBS	TMBA-M16H	-	BT15M
TPO18R125M...	CSTB-4L120	H-TBS	TMBA-M20H	-	BT15M
TPO18R160M...	CSTB-4L120	H-TBS	-	-	BT15M

*Recommended clamping torque (N·m)：CSTB-4L093=3.5, CSTB-4L120=3.5

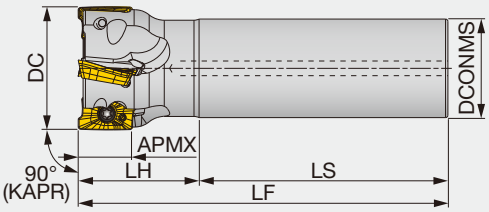
Reference pages: Inserts, Standard cutting conditions → H152

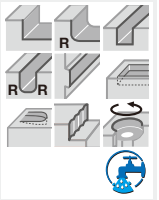
EPO18

High precision square shoulder endmill, shank type, with screw clamp system, for AOMT/AOGT18 inserts

GAMP = +14° ~ +17°, GAMF = +22° ~ +31°







Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPO18R025M25.0-02	16.7	25	2	25	80	35	115	0.4	With	AO*T1805...
EPO18R025M25.0-02L	16.7	25	2	25	150	70	220	0.8	With	AO*T1805...
EPO18R028M25.0-02	16.7	28	2	25	80	35	115	0.4	With	AO*T1805...
EPO18R028M25.0-02L	16.7	28	2	25	150	70	220	0.8	With	AO*T1805...
EPO18R030M32.0-02	16.7	30	2	32	80	40	120	0.6	With	AO*T1805...
EPO18R030M32.0-02L	16.7	30	2	32	175	80	255	1.4	With	AO*T1805...
EPO18R030M32.0-03	16.7	30	3	32	80	40	120	0.6	With	AO*T1805...
EPO18R032M32.0-02	16.7	32	2	32	80	40	120	0.7	With	AO*T1805...
EPO18R032M32.0-02L	16.7	32	2	32	175	80	255	1.5	With	AO*T1805...
EPO18R032M32.0-03	16.7	32	3	32	80	40	120	0.6	With	AO*T1805...
EPO18R035M32.0-02	16.7	35	2	32	80	40	120	0.7	With	AO*T1805...
EPO18R035M32.0-02L	16.7	35	2	32	175	80	255	1.5	With	AO*T1805...
EPO18R035M32.0-03	16.7	35	3	32	80	40	120	0.7	With	AO*T1805...
EPO18R040M32.0-02L	16.7	40	2	32	205	50	255	1.6	With	AO*T1805...
EPO18R040M32.0-03	16.7	40	3	32	80	40	120	0.7	With	AO*T1805...
EPO18R040M32.0-04	16.7	40	4	32	80	40	120	0.7	With	AO*T1805...
EPO18R040M42.0-02L	16.7	40	2	42	210	100	310	3	With	AO*T1805...
EPO18R050M32.0-03	16.7	50	3	32	80	40	120	0.8	With	AO*T1805...
EPO18R050M32.0-05	16.7	50	5	32	80	40	120	0.8	With	AO*T1805...
EPO18R050M42.0-03L	16.7	50	3	42	310	50	360	3.8	With	AO*T1805...
EPO18R063M32.0-04	16.7	63	4	32	80	45	125	1	With	AO*T1805...
EPO18R063M32.0-06	16.7	63	6	32	80	45	125	1.1	With	AO*T1805...
EPO18R063M42.0-03L	16.7	63	3	42	310	50	360	4	With	AO*T1805...

*The DC above is the diameter when using MJ chipbreaker. With AJ chipbreaker, the tool diameter is (DC above + 0.2 mm).

SPARE PARTS





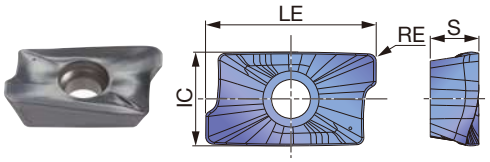
Designation	Clamping screw	Wrench
EPO18R025 - 030...	CSTB-4L085	T-15DB
EPO18R032 - 050...	CSTB-4L093	T-15DB
EPO18R063M...	CSTB-4L120	T-15DB

*Recommended clamping torque N·m)：CSTB-4L085=3.5, CSTB-4L093=3.5, CSTB-4L120=3.5

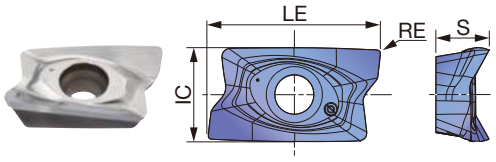
Reference pages: Inserts, Standard cutting conditions → H152

INSERT

AOMT18-MJ



AOGT18-AJ



		Coated		Uncoated
P	Steel		★	
M	Stainless	★	☆	
K	Cast iron		★	
N	Non-ferrous			★
S	Superalloys		★	
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH140	Coated AH725	Uncoated KS15F	LE	IC	S
AOMT180508PDPR-MJ	0.8	16.7	●	●		19.5	10.7	5.6
AOMT180516PDPR-MJ	1.6	16.7	●	●		19.5	10.7	5.6
AOMT180524PDPR-MJ	2.4	16.7	●	●		19.5	10.7	5.6
AOMT180532PDPR-MJ	3.2	16.7	●	●		19.5	10.7	5.6
AOGT180504PDFR-AJ	0.4	16.7			●	19.8	10.8	6.1
AOGT180508PDFR-AJ	0.8	16.7			●	19.8	10.8	6.1

●: Line up

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

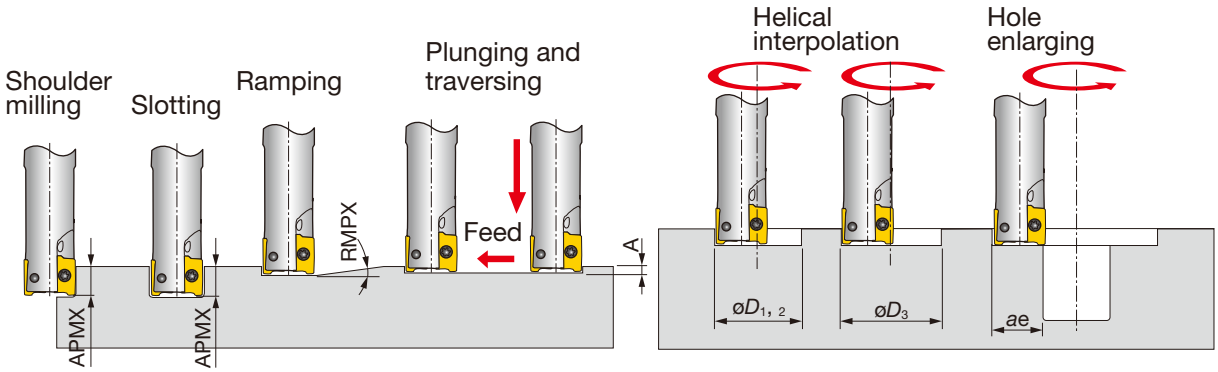
STANDARD CUTTING CONDITIONS

TPO18/EPO18 type

ISO	Workpiece material	Brinell hardness HB	Priority	Cutting speed: *Vc* (m/min)	Feed per tooth: *fz* (mm/t) MJ	Feed per tooth: *fz* (mm/t) AJ
P	Low carbon steel S15C, etc. C15E4, etc.	~ 200	AH725	100 - 250	0.08 - 0.25	-
P	High carbon steel and alloy steel S55C, SCM440, etc. C55, 42CrMo4, etc.	200 ~ 300	AH725	100 - 230	0.08 - 0.2	-
P	Tool steel SKD11, etc. X153CrMoV12, etc.	150 ~ 300	AH725	100 - 180	0.08 - 0.2	-
M	Stainless steel SUS304, etc. X5CrNi18-9, etc.	-	AH140	90 - 200	0.08 - 0.2	-
K	Grey cast irons FC250, etc. 250, etc.	150 ~ 250	AH725	140 - 250	0.08 - 0.25	-
K	Ductile cast irons FCD450, etc. 450-10S, etc.	150 ~ 250	AH725	110 - 200	0.08 - 0.25	-
N	Aluminium alloys Si < 13%	-	KS15F	300 - 1000	-	0.05 - 0.25
N	Aluminium alloys Si ≥ 13%	-	KS15F	100 - 200	-	0.05 - 0.25
S	Titanium alloys Ti-6Al-4V, etc.	-	AH725	20 - 60	0.08 - 0.18	-
S	Superalloys Inconel718, etc.	-	AH725	20 - 40	0.08 - 0.15	-

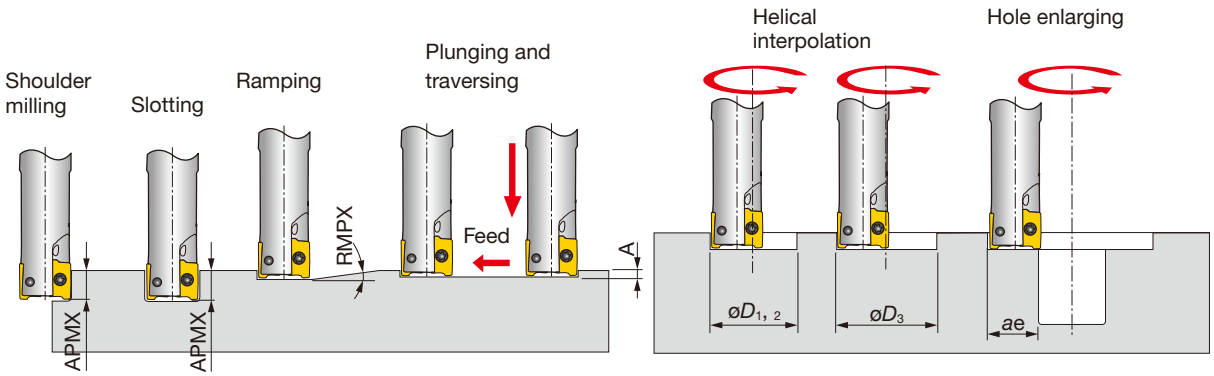
· To remove excessive chip accumulation use an air blast.
· To avoid build up edge on the cutting edges (aluminium machining), use a water soluble coolant.
· When cutting an interrupted surface or a casted skin, the feed per tooth (fz) should be reduced to the lower recommended value shown in the above table.
· Cutting conditions are limited by machine power, workpiece rigidity, and spindle output. When the cutting width, depth, or overhang length is large, set Vc and fz to the lower recommended values and check the machine power and vibration.

APPLICATION RANGE



Designation	Tool dia. DC	Chipbreaker	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Min. machining øD1	Max. machining øD2	Max. machining øD3*	Max. cutting width in enlarging ae
E/HPO07R012…	12	MJ	7	8°	0.5	16	23	20.5	11.5
E/HPO07R016…	16	MJ	7	5°	0.5	24	31	28.5	15.5
EPO07R018...	18	MJ	7	4°	0.5	28	35	32.5	17.5
E/HPO07R020...	20	MJ	7	3.5°	0.5	32	39	36.5	19.5
EPO07R022...	22	MJ	7	3°	0.5	36	43	40.5	21.5
E/HPO07R025...	25	MJ	7	2.5°	0.5	42	49	46.5	24.5
EPO07R028...	28	MJ	7	2°	0.5	48	55	52.5	27.5
TPO07R032…	32	MJ	7	1.8°	0.5	56	63	60.5	31.5
TPO07R040	40	MJ	7	1.2°	0.5	72	79	76.5	39.5
TPO07R050…	50	MJ	7	0.9°	0.5	92	99	96.5	49.5
E/HPO07R012…	12	AJ	6.4	8°	0.5	16	23	20.5	11.5
E/HPO07R016…	16	AJ	6.4	5°	0.5	24	31	28.5	15.5
EPO07R018...	18	AJ	6.4	4°	0.5	28	35	32.5	17.5
E/HPO07R020...	20	AJ	6.4	3.5°	0.5	32	39	36.5	19.5
EPO07R022...	22	AJ	6.4	3°	0.5	36	43	40.5	21.5
E/HPO07R025...	25	AJ	6.4	2.5°	0.5	42	49	46.5	24.5
EPO07R028...	28	AJ	6.4	2°	0.5	48	55	52.5	27.5
TPO07R032…	32	AJ	6.4	1.8°	0.5	56	63	60.5	31.5
TPO07R040	40	AJ	6.4	1.2°	0.5	72	79	76.5	39.5
TPO07R050…	50	AJ	6.4	0.9°	0.5	92	99	96.5	49.5
E/HPO07R012…	12.6	HJ	0.8	5°	0.5	17	24	-	9.6
E/HPO07R016…	16.6	HJ	0.8	3°	0.5	25	32	-	13.6
EPO07R018...	18.6	HJ	0.8	2.5°	0.5	29	36	-	15.6
E/HPO07R020...	20.6	HJ	0.8	2.1°	0.5	33	40	-	17.6
EPO07R022...	22.6	HJ	0.8	1.9°	0.5	37	44	-	19.6
E/HPO07R025...	25.6	HJ	0.8	1.6°	0.5	43	50	-	22.6
EPO07R028...	28.6	HJ	0.8	1.3°	0.5	49	56	-	25.6
TPO07R032…	32.6	HJ	0.8	1.1°	0.5	57	64	-	29.6
TPO07R040	40.6	HJ	0.8	0.8°	0.5	73	80	-	37.6
TPO07R050…	50.6	HJ	0.8	0.6°	0.5	93	100	-	47.6
EPO11R012…	12	MJ, MS, AJ	10.6	6°	0.5	15	23	21	11.5
EPO11R016…	16	MJ, MS, AJ	10.6	5°	0.5	20	31	29	15.5
EPO11R018…	18	MJ, MS, AJ	10.6	4°	0.5	26	35	33	17.5
E/HPO11R020…	20	MJ, MS, AJ	10.6	3°	0.5	28	39	37	19.5
EPO11R022...	22	MJ, MS, AJ	10.6	2.5°	0.5	31	43	41	21.5

APPLICATION RANGE



Designation	Tool dia. DC	Chipbreaker	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Min. machining øD1	Max. machining øD2	Max. machining øD3*	Max. cutting width in enlarging ae
E/HPO11R025…	25	MJ, MS, AJ	10.6	2°	0.5	38	49	47	24.5
EPO11R028...	28	MJ, MS, AJ	10.6	1.5°	0.5	42	53	51	27.5
EPO11R030…	30	MJ, MS, AJ	10.6	1.5°	0.5	48	55	53	29.5
E/HPO11R032…	32	MJ, MS, AJ	10.6	1.5°	0.5	52	59	57	31.5
EPO11R035…	35	MJ, MS, AJ	10.6	1°	0.5	56	67	65	34.5
E/TPO11R040…	40	MJ, MS, AJ	10.6	1°	0.5	68	79	77	39.5
TPO11R050…	50	MJ, MS, AJ	10.6	0.7°	0.5	68	99	97	49.5
TPO11R063…	63	MJ, MS, AJ	10.6	0.5°	0.5	114	125	123	62.5
TPO11R080…	80	MJ, MS, AJ	10.6	0.4°	0.5	148	159	157	79.5
TPO11R100…	100	MJ, MS, AJ	10.6	0.3°	0.5	188	199	197	99.5
EPO18R025...	25	MJ, AJ	16.7	6°	1	32	48	44	24
EPO18R028...	28	MJ, AJ	16.7	4.5°	1	38	54	50	27
EPO18R030…	30	MJ, AJ	16.7	4°	1	42	58	54	29
EPO18R032…	32	MJ, AJ	16.7	3.5°	1	46	62	58	31
EPO18R035…	35	MJ, AJ	16.7	3°	1	52	68	64	34
E/TPO18R040…	40	MJ, AJ	16.7	2.5°	1	62	78	74	39
E/TPO18R050…	50	MJ, AJ	16.7	1.9°	1	82	98	94	49
E/TPO18R063	63	MJ, AJ	16.7	1.4°	1	108	124	120	62
TPO18R080…	80	MJ, AJ	16.7	1°	1	142	158	154	79
TPO18R100…	100	MJ, AJ	16.7	0.8°	1	182	198	194	99
TPO18R125…	125	MJ, AJ	16.7	0.6°	1	232	248	244	124
TPO18R160…	160	MJ, AJ	16.7	0.4°	1	302	318	314	159

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

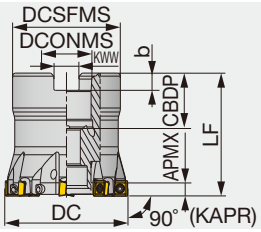
*Flat bottom hole
Note: Corner r_ε for dimensions of øD_1, øD_2, and øD_3: RE = 0.4 for EPO07 / EPO11 and RE = 0.8 for EPO18.

TUNGQUAD
TPD05

High density square shoulder mill, with screw clamp system, for SDMT/SDHT05 inserts

GAMP = +5°, GAMF = -7° ~ +12°





Right hand (R) shown.

Designation	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TPD05R032M16.0E06	4	32	6	30	32	16	20	8.4	5.6	0.1	With	SD*T0502...
TPD05R040M22.0E08	4	40	8	38	40	22	22	10.4	6.3	0.2	With	SD*T0502...

SPARE PARTS

Designation	Clamping screw	Shell locking bolt	Wrench
TPD05R032M16.0E06	CSPB-2L043	CM8X30H	IP-6DB
TPD05R040M22.0E08	CSPB-2L043	CM10X30H	IP-6DB

*Recommended clamping torque (N·m) : CSPB-2L043=0.7

TUNGQUAD
EPD05

High density square shoulder endmill, shank type, with screw clamp system, for SDMT/SDHT05 inserts

GAMP = +5°, GAMF = -7° ~ +12°



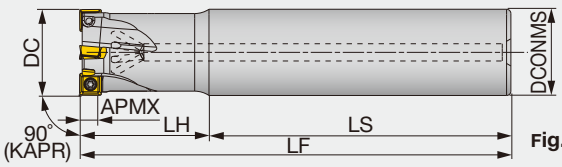


Fig. 1

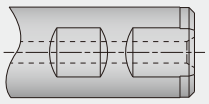


Fig. 2

Right hand (R) shown.

Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Shank	Insert	Shank type
EPD05R012M12.0-02	4	12	2	12	62	18	80	0.1	With	Straight	SD*T0502...	Fig .1
EPD05R016M16.0-03	4	16	3	16	90	20	110	0.2	With	Straight	SD*T0502...	Fig .1
EPD05R020M20.0W04	4	20	4	20	80	25	105	0.2	With	Weldon	SD*T0502...	Fig .2
EPD05R025M20.0W05	4	25	5	20	90	25	115	0.3	With	Weldon	SD*T0502...	Fig .2
EPD05R032M25.0W06	4	32	6	25	98	32	130	0.5	With	Weldon	SD*T0502...	Fig .2
EPD05R040M32.0W08	4	40	8	32	100	40	140	0.8	With	Weldon	SD*T0502...	Fig .2

SPARE PARTS

Designation	Clamping screw	Wrench
EPD05...	CSPB-2L043	IP-6DB

*Recommended clamping torque (N·m) : CSPB-2L043=0.7

Reference pages: Inserts → H157, Standard cutting conditions → H158 - H159

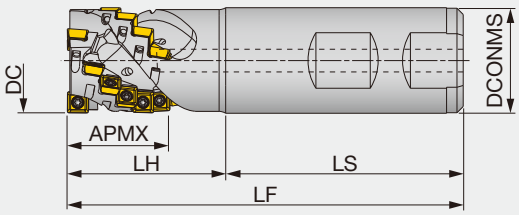
TUNGQUAD

ELD05

High density square shoulder endmill for roughing, shank type, with screw clamp system, for SDMT/SDHT05 inserts

GAMP = +5°, GAMF = -3°





Designation	APMX	DC	ZEFP	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
ELD05R020M20.0W02	20.3	20	2	10	20	53	32	85	0.2	With	SD*T0502...
ELD05R025M25.0W03	24.2	25	3	18	25	59	36	95	0.3	With	SD*T0502...

SPARE PARTS

Designation	Clamping screw	Wrench
ELD05...	CSPB-2L043	IP-6DB

*Recommended clamping torque (N·m)：CSPB-2L043=0.7

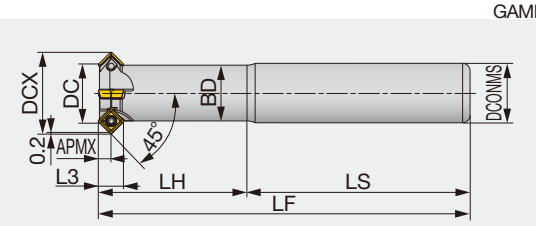
TUNGQUAD

EASD05

Chamfering endmill, for SDMT/SDHT05 inserts

GAMP = +5°, GAMF = -7° ~ +12°





Designation	DCX	CICT	*DC	BD	APMX	DCONMS	LH	L3	LS	LF	Insert
EASD05M006C12.0R01	12	1	5.7	7.5	3	12	40	6.8	60	100	SD*T0502...
EASD05M008C12.0R02	14	2	7.8	9.1	3	12	40	6.8	60	100	SD*T0502...
EASD05M016C16.0R04	22	4	15.7	15	3	16	40	6.8	60	100	SD*T0502...

The minimum chamfering diameter (DC) measures up to the point where the insert's nose radius ends.
This will offset the total tool length by shortening 0.3 mm.

SPARE PARTS

Designation	Clamping screw	Wrench
EASD05...	CSPB-2L043	IP-6DB

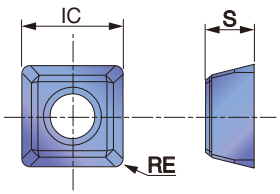
*Recommended clamping torque (N·m)：CSPB-2L043=0.7

Reference pages: Inserts → H157, Standard cutting conditions → H158 - H159

INSERT

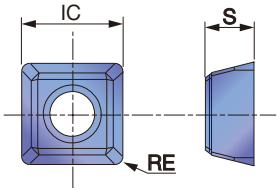
SDMT05-MJ





SDHT05-AJ





		AH140	AH725	TH10
P	Steel		★	
M	Stainless	★	☆	
K	Cast iron		★	
N	Non-ferrous			★
S	Superalloys		★	
H	Hard materials			

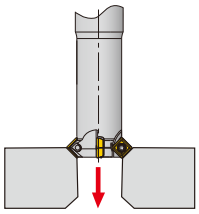
★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH140	Coated AH725	Uncoated TH10	S	IC
SDMT050204PN-MJ	0.4	4	●	●		2.38	5.09
SDHT050204FN-AJ	0.4	4			●	2.39	5.09

●: Line up

CUTTING PERFORMANCE

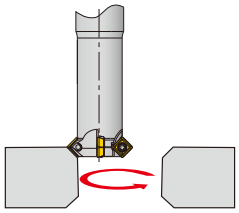
Chamfering & countersinking



■ C2.5 (45° x 2.5 mm)
Workpiece material: S55C / C55

Designation	Cutting speed *Vc* (m/min)	Feed rate *fz* (mm/z)
EASD05M006C12.0R01	80 - 120	0.03 - 0.08
EASD05M008C12.0R02	80 - 120	0.03 - 0.08
EASD05M016C16.0R04 (*z=2)	80 - 120	0.03 - 0.08

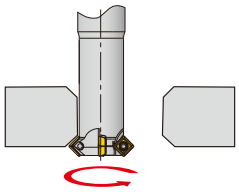
Interpolated chamfering



■ C2.5 (45° x 2.5 mm)
Workpiece material: S55C / C55

Designation	Cutting speed *Vc* (m/min)	Feed rate *fz* (mm/z)
EASD05M006C12.0R01	80 - 120	0.08 - 0.12
EASD05M008C12.0R02	80 - 120	0.08 - 0.12
EASD05M016C16.0R04	80 - 120	0.08 - 0.12

Back chamfering



■ C1.0 (45° x 1.0 mm)
Workpiece material: S55C / C55

Designation	Cutting speed *Vc* (m/min)	Feed rate *fz* (mm/z)
EASD05M006C12.0R01	80 - 120	0.08 - 0.12
EASD05M008C12.0R02	80 - 120	0.08 - 0.12
EASD05M016C16.0R04	80 - 120	0.08 - 0.12

Reference pages: Inserts → H157, Standard cutting conditions → H158 - H159

STANDARD CUTTING CONDITIONS

Bore, shank type TPD05/EPD05

ISO	Workpiece material	Brinell hardness HB	Grade	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steels S15C / C15E4, etc.	~ 200	AH725	230 - 320	0.04 - 0.1
P	High carbon steels S45C / C45, etc.	200 ~ 300	AH725	150 - 230	0.04 - 0.1
P	Alloyed steels SCM440 / 42CrMo4, etc.	150 ~ 300	AH725	150 - 230	0.04 - 0.1
P	Tool steels SKD11 / X153CrMoV12, etc.	~ 300	AH725	110 - 130	0.03 - 0.09
M	Stainless steels SUS304 / X5CrNi18-9, etc.	-	AH140	100 - 200	0.03 - 0.09
K	Grey cast irons FC250 / 250, etc.	150 ~ 250	AH725	200 - 300	0.05 - 0.12
K	Ductile cast irons FCD450 / 450-10S, etc.	150 ~ 250	AH725	160 - 240	0.05 - 0.12
N	Aluminium alloys Si < 13%	-	TH10	350 - 500	0.05 - 0.15
N	Aluminium alloys Si ≥ 13%	-	TH10	100 - 200	0.05 - 0.15

* For deep and wide cutting, set the *Vc* and *fz* to the lower recommended limits and check the vibration and spindle load of the machine.

Roughing type ELD05

ISO	Workpiece material	Brinell hardness HB	Grade	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steels S15C / C15E4, etc.	~ 200	AH725	100 - 250	0.04 - 0.1
P	High carbon steels S45C / C45, etc.	200 ~ 300	AH725	100 - 200	0.04 - 0.1
P	Alloyed steels SCM440 / 42CrMo4, etc.	150 ~ 300	AH725	100 - 200	0.04 - 0.1
P	Tool steels SKD11 / X153CrMoV12, etc.	~ 300	AH725	100 - 130	0.03 - 0.09
M	Stainless steels SUS304 / X5CrNi18-9, etc.	-	AH140	100 - 150	0.03 - 0.09
K	Grey cast irons FC250 / 250, etc.	150 ~ 250	AH725	100 - 250	0.05 - 0.12
K	Ductile cast irons FCD450 / 450-10S, etc.	150 ~ 250	AH725	80 - 200	0.05 - 0.12
N	Aluminium alloys Si < 13%	-	TH10	200 - 500	0.05 - 0.15
N	Aluminium alloys Si ≥ 13%	-	TH10	100 - 200	0.05 - 0.15

Interpolated or back chamfering type

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steels S15C / C15E4, etc.	AH725	230 ~ 320	0.04 ~ 0.1
P	High carbon steels S45C / C45, etc.	AH725	150 ~ 230	0.04 ~ 0.1
P	Alloyed steels SCM440 / 42CrMo4, etc.	AH725	150 ~ 230	0.04 ~ 0.1
P	Tool steels SKD11 / X153CrMoV12, etc.	AH725	110 ~ 130	0.03 ~ 0.09
M	Stainless steels SUS304 / X5CrNi18-9, etc.	AH140	100 ~ 200	0.03 ~ 0.09
K	Grey cast irons FC250 / 250, etc.	AH725	150 ~ 250	0.05 ~ 0.12
K	Ductile cast irons FCD450 / 450-10S, etc.	AH725	100 ~ 180	0.05 ~ 0.12
N	Aluminium alloys Si < 13%	TH10	350 ~ 500	0.05 ~ 0.15
N	Copper alloys	TH10	100 ~ 200	0.05 ~ 0.15

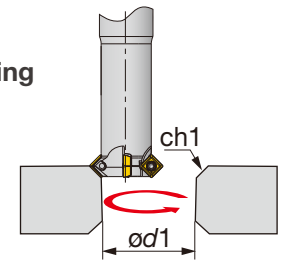
Front chamfering type

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steels S15C / C15E4, etc.	AH725	160 ~ 220	0.04 ~ 0.1
P	High carbon steels S45C / C45, etc.	AH725	110 ~ 160	0.04 ~ 0.1
P	Alloyed steels SCM440 / 42CrMo4, etc.	AH725	110 ~ 160	0.04 ~ 0.1
P	Tool steels SKD11 / X153CrMoV12, etc.	AH725	80 ~ 90	0.03 ~ 0.09
M	Stainless steels SUS304 / X5CrNi18-9, etc.	AH140	70 ~ 140	0.03 ~ 0.09
K	Grey cast irons FC250 / 250, etc.	AH725	110 ~ 180	0.05 ~ 0.12
K	Ductile cast irons FCD450 / 450-10S, etc.	AH725	70 ~ 130	0.05 ~ 0.12
N	Aluminium alloys Si < 13%	TH10	250 ~ 350	0.05 ~ 0.15
N	Copper alloys	TH10	70 ~ 140	0.05 ~ 0.15

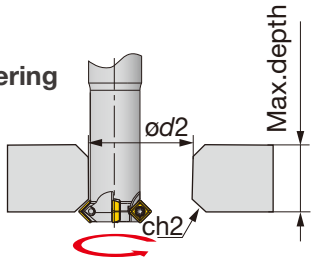
* When chamfering over C1.0 (45° x 1.0 mm), decrease the cutting parameters to 70% of the above parameters.

APPLICATION RANGE

Front chamfering



Back chamfering



Designation	Minimum hole diameter to be chamfered (mm)		Maximum chamfer dimension (at 45°) (mm)		Maximum reachable hole distance when back chamfering (mm)
	Front-chamfer ø*d*1	Back-chamfer ø*d*2	Front ch1	Back ch2	Max. depth
EASD05M006C12.0R01	5.7	12.5	2.9 x 2.9	2 x 2	18.2
EASD05M008C12.0R02	7.8	14.5	2.9 x 2.9	1.5 x 1.5	33.2
EASD05M016C16.0R04	15.8	22.5	2.9 x 2.9	2.8 x 2.8	43.2

TUNGMILL

TPW13

Square shoulder mill, with screw clamp system, for SWMT/SWGT13 inserts

GAMP = +11.5°, GAMF = -13° ~ -10.5°



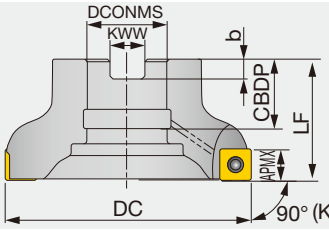


Fig. 1

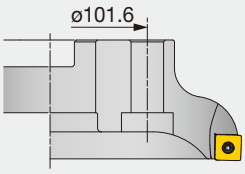


Fig. 2

Right hand (R) shown.

Designation	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert	Fig.
TPW13R050M22.0-03	10	50	3	40	22	20	10	6	0.3	With	SW*T1304...	1
TPW13R050M22.0-04	10	50	4	40	22	20	10	6	0.3	With	SW*T1304...	1
TPW13R050M22.0E04	10	50	4	40	22	20	10.4	6.3	0.3	With	SW*T1304...	1
TPW13R050M22.0E05	10	50	5	40	22	20	10.4	6.3	0.3	With	SW*T1304...	1
TPW13R063M22.0-04	10	63	4	40	22	20	10	6	0.5	With	SW*T1304...	1
TPW13R063M22.0-05	10	63	5	40	22	20	10	6	0.5	With	SW*T1304...	1
TPW13R063M22.0E05	10	63	5	40	22	20	10.4	6.3	0.4	With	SW*T1304...	1
TPW13R063M22.0E06	10	63	6	40	22	20	10.4	6.3	0.4	With	SW*T1304...	1
TPW13R080M25.4-04	10	80	4	50	25.4	26	9.5	6	0.8	With	SW*T1304...	1
TPW13R080M25.4-06	10	80	6	50	25.4	26	9.5	6	0.8	With	SW*T1304...	1
TPW13R080M27.0E06	10	80	6	50	27	22	12.4	7	0.8	With	SW*T1304...	1
TPW13R080M27.0E08	10	80	8	50	27	22	12.4	7	0.8	With	SW*T1304...	1
TPW13R100M31.7-05	10	100	5	50	31.75	38	12.7	8	1.2	With	SW*T1304...	1
TPW13R100M31.7-07	10	100	7	50	31.75	38	12.7	8	1.2	With	SW*T1304...	1
TPW13R100M32.0E07	10	100	7	50	32	28.5	14.4	8	1.2	With	SW*T1304...	1
TPW13R100M32.0E10	10	100	10	50	32	28.5	14.4	8	1.2	With	SW*T1304...	1
TPW13R125M38.1-06	10	125	6	63	38.1	38	15.9	10	2.4	With	SW*T1304...	1
TPW13R125M38.1-08	10	125	8	63	38.1	38	15.9	10	2.4	With	SW*T1304...	1
TPW13R125M40.0E08	10	125	8	63	40	32	16.4	9	2.4	With	SW*T1304...	1
TPW13R125M40.0E12	10	125	12	63	40	32	16.4	9	2.5	With	SW*T1304...	1
TPW13R160M50.8-08	10	160	8	63	50.8	38	19	11	4	Without	SW*T1304...	1
TPW13R160M50.8-12	10	160	12	63	50.8	38	19	11	4	Without	SW*T1304...	1
TPW13R200M47.6-10	10	200	10	63	47.625	38	25.4	14	7.4	Without	SW*T1304...	2

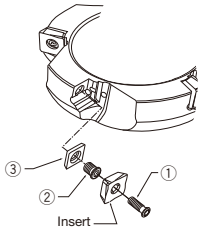
Approach angle

10°-20°
45°
70°
85°
88°
90°
Others

SPARE PARTS

Designation	①Clamping screw	Lubricant	②Shim screw	Shell locking bolt 1	Shell locking bolt 2	③Shim	Wrench for ①	Wrench for ②
TPW13R050, 063...	CSPB-3.5	M-1000	DTS5-3.5SS	-	CM10X30H	FSSP1102	IP-15D	P-3.5
TPW13R080M...	CSPB-3.5	M-1000	DTS5-3.5SS	-	CM12X30H	FSSP1102	IP-15D	P-3.5
TPW13R100M...	CSPB-3.5	M-1000	DTS5-3.5SS	TMBA-M16H	-	FSSP1102	IP-15D	P-3.5
TPW13R125M...	CSPB-3.5	M-1000	DTS5-3.5SS	TMBA-M20H	-	FSSP1102	IP-15D	P-3.5
TPW13R160, 200...	CSPB-3.5	M-1000	DTS5-3.5SS	-	-	FSSP1102	IP-15D	P-3.5

*Recommended clamping torque (N·m)：CSPB-3.5=3.5



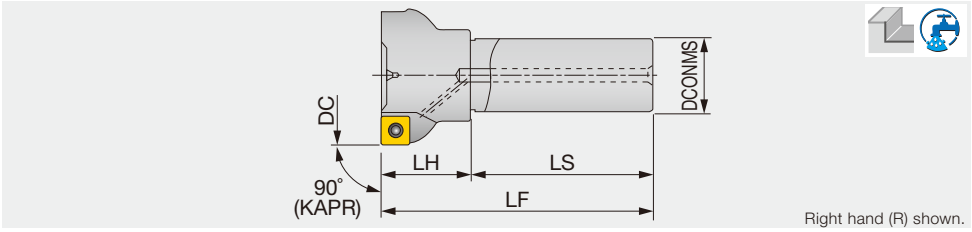
Reference pages: Inserts → H162, Standard cutting conditions → H163

EPW13

Square shoulder endmill, shank type, with screw clamp system, for SWMT/SWGT13 inserts

GAMP = +11.5°, GAMF = -13° ~ -10.5°





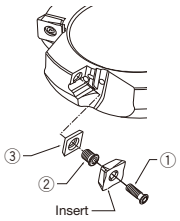
Right hand (R) shown.

Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPW13R032M32.0-02	10	32	2	32	80	35	115	0.6	With	SW*T1304...
EPW13R040M32.0-03	10	40	3	32	80	35	115	0.7	With	SW*T1304...
EPW13R050M32.0-03	10	50	3	32	80	40	120	0.9	With	SW*T1304...
EPW13R050M32.0-04	10	50	4	32	80	40	120	0.9	With	SW*T1304...
EPW13R063M32.0-04	10	63	4	32	80	40	120	1	With	SW*T1304...
EPW13R063M32.0-05	10	63	5	32	80	40	120	1	With	SW*T1304...
EPW13R080M32.0-04	10	80	4	32	80	40	120	1.3	With	SW*T1304...
EPW13R080M32.0-06	10	80	6	32	80	40	120	0.8	With	SW*T1304...

SPARE PARTS

Designation	①Clamping screw	Lubricant	②Shim screw	③Shim	Wrench for ①	Wrench for ②
EPW13R032, 040...	CSPB-3.5	M-1000	-	-	IP-15D	-
EPW13R050 - 080...	CSPB-3.5	M-1000	DTS5-3.5SS	FSSP1102	IP-15D	P-3.5

*Recommended clamping torque (N·m)：CSPB-3.5=3.5

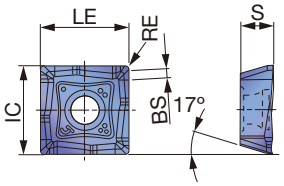


Reference pages: Inserts → H162, Standard cutting conditions → H163

INSERT

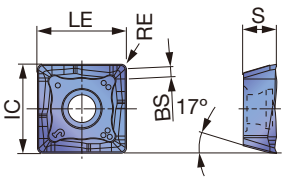
SWGT1304-MJ





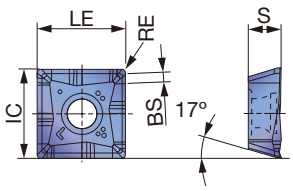
SWMT1304-MJ





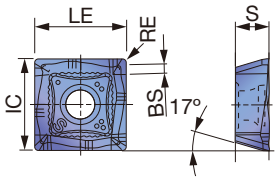
SWMT1304-ML





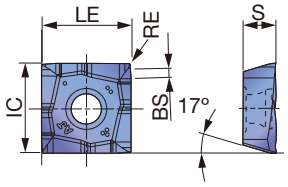
SWMT1304-MS





SWGT1304-AJ





		AH120	AH130	AH140	AH3135	T1115	T1215	T3130	T3225	DS1100	NS740	KS05F
P	Steel	☆			★			☆	☆		★	
M	Stainless		★	☆	★				☆			
K	Cast iron	★				☆	★					
N	Non-ferrous									★		★
S	Superalloys	★	☆									
H	Hard materials											

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated									Cermet		Uncoated				LE	IC	S	BS
			AH120	AH130	AH140	AH3135	T1115	T1215	T3130	T3225	DS1100	NS740		KS05F							
SWGT1304PDPR-MJ	0.8	10	●									●						13.6	13.6	5	1.4
SWMT1304PDPR-MJ	0.8	10	●	●	●	●	●	●	●	●		●						13.6	13.6	5	1.4
SWMT1304PDER-ML	0.8	10	●			●												13.6	13.6	5	1.4
SWMT1304PDPR-MS	0.8	10		●	●													13.6	13.6	5	1.4
SWGT1304PDFR-AJ	0	10									●			●				13.6	13.6	5	1.6

●: Line up

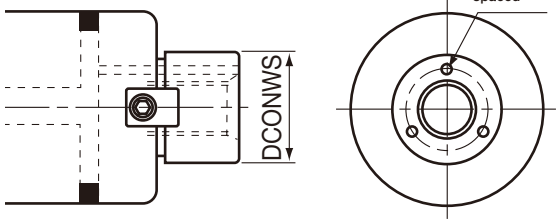
STANDARD CUTTING CONDITIONS TPW / EPW13 type

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Roughing (Depth of cut: APMX ≥ 1.0 mm)				Light cutting to finishing (Depth of cut: APMX ≥ 1.0 mm)			
				Feed per tooth: *fz* (mm/t)				Feed per tooth: *fz* (mm/t)			
				MJ	ML	MS	AJ	MJ	ML	MS	AJ
P	Mild steels Low carbon steels < 180HB	AH3135 (First choice)	100 - 270	0.05 - 0.25	0.05 - 0.2	-	-	0.05 - 0.2	0.05 - 0.18	-	-
		T3225 (Wear resistance)	150 - 300	0.05 - 0.25	-	-	-	0.05 - 0.2	-	-	-
		AH130 (Fracture resistance)	80 - 180	0.05 - 0.25	-	0.05 - 0.2	-	0.05 - 0.2	-	0.05 - 0.18	-
		NS740 (Surface finish)	100 - 300	0.05 - 0.15	-	-	-	0.05 - 0.12	-	-	-
	Carbon steels Alloy steels < 300HB	AH3135 (First choice)	100 - 230	0.05 - 0.2	0.05 - 0.15	-	-	0.05 - 0.18	0.05 - 0.12	-	-
		T3225 (Wear resistance)	150 - 280	0.05 - 0.2	-	-	-	0.05 - 0.18	-	-	-
		AH130 (Fracture resistance)	80 - 150	0.05 - 0.2	-	-	-	0.05 - 0.18	-	-	-
		NS740 (Surface finish)	100 - 230	0.05 - 0.15	-	-	-	0.05 - 0.12	-	-	-
	Die steels < 30HRC	AH3135 (First choice)	100 - 180	0.05 - 0.15	0.05 - 0.12	-	-	0.05 - 0.12	0.05 - 0.1	-	-
		T3225 (Wear resistance)	100 - 180	0.05 - 0.15	-	-	-	0.05 - 0.12	-	-	-
M	Stainless steels < 50HB	AH130 / AH3135 (First choice)	80 - 200	0.05 - 0.2	-	0.05 - 0.18	-	0.05 - 0.18	-	0.05 - 0.15	-
		AH120 (Wear resistance)	150 - 250	0.05 - 0.2	0.05 - 0.15	-	-	0.05 - 0.18	0.05 - 0.12	-	-
K	Grey cast irons Ductile cast irons	T1215 (First choice)	100 - 250	0.05 - 0.2	-	-	-	0.05 - 0.18	-	-	-
		AH120 (Fracture resistance)	100 - 250	0.05 - 0.2	0.05 - 0.15	-	-	0.05 - 0.18	0.05 - 0.12	-	-
N	Aluminium alloys Si < 13 %	DS1100 / KS05F (First choice)	300 - 1000	-	-	-	0.05 - 0.2	-	-	-	0.05 - 0.2
	Aluminium alloys Si ≥ 13 %	DS1100 / KS05F (First choice)	80 - 300	-	-	-	0.05 - 0.2	-	-	-	0.05 - 0.2
	Copper alloys	DS1100 / KS05F (First choice)	200 - 500	-	-	-	0.05 - 0.2	-	-	-	0.05 - 0.2

Notes:

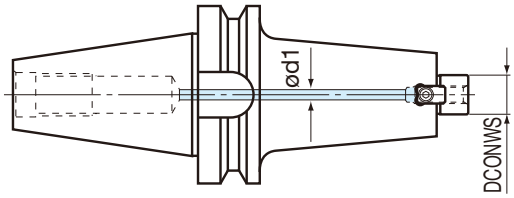
- When machining at large depth of cut or large cutting width, *Vc* and *fz* should be reduced.
- As a rule, dry machining (including air blow) is recommended. But, for excessive chip welding, such as when machining stainless steels, use a water soluble cutting fluid. In this case, use AH140 and set the cutting speed to *Vc* ≤ 100 m/min.
- When machining mild steel, carbon steel or alloy steel in wet conditions the T3130 is recommended. In this case, *Vc* and *fz* should be reduced.
- TPW13 type can not be used for ramping, plunging and drilling.

Face mill arbors with center through-coolant hole



Cutter diameter DC (mm)	50/63	80	100	125	160
Nominal diameter DCONWS (mm)	22	25.4	31.75	38.1	50.8
Arbor type	FMH22	FMH25.4	FMH31.75	FMH38.1	FMH50.8

Notes on arbors: when using TAW13 or TPW13 type, use through center air.



Nominal diameter DCONWS (mm)	16	22	25.4	31.75	38.1	50.8
Applicable arbor types	SMA SM1	FMC SM1	FMA FMC	FMA SMB	FMA	FMA
Through hole diameter ød1 (mm)	4 ~ 6	5 ~ 8	6 ~ 9	10 ~ 13	10 ~ 15	10 ~ 15

When using the TAW13 or TPW13 type with through center air (coolant or mist), the correct arbor must be used with through center air supplying.

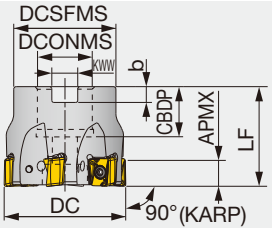
Cautionary notes in use

- In slotting or pocketing, when chips are likely to remain in the cutting zone, internal air supplying or air blow is recommended to prevent chip recutting.
- Use of inserts other than those specified, can result in poor cutting and cause damage to the cutter body. Therefore, specified inserts from the Tungaloy catalogue must be used.
- Before changing or indexing the inserts, remove chips or other foreign matter from the insert, insert pocket and cutter body by using an air blast or cloth.
- The inserts should be clamped by using the wrench supplied with the TAC Mill.
- After a long period of use, the clamping screws and wrench may become deformed or damaged. These elements must be replaced as soon as possible.

Square shoulder mill, with screw clamp system, for LQMU inserts

GAMP = +4° ~ +5°, GAMF = +13° ~ +15°







Right hand (R) shown.

Designation	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TPQ11R040M16.0E04	9	40	4	35	40	16	20	8.4	5.6	0.2	With	LQMU1107...
TPQ11R050M22.0E06	9	50	6	41	40	22	20	10.4	6.3	0.4	With	LQMU1107...
TPQ11R063M22.0E07	9	63	7	47	40	22	20	10.4	6.3	0.5	With	LQMU1107...
TPQ11R080M25.4-10	9	80	10	55	50	25.4	26	9.5	6	1.1	With	LQMU1107...
TPQ11R080M27.0E10	9	80	10	58	50	27	26	12.4	7	1	With	LQMU1107...
TPQ11R100M31.7-12	9	100	12	66	50	31.75	32	12.95	8	1.6	With	LQMU1107...
TPQ11R100M32.0E12	9	100	12	66	50	32	32	14.4	8	1.6	With	LQMU1107...
TPQ18R050M22.0E03	16	50	3	47	40	22	20	10.4	6.3	0.4	With	LQMU1808...
TPQ18R063M25.4-04	16	63	4	55	50	25.4	26	9.5	6	0.7	With	LQMU1808...
TPQ18R063M27.0E04	16	63	4	58	50	27	26	12.4	7	0.5	With	LQMU1808...
TPQ18R080M25.4-05	16	80	5	55	50	25.4	26	9.5	6	0.9	With	LQMU1808...
TPQ18R080M27.0E05	16	80	5	58	50	27	26	12.4	7	0.9	With	LQMU1808...
TPQ18R100M31.7-06	16	100	6	70	50	31.75	32	12.95	8	1.4	With	LQMU1808...
TPQ18R100M32.0E06	16	100	6	66	50	32	32	14.4	8	1.4	With	LQMU1808...
TPQ18R125M38.1-08	16	125	8	80	63	38.1	38	15.9	10	2.9	With	LQMU1808...
TPQ18R125M40.0E08	16	125	8	82	63	40	38	16.4	9	2.9	With	LQMU1808...
TPQ18R160M50.8-09	16	160	9	100	63	50.8	38	19	11	4.1	Without	LQMU1808...
TPQ18R160M40.0E09	16	160	9	100	63	40	38	16.4	9	4.1	Without	LQMU1808...

SPARE PARTS







Designation	Clamping screw	Grip 1	Grip 2	Torx bit	Shell locking bolt
TPQ11R040M...	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	CM8×30H
TPQ11R050M...	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	CM10×30H
TPQ11R063M...	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	CM10×30H
TPQ11R080M...	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	CM12×30H
TPQ11R100M...	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	TMBA-M16H
TPQ18R050M...	SR14-591	-	H-TB	BT20M	CM10×30H
TPQ18R063M...	SR14-591	-	H-TB	BT20M	CM12×30H
TPQ18R080M...	SR14-591	-	H-TB	BT20M	CM12×30H
TPQ18R100M...	SR14-591	-	H-TB	BT20M	TMBA-M16H
TPQ18R125M...	SR14-591	-	H-TB	BT20M	TMBA-M20H
TPQ18R160M...	SR14-591	-	H-TB	BT20M	-

*Recommended clamping torque (N·m) : CSTB-3.5L115=2.5, SR14-591=5

Reference pages: Inserts → H166, Standard cutting conditions → H167

DOREC
EPQ11,18

Square shoulder endmill, shank type, with screw clamp system, for LQMU inserts

GAMP = +4° ~ +5°, GAMF = +13° ~ +15°



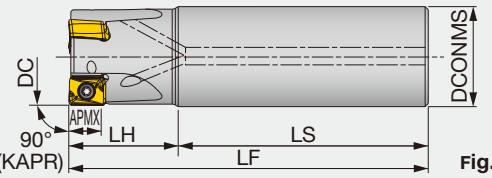


Fig. 1

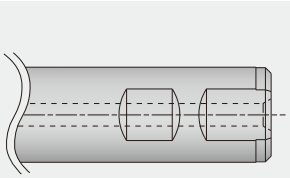
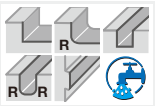


Fig. 2



Right hand (R) shown.

Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert	Shank type
EPQ11R025M25.0-02	9	25	2	25	70	30	100	0.3	あり	LQMU1107...	Fig .1
EPQ11R032M32.0-03	9	32	3	32	80	35	115	0.7	あり	LQMU1107...	Fig .1
EPQ11R040M32.0-04	9	40	4	32	80	35	115	0.8	あり	LQMU1107...	Fig .1
EPQ11R050M32.0-05	9	50	5	32	80	40	120	0.9	あり	LQMU1107...	Fig .1
EPQ11R063M32.0-06	9	63	6	32	80	40	120	1.1	あり	LQMU1107...	Fig .1
EPQ11R080M32.0-07	9	80	7	32	80	40	120	1.4	あり	LQMU1107...	Fig .1
EPQ18R040M32.0W03	16	40	3	32	75	35	110	0.7	あり	LQMU1808...	Fig .2
EPQ18R050M32.0W04	16	50	4	32	75	40	115	0.9	あり	LQMU1808...	Fig .2

SPARE PARTS

Designation	Clamping screw	Grip 1	Grip 2	Torx bit	Wrench
EPQ11...	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	T-10D
EPQ18...	SR14-591	-	H-TB	BT20M	T-20D

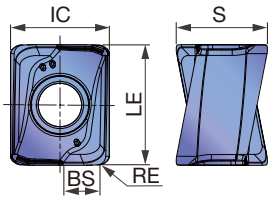
*Recommended clamping torque (N·m)：CSTB-3.5L115=2.5, SR14-591=5

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

INSERT

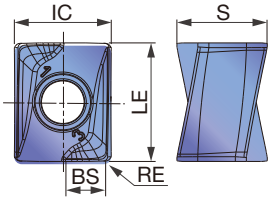
LQMU11-PXER-MJ





LQMU11/18-PNER-MJ





P	Steel	☆		★	★
M	Stainless		★	☆	★
K	Cast iron	★		☆	
N	Non-ferrous				
S	Superalloys	★		★	☆
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	Coated AH140	Coated AH725	Coated AH3135	LE	S	IC	BS
LQMU110704PNER-MJ	0.4	9	●	●	●		11	8.3	9	1.5
LQMU110708PNER-MJ	0.8	9	●	●	●		11	8.3	9	1.1
LQMU110708PXER-MJ	0.8	9	●			●	11	8.3	9	1.1
LQMU110716PNER-MJ	1.6	9	●	●	●		11	8.3	9	0.3
LQMU110720PNER-MJ	2	9	●				11	8.3	9	-
LQMU180804PNER-MJ	0.4	16	●	●	●		17.5	10.9	11.5	2.0
LQMU180808PNER-MJ	0.8	16	●	●	●		17.5	10.9	11.5	1.6
LQMU180816PNER-MJ	1.6	16	●	●	●		17.5	10.9	11.5	0.8
LQMU180824PNER-MJ	2.4	16	●	●	●		17.5	10.9	11.5	-

●: Line up

Reference pages: Standard cutting conditions → H167

STANDARD CUTTING CONDITIONS

LQMU11-PXER-MJ

ISO	Workpiece material		Hardness	Grade	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steel S15C, etc. C15E, etc.		- 200HB	AH3135	100 - 250	0.1 - 0.25*
P	Alloy steel S55C, etc. C55, etc.		- 300HB	AH3135	100 - 230	0.1 - 0.2*
P	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	AH3135	100 - 230	0.1 - 0.2*
M	Stainless steel SUS304, etc. X5CrNi18-9, etc.		-	AH3135	90 - 180	0.1 - 0.25*
K	Grey cast iron FC250, etc. 250, etc.		150 - 250HB	AH120	140 - 250	0.1 - 0.25*
K	Ductile cast iron FCD400, etc. 450-10S, etc.		150 - 250HB	AH120	110 - 200	0.1 - 0.25*
S	Titanium alloys Ti-6Al-4V, etc.		-	AH120	30 - 60	0.08 - 0.2*
S	Superalloys Inconel 718, etc.		-	AH120	20 - 50	0.06 - 0.1*
H	Hardened steel	SKD61, etc.	40 - 50HRC	AH120	45 - 70	0.08 - 0.15*
H		SKD11, etc.	50 - 60HRC	AH120	40 - 65	0.06 - 0.1*

LQMU11/18-PNER-MJ

ISO	Workpiece material	Hardness HB	Grade	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steel S15C, etc. C15E, etc.	- 200	AH725	100 - 250	0.1 - 0.25*
P	High carbon steel S45C, S55C, etc. C45, C55, etc.	200 - 300	AH725	100 - 230	0.1 - 0.2*
P	Alloy steel SCM440, SCr415, etc. 42CrMo4, etc.	150 - 300	AH725	100 - 230	0.1 - 0.2*
P	Tool steel D2, etc. X153CrMoV12, etc.	- 300	AH725	100 - 180	0.1 - 0.2*
M	Stainless steel SUS304, etc. X5CrNi18-9, etc.	-	AH140	90 - 180	0.1 - 0.25*
K	Grey cast iron FC250, etc. 250, etc.	150 - 250	AH120	140 - 250	0.1 - 0.25*
K	Ductile cast iron FCD400, etc. 450-10S, etc.	150 - 250	AH120	110 - 200	0.1 - 0.25*
S	Superalloys Inconel 718, Ti-6Al-4V, etc.	-	AH725	20 - 50	0.08 - 0.2*

* When using LQMU11 inserts, see page **H168** for proper feed per tooth setting.

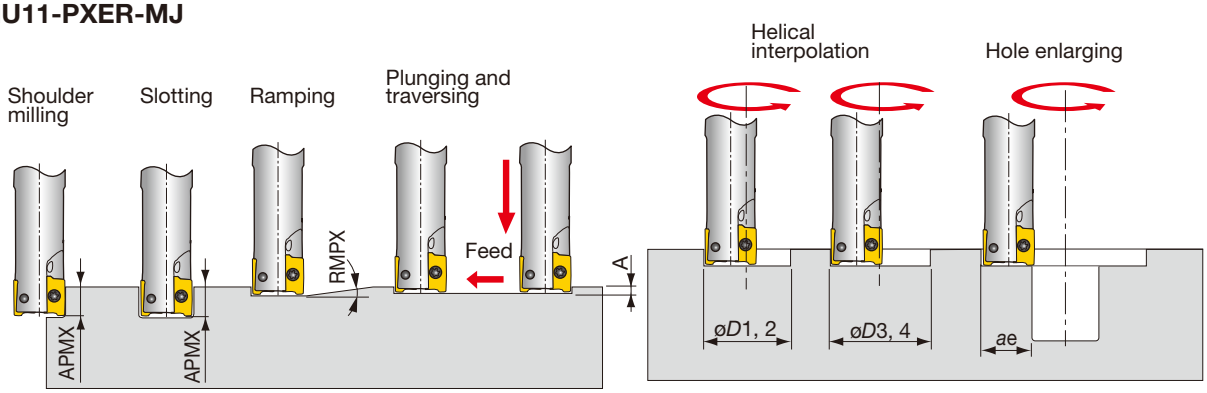
· For applications with poor chip evacuation, use air gun to remove chips from the machining area to avoid chip re-cutting and part damage.

· To machine cast surface with unstable cutting depths or interruptions, it is recommended to lower the feed rate (*fz*) to the lowest parameter in the recommended range.

· Rigidity of the machine and/or workpiece and the spindle power capability greatly influence the cutting conditions. For applications with large cutting width/depth and/or long tool overhang, start with a *Vc* and *fz* in the lower range of the recommended cutting parameters and monitor the machine stability.

APPLICATION RANGE

LQMU11-PXER-MJ



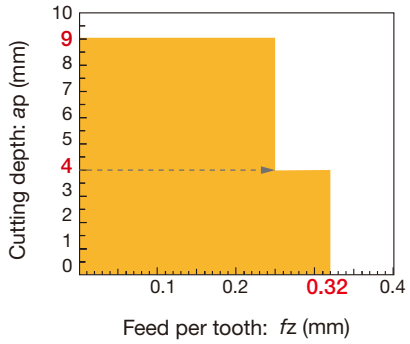
Designation	DC	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging A	Min. machining øD1	Max. machining øD2*	Max. machining øD3	Max. machining øD4*	Max. machining RE	Max. cutting width in enlarging ae
EPQ11R025…	25	9	1.8°	0.6	35	46.8	49	48.5	0.8	24.1
EPQ11R032…	32	9	1.3°	0.6	48	60.8	63	62.5	0.8	31.1
TPQ11R040…	40	9	0.9°	0.6	64	76.8	79	78.5	0.8	39.1
TPQ11R050…	50	9	0.7°	0.6	84	96.8	99	98.5	0.8	49.1
TPQ11R063…	63	9	0.5°	0.6	110	122.8	125	124.5	0.8	62.1
TPQ11R080…	80	9	0.4°	0.6	144	156.8	159	158.5	0.8	79.1
TPQ11R100…	100	9	0.3°	0.6	184	196.8	199	198.5	0.8	99.1

*For a flat bottom

NOTE WHEN USING LQMU11 INSERTS

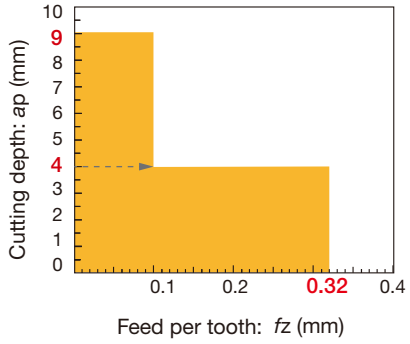
Maximum feed rate per tooth varies depending on the cutting depth and width.
Use proper feed rate as described below.
Use caution. Tool may damage if the parameters are not properly set.

Applicable feed rate (for ae < 10% of tool diameter)



Cutter : TPQ11R050M22.0-06 (DC = 50 mm, z = 6)
Insert : LQMU110708PXER-MJ
Grade : AH3135
Workpiece material : S55C (200HB)
Cutting Speed : *Vc* = 200 m/min
Cutting width : *ae* = 5 mm
Coolant : Dry
Machine : Vertical M/C, 22 kW

Applicable feed rate (for ae > 10% of tool diameter)



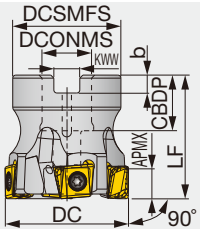
Cutter : TPQ11R050M22.0-06 (DC = 50 mm, z = 6)
Insert : LQMU110708PXER-MJ
Grade : AH3125
Workpiece material : S55C (200HB)
Cutting Speed : *Vc* = 200 m/min
Cutting width : *ae* = 42.5 mm
Coolant : Dry
Machine : Vertical M/C, 22 kW

TECMILL
TPM11,16

Square shoulder mill, with screw clamp system, for LMMU tangential clamp inserts

GAMP = +5° ~ +6°, GAMF = +9° ~ +13°

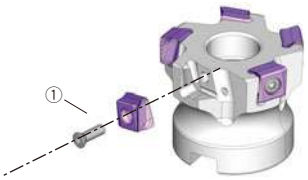






Right hand (R) shown.

Designation	APMX	DC	CICT	DCSMFS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TPM11R050M22.0-05	9.7	50	5	41	40	22	20	10	6	0.3	With	LMMU1107...
TPM11R050M22.0E05	9.7	50	5	41	40	22	20	10.4	6.3	0.3	With	LMMU1107...
TPM11R063M22.0-06	9.7	63	6	41	40	22	20	10	6	0.5	With	LMMU1107...
TPM11R063M22.0E06	9.7	63	6	41	40	22	20	10.4	6.3	0.5	With	LMMU1107...
TPM11R080M25.4-07	9.7	80	7	46	50	25.4	26	9.5	6	0.9	With	LMMU1107...
TPM11R080M25.4-09	9.7	80	9	46	50	25.4	26	9.5	6	1	With	LMMU1107...
TPM11R080M27.0E07	9.7	80	7	50	50	27	22	12.4	7	1	With	LMMU1107...
TPM11R080M27.0E09	9.7	80	9	50	50	27	22	12.4	7	1	With	LMMU1107...
TPM11R100M31.7-08	9.7	100	8	60	50	31.75	32	12.7	8	1.4	With	LMMU1107...
TPM11R100M31.7-11	9.7	100	11	60	50	31.75	32	12.7	8	1.5	With	LMMU1107...
TPM11R100M32.0E08	9.7	100	8	60	50	32	28.5	14.4	8	1.4	With	LMMU1107...
TPM11R100M32.0E11	9.7	100	11	60	50	32	28.5	14.4	8	1.5	With	LMMU1107...
TPM16R080M25.4-05	15.1	80	5	46	50	25.4	26	9.5	6	1	With	LMMU1609...
TPM16R080M27.0E05	15.1	80	5	50	50	27	22	12.4	7	1	With	LMMU1609...
TPM16R100M31.7-06	15.1	100	6	60	50	31.75	32	12.7	8	1.6	With	LMMU1609...
TPM16R100M32.0E06	15.1	100	6	60	50	32	28.5	14.4	8	1.5	With	LMMU1609...
TPM16R125M38.1-07	15.1	125	7	80	63	38.1	38	15.9	10	3	With	LMMU1609...
TPM16R125M40.0E07	15.1	125	7	71	63	40	32	16.4	9	2.7	With	LMMU1609...



SPARE PARTS







Designation	Clamping screw	Grip	Shell locking bolt 1	Shell locking bolt 2	Torx bit
TPM11R050, 063...	CSTB-3.5L110	H-TB	-	CM10X30H	BT15S
TPM11R080M...	CSTB-3.5L110	H-TB	-	CM12X30H	BT15S
TPM11R100M...	CSTB-3.5L110	H-TB	TMBA-M16H	-	BT15S
TPM16R080M25.4-05, TPM16R080M27.0E05	CSTB-5L159	H-TB	-	CM12X30H	BT20S
TPM16R100M31.7-06, TPM16R100M32.0E06	CSTB-5L159	H-TB	TMBA-M16H	-	BT20S
TPM16R125M38.1-07, TPM16R125M40.0E07	CSTB-5L159	H-TB	TMBA-M20H	-	BT20S

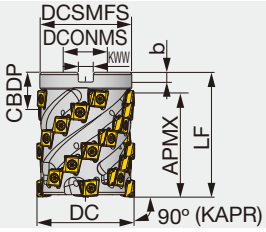
*Recommended clamping torque (N·m)：CSTB-3.5L110=3.5, CSTB-5L159=5

TECMILL
TLM11

Square shoulder mill for roughing, with screw clamp system, for LMMU tangential clamp inserts

GAMP = +5° ~ +6°, GAMF = +9° ~ +13°







Designation	APMX	DC	ZEFP	CICT	DCSMFS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TLM11R050M22.0E03	58.5	50	3	21	47	70	22	20	10.4	6.3	0.8	With	LMMU1107...
TLM11R063M25.4-04	66.9	63	4	32	59	80	25.4	26	9.5	6	1.4	With	LMMU1107...
TLM11R063M27.0E04	66.9	63	4	32	59	80	27	22	12.4	7	1.4	With	LMMU1107...






Note: Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS

Designation	Clamping screw	Grip	Shell locking bolt	Torx bit
TLM11R050M22.0E03	SM35-114-H0	H-TB	SD06-A3	BT15S
TLM11R063M25.4-04, TLM11R063M27.0E04	SM35-114-H0	H-TB	SD08-98	BT15S

*Recommended clamping torque N·m)：SM35-114-H0=3.5

Reference pages: Inserts → H170, Standard cutting conditions → H171

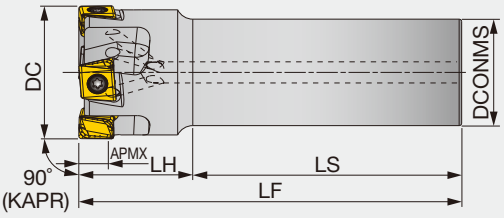
TECMILL

EPM11

Square shoulder endmill, shank type, with screw clamp system, for LMMU tangential clamp inserts

GAMP = +5° ~ +6°, GAMF = +9° ~ +13°







Right hand (R) shown.

Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPM11R032M32.0-03	9.7	32	3	32	80	35	115	0.6	With	LMMU1107...
EPM11R040M32.0-04	9.7	40	4	32	80	35	115	0.7	With	LMMU1107...
EPM11R050M32.0-04	9.7	50	4	32	80	40	120	0.9	With	LMMU1107...
EPM11R063M32.0-06	9.7	63	6	32	80	40	120	1.2	With	LMMU1107...
EPM11R080M32.0-07	9.7	80	7	32	80	40	120	1.6	With	LMMU1107...

SPARE PARTS





Designation	Clamping screw	Wrench
EPM11...	CSTB-3.5L110	T-15DB

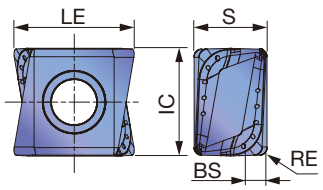
*Recommended clamping torque (N·m) : CSTB-3.5L110=3.5

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

INSERT

LMMU11/16-MJ





P	Steel	★	☆				☆
M	Stainless	★			☆		
K	Cast iron			★		☆	
N	Non-ferrous						
S	Superalloys	☆	★	☆			
H	Hard materials		★				

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated						LE	IC	S	BS
			AH3135	AH725	AH120	AH140	T1215	T3225				
LMMU110708PNER-MJ	0.8	9.7	●	●	●	●	●	●	11.7	10.5	7.1	2
LMMU110716PNER-MJ	1.6	9.7	●	●	●	●	●	●	11.7	10.5	7.1	1.2
LMMU110724PNER-MJ	2.4	9.7		●	●	●			11.7	10.5	7.1	0.4
LMMU110732PNER-MJ	3.2	9.7		●	●	●			11.7	10.5	7.1	-
LMMU160908PNER-MJ	0.8	15.1	●	●	●	●	●	●	17.3	16	1	2.4
LMMU160916PNER-MJ	1.6	15.1	●	●	●	●			17.3	16	1	1.6
LMMU160924PNER-MJ	2.4	15.1		●	●	●			17.3	16	1	0.8
LMMU160932PNER-MJ	3.2	15.1		●	●	●			17.3	16	1	-

●: Line up

Reference pages: Standard cutting conditions → H171

STANDARD CUTTING CONDITIONS

Bore, shank type

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steel (S15C / C15E4, SS400 / E275A, etc.)		- 200 HB	First choice	AH3135	100 - 250	0.12-0.3
			- 200 HB	Wear resistance	T3225	150 - 350	0.08 - 0.2
	Carbon steel and alloy steel (S55C / C55, SCM440 / 42CrMo4, etc.)		- 300 HB	First choice	AH3135	100 - 230	0.1 - 0.25
			- 300 HB	Wear resistance	T3225	150 - 350	0.08 - 0.2
	Prehardend steel (NAK80, PX5, etc.)		30 - 40 HRC	First choice	AH3135	100 - 230	0.1 - 0.25
			30 - 40 HRC	Wear resistance	T3225	120 - 350	0.08 - 0.2
M	Stainless steel (SUS304 / X5CrNi18-9, etc.)		-	First choice	AH3135	90 - 180	0.1 - 0.25
K	Grey cast iron (FC250 / 250, etc.)		150 - 250 HB	First choice	AH120	140 - 250	0.12 - 0.3
			150 - 250 HB	Wear resistance	T1215	120 - 350	0.08 - 0.2
	Ductile cast iron (FCD400, FCD600 / 600-3, etc.)		150 - 250 HB	First choice	AH120	110 - 200	0.12- 0.3
			150 - 250 HB	Wear resistance	T1215	120 - 350	0.08 - 0.2
S	Titanium alloys (Ti-6Al-4V, etc.)		-	First choice	AH725	30 - 60	0.08 - 0.2
	Superalloys (Inconel718, etc.)		-	First choice	AH725	20 - 50	0.06 - 0.1
H	Hardened steel	(SKD61 / X40CrMoV5-1, etc.)	40 - 50 HRC	First choice	AH725	45 - 70	0.08 - 0.15
		(SKD11 / X153CrMoV12, etc.)	50 - 60 HRC	First choice	AH725	40 - 65	0.06 - 0.1

Roughing type

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steel (S15C / C15E4, SS400 / E275A, etc.)		- 200 HB	First choice	AH3135	100 - 250	0.1- 0.25
			- 300 HB	Wear resistance	T3225	150 - 350	0.1 - 0.2
	Carbon steel and alloy steel (S55C / C55, SCM440 / 42CrMo4, etc.)		- 300 HB	First choice	AH3135	100 - 200	0.1 - 0.2
			- 300 HB	Wear resistance	T3225	150 - 300	0.1 - 0.2
	Prehardend steel (NAK80, PX5, etc.)		30 - 40 HRC	First choice	AH3135	100 - 200	0.1 - 0.2
			30 - 40 HRC	Wear resistance	T3225	120 - 300	0.1 - 0.2
M	Stainless steel (SUS304 / X5CrNi18-9, etc.)		-	First choice	AH3135	90 - 150	0.1 - 0.25
K	Grey cast iron (FC250 / 250, etc.)		150 - 250 HB	First choice	AH120	100 - 250	0.1 - 0.25
			150 - 250 HB	Wear resistance	T1215	120 - 350	0.1 - 0.25
	Ductile cast iron (FCD400, FCD600 / 600-3, etc.)		150 - 250 HB	First choice	AH120	100 - 200	0.1 - 0.25
			150 - 250 HB	Wear resistance	T1215	120 - 350	0.1 - 0.25
S	Titanium alloys (Ti-6Al-4V, etc.)		-	First choice	AH725	20 - 50	0.06 - 0.15
	Superalloys (Inconel718, etc.)		-	First choice	AH725	20 - 40	0.06 - 0.1
H	Hardened steel	(SKD61 / X40CrMoV5-1, etc.)	40 - 50 HRC	First choice	AH725	30 - 60	0.08 - 0.15
		(SKD11 / X153CrMoV12, etc.)	50 - 60 HRC	First choice	AH725	25 - 55	0.06 - 0.1

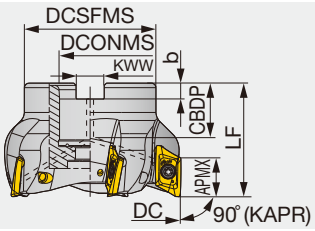
TUNG-ALUMILL

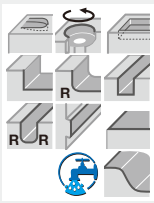
TPV16

90° shoulder mill for aluminium machining, with screw clamp system, for XVCT16 inserts

GAMP = +10° ~ +11°, GAMF = -9° ~ -5.5°







Designation	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Max. RPM (min^{-1})	Insert
TPV16R040M16.0E03	40	3	38	16	20	50	5.6	8.4	0.23	With	30,000	XVCT1605...
TPV16R050M22.0E04	50	4	45	22	22	50	6.3	10.4	0.33	With	27,000	XVCT1605...
TPV16R063M22.0E05	63	5	47	22	22	50	6.3	10.4	0.54	With	24,000	XVCT1605...
TPV16R080M27.0E05	80	5	58	27	28	50	7	12.4	0.86	With	21,000	XVCT1605...
TPV16R100M32.0E06	100	6	66	32	26	63	8	14.4	1.55	With	19,000	XVCT1605...
TPV16R125M40.0E07	125	7	85	40	32	63	9	16.4	2.53	With	17,000	XVCT1605...

SPARE PARTS

Designation	Clamping screw	Grip	Shell locking bolt	Torx bit
TPV16R040M16.0E03	TS40093I/HG	H-TBS	SHM8X1.25X35-C	BT15S
TPV16R050 - 063...	TS40093I/HG	H-TBS	SHM10X1.5X30-C	BT15S
TPV16R080M27.0E05	TS40093I/HG	H-TBS	LHM12X1.75X30-C	BT15S
TPV16R100M32.0E06	TS40093I/HG	H-TBS	SHM16X2X35-C	BT15S
TPV16R125M40.0E07	TS40093I/HG	H-TBS	SHM20X2.5X40-C	BT15S

*Recommended clamping torque (N·m) : TS40093I/HG=3.5

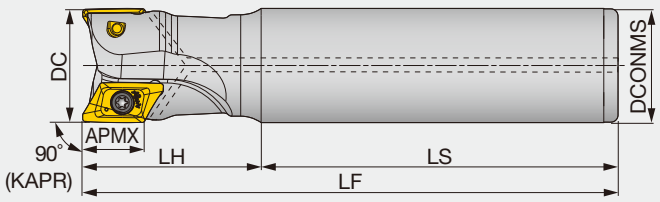
TUNG-ALUMILL

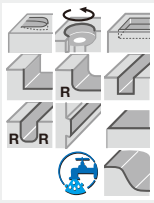
EPV16

90° shoulder endmill for aluminium machining, shank type, with screw clamp system, for XVCT16 inserts

GAMP = +6° ~ +10°, GAMF = -12° ~ -9°







Designation	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Max. RPM (min^{-1})	Insert
EPV16R025M25.0-02	25	2	25	70	55	125	0.37	With	38,000	XVCT1605...
EPV16R025M25.0-02L	25	2	25	100	70	170	0.53	With	38,000	XVCT1605...
EPV16R032M32.0-02	32	2	32	100	50	150	0.77	With	34,000	XVCT1605...
EPV16R032M32.0-02L	32	2	32	120	80	200	1.03	With	34,000	XVCT1605...
EPV16R032M32.0-03	32	3	32	100	50	150	0.76	With	34,000	XVCT1605...
EPV16R032M32.0-03L	32	3	32	120	80	200	1.03	With	34,000	XVCT1605...
EPV16R040M32.0-03	40	3	32	120	50	170	0.94	With	30,000	XVCT1605...
EPV16R040M32.0-03L	40	3	32	195	55	250	1.43	With	30,000	XVCT1605...

SPARE PARTS

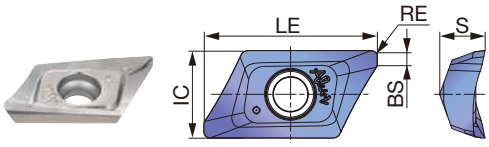
Designation	Clamping screw	Grip	Torx bit
EPV16R025M...	TS40085I/HG	H-TBS	BT15S
EPV16R032M...	TS40093I/HG	H-TBS	BT15S
EPV16R040M...	TS40093I/HG	H-TBS	BT15S

*Recommended clamping torque (N·m) : TS40085I/HG=3.5, TS40093I/HG=3.5

Reference pages: Inserts, Standard cutting conditions → H173

INSERT

XVCT16-AJ



P	Steel		
M	Stainless		
K	Cast iron		
N	Non-ferrous	★	
S	Superalloys		
H	Hard materials		

★ : First choice
☆ : Second choice

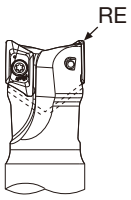
Designation	RE	APMX	Uncoated TH10	LE	IC	S	BS
XVCT160504R-AJ	0.4	16	●	22.2	11.2	5.9	1.3
XVCT160508R-AJ	0.8	16	●	22.2	11.2	5.9	1
XVCT160512R-AJ	1.2	15.5	●	21.7	11.2	5.8	1
XVCT160516R-AJ	1.6	15	●	21.2	11.2	5.75	1
XVCT160520R-AJ	2	14.5	●	20.8	11.2	5.75	1
XVCT160530R-AJ	3	14	●	19.5	11.2	5.6	1
XVCT160532R-AJ	3.2	14	●	19.2	11.2	5.6	1
XVCT160540R-AJ	4	13	●	18.4	11.2	5.5	1.2
XVCT160550R-AJ	5	13	●	18.4	11.2	5.4	0.4

●: Line up

CAUTIONARY POINT IN MODIFYING CUTTER BODIES

When using inserts with corner radius RE ≥ 2.0 mm, standard cutter bodies have to be modified “R”.

Corner radius RE (mm)	The dimension of modifying (mm)
0.4 ~ 1.6	Unnecessary
2.0 ~ 5	2



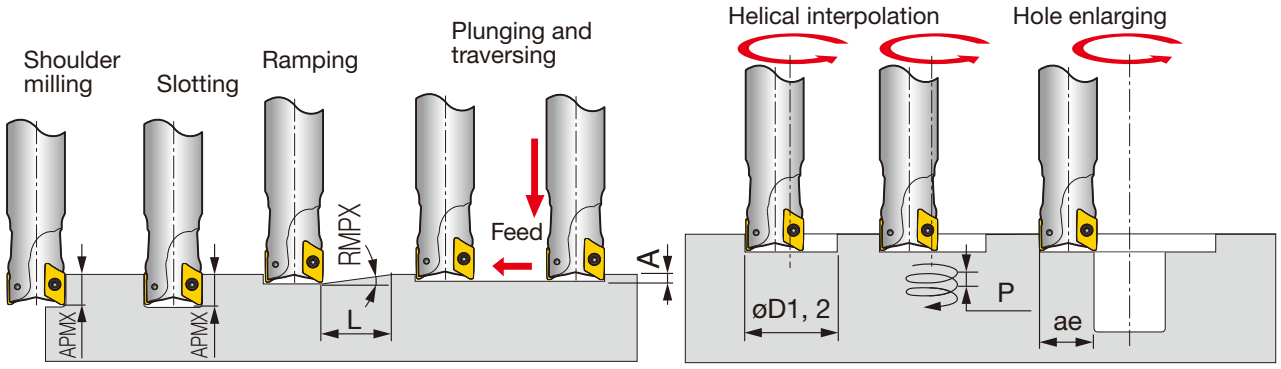
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness HB	Grade	Chip-breaker	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
N	Aluminium alloy	60	TH10	AJ	300 - 5000	0.15 - 0.35
		100	TH10	AJ	200 - 2000	0.1 - 0.25
	Cast aluminium alloy Si ≤ 12%	75	TH10	AJ	200 - 2000	0.15 - 0.3
		90	TH10	AJ	200 - 1500	0.1 - 0.25
	Cast aluminium alloy Si > 12%	130	TH10	AJ	200 - 1000	0.07 - 0.15
	Copper alloys Pb > 1%	110	TH10	AJ	200 - 800	0.07 - 0.15
	Copper alloys	90	TH10	AJ	300 - 1000	0.1 - 0.15
		100	TH10	AJ	300 - 800	0.1 - 0.15
	Duroplastics, fiber plastics	-	TH10	AJ	100 - 500	0.1 - 0.15
	Hard rubber	-	TH10	AJ	100 - 300	0.1 - 0.15

Safety guidelines

1. Use only the original inserts, cutters and spare parts.
2. Insert pocket must be cleaned before clamping the insert.
3. Clamp torque of screw should be 4.5 N·m.
4. For safety reasons, use a new screw when changing the insert.
5. Maximum RPM values are determined based on the burst test. Using RPM beyond maximum values may cause insert breakage, machine damage or personal injury.
6. XVCT insert has sharp cutting edges. Always wear gloves for protection from injury when handling.

APPLICATION RANGE



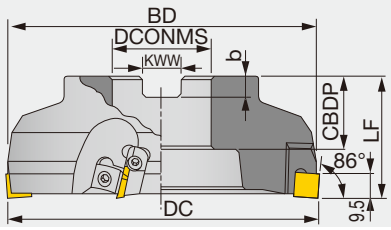
				Straight ramp down		Step down		Helical ramp down				Hole enlarging
	Tool	Corner radius	Max. depth of cut	Max. ramping angle	Min. length	Max. plunging depth	Min. machining	Min. pitch/rev	Max. machining	Max. pitch/rev	Max. width
Designation	DC	RE	APMX	RMPX	L	A	øD1	P	øD2	P	ae
EPV16R025…	25	0.4, 0.8	16	22	40	4.2	29.1	4.4	50	13.6	22.5
EPV16R025…	25	1.2	15.5	22	40	4.2	29.1	4.4	50	13.6	22.5
EPV16R025…	25	1.6	15	22	38	3.7	29.1	4.4	50	13.2	22.5
EPV16R025…	25	2	14.5	22	38	3.7	29.1	4.4	50	13.2	22.5
EPV16R025…	25	3, 3.2	14	21	38	2.5	29.1	4.2	50	12.3	22.5
EPV16R025…	25	4, 5	13	18.5	40	2.3	29.1	3.7	50	12.3	22.5
EPV16R032…	32	0.4, 0.8	16	16.5	54	4	43.1	8.8	64	13.6	28.8
EPV16R032…	32	1.2	15.5	16.5	54	4	43.1	8.8	64	13.6	28.8
EPV16R032…	32	1.6	15	16	54	3.5	43.1	8.5	64	13.2	28.8
EPV16R032…	32	2	14.5	16	54	3.5	43.1	8.5	64	13.2	28.8
EPV16R032…	32	3, 3.2	14	15	54	3	43.1	7.9	64	12.3	28.8
EPV16R032…	32	4, 5	13	13.5	56	2.5	43.1	7.1	64	12.3	28.8
T/EPV16R040…	40	0.4, 0.8	16	11.5	79	4	59.1	10.4	80	13.6	36
T/EPV16R040…	40	1.2	15.5	11.5	79	4	59.1	10.4	80	13.6	36
T/EPV16R040…	40	1.6	15	11	80	3.5	59.1	9.9	80	13.2	36
T/EPV16R040…	40	2	14.5	11	80	3.5	59.1	9.9	80	13.2	36
T/EPV16R040…	40	3, 3.2	14	10	82	3	59.1	9	80	12.3	36
T/EPV16R040…	40	4, 5	13	8.5	90	2.5	59.1	7.6	80	12.3	36
TPV16R050…	50	0.4, 0.8	16	9.5	96	4	79.1	13	100	13.6	45
TPV16R050…	50	1.2	15.5	9.5	96	4	79.1	13	100	13.6	45
TPV16R050…	50	1.6	15	9	98	3.5	79.1	12.3	100	13.2	45
TPV16R050…	50	2	14.5	9	98	3.5	79.1	12.3	100	13.2	45
TPV16R050…	50	3.0, 3.2	14	8	103	3	79.1	10.9	100	12.3	45
TPV16R050…	50	4, 5	13	7	110	2.5	79.1	9.5	100	12.3	45
TPV16R063…	63	0.4, 0.8	16	7	130	4	105.1	13.6	126	13.6	56.7
TPV16R063…	63	1.2	15.5	7	130	4	105.1	13.6	126	13.6	56.7
TPV16R063…	63	1.6	15	6.5	136	3.5	105.1	12.8	126	13.2	56.7
TPV16R063…	63	2	14.5	6.5	136	3.5	105.1	12.8	126	13.2	56.7
TPV16R063…	63	3.0, 3.2	14	6	136	3	105.1	11.8	126	12.3	56.7
TPV16R063…	63	4, 5	13	5.5	140	2.5	105.1	10.8	126	12.3	56.7
TPV16R080…	80	0.4, 0.8	16	5	183	4	139.1	13.6	160	13.6	72
TPV16R080…	80	1.2	15.5	5	183	4	139.1	13.6	160	13.6	72
TPV16R080…	80	1.6	15	4.5	197	3.5	139.1	12.4	160	13.2	72
TPV16R080…	80	2	14.5	4.5	197	3.5	139.1	12.4	160	13.2	72
TPV16R080…	80	3, 3.2	14	4	207	3	139.1	11	160	12.3	72
TPV16R080…	80	4, 5	13	3.5	221	2.5	139.1	9.6	160	12.3	72
TPV16R100…	100	0.4, 0.8	16	3.5	262	4	179.1	12.9	200	13.6	90
TPV16R100…	100	1.2	15.5	3.5	262	4	179.1	12.9	200	13.6	90
TPV16R100…	100	1.6	15	3	296	3.5	179.1	11.1	200	13.2	90
TPV16R100…	100	2	14.5	3	296	3.5	179.1	11.1	200	13.2	90
TPV16R100…	100	3, 3.2	14	2.5	332	3	179.1	9.2	200	12.3	90
TPV16R100…	100	4, 5	13	2.5	309	2.5	179.1	9.2	200	11.6	90
TPV16R125…	125	0.4, 0.8	16	2.5	367	4	229.1	12.1	125	13.6	112.5
TPV16R125…	125	1.2	15.5	2.5	367	4	229.1	12.1	125	13.6	112.5
TPV16R125…	125	1.6	15	2	444	3.5	229.1	9.7	125	13.2	112.5
TPV16R125…	125	2	14.5	2	444	3.5	229.1	9.7	125	13.2	112.5
TPV16R125…	125	3, 3.2	14	1.5	554	3	229.1	7.3	125	8.7	112.5
TPV16R125…	125	4, 5	13	1.5	516	2.5	229.1	7.3	125	8.7	112.5

THE4000RIA

86° face mill for aluminium machining, with wedge clamp system, for positive square inserts

GAMP = 13°, GAMF = +7° ~ +9°



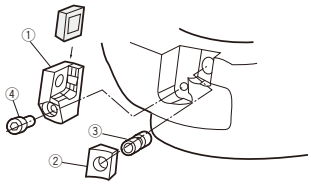


Right hand (R) shown.

Designation	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
THE4003RIA	6	80	4	80	50	25.4	26	9.5	6	1.5	S/WE*N42...
THE4004RIA	6	100	5	99	63	31.75	32	12.7	8	2.1	S/WE*N42...
THE4005RIA	6	125	6	124	63	38.1	38	15.9	10	3.2	S/WE*N42...

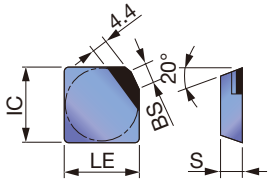
SPARE PARTS

Designation	①Locator	②Wedge	③Wedge fixing screw	④Locator fixing screw	Wrench
THE4003RIA	LE413R	WP440R	FDS-8SS	CM4X0.7X14	TP-4
THE400*RIA	LE413R	WP440R	FDS-8S	CM4X0.7X14	TP-4

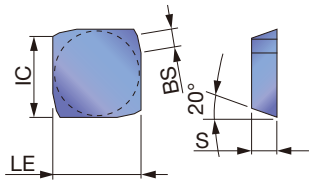


INSERT

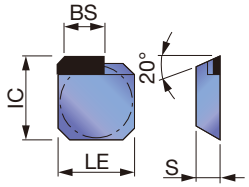
SECN42ZFR-DIA



SEEN/SECN 42Z



WECN42ZFR-DIA



P	Steel					
M	Stainless					
K	Cast iron					
N	Non-ferrous	★		★		
S	Superalloys					
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	APMX	Uncoated	PCD				
		TH10	DX140	LE	IC	S	BS
SECN42ZFR-DIA	3.5		●	12.7	12.7	3.18	2.5
SECN42ZFR	6	●		12.7	12.7	3.18	2.5
SEEN42ZFR	6	●		12.7	12.7	3.18	2.5
WECN42ZFR-DIA	0.5		●	12.4	12.93	3.18	6

Note: T-DIA is a diamond-based ultra high pressure sintered body. Available in 1-corner type.

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grades	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
N	Aluminium alloys (Si < 13%)	TH10	200 ~ 1000	0.05 ~ 0.2
		DX140	200 ~ 1000	0.05 ~ 0.2
	Aluminium alloys (Si ≥ 13%)	TH10	80 ~ 200	0.1 ~ 0.2
		DX140	200 ~ 400	0.1 ~ 0.2
	Duralumin	TH10	200 ~ 1000	0.05 ~ 0.2
		DX140	200 ~ 1000	0.05 ~ 0.2
	Copper alloys	TH10	200 ~ 500	0.05 ~ 0.2

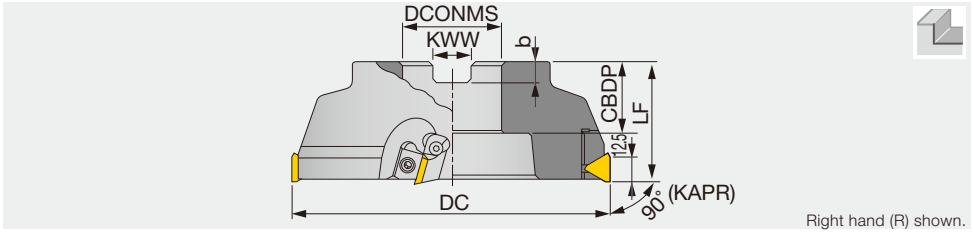
Note : Use of water-soluble cutting fluid is recommended.
Maximum depth of cut for SECN42ZFR-DIA is 3.5 mm.

TSE3000R

Square shoulder mill, with wedge clamp system, for positive triangular inserts

GAMP = +17°, GAMF = +5°





Right hand (R) shown.

Designation	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TSE3050R	8	50	3	40	22	20	10	6	0.3	TE*N32/TEKR1603...
TSE3050R-E	8	50	3	40	22	20	10.4	6.3	0.3	TE*N32/TEKR1603...
TSE3063R	8	63	3	40	22	20	10	6	0.5	TE*N32/TEKR1603...
TSE3063RE	8	63	3	40	22	20	10.4	6.3	0.5	TE*N32/TEKR1603...
TSE3003RIA	8	80	4	50	25.4	26	9.5	6	1	TE*N32/TEKR1603...
TSE3003RIAE	8	80	4	50	27	26	12.4	7	1	TE*N32/TEKR1603...
TSE3004RIA	8	100	6	63	31.75	32	12.7	8	2	TE*N32/TEKR1603...
TSE3004RIA-E	8	100	6	63	32	32	14.4	8	2	TE*N32/TEKR1603...
TSE3005RIA	8	125	6	63	38.1	38	15.9	10	3.1	TE*N32/TEKR1603...
TSE3006RIA	8	160	8	63	50.8	38	19	11	5.2	TE*N32/TEKR1603...

TSE3050R/L and TSE3063R/L do not have variable pitch.

SPARE PARTS

Designation	①Clamp set	②Locator	③Locator fixing screw	④Wedge	⑤Wedge fixing screw	Wrench 1	Wrench 2
TSE3050R..., 63R...	CSL-4	-	-	-	-	-	P-3
TSE300*RIA	-	LE303R	CM4X0.7X12	WF330R	FDS-8S	TP-4	-

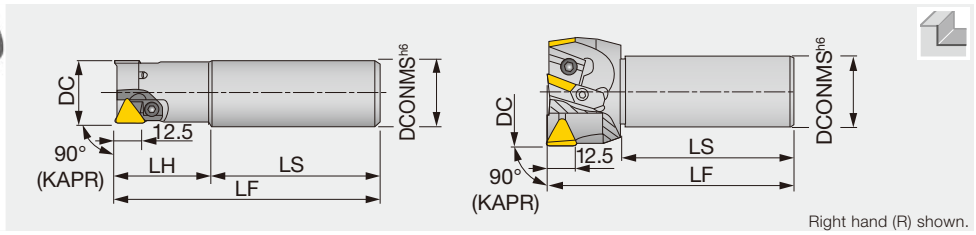
*Recommended clamping torque (N·m)：FDS-8S=8

ESE3000R

Square shoulder endmill, shank type, with wedge clamp system, for positive triangular inserts

GAMP = +17°, GAMF = +5°





Right hand (R) shown.

Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	Insert
ESE3020R	8	20	1	20	70	30	100	TE*N32/TEKR1603...
ESE3025R	8	25	1	25	80	35	115	TE*N32/TEKR1603...
ESE3030R	8	30	2	32	80	45	125	TE*N32/TEKR1603...
ESE3035R	8	35	2	32	80	45	125	TE*N32/TEKR1603...
ESE3040R	8	40	2	32	80	45	125	TE*N32/TEKR1603...
ESE3050R	8	50	3	32	80	-	115	TE*N32/TEKR1603...
ESE3063R	8	63	4	32	80	-	115	TE*N32/TEKR1603...

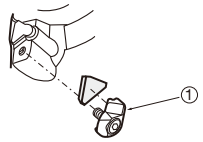
Note: The items do not have variable pitch.

SPARE PARTS

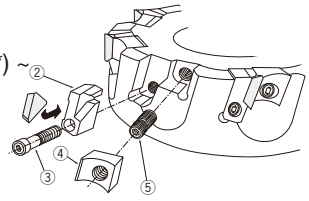
Designation	Clamp set	Locator	Wedge fixing screw	Shell locking bolt	Wedge	Wrench 1	Wrench 2
ESE3020R - ESE3050R	CSL-4	-	-	-	-	-	P-3
ESE3063R	-	LE302R	DS-8S	SHCM4-10	WP302R	TP-4	-

*Recommended clamping torque (N·m)：DS-8S=8

TSE3050R ~ 3063R
ESE3020R ~ 3040R



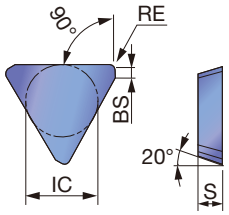
TSE3003R/LIA~
3006R/LIA
ESE3050R (RS**) ~
3063R (RS**)



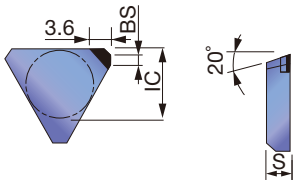
Reference pages: Inserts → H177, Standard cutting conditions → H178

INSERT

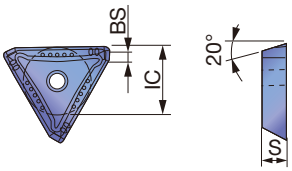
TECN/TEEN 32Z



TECN32ZFR-DIA



TEKR16-MS



P	Steel	★			☆	☆		☆	★		☆	★	☆	☆			
M	Stainless		★	☆					★		☆						
K	Cast iron	★					☆			★							
N	Non-ferrous														★	★	
S	Superalloys	★	☆														
H	Hard materials																

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated										Cermet		Uncoated		PCD		IC	S	BS
			AH120	AH130	AH140	AH330	GH330	T1115	T3130	AH3135	T1215	T3225	NS740	N308	UX30	TH10	DX140				
TECN32ZFR	-	8														●			9.525	3.18	1.37
TECN32ZTR	0.8	8											●	●	●				9.525	3.18	1
TEEN32ZFR	-	8														●			9.525	3.18	1.37
TEEN32ZTR	0.8	8	●	●	●	●	●	●	●	●	●	●	●	●	●				9.525	3.18	1
TECN32ZFR-DIA	-	2.5															●		9.525	3.18	1.37
TEKR1603PEPR-MS	-	8			●														9.525	3.18	1.49

Note: T-DIA is a diamond-based ultra high pressure sintered body. Available in 1-corner type.

●: Line up

DX140: 1 piece per package

Reference pages: Standard cutting conditions → H178

STANDARD CUTTING CONDITIONS

Applied to cutter dia. ≤ ø40 mm

ISO	Workpiece material	Grades	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Mild steels Unhardened steels < 180 HB	AH3135	60 ~ 180	0.05 ~ 0.2
		NS740	60 ~ 150	0.05 ~ 0.15
	Carbon steels Alloy steels < 300 HB	AH3135	60 ~ 150	0.05 ~ 0.18
		NS740	60 ~ 130	0.05 ~ 0.15
	Die steels < 30 HRC	AH3135	80 ~ 130	0.05 ~ 0.2
		NS740	60 ~ 130	0.05 ~ 0.15
M	Stainless steels < 250 HB	AH3135	100 ~ 180	0.08 ~ 0.2
K	Cast irons	AH120	100 ~ 150	0.05 ~ 0.2
N	Aluminium alloys	TH10	200 ~ 400	0.05 ~ 0.2
S	Titanium alloys Ti-6Al-4V, etc.	AH130	20 ~ 60	0.05 ~ 0.15
	Heat-resistant alloys Inconel 718, etc.	AH120	20 ~ 40	0.05 ~ 0.1

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

Applied to cutter dia. ≥ ø50 mm

ISO	Workpiece material	Grades	Roughing (Depth of cut: > 1.5 mm)		Finishing (Depth of cut: 0.3 ~ 0.7 mm)	
			Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Mild steels Unhardened steels < 180 HB	AH3135	130 ~ 230	0.1 ~ 0.2	130 ~ 250	0.1 ~ 0.23
		T3225	130 ~ 300	0.1 ~ 0.23	150 ~ 300	0.1 ~ 0.25
		NS740	130 ~ 200	0.1 ~ 0.18	150 ~ 250	0.1 ~ 0.2
	Carbon steels Alloy steels < 300 HB	AH3135	100 ~ 200	0.1 ~ 0.18	130 ~ 230	0.1 ~ 0.2
		T3225	130 ~ 280	0.1 ~ 0.2	180 ~ 280	0.1 ~ 0.23
		NS740	100 ~ 150	0.1 ~ 0.15	150 ~ 200	0.1 ~ 0.18
	Die steels < 30 HRC	AH3135	100 ~ 150	0.1 ~ 0.15	100 ~ 150	0.1 ~ 0.2
		T3225	100 ~ 250	0.1 ~ 0.15	100 ~ 250	0.1 ~ 0.2
M	Stainless steels < 250 HB	AH3135	80 ~ 180	0.1 ~ 0.2	100 ~ 200	0.1 ~ 0.25
		T3225	150 ~ 200	0.1 ~ 0.18	200 ~ 250	0.1 ~ 0.25
K	Cast irons Ductile cast iron	T1215	100 ~ 250	0.1 ~ 0.2	100 ~ 250	0.1 ~ 0.2
		AH120	100 ~ 200	0.1 ~ 0.2	100 ~ 200	0.1 ~ 0.25
N	Aluminium alloys Si < 13%	TH10	200 ~ 1000	0.05 ~ 0.25	350 ~ 1000	0.1 ~ 0.25
		DX140	200 ~ 1000	0.05 ~ 0.15	350 ~ 1000	0.1 ~ 0.2
	Copper alloys	TH10	200 ~ 500	0.1 ~ 0.15	200 ~ 500	0.1 ~ 0.2
S	Titanium alloys Ti-6Al-4V, etc.	AH130	20 ~ 60	0.05 ~ 0.15	20 ~ 60	0.05 ~ 0.15
	Heat-resistant alloys Inconel 718, etc.	AH120	20 ~ 40	0.05 ~ 0.1	20 ~ 40	0.05 ~ 0.1

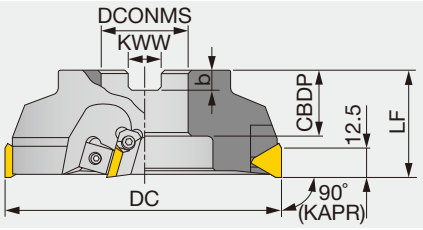
Note:
- Dry cutting is recommended except for aluminium alloys
- Maximum depth of cut for TECN32ZFR-DIA is 2.5 mm.

TSE4000RIA

Square shoulder mill, with wedge clamp system, for positive triangular inserts

GAMP = +17°, GAMF = +5°



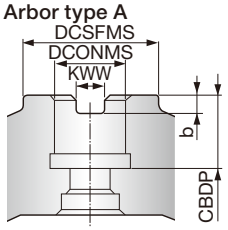


Right hand (R) shown.

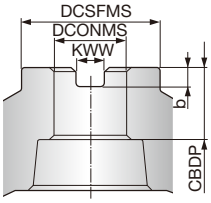
Designation	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(kg)	Arbor type
TSE4003RIA	10	80	4	50	25.4	26	9.5	60	1	A
TSE4004RIA	10	100	6	63	31.75	32	12.7	80	1.9	A
TSE4005RIA	10	125	6	63	38.1	38	15.9	100	2.9	B
TSE4006RIA	10	160	8	63	50.8	38	19	110	4.9	B
TSE4008RIA	10	200	10	63	47.625	38	25.4	140	7.4	C
TSE4010RIA	10	250	12	63	47.625	38	25.4	140	13.8	C
TSE4012RIA	10	315	14	63	47.625	38	25.4	140	22.1	D
TSE4003RIAE	10	80	4	50	27	26	12.4	70	1	A
TSE4004RIAE	10	100	6	63	32	32	14.4	80	1.9	A
TSE4005RIAE	10	125	6	63	40	32	16.4	90	2.9	B
TSE4006RIAE	10	160	8	63	40	29	16.4	90	4.9	B

Arbor type

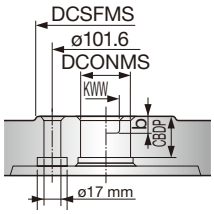
Arbor type A



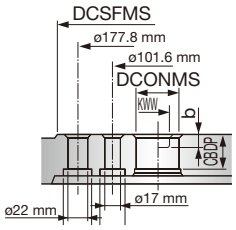
Arbor type B



Arbor type C



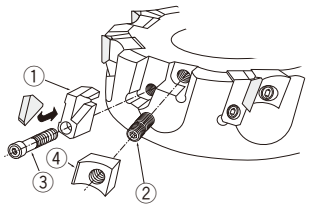
Arbor type D



SPARE PARTS

Designation	①Locator	②Wedge fixing screw	③Locator fixing screw	Shell locking bolt	④Wedge	Wrench
TSE4003RIA	LE403R	FDS-8SS	CM4X0.7X14	CAP-CM12X1.75X30	WF330N	TP-4
TSE4004RIA	LE403R	FDS-8S	CM4X0.7X14	CAP-CM16X2.0X40	WF330N	TP-4
TSE4005 - 12...	LE405R	FDS-8S	CM4X0.7X14	-	WF500R	TP-4
TSE4003RIAE	LE403R	FDS-8S	CM4X0.7X14	-	WF330N	TP-4
TSE4004RIAE	LE403R	FDS-8S	CM4X0.7X14	-	WF330N	TP-4
TSE4005RIAE	LE405R	FDS-8S	CM4X0.7X14	-	WF500R	TP-4
TSE4006RIAE	LE405R	FDS-8S	CM4X0.7X14	-	WF500R	TP-4

*Recommended clamping torque (N·m) : FDS-8SS/FDS-8S=8



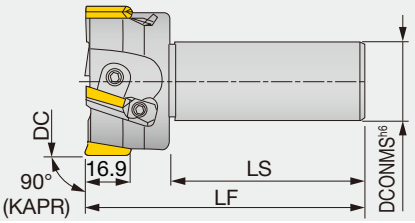
Reference pages: Inserts → H180, Standard cutting conditions → H181

ESE4000R

Square shoulder endmill, shank type, with wedge clamp system, for positive triangular inserts

GAMP = +17°, GAMF = +1° ~ +4°





Right hand (R) shown.

Designation	APMX	DC	CICT	DCONMS	LS	LF	Insert
ESE4050RA	10	50	3	32	80	115	TE*N43/TEKR2204...
ESE4063RA	10	63	4	32	80	115	TE*N43/TEKR2204...
ESE4003RIA-S32	10	80	4	32	80	120	TE*N43/TEKR2204...

（注）ESE4050RA、ESE4063RAは不等分割刃仕様ではありません。

SPARE PARTS

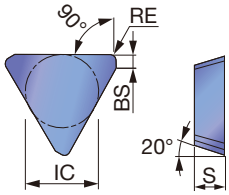
Designation	Locator	Wedge fixing screw	Locator fixing screw	Shell locking bolt	Wedge	Wrench
ESE4050RA	LE402AR	DS-8S	-	SHCM4-10	WT402R	TP-4
ESE4063RA	LE402AR	DS-8	-	SHCM4-10	WT402R	TP-4
ESE4003RIA-S32	LE403R	FDS-8S	CM4X0.7X14	-	WF330N	TP-4

*Recommended clamping torque (N·m)：DS-8S/DS-8/FDS-8S=8

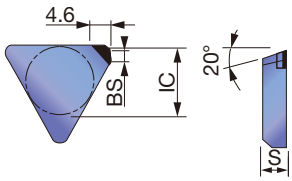
Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

INSERT

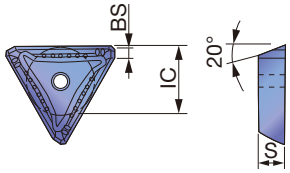
TECN/TEEN 43Z



TECN43ZFR-DIA



TEKR22-MS



		AH120	AH130	AH140	AH330	GH330	T1115	T3130	AH3135	T1215	T3225	NS740	N308	UX30	TH10	DX140
P	Steel	☆		☆	☆	☆		☆	★		☆	★	☆		☆		
M	Stainless	☆	★	☆					★		☆						
K	Cast iron	★					☆			★					☆		
N	Non-ferrous														★	★	
S	Superalloys	☆	☆														
H	Hard materials																

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated										Cermet			Uncoated		PCD		IC	S	BS
			AH120	AH130	AH140	AH330	GH330	T1115	T3130	AH3135	T1215	T3225	NS740	N308		UX30	TH10	DX140				
TECN43ZFR	C0.5	10															●			12.7	4.76	2
TECN43ZTR	1	10											●	●		●				12.7	4.76	1.31
TEEN43ZFR	C0.5	10															●			12.7	4.76	2
TEEN43ZTR	1	10	●	●	●	●	●	●	●	●	●	●	●	●		●				12.7	4.76	1.31
TECN43ZFR-DIA	-	3.5																●		12.7	4.76	2
TEKR2204PEPR-MS	-	10			●															12.7	4.76	1.8

Note: T-DIA is a diamond-based ultra high pressure sintered body. Available in 1-corner type.

●: Line up

DX140: 1 piece per package

Reference pages: Standard cutting conditions → H181

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grades	Roughing (Depth of cut: > 1.5 mm)		Finishing (Depth of cut: 0.3 ~ 0.7 mm)	
			Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Mild steels Unhardened steels < 180 HB	AH3135	130 ~ 230	0.1 ~ 0.2	150 ~ 250	0.1 ~ 0.23
		T3225	130 ~ 300	0.1 ~ 0.23	180 ~ 300	0.1 ~ 0.25
		NS740	130 ~ 200	0.1 ~ 0.18	150 ~ 250	0.1 ~ 0.2
	Carbon steels Alloy steels < 300 HB	AH3135	100 ~ 200	0.1 ~ 0.18	130 ~ 230	0.1 ~ 0.2
		T3225	130 ~ 280	0.1 ~ 0.2	180 ~ 280	0.1 ~ 0.23
		NS740	100 ~ 150	0.1 ~ 0.15	150 ~ 200	0.1 ~ 0.18
	Die steels < 30 HRC	T3225	100 ~ 250	0.1 ~ 0.15	100 ~ 250	0.1 ~ 0.2
		AH3135	100 ~ 150	0.1 ~ 0.15	100 ~ 150	0.1 ~ 0.2
M	Stainless steels < 250 HB	AH3135	80 ~ 180	0.1 ~ 0.2	100 ~ 200	0.1 ~ 0.25
		T3225	150 ~ 200	0.1 ~ 0.18	200 ~ 250	0.1 ~ 0.25
K	Cast irons Ductile cast iron	T1215	100 ~ 250	0.1 ~ 0.2	100 ~ 250	0.1 ~ 0.25
		AH120	100 ~ 200	0.1 ~ 0.2	100 ~ 200	0.1 ~ 0.25
N	Aluminium alloys Si < 13%	TH10	200 ~ 1000	0.05 ~ 0.25	350 ~ 1000	0.1 ~ 0.25
		DX140	200 ~ 1000	0.05 ~ 0.15	350 ~ 1000	0.1 ~ 0.2
	Copper alloys	TH10	200 ~ 500	0.1 ~ 0.15	200 ~ 500	0.1 ~ 0.2
S	Titanium alloys Ti-6Al-4V, etc.	AH130	20 ~ 60	0.05 ~ 0.15	20 ~ 60	0.05 ~ 0.15
	Heat-resistant alloys Inconel 718, etc.	AH120	20 ~ 40	0.05 ~ 0.1	20 ~ 40	0.05 ~ 0.1

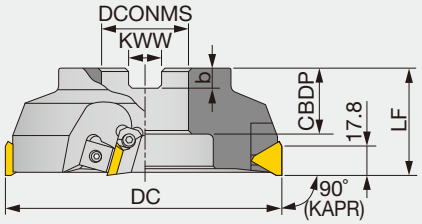
Note:
- Dry cutting is recommended except for aluminium alloys
- Maximum depth of cut for DX140 TECN43ZFR-DIA is 3.5 mm.

TSP4000IA

Square shoulder mill, with wedge clamp system, for positive triangular inserts

GAMP = +5°, GAMF = 0°





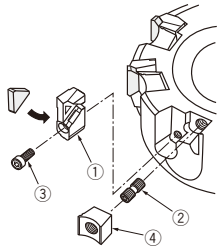
Right hand (R) shown.

Designation	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TSP4003RIA	10	80	4	50	25.4	26	9.5	6	1.1	TP*N43 / TP*R...
TSP4004RIA	10	100	6	63	31.75	32	12.7	8	2	TP*N43 / TP*R...
TSP4005RIA	10	125	6	63	38.1	38	15.9	10	3.1	TP*N43 / TP*R...
TSP4006RIA	10	160	8	63	50.8	38	19	11	5.1	TP*N43 / TP*R...
TSP4008RIA	10	200	10	63	47.625	38	25.4	14	7.7	TP*N43 / TP*R...
TSP4010RIA	10	250	12	63	47.625	38	25.4	14	14.1	TP*N43 / TP*R...
TSP4012RIA	10	315	14	63	47.625	38	25.4	14	22.6	TP*N43 / TP*R...

SPARE PARTS

Designation	Locator	Wedge fixing screw	Locator fixing screw	Shell locking bolt	Wedge	Wrench
TSP4003RIA	LP403R	FDS-8S	CM4X0.7X14	CAP-CM12X1.75X30	WF330N	TP-4
TSP4004RIA	LP403R	FDS-8S	CM4X0.7X14	CAP-CM16X2.0X40	WF330N	TP-4
TSP40**RIA	LP405R	FDS-8S	CM4X0.7X14	-	WF500R	TP-4

*Recommended clamping torque (N·m)：FDS-8S=8



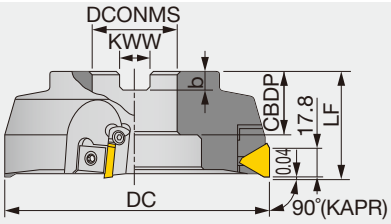
Reference pages: Inserts, Standard cutting conditions → H184 - H185

TFP4000IA

Square shoulder mill with finisher



GAMP = +5°, GAMF = 0°



Right hand (R) shown.

Designation	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(kg)	Insert
TFP4004RIA	10	100	5	63	31.75	32	12.7	8	2	TP*N43 / TP*R...
TFP4005RIA	10	125	6	63	38.1	38	15.9	10	3.1	TP*N43 / TP*R...
TFP4006RIA	10	160	8	63	50.8	38	19	11	5.2	TP*N43 / TP*R...
TFP4008RIA	10	200	10	63	47.625	38	25.4	14	7.9	TP*N43 / TP*R...

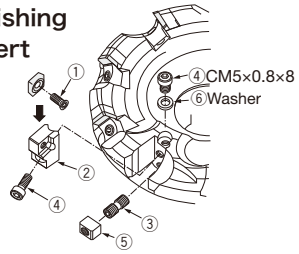
A SPARE PARTS FOR FINISHING INSERT



Designation	①Clamping screw	②Locator	③Wedge fixing screw	④Locator fixing screw	④Locator fixing screw	⑤Wedge	Wrench 1	Wrench 2
TFP40...	CSTA-5S	LW400R	FDS-8S	CM4X0.7X14	CM5X0.8X16	FW-305	T-15D	TP-4

*Recommended clamping torque (N·m) : FDS-8S=8

A Finishing insert



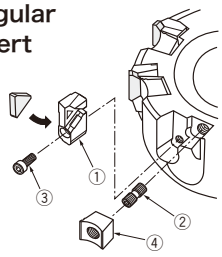
B SPARE PARTS FOR REGULAR INSERT



Designation	①Clamping screw	②Wedge fixing screw	③Locator fixing screw	④Wedge	Wrench
TFP4004RIA	LP403R	FDS-8S	CM4X0.7X14	WF330N	TP-4
TFP4005 - 08...	LP405R	FDS-8S	CM4X0.7X14	WF500R	TP-4

*Recommended clamping torque N·m) : FDS-8S=8

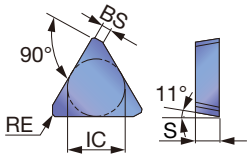
B Regular insert



Reference pages: Inserts, Standard cutting conditions → H184 - H185

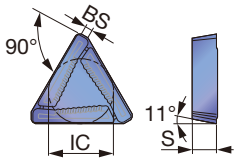
INSERT

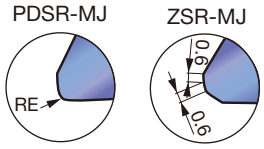
TPCN/TPEN/TPKN 43Z



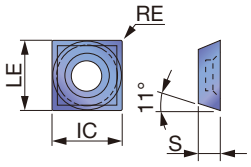
図は右勝手(R)を示す

TPKR/TPMR-MJ





SPHA-FNW



		Coated						Cermet		Uncoated								
		AH120	AH130	AH140	GH330	T1115	T3130	NS740	N308	UX30	TH10							
P	Steel	★			☆		★	★	☆		☆							
M	Stainless		★	★														
K	Cast iron	★				★												
N	Non-ferrous										★							
S	Superalloys	★	☆															
H	Hard materials																	

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated						Cermet		Uncoated						IC	LE	S	BS
			AH120	AH130	AH140	GH330	T1115	T3130	NS740	N308	UX30	TH10								
TPCN43ZFR	C0.5	10										●					12.7	-	4.76	2
TPCN43ZTR	C0.5	10							●	●	●						12.7	-	4.76	2
TPEN43ZTR	C0.5	10							●								12.7	-	4.76	2
TPEN43ZTRCR	1	10						●									12.7	-	4.76	2
TPKN43ZFR	C0.5	10										●					12.7	-	4.76	2
TPKN43ZTR	C0.5	10	●	●	●	●	●	●	●	●	●						12.7	-	4.76	2
TPKR43ZSR-MJ	-	10				●		●									12.7	-	4.76	1.5
TPMR2204PDSR-MJ	0.8	10				●		●									12.7	-	4.76	1.2
TPKN43ZFL	C0.5	10										●					12.7	-	4.76	2
SPHA431FNW	0.4	-								●		●					12.7	12.7	4.76	-

●: Line up

STANDARD CUTTING CONDITIONS

TSP4000IA · TFP4000IA (When finishing insert is not in use)

ISO	Workpiece material	Grades	Roughing (Depth of cut: > 1.5 mm)		Finishing (Depth of cut: 0.3 ~ 0.7 mm)	
			Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Mild steels Unhardened steels < 180 HB	AH120 · GH330	100 ~ 230	0.1 ~ 0.25	130 ~ 250	0.1 ~ 0.3
		T3130	130 ~ 300	0.1 ~ 0.28	180 ~ 300	0.1 ~ 0.3
		UX30	100 ~ 180	0.1 ~ 0.25	130 ~ 200	0.1 ~ 0.3
		NS740 · N308	130 ~ 200	0.1 ~ 0.2	150 ~ 250	0.1 ~ 0.25
	Carbon steels Alloy steels < 300 HB	AH120 · GH330	100 ~ 180	0.1 ~ 0.2	150 ~ 200	0.1 ~ 0.28
		T3130	130 ~ 180	0.1 ~ 0.25	180 ~ 280	0.1 ~ 0.28
		UX30	80 ~ 130	0.1 ~ 0.2	100 ~ 150	0.1 ~ 0.28
		NS740 · N308	100 ~ 150	0.1 ~ 0.18	150 ~ 200	0.1 ~ 0.23
	Die steels < 30 HRC	T3130 · AH120 · GH330	100 ~ 150	0.1 ~ 0.18	100 ~ 150	0.1 ~ 0.2
		UX30	80 ~ 130	0.1 ~ 0.18	80 ~ 130	0.1 ~ 0.2
M	Stainless steels < 250 HB	AH130 · AH140	150 ~ 200	0.15 ~ 0.23	200 ~ 230	0.15 ~ 0.25
		AH120	150 ~ 230	0.15 ~ 0.2	200 ~ 250	0.15 ~ 0.23
K	Cast irons Ductile cast iron	T1115	100 ~ 200	0.1 ~ 0.2	100 ~ 200	0.1 ~ 0.25
		TH10 · UX30	80 ~ 130	0.1 ~ 0.2	80 ~ 130	0.1 ~ 0.25
S	Titanium alloys	AH130	20 ~ 60	0.05 ~ 0.15	20 ~ 60	0.05 ~ 0.15
	Heat-resistant alloys	AH120	20 ~ 40	0.05 ~ 0.1	20 ~ 40	0.05 ~ 0.1

STANDARD CUTTING CONDITIONS FOR MJ INSERT TPM/KR

ISO	Workpiece material	Roughing (Depth of cut: > 1.5 mm) Feed per tooth *fz* (mm/t)	
		TPKR43ZSR-MJ	TPMR2204PDSR-MJ
P	Mild steels·Unhardened steels (< 180 HB)	0.1 ~ 0.23	0.1 ~ 0.4
P	Carbon steels · Alloy steels (< 300 HB)	0.1 ~ 0.2	0.1 ~ 0.35
P	Die steels (< 30 HRC)	0.1 ~ 0.18	0.1 ~ 0.25

Please refer to the above table for cutting speeds and finishing conditions.

STANDARD CUTTING CONDITIONS (WHEN FINISHING INSERT IS IN USE)

TFP4000IA (For finishing)

ISO	Workpiece material	Grades		Cutting speed *Vc* (m/min)
		Regular insert	Finishing insert	
P	Mild steels·Unhardened steels (< 180 HB)	NS740	N308	180 ~ 300
P	Mild steels·Unhardened steels (< 180 HB)	N308	N308	180 ~ 250
P	Carbon steels · Alloy steels (< 300 HB)	NS740	N308	150 ~ 250
P	Carbon steels · Alloy steels (< 300 HB)	N308	N308	150 ~ 230
K	Cast irons. Ductile cast irons	T1115	TH10	100 ~ 150

Notes:
- Above conditions are applied when the finishing insert is used.
- Generally, high-speed, high-feed and small depth of cut are recommended for TFP4000IA type cutters.
- When cutting width is larger than 60 mm, the maximum depth of cut should be around 1 mm.

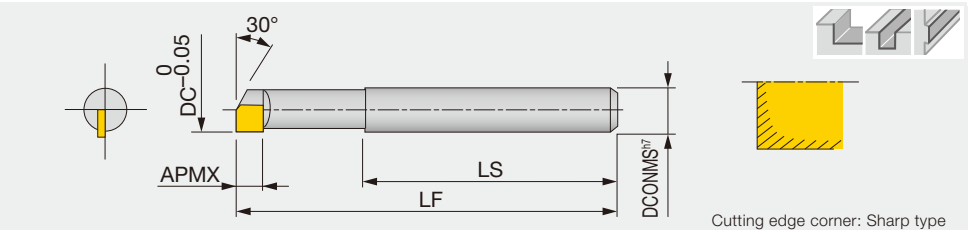
Starting guideline		
Depth of cut a_p (mm)	Feed per rev. *f* (mm/rev)	Feed per tooth f_z (mm/t)
> 1.0	1 ~ 1.6	0.15 ~ 0.2
0.2 ~ 0.7	1.6 ~ 2.5	0.18 ~ 0.3
< 0.1	2 ~ 3.5	0.2 ~ 0.4

Notes: When cutting width is larger than 60 mm, the maximum depth of cut should be around 1 mm.

DEB1000

T-DIA endmill for high speed aluminium machining





Cutting edge corner: Sharp type

Designation	DX140	NOF	DC	DCONMS	APMX	LS	LF
DEB1040	●	1	4	6	3.5	32	45
DEB1050	●	1	5	6	3.5	35	50
DEB1060	●	1	6	6	3.5	35	50
DEB1070		1	7	8	5	37	55
DEB1080	●	1	8	8	5	37	55
DEB1090		1	9	10	5	40	60
DEB1100	●	1	10	10	5	40	60
DEB1110		1	11	12	5	45	65
DEB1120	●	1	12	12	5	45	65

Note:

●: Line up

- The cutting edge is very sharp. Please handle it carefully. Do not directly measure the cutting edge with micrometer, etc. as it may cause chipping.
- Please keep the tool overhang from the milling chuck as short as possible.
- Please choose a machine that is as rigid as possible.

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

STANDARD CUTTING CONDITIONS

DEB1000

For side milling $a_p \leq 3D$, $a_e = 0.1$ mm

ISO	Workpiece material	Mill dia. (mm)	Cutting Speed *Vc* (m/min)	No. of revolutions *n* (min^{-1})	Table feed *Vf* (mm/min)
N	Aluminium alloys, Copper alloys	ø4	120 - 180	12,000	120
		ø5	120 - 180	9,600	120
		ø6	120 - 180	8,000	120
		ø8	120 - 180	6,000	120
		ø10	120 - 180	4,800	120
		ø12	120 - 180	4,000	100

- Keep the tool overhang as short as possible. When the overhang is long, please reduce the number of revolutions and feed to prevent chattering.
- Please adjust the number of revolutions and feed speed according to the cutting condition, such as depth of cut and machine rigidity.

TUNGUSLOT UNIVERSAL

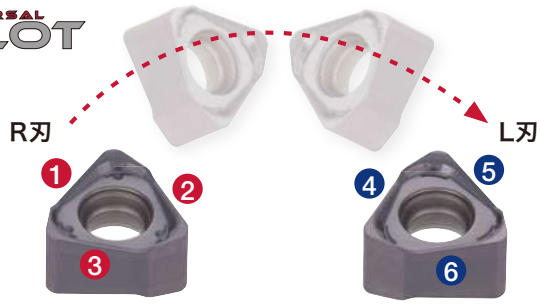


High economy by 6-corner insert with wiper
Machining stability with the cutter design for optimum chip evacuation

High economy by 6-corner insert

6-corner insert provides economical advantage. Self-wiper edge delivers good surface quality.

TUNGUSLOT UNIVERSAL
6 corners
with wiper



ASW / TSW
CW = 10, 12, 14, 16 mm

Excellent chip evacuation even in deep slot milling - optimum pocket design

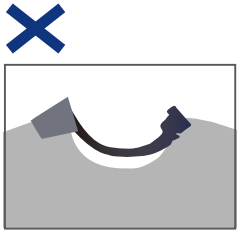
TUNGUSLOT UNIVERSAL

OK



Optimum chipbreaker and big gullets create compact chip formation and smooth evacuation!

Competitor



Unformed chip and narrow gullet cause chip packing.

TUNGUSLOT UNIVERSAL ASW / TSW type

P **Steel** S55C / C55 (200HB)
Edge width: CW = 10 mm, Dry
Corner radius: RE = 0.8 mm

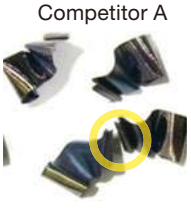
Cutter	Depth of slot: *ae* (mm)		
	10	20	30
TUNGUSLOT UNIVERSAL	O	O	O
Competitor A	O	O	×

Chips at *ae* = 30 mm depth

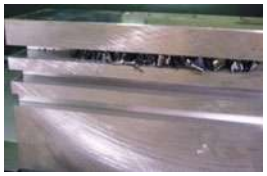
TUNGUSLOT UNIVERSAL



Competitor A



Packed chips



Chips are packed because of bad chip control and flow.

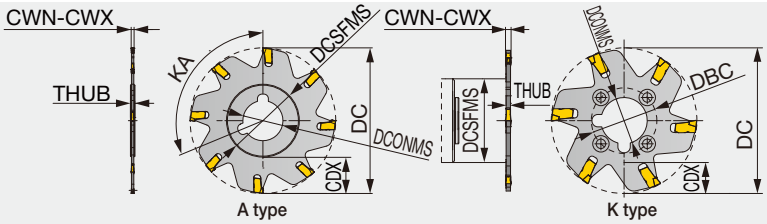
Reference pages: H194

TUNGMINI SLIT

S/ASG

Side cutter for thin slitting and cutting off





Designation	CWN	CWX	DC	CICT	DCSFMS	DCONMS	DBC	THUB	CDX	KA	SS	SS	Drive flange	Type	Insert
SSG01R063-E1.6	1.6	1.6	63	6	32	10	22	2.4	14	0	SW25-32	SW1.00-32	-	K	SSS16N
ASG01N076-1.6	1.6	1.6	76.2	8	39	25.4	-	2.4	14	112.5	-	-	-	A	SSS16N
ASG01N080-E1.6	1.6	1.6	80	8	39	22	-	2.4	16	112.5	-	-	-	A	SSS16N
ASG01N100-1.6	1.6	1.6	100	10	39	25.4	-	2.4	30	90	-	-	-	A	SSS16N
ASG01N100-E1.6	1.6	1.6	100	10	39	22	-	2.4	30	90	-	-	-	A	SSS16N
ASG01N125-1.6	1.6	1.6	125	12	64	31.75	-	2.4	30	75	-	-	-	A	SSS16N
ASG01N125-E1.6	1.6	1.6	125	12	64	27	-	2.4	30	75	-	-	-	A	SSS16N
SSG02R063-E2	1.85	2.5	63	6	32	10	22	2.4	15	0	SW25-32	SW1.00-32	-	K	SSM/S22N
ASG02N076-2	1.85	2.5	76.2	8	39	25.4	-	2.4	17	112.5	-	-	-	A	SSM/S22N
ASG02N080-E2	1.85	2.5	80	8	39	22	-	2.4	20	112.5	-	-	-	A	SSM/S22N
ASG02N100-2	1.85	2.5	100	10	39	25.4	-	2.4	30	90	-	-	-	A	SSM/S22N
ASG02N100-E2	1.85	2.5	100	10	39	22	-	2.4	30	90	-	-	-	A	SSM/S22N
ASG02N125-2	1.85	2.5	125	12	60	31.75	-	2.4	32	75	-	-	-	A	SSM/S22N
ASG02N125-E2	1.85	2.5	125	12	60	27	-	2.4	32	75	-	-	-	A	SSM/S22N
SSG03R063-E3	2.65	3.5	63	5	32	10	22	2.4	15	0	SW25-32	SW1.00-32	-	K	SSM/S31N
SSG03R080-3	2.65	3.5	80	6	46	25.4	36	2.4	16	0	SW32-25.4-46-J	SW1.25-46	R1.00-46	K	SSM/S31N
SSG03R080-E3	2.65	3.5	80	6	40(1)	22	32	2.4	19(2)	0	SW32-40	-	R22-46	K	SSM/S31N
SSG03R100-3	2.65	3.5	100	6	46	25.4	36	2.4	26	0	SW32-25.4-46-J	SW1.25-46	R1.00-46	K	SSM/S31N
SSG03R100-E3	2.65	3.5	100	6	40(1)	22	32	2.4	29(3)	0	SW32-40	-	R22-46	K	SSM/S31N
SSG03R125-3	2.65	3.5	125	8	55	31.75	45	2.4	34	0	-	-	R1.25-55	K	SSM/S31N
SSG03R125-E3	2.65	3.5	125	8	55	32	45	2.4	34	0	S32-55	-	R32-55	K	SSM/S31N
SSG04R063-E4	4	4.5	63	5	32	10	22	3.2	15	0	SW25-32	SW1.00-32	-	K	SSM/S41N
SSG04R080-4	4	4.5	80	6	46	25.4	36	3.2	16	0	SW32-25.4-46-J	SW1.25-46	R1.00-46	K	SSM/S41N
SSG04R080-E4	4	4.5	80	6	40(1)	22	32	3.2	19(2)	0	SW32-40	-	R22-46	K	SSM/S41N
SSG04R100-4	4	4.5	100	6	46	25.4	36	3.2	26	0	SW32-25.4-46-J	SW1.25-46	R1.00-46	K	SSM/S41N
SSG04R100-E4	4	4.5	100	6	40(1)	22	32	3.2	29(3)	0	SW32-40	-	R22-46	K	SSM/S41N
SSG04R125-4	4	4.5	125	8	55	31.75	45	3.2	34	0	-	-	R1.25-55	K	SSM/S41N
SSG04R125-E4	4	4.5	125	8	55	32	45	3.2	34	0	S32-55	-	R32-55	K	SSM/S41N

(1) When using a drive flange, DCSFMS = 46 mm
(2) When using a drive flange, CDX = 16 mm
(3) When using a drive flange, CDX = 26 mm

SPARE PARTS

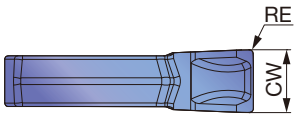
Designation	Grip	Extractor
SSG01/02...	ESG0.5	-
ASG01/02...	ESG0.5	-
SSG03/04...	-	ESG1

Reference pages: Inserts, Standard cutting conditions → H189

INSERT

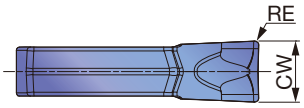
SSM





SSS





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	RE	Coated GH130	CW±0.04
SSM22N	0.2	●	2.2
SSM31N	0.2	●	3.1
SSM41N	0.25	●	4.1
SSS16N	0.16	●	1.6
SSS22N	0.2	●	2.2
SSS31N	0.2	●	3.1
SSS41N	0.25	●	4.1

●: Line up

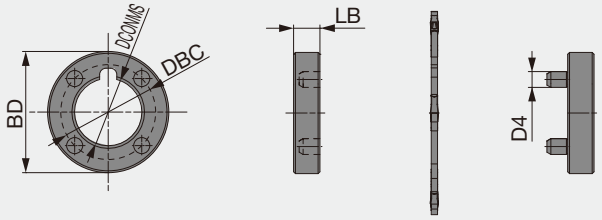
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness (HB)	Insert	Cutting speed *Vc* (m/min)	Chip thickness t (mm)
P	Low carbon steel SS400, S15C, etc. E275A, C15E4, etc.	- 200	SSM**	150 - 230	0.05 - 0.15
	High carbon steel S45C, S55C, etc. E355D, C55, etc.	200 - 300	SSM**	100 - 170	0.04 - 0.13
	Alloy steels SCM440, SCr415, etc. 42CrMo4, 20Cr4, etc.	150 - 300	SSM**	90 - 160	0.04 - 0.13
	Tool steel SKD11, SKD61, etc. X153CrMoV12, X40CrMoV5-1, etc.	- 300	SSM**	70 - 120	0.04 - 0.13
M	Stainless steel SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-3, etc.	-	SSS**	90 - 200	0.04 - 0.13
K	Grey cast iron FC250, FC300, etc. 250, 300, etc.	150 - 250	SSM**	100 - 200	0.05 - 0.15
	Ductile cast iron FCD400, etc, 400-15S, etc.	150 - 250	SSM**	80 - 130	0.05 - 0.15

TUNGMINI SLIT
R (drive flange set)

Drive flange set for side cutters



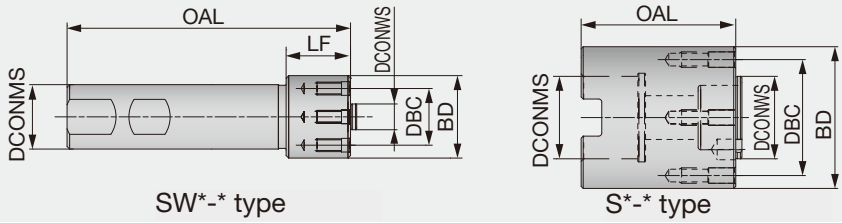


Designation	DCONMS	BD	D4	DBC	LB
R1.00-46	25.4	46	5	36	10
R22-46	22	46	6	32	10
R1.25-55	31.75	55	6	45	10
R32-55	32	55	6	45	10

TUNGMINI SLIT
SW

Drive shank for side cutters





Designation	DCONMS	DCONMS	DCONWS	BD	DBC	LF	OAL
SW25-32	25	-	10	32	22	25	110
SW32-40	32	-	22	40	32	30	120
SW32-25.4-46-J	32	-	25.4	46	36	30	120
SW1.00-32	25.4	-	10	32	22	25.4	110
SW1.25-46	31.75	-	25.4	46	36	30	120
S32-55	-	32	32	55	45	-	60

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

SPARE PARTS






Designation	Screw	Wrench		
		Mono block type	Torx bit	Handle
SW25-32	SR76-961	SETT-15/5	-	-
SW32-40	SR76-963	SETT-15/5	-	-
SW32-25.4-46-J	SR76-963	SETT-15/5	-	-
SW1.00-32	SR76-961	SETT-15/5	-	-
SW1.25-46	SR76-963	SETT-15/5	-	-
S32-55	SR76-943	-	BT20M	H-TB

*Recommended clamping torque (N·m) : SR76-961 = 3.5

Reference pages: Inserts, Standard cutting conditions → H193

COMBINATION OF ARBORS / ATTACHMENTS

Cutter bodies : “A” type

A-type disk cutters are without clamping holes on the hub and can be mounted only by using axial drive arbors.





Axial drive arbor

Cutter bodies : “K” type

K-type disk cutters are with clamping holes on the hub and can be mounted by using intermediate shanks or shell adaptors, making it possible to use endmills / shell mill arbors.





Drive flange



Axial drive arbor



Shank adaptor



Shell adaptor



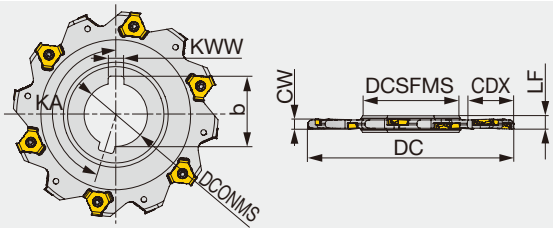
Shell mill / Endmill arbor

Tool dia.	ø63	ø80	ø100	ø125
Drive flange	-	✔	✔	✔
Shank / Shell adaptor	✔	✔	✔	✔

TUNGTHIN SLIT
ASV 02/03/04/05

Axial drive slot mill, for tangentially mounted inserts





Designation	CW	DC	ZEFP/CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	KA	Insert
ASV02N080-4	4	80	5/10	41	25.4	6	28	6.35	15	162	TVKX0202...
ASV02N080-E4	4	80	5/10	41	27	6	29.8	7	15	162	TVKX0202...
ASV02N100-4	4	100	6/12	48	31.75	6	35.2	7.92	20	165	TVKX0202...
ASV02N100-E4	4	100	6/12	47	32	6	34.8	8	20	165	TVKX0202...
ASV02N125-4	4	125	8/16	58	38.1	6	42.3	9.52	30	168.75	TVKX0202...
ASV02N125-E4	4	125	8/16	55	40	6	43.5	10	30	168.75	TVKX0202...
ASV02N160-4	4	160	10/20	58	38.1	6	42.3	9.52	45	171	TVKX0202...
ASV02N160-E4	4	160	10/20	55	40	6	43.5	10	45	171	TVKX0202...
ASV03N080-5	5	80	5/10	41	25.4	6.5	28	6.35	15	162	TVKX03X3...
ASV03N080-E5	5	80	5/10	41	27	6.5	29.8	7	15	162	TVKX03X3...
ASV03N100-5	5	100	6/12	48	31.75	6.5	35.2	7.92	20	165	TVKX03X3...
ASV03N100-E5	5	100	6/12	47	32	6.5	34.8	8	20	165	TVKX03X3...
ASV03N125-5	5	125	8/16	58	38.1	6.5	42.3	9.52	30	168.75	TVKX03X3...
ASV03N125-E5	5	125	8/16	55	40	6.5	43.5	10	30	168.75	TVKX03X3...
ASV03N160-5	5	160	10/20	58	38.1	6.5	42.3	9.52	45	171	TVKX03X3...
ASV03N160-E5	5	160	10/20	55	40	6.5	43.5	10	45	171	TVKX03X3...
ASV04N080-6	6	80	4/8	41	25.4	8	28	6.35	17	157.5	TVKX04H3...
ASV04N080-E6	6	80	4/8	41	27	8	29.8	7	17	157.5	TVKX04H3...
ASV04N100-6	6	100	5/10	48	31.75	8	35.2	7.92	23.5	162	TVKX04H3...
ASV04N100-E6	6	100	5/10	47	32	8	34.8	8	23.5	162	TVKX04H3...
ASV04N125-6	6	125	6/12	58	38.1	8	42.3	9.52	31	165	TVKX04H3...
ASV04N125-E6	6	125	6/12	55	40	8	43.5	10	32.5	165	TVKX04H3...
ASV04N160-6	6	160	8/16	58	38.1	8	42.3	9.52	48.5	168.75	TVKX04H3...
ASV04N160-E6	6	160	8/16	55	40	8	43.5	10	50	168.75	TVKX04H3...
ASV04N200-6	6	200	10/20	69	50.8	8	55.8	12.7	63	171	TVKX04H3...
ASV04N200-E6	6	200	10/20	69	50	8	53.5	12	63	171	TVKX04H3...
ASV05N080-8	8	80	4/8	41	25.4	10	28	6.35	17	157.5	TVKX0504...
ASV05N080-E8	8	80	4/8	41	27	10	29.8	7	17	157.5	TVKX0504...
ASV05N100-8	8	100	5/10	48	31.75	10	35.2	7.92	23.5	162	TVKX0504...
ASV05N100-E8	8	100	5/10	47	32	10	34.8	8	23.5	162	TVKX0504...
ASV05N125-8	8	125	6/12	58	38.1	10	42.3	9.52	31	165	TVKX0504...
ASV05N125-E8	8	125	6/12	55	40	10	43.5	10	32.5	165	TVKX0504...
ASV05N160-8	8	160	8/16	58	38.1	10	42.3	9.52	48.5	168.75	TVKX0504...
ASV05N160-E8	8	160	8/16	55	40	10	43.5	10	50	168.75	TVKX0504...
ASV05N200-8	8	200	10/20	69	50.8	10	55.8	12.7	63	171	TVKX0504...
ASV05N200-E8	8	200	10/20	69	50	10	53.5	12	63	171	TVKX0504...

Approach angle: 10°-20° | 45° | 70° | 85° | 88° | 90° | Others

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Torx bit	Mono block type Torx bit
ASV02/03N...	SR114-018-L3.40	-	M-1000	-	T-6D
ASV04N...	SR14-500/L5.1	H-TB2W	M-1000	BT15S	-
ASV05N...	SR14-500-L7.0	H-TB2W	M-1000	BT15S	-

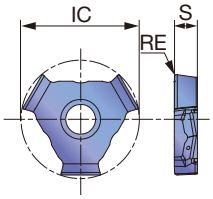
*Recommended clamping torque (N·m): SR114-018-L3.40=0.7, SR14-500/L5.1=3.5, SR14-500-L7.0=3.5

Reference pages: Inserts, Standard cutting conditions → H193

INSERT

TVKX-MJ





P	Steel	☆		★	
M	Stainless		★	☆	
K	Cast iron	★		☆	
N	Non-ferrous				
S	Superalloys	★	☆	★	
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	RE	Coated			S	IC
		AH120	AH130	AH725		
TVKX020202TN-MJ	0.2	●		●	2.4	9.4
TVKX020204TN-MJ	0.4	●		●	2.4	9.4
TVKX03X302TN-MJ	0.2	●		●	3.2	9.4
TVKX03X304TN-MJ	0.4	●		●	3.2	9.4
TVKX04H304TN-MJ	0.4	●	●	●	3.5	16.9
TVKX04H308TN-MJ	0.8	●	●	●	3.5	16.9
TVKX050404TN-MJ	0.4	●	●	●	4.5	16.9
TVKX050408TN-MJ	0.8	●	●	●	4.5	16.9

●: Line up

STANDARD CUTTING CONDITIONS

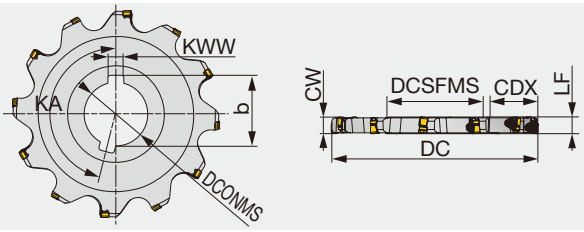
ISO	Workpiece material	Hardness (HB)	Priority	Grade	Cutting speed *Vc* (m/min)	Feed per edge line: *fz* (mm/t) ASV *ae* / DC (mm) 10%	ASV *ae* / DC (mm) 20%	30%	≤ 50%
P	Low carbon steels SS400, etc. E275A, etc.	- 200	First choice	AH725	90 - 180	0.08 - 0.25	0.06 - 0.19	0.05 - 0.16	0.05 - 0.15
		- 200	Fracture resistance	AH130	90 - 180	0.08 - 0.25	0.06 - 0.19	0.05 - 0.16	0.05 - 0.15
	High carbon steels S45C, etc. C45, etc.	200 - 300	First choice	AH725	90 - 180	0.07 - 0.22	0.05 - 0.16	0.04 - 0.14	0.04 - 0.13
		200 - 300	Fracture resistance	AH130	90 - 180	0.07 - 0.22	0.05 - 0.16	0.04 - 0.14	0.04 - 0.13
	Alloy steels SCM440, etc. 42CrMo4, etc.	150 - 300	First choice	AH725	90 - 180	0.07 - 0.22	0.05 - 0.16	0.04 - 0.14	0.04 - 0.13
		150 - 300	Fracture resistance	AH130	90 - 180	0.07 - 0.22	0.05 - 0.16	0.04 - 0.14	0.04 - 0.13
	Tool steels SKD61, etc. X40CrMoV5-1, etc.	- 300	First choice	AH725	90 - 180	0.07 - 0.22	0.05 - 0.16	0.04 - 0.14	0.04 - 0.13
		- 300	Fracture resistance	AH130	90 - 180	0.07 - 0.22	0.05 - 0.16	0.04 - 0.14	0.04 - 0.13
M	Stainless steel SUS304, etc. X5CrNi18-9, etc.	-		AH130	90 - 200	0.07 - 0.22	0.05 - 0.16	0.04 - 0.14	0.04 - 0.13
K	Grey cast irons FC250, etc. 250, etc.	150 - 250		AH120	120 - 230	0.08 - 0.25	0.06 - 0.19	0.05 - 0.16	0.05 - 0.15
	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250		AH120	90 - 150	0.08 - 0.25	0.06 - 0.19	0.05 - 0.16	0.05 - 0.15
S	Titanium alloys Ti-6Al-4V, etc.	-	First choice	AH725	30 - 40	0.07 - 0.12	0.05 - 0.09	0.04 - 0.07	0.04 - 0.07
		-	Fracture resistance	AH130	30 - 40	0.07 - 0.12	0.05 - 0.09	0.04 - 0.07	0.04 - 0.07
	Nickel-based alloys Inconel 718, etc.	-	First choice	AH725	20 - 35	0.07 - 0.12	0.05 - 0.09	0.04 - 0.07	0.04 - 0.07
		-	Fracture resistance	AH130	20 - 35	0.07 - 0.12	0.05 - 0.09	0.04 - 0.07	0.04 - 0.07

TUNGUSLOT UNIVERSAL

ASW 06/07/09

Axial drive slot mill, for 6-corner double sided inserts





Designation	CW	DC	ZEFP/CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	KA	Insert
ASW06N080-10	10	80	4/8	41	25.4	10	28	6.35	18.5	157.5	WNGU0603...
ASW06N080-E10	10	80	4/8	41	27	10	29.8	7	18.5	157.5	WNGU0603...
ASW06N100-10	10	100	5/10	48	31.75	10	35.2	7.92	25	162	WNGU0603...
ASW06N100-E10	10	100	5/10	47	32	10	34.8	8	25.5	162	WNGU0603...
ASW06N125-10	10	125	6/12	58	38.1	10	42.3	9.52	32.5	165	WNGU0603...
ASW06N125-E10	10	125	6/12	55	40	10	43.5	10	34	165	WNGU0603...
ASW06N160-10	10	160	7/14	58	38.1	10	42.3	9.52	50	167.14	WNGU0603...
ASW06N160-E10	10	160	7/14	55	40	10	43.5	10	51.5	167.14	WNGU0603...
ASW07N100-12	12	100	5/10	48	31.75	12	35.2	7.92	25	162	WNGU07T3...
ASW07N100-E12	12	100	5/10	47	32	12	34.8	8	25.5	162	WNGU07T3...
ASW07N125-12	12	125	6/12	58	38.1	12	42.3	9.52	32.5	165	WNGU07T3...
ASW07N125-E12	12	125	6/12	55	40	12	43.5	10	34	165	WNGU07T3...
ASW07N160-12	12	160	7/14	58	38.1	12	42.3	9.52	50	167.14	WNGU07T3...
ASW07N160-E12	12	160	7/14	55	40	12	43.5	10	51.5	167.14	WNGU07T3...
ASW09N100-14	14	100	5/10	48	31.75	14	35.2	7.92	25	162	WNGU0904...
ASW09N100-E14	14	100	5/10	47	32	14	34.8	8	25.5	162	WNGU0904...
ASW09N160-14	14	160	7/14	58	38.1	14	42.3	9.52	50	167.14	WNGU0904...
ASW09N160-E14	14	160	7/14	55	40	14	43.5	10	51.5	167.14	WNGU0904...
ASW09N160-16	16	160	7/14	58	38.1	16	42.3	9.52	50	167.14	WNGU0904...
ASW09N160-E16	16	160	7/14	55	40	16	43.5	10	51.5	167.14	WNGU0904...

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

SPARE PARTS



Designation	Clamping screw1	Clamping screw2	Grip 1	Grip 2	Lubricant	Torx bit	Wrench
ASW06N...	-	CSPB-2.5	-	-	M-1000	-	IP-8D
ASW07N100/125-...	-	CSPD-3	-	SW6-SD	M-1000	BLD IP10/S7	-
ASW07N160-...	-	CSPD-3	-	-	M-1000	-	IP-10D
ASW09N100-...	CSPB-3.5	-	H-TB2W	-	M-1000	BLDIP15/S7	-
ASW09N160-...	CSPB-3.5	-	-	-	M-1000	-	IP-15D

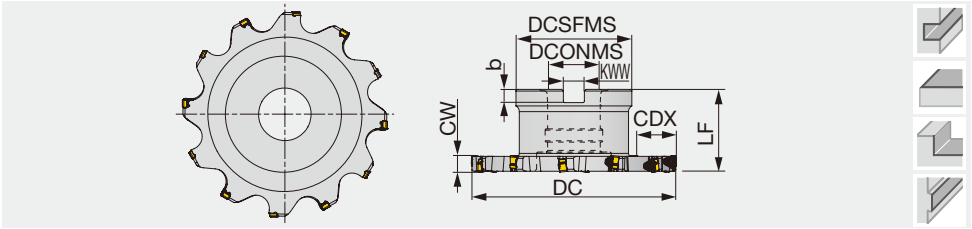
*Recommended clamping torque N·m)：CSPB-2.5=1.3, CSPB-3.5＝3.5, CSPD-3=2.5

Reference pages: Inserts, Standard cutting conditions → H196

TSW 06/07/09

Radial drive slot mill, for 6-corner double sided inserts





Designation	CW	DC	ZEFP/CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	Insert
TSW06R100-10	10	100	5/10	50	25.4	50	6	9.5	24	WNGU0603...
TSW06R100-E10	10	100	5/10	58	27	50	7	12.4	20	WNGU0603...
TSW06R125-10	10	125	6/12	70	31.75	50	8	12.7	26.5	WNGU0603...
TSW06R125-E10	10	125	6/12	66	32	50	8	14.4	28.5	WNGU0603...
TSW06R160-10	10	160	7/14	100	38.1	63	10	15.9	29	WNGU0603...
TSW06R160-E10	10	160	7/14	82	40	63	9	16.4	38	WNGU0603...
TSW07R100-12	12	100	5/10	50	25.4	50	6	9.5	24	WNGU07T3...
TSW07R100-E12	12	100	5/10	58	27	50	7	12.4	20	WNGU07T3...
TSW07R125-12	12	125	6/12	70	31.75	50	8	12.7	26.5	WNGU07T3...
TSW07R125-E12	12	125	6/12	66	32	50	8	14.4	28.5	WNGU07T3...
TSW07R160-12	12	160	7/14	100	38.1	63	10	15.9	29	WNGU07T3...
TSW07R160-E12	12	160	7/14	82	40	63	9	16.4	38	WNGU07T3...
TSW09R160-16	16	160	7/14	100	38.1	63	10	15.9	29	WNGU0904...
TSW09R160-E16	16	160	7/14	82	40	63	9	16.4	38	WNGU0904...

SPARE PARTS



Designation	Clamping screw1	Clamping screw2	Grip	Lubricant	Torx bit	Mono block type Torx bit
TSW06R...	-	CSPB-2.5	-	M-1000	-	IP-8D
TSW07R100/125-...	-	CSPD-3	SW6-SD	M-1000	BLD IP10/S7	-
TSW07R160-...	-	CSPD-3	-	M-1000	-	IP-10D
TSW09R160-...	CSPB-3.5	-	-	M-1000	-	IP-15D

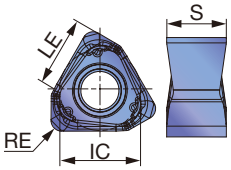
*Recommended clamping torque (N·m):CSPB-2.5=1.3, CSPB-3.5=3.5, CSPD-3=2.5

Reference pages: Inserts, Standard cutting conditions → H196

INSERT

WNGU-MJ





P	Steel	☆		★	
M	Stainless		★	☆	
K	Cast iron	★		☆	
N	Non-ferrous				
S	Superalloys	★	☆	★	
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	RE	Coated			LE	IC	S
		AH120	AH130	AH725			
WNGU060308TN-MJ	0.8	●	●	●	5.6	6.1	4.4
WNGU060316TN-MJ	1.6	●	●	●	5.6	6.1	4.4
WNGU07T308TN-MJ	0.8	●	●	●	6.8	7.4	5.5
WNGU07T316TN-MJ	1.6	●	●	●	6.8	7.4	5.5
WNGU090408TN-MJ	0.8	●	●	●	8.5	8.6	6.5
WNGU090416TN-MJ	1.6	●	●	●	8.5	8.6	6.5

●: Line up

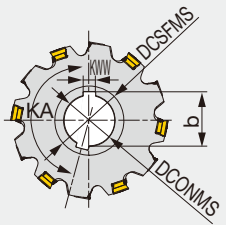
STANDARD CUTTING CONDITIONS

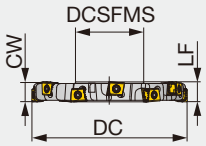
ISO	Workpiece material	Hardness (HB)	Priority	Grade	Cutting speed *Vc* (m/min)	Feed per edge line: *fz* (mm/t) TSW / ASW ae / DC (mm) 10%	20%	30%	≦ 50%
P	Low carbon steels SS400, etc. E275A, etc.	- 200	First choice	AH725	90 - 180	0.12 - 0.33	0.09 - 0.25	0.07 - 0.21	0.07 - 0.2
		- 200	Fracture resistance	AH130	90 - 180	0.12 - 0.33	0.09 - 0.25	0.07 - 0.21	0.07 - 0.2
	High carbon steels S45C, etc. C45, etc.	200 - 300	First choice	AH725	90 - 180	0.12 - 0.33	0.09 - 0.25	0.07 - 0.21	0.07 - 0.2
		200 - 300	Fracture resistance	AH130	90 - 180	0.12 - 0.33	0.09 - 0.25	0.07 - 0.21	0.07 - 0.2
	Alloy steels SCM440, etc. 42CrMo4, etc.	150 - 300	First choice	AH725	90 - 180	0.12 - 0.33	0.09 - 0.25	0.07 - 0.21	0.07 - 0.2
		150 - 300	Fracture resistance	AH130	90 - 180	0.12 - 0.33	0.09 - 0.25	0.07 - 0.21	0.07 - 0.2
	Tool steels SKD61, etc. X40CrMoV5-1, etc.	- 300	First choice	AH725	90 - 180	0.12 - 0.33	0.09 - 0.25	0.07 - 0.21	0.07 - 0.2
		- 300	Fracture resistance	AH130	90 - 180	0.12 - 0.33	0.09 - 0.25	0.07 - 0.21	0.07 - 0.2
M	Stainless steel SUS304, etc. X5CrNi18-9, etc.	-	-	AH130	90 - 200	0.12 - 0.33	0.09 - 0.25	0.07 - 0.21	0.07 - 0.2
K	Grey cast irons FC250, etc. 250, etc.	150 - 250	-	AH120	120 - 230	0.12 - 0.42	0.09 - 0.31	0.07 - 0.27	0.07 - 0.25
	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250	-	AH120	90 - 150	0.12 - 0.42	0.09 - 0.31	0.07 - 0.27	0.07 - 0.25
S	Titanium alloys Ti-6Al-4V, etc.	-	First choice	AH725	30 - 40	0.1 - 0.17	0.08 - 0.13	0.06 - 0.11	0.06 - 0.1
		-	Fracture resistance	AH130	30 - 40	0.1 - 0.17	0.08 - 0.13	0.06 - 0.11	0.06 - 0.1
	Nickel-based alloys Inconel 718, etc.	-	First choice	AH725	20 - 35	0.1 - 0.17	0.08 - 0.13	0.06 - 0.11	0.06 - 0.1
		-	Fracture resistance	AH130	20 - 35	0.1 - 0.17	0.08 - 0.13	0.06 - 0.11	0.06 - 0.1

ASN 10/12/15

Axial drive slot mill, for tangentially mounted inserts







Designation	CW	DC	ZEFP	CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	KA	Insert
ASN10R100M31.7-16-05	16	100	5	10	48	31.75	16	35.2	7.92	25	162	LMEU1008**ZNEN-MJ
ASN10R100M32.0E16-05	16	100	5	10	47	32	16	34.8	8	25.5	162	LMEU1008**ZNEN-MJ
ASN10R125M38.1-16-06	16	125	6	12	58	38.1	16	42.3	9.52	32.5	165	LMEU1008**ZNEN-MJ
ASN10R125M40.0E16-06	16	125	6	12	55	40	16	43.5	10	34	165	LMEU1008**ZNEN-MJ
ASN10R160M38.1-16-07	16	160	7	14	58	38.1	16	42.3	9.52	50	167.14	LMEU1008**ZNEN-MJ
ASN10R160M40.0E16-07	16	160	7	14	55	40	16	43.5	10	51.5	167.14	LMEU1008**ZNEN-MJ
ASN10R200M50.0E16-08	16	200	8	16	69	50	16	53.6	12	64.5	168.75	LMEU1008**ZNEN-MJ
ASN12R100M31.7-19-05	19	100	5	10	48	31.75	19	35.2	7.92	25	162	LMEU1206**ZNEN-MJ
ASN12R100M32.0E19-05	19	100	5	10	47	32	19	34.8	8	25.5	162	LMEU1208**ZNEN-MJ
ASN12R125M38.1-19-06	19	125	6	12	58	38.1	19	42.3	9.52	32.5	165	LMEU1206**ZNEN-MJ
ASN12R125M40.0E19-06	19	125	6	12	55	40	19	43.5	10	34	165	LMEU1208**ZNEN-MJ
ASN12R160M38.1-19-07	19	160	7	14	58	38.1	19	42.3	9.52	50	167.14	LMEU1206**ZNEN-MJ
ASN12R160M40.0E19-07	19	160	7	14	55	40	19	43.5	10	51.5	167.14	LMEU1208**ZNEN-MJ
ASN12R200M50.0E19-08	19	200	8	16	69	50	19	53.6	12	64.5	168.75	LMEU1208**ZNEN-MJ
ASN12R250M50.0E19-09	19	250	9	18	84	50	19	53.6	12	82	170	LMEU1208**ZNEN-MJ
ASN15R125M38.1-25-05	25	125	5	10	58	38.1	25	42.3	9.52	32.5	162	LMEU1509**ZNEN-MJ
ASN15R125M40.0E25-05	25	125	5	10	55	40	25	43.5	10	34	165	LMEU1509**ZNEN-MJ
ASN15R160M38.1-25-06	25	160	6	12	58	38.1	25	42.3	9.52	50	165	LMEU1509**ZNEN-MJ
ASN15R160M40.0E25-06	25	160	6	12	55	40	25	43.5	10	51.5	167.14	LMEU1509**ZNEN-MJ
ASN15R200M50.0E25-07	25	200	7	14	69	50	25	53.6	12	64.5	168.75	LMEU1509**ZNEN-MJ
ASN15R250M50.0E25-08	25	250	8	16	84	50	25	53.6	12	82	170	LMEU1509**ZNEN-MJ

SPARE PARTS

Designation	Clamping screw	Grip	Torx bit
ASN10/12R...	SM40-143-H0	H-TB	BT15S
ASN15R...	CSTB-5L159	H-TB	BT20S

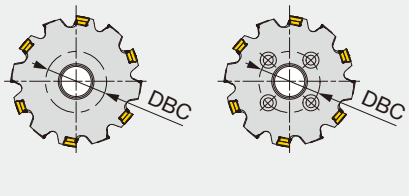
*Recommended clamping torque (N·m): SM40-143-H0=1.3, CSTB-5L159=5

Reference pages: Inserts, Standard cutting conditions → H199

TECTSLOT TANGENTIAL
TSN

Radial drive slot mill, for tangentially mounted inserts





Designation	CW	DC	ZEFP	CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	DBC	Insert
TSN10R100M25.4-16-05	16	100	5	10	50	25.4	50	6	9.5	24	-	LMEU1008**ZNEN-MJ
TSN10R100M27.0E16-05	16	100	5	10	58	27	50	7	12.4	20	-	LMEU1008**ZNEN-MJ
TSN10R125M31.7-16-06	16	125	6	12	70	31.75	50	8	12.7	26.5	-	LMEU1008**ZNEN-MJ
TSN10R125M32.0E16-06	16	125	6	12	66	32	50	8	14.4	28.5	-	LMEU1008**ZNEN-MJ
TSN10R160M38.1-16-07	16	160	7	14	100	38.1	63	10	15.9	29	-	LMEU1008**ZNEN-MJ
TSN10R160M40.0E16-07	16	160	7	14	82	40	63	9	16.4	38	-	LMEU1008**ZNEN-MJ
TSN10R200M40.0E16-08	16	200	8	16	95	40	63	9	16.4	55	66.7	LMEU1008**ZNEN-MJ
TSN10R200M47.6-16-08	16	200	8	16	135	47.625	63	14	25.4	31.5	101.6	LMEU1008**ZNEN-MJ
TSN12R100M25.4-19-05	19	100	5	10	50	25.4	50	6	9.5	24	-	LMEU1208**ZNEN-MJ
TSN12R100M27.0E19-05	19	100	5	10	58	27	50	7	12.4	20	-	LMEU1208**ZNEN-MJ
TSN12R125M31.7-19-06	19	125	6	12	70	31.75	50	8	12.7	26.5	-	LMEU1208**ZNEN-MJ
TSN12R125M32.0E19-06	19	125	6	12	66	32	50	8	14.4	28.5	-	LMEU1208**ZNEN-MJ
TSN12R160M38.1-19-07	19	160	7	14	100	38.1	63	10	15.9	29	-	LMEU1208**ZNEN-MJ
TSN12R160M40.0E19-07	19	160	7	14	82	40	63	9	16.4	38	-	LMEU1208**ZNEN-MJ
TSN12R200M40.0E19-08	19	200	8	16	95	40	63	9	16.4	55	66.7	LMEU1208**ZNEN-MJ
TSN12R200M47.6-19-08	19	200	8	16	135	47.625	63	14	25.4	31.5	101.6	LMEU1208**ZNEN-MJ
TSN12R250M47.6-19-09	19	250	9	18	140	47.625	63	14	25.4	54	101.6	LMEU1208**ZNEN-MJ
TSN12R250M60.0E19-09	19	250	9	18	135	60	63	14	25.7	60	101.6	LMEU1208**ZNEN-MJ
TSN15R125M31.7-25-05	25	125	5	10	70	31.75	50	8	12.7	26.5	-	LMEU1509**ZNEN-MJ
TSN15R125M32.0E25-05	25	125	5	10	66	32	50	8	14.4	28.5	-	LMEU1509**ZNEN-MJ
TSN15R160M38.1-25-06	25	160	6	12	100	38.1	63	10	15.9	29	-	LMEU1509**ZNEN-MJ
TSN15R160M40.0E25-06	25	160	6	12	82	40	63	9	16.4	38	-	LMEU1509**ZNEN-MJ
TSN15R200M40.0E25-07	25	200	7	14	95	40	63	9	16.4	55	66.7	LMEU1509**ZNEN-MJ
TSN15R200M47.6-25-07	25	200	7	14	135	47.625	63	14	25.4	31.5	101.6	LMEU1509**ZNEN-MJ
TSN15R250M47.6-25-08	25	250	8	16	140	47.625	63	14	25.4	54	101.6	LMEU1509**ZNEN-MJ
TSN15R250M60.0E25-08	25	250	8	16	135	60	63	14	25.7	60	101.6	LMEU1509**ZNEN-MJ

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

SPARE PARTS

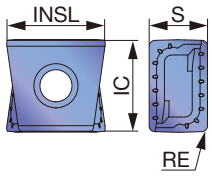
Designation	Clamping screw	Grip	Torx bit
TSN10/12R...	SM40-143-H0	H-TB	BT15S
TSN15R...	CSTB-5L159	H-TB	BT20S

*Recommended clamping torque (N·m):SM40-143-H0=1.3, CSTB-5L159=5

INSERT

LMEU-MJ





P	Steel	☆		☆	★	
M	Stainless		☆	☆	★	
K	Cast iron	★		☆		
N	Non-ferrous					
S	Superalloys	★		★		
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	RE	Coated				INSL	IC	S
		AH120	AH140	AH725	AH3135			
LMEU100808ZNEN-MJ	0.8	●	●	●	●	12.7	10.5	8
LMEU100816ZNEN-MJ	1.6	●	●	●	●	12.5	10.5	8
LMEU100824ZNEN-MJ	2.4	●	●	●	●	12.4	10.5	8
LMEU100832ZNEN-MJ	3.2	●	●	●	●	12.2	10.5	8
LMEU120808ZNEN-MJ	0.8	●	●	●	●	13.6	12.7	8
LMEU120816ZNEN-MJ	1.6	●	●	●	●	13.4	12.7	8
LMEU120824ZNEN-MJ	2.4	●	●	●	●	13.2	12.7	8
LMEU120832ZNEN-MJ	3.2	●	●	●	●	13.1	12.7	8
LMEU150908ZNEN-MJ	0.8	●	●	●	●	15.6	15	9.5
LMEU150916ZNEN-MJ	1.6	●	●	●	●	15.4	15	9.5
LMEU150924ZNEN-MJ	2.4	●	●	●	●	15.3	15	9.5
LMEU150932ZNEN-MJ	3.2	●	●	●	●	15.1	15	9.5

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness (HB)	Priority	Grade	Cutting speed *Vc* (m/min)	Feed per edge line: *fz* (mm/t) TSN / ASN ae / DC (mm) 10%	20%	30%	≦ 50%
P	Low carbon steels SS400, etc. E275A, etc.	- 200	First choice	AH3135	90 - 180	0.22 - 0.42	0.16 - 0.31	0.14 - 0.27	0.13 - 0.25
		- 200	Fracture resistance	AH725	90 - 180	0.22 - 0.42	0.16 - 0.31	0.14 - 0.27	0.13 - 0.25
	High carbon steels S45C, etc. C45, etc.	200 - 300	First choice	AH3135	90 - 180	0.22 - 0.42	0.16 - 0.31	0.14 - 0.27	0.13 - 0.25
		200 - 300	Fracture resistance	AH725	90 - 180	0.22 - 0.42	0.16 - 0.31	0.14 - 0.27	0.13 - 0.25
	Alloy steels SCM440, etc. 42CrMo4, etc.	150 - 300	First choice	AH3135	90 - 180	0.22 - 0.42	0.16 - 0.31	0.14 - 0.27	0.13 - 0.25
		150 - 300	Fracture resistance	AH725	90 - 180	0.22 - 0.42	0.16 - 0.31	0.14 - 0.27	0.13 - 0.25
	Tool steels SKD61, etc. X40CrMoV5-1, etc.	- 300	First choice	AH3135	90 - 180	0.22 - 0.42	0.16 - 0.31	0.14 - 0.27	0.13 - 0.25
		- 300	Fracture resistance	AH725	90 - 180	0.22 - 0.42	0.16 - 0.31	0.14 - 0.27	0.13 - 0.25
M	Stainless steel SUS304, etc. X5CrNi18-9, etc.	-	-	AH3135	90 - 200	0.22 - 0.42	0.16 - 0.31	0.14 - 0.27	0.13 - 0.25
K	Grey cast irons FC250, etc. 250, etc.	150 - 250	-	AH120	120 - 230	0.22 - 0.5	0.16 - 0.38	0.14 - 0.32	0.13 - 0.3
	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250	-	AH120	90 - 150	0.22 - 0.33	0.16 - 0.25	0.14 - 0.21	0.13 - 0.2
S	Titanium alloys Ti-6Al-4V, etc.	-	First choice	AH725	30 - 40	0.12 - 0.22	0.09 - 0.16	0.07 - 0.14	0.07 - 0.13
	Nickel-based alloys Inconel 718, etc.	-	First choice	AH725	20 - 35	0.12 - 0.22	0.09 - 0.16	0.07 - 0.14	0.07 - 0.13

PROFILEMILL SERIES



Lineups and Application Ranges

- All inserts are precision ground, making them suitable for various applications ranging from roughing to finishing
- Increased reliability thanks to the innovative insert clamping design

Finishing

Semi-Finishing

Roughing

Ball type



BALL FINISH NOSE

Tool diameter ø8 - 32
(R4 – R16)



BALL ROUGH NOSE

Tool diameter ø16 - 25
(R8 - R12.5)

Radius type



BALL FINISH NOSE

Tool diameter ø12 - 20
(R0.5 – R1.5)



DO MINI MILL

Tool diameter ø16-25
(R0.5, R1.0)

Reference pages: BallFinishNose → H204, BallRoughNose → H202, DoMini-Mill → H209

FINISH BALL NOSE



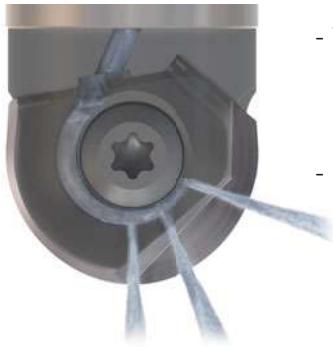
Indexable endmill for high precision finishing!

Secure clamping mechanism



- Clamping force gathers on the flat part of the insert hole as the screw is tightened.
- The force pushes the insert towards the cutter body, providing high repeatability and rigidity as well as minimum run-out.

Unique coolant delivery system



- The coolant channel on insert surface, delivers coolant to the cutting edge from three directions.

- Excellent chip evacuation and cooling effect provides good surface finish and long tool life in machining of hardened steel.

Two insert varieties

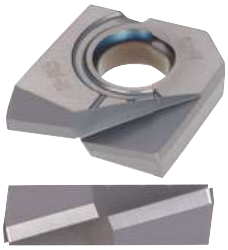
MJ chipbreaker

Ball nose type: ZFBM



- Suitable for finishing and three-dimensional milling of die & mold
- Applicable for a wide range of operations

Radius type: ZFRM



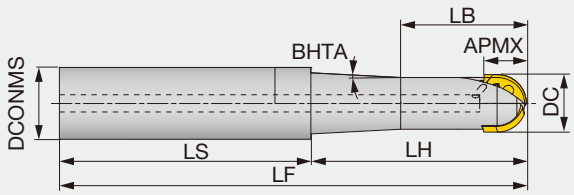
- Suitable for finishing of die & mold
- Designed for milling with high productivity

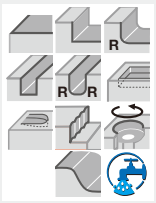
Reference pages: H204

ROUGH BALLRNOSE
EBRM...

Ball nose endmill for semi-roughing, shank type, with screw clamp system







Designation	APMX	DC	CICT	DCONMS	LS	LF	LH	LB	BHTA	WT(kg)	Air hole	Insert
EBRM16T20S130	11.8	16	2	20	70	130	60	35	3	0.235	With	ZRBM160...
EBRM16T20S200	11.8	16	2	20	140	200	60	35	3	0.395	With	ZRBM160...
EBRM20T25S160	13.6	20	2	25	85	160	75	45	3	0.455	With	ZRBM200...
EBRM20T25S220	13.6	20	2	25	135	220	85	60	5	0.655	With	ZRBM200...
EBRM25T32S200	17.7	25	2	32	115	200	85	55	6	0.965	With	ZRBM250...
EBRM25T32S300	17.7	25	2	32	180	300	120	70	4	1.505	With	ZRBM250...

SPARE PARTS

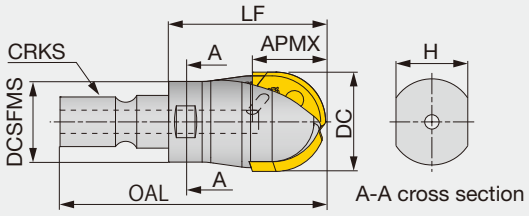
Designation	Clamping screw	Wrench
EBRM16...	TS25064I	T-8D
EBRM20...	TS30085I/HG	T-9D
EBRM25...	TS35085I/HG	T-15D

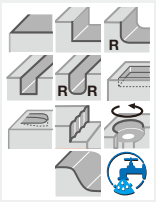
*Recommended clamping torque (N·m) :TS25064I=1.3, TS30085I/HG=2.3, TS35085I/HG=3.5

ROUGH BALLRNOSE
HBRM...

Ball nose endmill for semi-roughing, modular type, with screw clamp system (TungFlex)







Designation	APMX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HBRM16M08	11.8	16	2	42.5	25	10	13	M8	0.025	With	ZRBM160...
HBRM20M10	13.6	20	2	50	30	15	18	M10	0.05	With	ZRBM200...
HBRM25M12	17.7	25	2	57	35	17	21	M12	0.08	With	ZRBM250...

SPARE PARTS

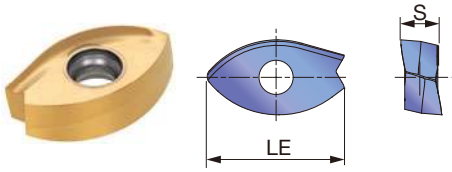
Designation	Clamping screw	Wrench
HBRM16...	TS25064I	T-8D
HBRM20...	TS30085I/HG	T-9D
HBRM25...	TS35085I/HG	T-15D

*Recommended clamping torque (N·m) :TS25064I=1.3, TS30085I/HG=2.3, TS35085I/HG=3.5

Reference pages: Inserts, Standard cutting conditions → H203

INSERT

ZRBM...



| | | |

BALL FINISH NOSE

EBFM

High precision finishing endmill, shank type, with screw clamp system



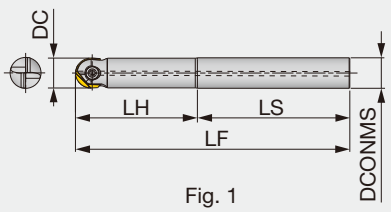


Fig. 1

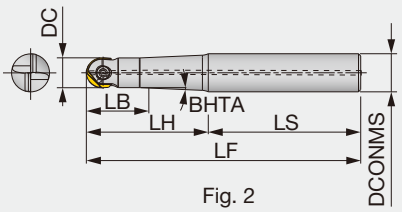
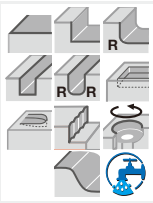


Fig. 2



Designation	DC	DCONMS	LS	LH	LF	LB	BHTA	Air hole	Fig.	Shank material	Insert
EBFM08T12S100	8	12	80	20	100	10	9.5°	With	2	Steel	ZFBM080...
EBFM08S08C100	8	8	70	30	100	-	-	Without	1	Carbide	ZFBM080...
EBFM08S08C140	8	8	75	65	140	-	-	Without	1	Carbide	ZFBM080...
EBFM10T12S100	10	12	75	25	100	15	5°	With	2	Steel	ZFBM100...
EBFM10S10C140	10	10	65	75	140	-	-	Without	1	Carbide	ZFBM100...
EBFM10S10C220	10	10	80	140	220	-	-	Without	1	Carbide	ZFBM100...
EBFM12S12S110	12	12	80	30	110	-	-	With	1	Steel	ZF*M120...
EBFM12S12C160	12	12	70	90	160	-	-	Without	1	Carbide	ZF*M120...
EBFM12S12C220	12	12	70	150	220	-	-	Without	1	Carbide	ZF*M120...
EBFM16T20S130	16	20	80	50	130	15.5	1.5°	With	2	Steel	ZF*M160...
EBFM16S16C160	16	16	80	80	160	-	-	Without	1	Carbide	ZF*M160...
EBFM16S16C220	16	16	70	150	220	-	-	Without	1	Carbide	ZF*M160...
EBFM20T25S180	20	25	100	80	180	24	2.5°	With	2	Steel	ZF*M200...
EBFM20S20C220	20	20	100	120	220	-	-	Without	1	Carbide	ZF*M200...
EBFM20S20C300	20	20	80	220	300	-	-	Without	1	Carbide	ZF*M200...
EBFM25T32S200	25	32	100	100	200	32	1.5°	With	2	Steel	ZFBM250...
EBFM25S25C220	25	25	100	120	220	-	-	Without	1	Carbide	ZFBM250...
EBFM25S25C300	25	25	80	220	300	-	-	Without	1	Carbide	ZFBM250...
EBFM30T32S220	30	32	120	100	220	35	0.5°	With	2	Steel	ZFBM300...
EBFM30S32C250	30	32	100	150	250	-	-	Without	1	Carbide	ZFBM300...
EBFM30S32C350	30	32	100	250	350	-	-	Without	1	Carbide	ZFBM300...
EBFM32S32S250	32	32	150	100	250	-	-	With	1	Steel	ZFBM320...
EBFM32S32C300	32	32	80	220	300	-	-	Without	1	Carbide	ZFBM320...

SPARE PARTS






Designation	Clamping screw	Torx bit	Grip	Wrench
EBFM08...	TS 25F080A	-	-	T-8D
EBFM10...	TS 30F100A	-	-	T-10D
EBFM12...	TS 40F120A	-	-	T-15D
EBFM16...	TS 50F160A	BT20S	H-TB2W	-
EBFM20...	TS 60F200A	BLDT25/M7	H-TB2W	-
EBFM25...	TS 70F250A	BLDT25/M7	H-TB2W	-
EBFM30...	TS 80F300A	-	-	T-T30
EBFM32...	TS 80F300A	-	-	T-T30

*Recommended clamping torque (N·m) : TS 25F080A=1.3, TS 30F100A=2.5, TS 40F120A=3.5, TS 50F160A=5, TS 60F200A=7, TS 70F250A=7, TS 80F300A=10

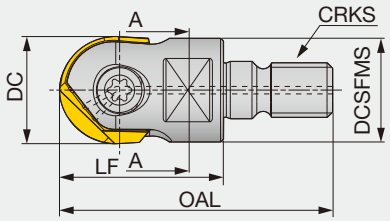
Reference pages: Inserts → H206, Standard cutting conditions → H207

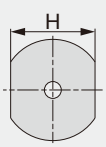
BALL FINISH NOSE

HBFM

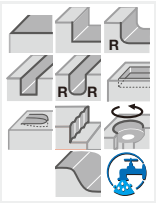
High precision finishing endmill, modular type, with screw clamp system (TungFlex)







A-A cross section



Designation	DC	OAL	LF	H	DCSFMS	CRKS	Air hole	Insert
HBFM10M06	10	34.5	20	7	9.7	M6	With	ZFBM100...
HBFM12M06	12	37.5	23	7	11.5	M6	With	ZF*M120...
HBFM12M08	12	40	23	10	13	M8	With	ZF*M120...
HBFM16M08	16	47	30	10	13	M8	With	ZF*M160...
HBFM20M10	20	49	30	15	19	M10	With	ZF*M200...
HBFM25M12	25	57	35	17	24	M12	With	ZFBM250...
HBFM30M16	30	66	43	22	29	M16	With	ZFBM300...
HBFM32M16	32	66	43	22	29.5	M16	With	ZFBM320...

Please see the page **H208** for TungFlex modular shank.

SPARE PARTS






Designation	Clamping screw	Torx bit	Grip	Wrench
HBFM10...	TS 30F100A	-	-	T-10D
HBFM12...	TS 40F120A	-	-	T-15D
HBFM16...	TS 50F160A	BT20S	H-TB2W	-
HBFM20...	TS 60F200A	BLDT25/M7	H-TB2W	-
HBFM25...	TS 70F250A	BLDT25/M7	H-TB2W	-
HBFM30...	TS 80F300A	-	-	T-T30
HBFM32...	TS 80F300A	-	-	T-T30

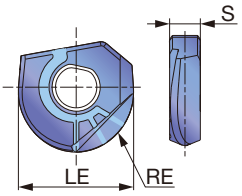
*Recommended clamping torque (N·m) : TS 25F080A=1.3, TS 30F100A=2.5, TS 40F120A=3.5, TS 50F160A=5, TS 60F200A=7, TS 70F250A=7, TS 80F300A=10

Reference pages: Inserts → H206, Standard cutting conditions → H207, TungFlex → H208

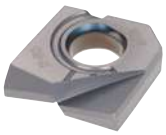
INSERT

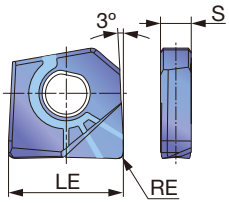
ZFBM-MJ





ZFRM-MJ





P	Steel	☆	★
M	Stainless		☆
K	Cast iron	★	☆
N	Non-ferrous		☆
S	Superalloys		★
H	Hard materials	★	☆

★ : First choice
☆ : Second choice

Designation	RE	Coated		LE	S
		AH710	AH725		
ZFBM080R00-MJ	4	●	●	8	2.4
ZFBM100R00-MJ	5	●	●	10	2.9
ZFBM120R00-MJ	6	●	●	12	3.4
ZFBM160R00-MJ	8	●	●	16	4.4
ZFBM200R00-MJ	10	●	●	20	5.4
ZFBM250R00-MJ	12.5	●	●	25	6.4
ZFBM300R00-MJ	15	●	●	30	7.4
ZFBM320R00-MJ	16	●	●	32	7.4
ZFRM120R05-MJ	0.5	●	●	12	3.4
ZFRM120R10-MJ	1	●	●	12	3.4
ZFRM160R05-MJ	0.5	●	●	16	4.4
ZFRM160R10-MJ	1	●	●	16	4.4
ZFRM160R15-MJ	1.5	●	●	16	4.4
ZFRM200R10-MJ	1	●	●	20	5.4
ZFRM200R15-MJ	1.5	●	●	20	5.4

●: Line up
ZFBM080/100/120/160... : 5 piece per package
ZFBM200/250/300/320... : 1 piece per package
ZFRM120/160... : 5 piece per package
ZFRM200... : 1 piece per package

Reference pages: Standard cutting conditions → H207, TungFlex → H208

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness	Priority	Grades	Max. depth of cut (mm)	Cutting speed *Vc* (m/min)	Feed per tooth: *fz* (mm/t)							
							D8	D10	D12	D16	D20	D25	D30	D32
P	Low carbon steel, alloy steel	85 - 180 HB	First choice	AH725	≦ 0.04D	180 - 260	0.15	0.2	0.2	0.25	0.25	0.3	0.35	0.35
		85 - 180 HB	Wear resistance	AH710	≦ 0.04D	180 - 260	0.15	0.2	0.2	0.25	0.25	0.3	0.35	0.35
	High carbon steel, alloy steel	180 - 280 HB	First choice	AH725	≦ 0.03D	150 - 230	0.15	0.2	0.2	0.25	0.25	0.3	0.35	0.35
		180 - 280 HB	Wear resistance	AH710	≦ 0.03D	180 - 230	0.15	0.2	0.2	0.25	0.25	0.3	0.35	0.35
	Prehardened steel Die & mold tool steel	40 - 48 HRC	First choice	AH710	≦ 0.03D	180 - 300	0.15	0.15	0.2	0.2	0.25	0.25	0.3	0.3
		40 - 48 HRC	Fracture resistance	AH725	≦ 0.03D	180 - 300	0.15	0.15	0.2	0.2	0.25	0.25	0.3	0.3
M	Stainless steel	135 - 200 HB	First choice	AH725	≦ 0.03D	100 - 250	0.1	0.15	0.2	0.2	0.25	0.25	0.3	0.3
K	Cast iron	150 - 240 HB	First choice	AH710	≦ 0.04D	90 - 350	0.2	0.2	0.25	0.3	0.3	0.35	0.4	0.4
		150 - 240 HB	Fracture resistance	AH725	≦ 0.04D	90 - 350	0.2	0.2	0.25	0.3	0.3	0.35	0.4	0.4
N	Aluminium	-	First choice	AH725	≦ 0.03D	200 - 400	0.25	0.25	0.35	0.35	0.35	0.4	0.4	0.45
S	Titanium alloy	-	First choice	AH725	≦ 0.03D	30 - 80	0.08	0.08	0.1	0.12	0.15	0.18	0.2	0.2
	Heat-resistance alloys	-	First choice	AH725	≦ 0.03D	20 - 60	0.08	0.08	0.1	0.12	0.15	0.18	0.2	0.2
H	High hardened steel	48 - 65 HRC	First choice	AH710	≦ 0.02D	50 - 180	0.08	0.08	0.1	0.13	0.15	0.2	0.2	0.25

· Remove excessive chip accumulation with an air blast.
· For the operation with depth of cut which varies (ex.casting skin) and machining of workpiece materials with interrupted surface, the feed per tooth (*fz*) should be set to the lower recommended value shown in the above table.
· Cutting conditions maybe limited depending on machine power, workpiece rigidity, and spindle output. When the cutting width, depth, or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

How to clamp the insert

1. Clear chips and dust from the pocket.
2. Place the insert in the pocket. The insert can be placed only in one direction.
3. Tighten the screw while pressing the insert into the pocket.

How to check the run-out

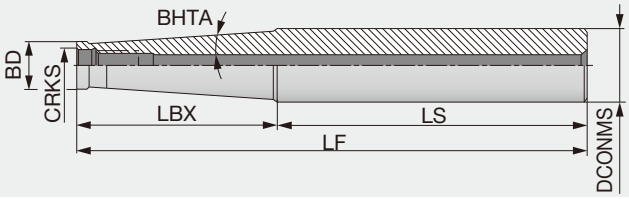
1. Clamp the insert on the shank.
2. Clamp the shank on a high-precision arbor.
3. Measure the run-out on tool presetter or by dial gauge.

Notes:
1. Due to the helical cutting edge, it is important that the run-out is inspected with the insert clamped on the shank.
2. Do not use micrometer or caliper to inspect the insert diameter as inaccurate dimensions may be provided.

TungFlex

TungFlex modular shank





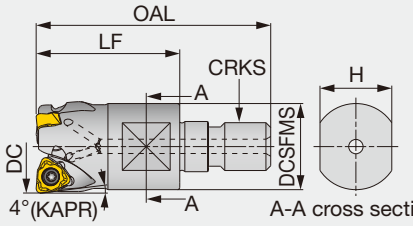
Designation	DCONMS	LF	LS	LBX	BD	CRKS	BHTA	Shank type
SM06-L60C10	10	60	40	20	9.7	M6	0°	Cylindrical
SM06-L105-C12	12	105	45	60	9.7	M6	1.2°	Cylindrical
SM06-L125-C16	16	125	65	60	9.7	M6	3.3°	Cylindrical
SM08-L73C16	16	73	48	25	13	M8	0°	Cylindrical
SM08-L128-C16	16	128	48	80	13	M8	0.9°	Cylindrical
SM08-L170-C20	20	170	103.2	66.8	13	M8	3.3°	Cylindrical
SM10-L80-C20	20	80	50	30	18	M10	0°	Cylindrical
SM10-L130-C20	20	130	50	80	18	M10	0.6°	Cylindrical
SM10-L200-C25	25	200	142.8	57.2	19	M10	3.3°	Cylindrical
SM12-L86-C25	25	86	56	30	21	M12	5.1°	Cylindrical
SM12-L200-C32	32	200	122	78	21	M12	4.4°	Cylindrical
SM16-L95-C32	32	95	60	35	29	M16	1.7°	Cylindrical
SM16-L230-C32	32	230	180	50	29	M16	1.8°	Cylindrical

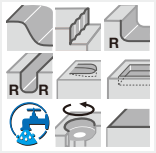
HFWX04-M

Small-radius finishing endmill, modular type (TungFlex)

GAMP = 0°, GAMF = -14°







Designation	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HFWX04M016M08R02	16	2	42	25	10	13	M8	0.03	With	WXHU04...
HFWX04M020M10R03	20	3	49	30	15	18	M10	0.05	With	WXHU04...
HFWX04M025M12R04	25	4	52	30	17	21	M12	0.09	With	WXHU04...

Please see the page **H208** for TungFlex modular shank.

SPARE PARTS



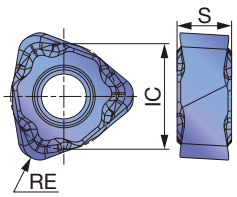


Designation	Clamping screw	Lubricant	Wrench
HFWX04M...	SR34-514	M-1000	T-7F

*Recommended clamping torque (N·m) : SR34-514=0.9

INSERT

WXHU-MJ

P	Steel	★	
M	Stainless		
K	Cast iron		
N	Non-ferrous		
S	Superalloys		
H	Hard materials	★	

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH110	IC	S
WXHU040305R-MJ	0.5	0.5	●	6.35	3.18
WXHU040310R-MJ	1	1	●	6.35	3.18

* For plunging, the maximum cutting width is 2 mm.

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material		Hardness	Grade	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	High carbon steel S45C, S55C, etc. C45, C55, etc.		200 - 300 HB	AH110	100 - 300	0.1 - 0.3
P	Alloy steel SCM440, etc. 42CrMo4, SCr145, etc.		150 - 300 HB	AH110	100 - 300	0.1 - 0.3
P	Prehardened steel NAK80, PX5, etc.		30 - 40 HRC	AH110	100 - 300	0.05 - 0.3
H	Hardened steel	SKD61, etc. X40CrMoV5-1, etc.	40 - 50 HRC	AH110	80 - 130	0.1 - 0.3
H	Hardened steel	SKD11, etc. X153CrMoV12, etc.	50 - 60 HRC	AH110	50 - 100	0.05 - 0.15

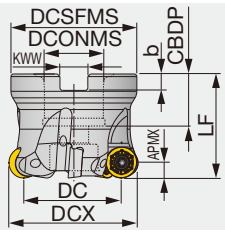
Reference pages: TungFlex → H208

FIXRMILL
TRP10/12/16

Radius mill with anti-rotation system

GAMP = +4°, GAMF = -4°







Designation	APMX	DCX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Insert
TRP10R040M16.0E05	5	40	30	5	35	16	18	40	5.6	8.4	0.2	With	RPMT10T3...
TRP12R050M22.0E05	6	50	38	5	47	22	20	40	6.3	10.4	0.3	With	RPMT1204...
TRP12R052M22.0E05	6	52	40	5	49	22	20	40	6.3	10.4	0.3	With	RPMT1204...
TRP12R063M22.0E06	6	63	51	6	59	22	20	40	6.3	10.4	0.6	With	RPMT1204...
TRP12R066M27.0E06	6	66	54	6	62	27	22	40	7	12.4	0.6	With	RPMT1204...
TRP16R063M22.0E05	8	63	47	5	59	22	20	40	6.3	10.4	0.6	With	RPMT1606...
TRP16R066M27.0E05	8	66	50	5	62	27	22	40	7	12.4	0.7	With	RPMT1606...

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Shell locking bolt	Torx bit
TRP10R040M16.0E05	CSPB-3.5S	H-TBS	M-1000	FSHM8-30H	BLDIP15/S7
TRP12R050 - 063M22.0...	CSTR-4L100	H-TBS	M-1000	CM10X30H	BT15S
TRP12R066M27.0E06	CSTR-4L100	H-TBS	M-1000	CM12X30H	BT15S
TRP16R063M22.0E05	CSPB-5	H-TBS	M-1000	CM10X30H	BLDIP20/S7
TRP16R066M27.0E05	CSPB-5	H-TBS	M-1000	CM12X30H	BLDIP20/S7

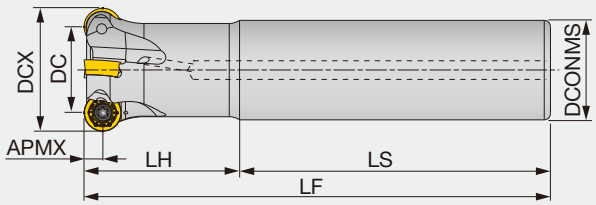
*Recommended clamping torque (N·m) :CSPB-3.5S/CSTR-4L100=3.5, CSPB-5=5

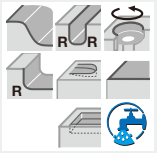
FIXRMILL
ERP

Radius endmill with anti-rotation system, shank type

GAMP = +10°~ +4°, GAMF = -2°~ -8.5°







Designation	APMX	DCX	DC	CICT	DCONMS	LS	LH	LF	Air hole	Insert
ERP10R020M20.0-02	5	20	10	2	20	100	50	150	With	RPMT10T3...
ERP10R025M25.0-02	5	25	15	2	25	90	60	150	With	RPMT10T3...
ERP10R032M32.0-04	5	32	22	4	32	80	70	150	With	RPMT10T3...
ERP10R035M32.0-04	5	35	25	4	32	100	50	150	With	RPMT10T3...
ERP12R032M32.0-03	6	32	20	3	32	100	50	150	With	RPMT1204...
ERP12R040M32.0-04	6	40	28	4	32	100	50	150	With	RPMT1204...
ERP16R040M32.0-02	8	40	24	2	32	100	50	150	With	RPMT1606...

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
ERP10R...	CSPB-3.5S	M-1000	IP-15D
ERP12R...	CSTR-4L100	M-1000	T-15DB
ERP16R...	CSPB-5	M-1000	IP-20D

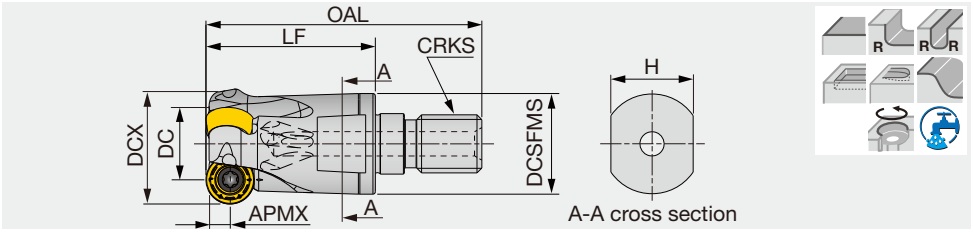
*Recommended clamping torque (N·m) :CSPB-3.5S/CSTR-4L100=3.5, CSPB-5=5

Reference pages: Inserts → H211, Standard cutting conditions → H212 - H213

Radius endmill with anti-rotation system, modular type (TungFlex)

GAMP = 1°~ 4°, GAMF = -8.5°~ 2°





Designation	APMX	DCX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HRP10R020MM10-02	5	20	10	2	49	30	15	17.8	M10	0.1	With	RPMT10T3...
HRP10R025MM12-02	5	25	15	2	57	35	17	20.8	M12	0.1	With	RPMT10T3...
HRP10R032MM16-04	5	32	22	4	63	40	22	28.8	M16	0.2	With	RPMT10T3...
HRP12R032MM16-03	6	32	20	3	63	40	22	28.8	M16	0.2	With	RPMT1204...

Please see the page **H206** for TungFlex modular shank.

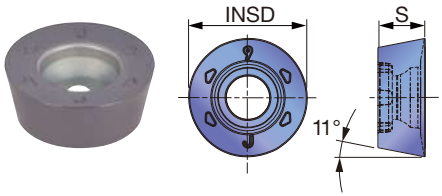
SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench	
			Bit	Grip
HRP10R**	CSPB-3.5S	M-1000	BLD IP15/S7	H-TBS
HRP12R**	CSTR-4L100	M-1000	BT15S	H-TBS

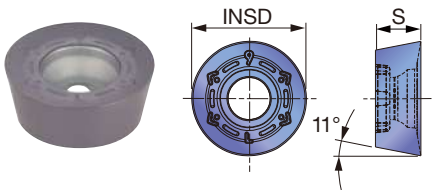
*Recommended clamping torque (N·m) :CSPB-3.5S/CSTR-4L100=3.5

INSERT

RPMT-MJ



RPMT-ML



P	Steel		★		
M	Stainless	★	☆	★	
K	Cast iron		☆		
N	Non-ferrous				
S	Superalloys	☆	★		
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	APMX	Coated			INSD	S
		AH130	AH725	AH4035		
RPMT10T3EN-MJ	5	●	●	●	10	3.97
RPMT10T3EN-ML	5	●	●	●	10	3.97
RPMT1204EN-MJ	6	●	●	●	12	4.76
RPMT1204EN-ML	6	●	●	●	12	4.76
RPMT1606EN-MJ	8	●	●	●	16	6.35
RPMT1606EN-ML	8	●	●	●	16	6.35

●: Line up

Reference pages: Standard cutting conditions → H212 - H213, TungFlex → H208

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Carbon steels S45C, S55C, etc. C45, C55, etc.	< 300 HB	First choice	AH725	MJ	120 - 250	0.3 - 0.7
		< 300 HB	Fracture resistance	AH130	MJ	120 - 250	0.3 - 0.7
	Alloy steels SCM440, SCr415, etc. 42CrMo4, 17Cr3, etc.	150 - 300 HB	First choice	AH725	MJ	100 - 250	0.2 - 0.6
		150 - 300 HB	Fracture resistance	AH130	MJ	100 - 250	0.2 - 0.6
	Tool steels SKD11, etc. X153CrMoV12, etc.	< 300 HB	-	AH725	ML	80 - 180	0.2 - 0.4
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-3, etc.	< 200 HB	First choice	AH130	ML	100 - 250	0.2 - 0.6
		< 200 HB	Fracture resistance	AH130	MJ	100 - 250	0.2 - 0.6
	Stainless steels SUS430, etc. X6Cr17, etc.	< 200 HB	First choice	AH4035	ML	100 - 300	0.2 - 0.6
		< 200 HB	Fracture resistance	AH4035	MJ	100 - 300	0.2 - 0.6
K	Grey cast irons FCD250, etc. 250, etc.	150 - 250 HB	-	AH725	ML	120 - 250	0.3 - 0.7
	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250 HB	-	AH725	ML	100 - 200	0.3 - 0.7
H	Hardened steels SKD61, etc X40CrMoV5-1, etc.	40 - 50 HRC	-	AH725	MJ	60 - 140	0.1 - 0.3
	Hardened steels SKD11, etc. X153CrMoV12, etc.	50 - 60 HRC	-	AH725	MJ	20 - 60	0.05 - 0.2

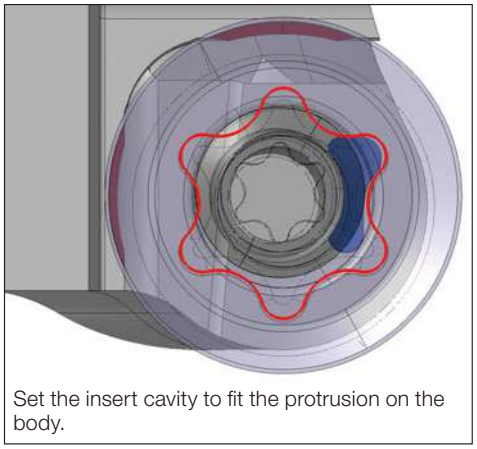
· Use air blast to remove chips from the work area in slot milling or pocketing operation.
· When machining at high cutting speeds of more than *Vc* = 1000 m/min, the dynamic balance of the tools must be adjusted.
· Cutting conditions are limited by machine power, workpiece rigidity and spindle output. When the cutting width or depth is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

Tool dia.: DCX (mm), Number of revolutions: *n* (min^{-1}), Feed speed: *Vf* (mm/min), Depth of cut: *ap* = 2.0 mm

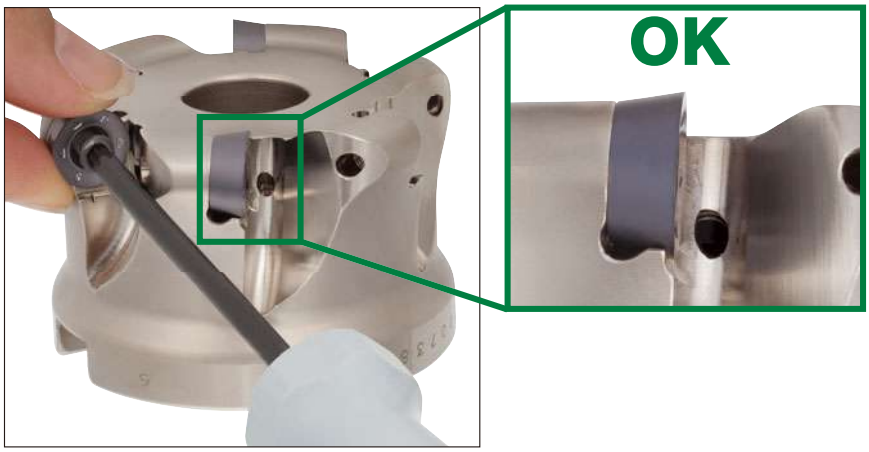
ø20		ø25		ø32			ø35		ø40				ø50		ø63	
n	*Vf* E/HRP10	*n*	*Vf* E/HRP10, E/HRP12	*n*	*Vf* E/HRP10	E/HRP12	*n*	*Vf* ERP10	*n*	*Vf* TRP10	ERP12	ERP16	*n*	*Vf* ERP12	*n*	*Vf* TRP12	TRP16
2870	2870	2290	2290	1790	3580	2690	1640	3280	1430	3580	2860	1430	1150	2880	910	2730	2280
Vc = 180 m/min, *fz* = 0.5 mm/t																	
2870	2870	2290	2290	1790	3580	2690	1640	3280	1430	3580	2860	1430	1150	2880	910	2730	2280
Vc = 180 m/min, *fz* = 0.5 mm/t																	
2710	2160	2170	1740	1690	2700	2030	1550	2480	1350	2700	2160	1080	1080	2160	860	2060	1720
Vc = 170 m/min, *fz* = 0.4 mm/t																	
2710	2160	2170	1740	1690	2700	2030	1550	2480	1350	2700	2160	1080	1080	2160	860	2060	1720
Vc = 170 m/min, *fz* = 0.4 mm/t																	
2070	1240	1660	1000	1290	1550	1160	1180	1420	1030	1550	1240	620	830	1250	660	1190	990
Vc = 130 m/min, *fz* = 0.3 mm/t																	
2710	2160	2170	1740	1690	2700	2030	1550	2480	1350	2700	2160	1080	1080	2160	860	2060	1720
Vc = 170 m/min, *fz* = 0.4 mm/t																	
2710	2160	2170	1740	1690	2700	2030	1550	2480	1350	2700	2160	1080	1080	2160	860	2060	1720
Vc = 170 m/min, *fz* = 0.4 mm/t																	
3180	2540	2550	2040	1990	3180	2390	1820	2910	1590	3180	2540	1270	1270	2540	1010	2420	2020
Vc = 200 m/min, *fz* = 0.4 mm/t																	
3180	2540	2550	2040	1990	3180	2390	1820	2910	1590	3180	2540	1270	1270	2540	1010	2420	2020
Vc = 200 m/min, *fz* = 0.4 mm/t																	
2870	2870	2290	2290	1790	3580	2690	1640	3280	1430	3580	2860	1430	1150	2880	910	2730	2280
Vc = 180 m/min, *fz* = 0.5 mm/t																	
2390	2390	1910	1910	1490	2980	2240	1360	2720	1190	2980	2380	1190	950	2380	760	2280	1900
Vc = 150 m/min, *fz* = 0.5 mm/t																	
1590	630	1270	510	990	790	590	910	730	800	800	640	320	640	640	510	610	510
Vc = 100 m/min, *fz* = 0.2 mm/t																	
640	150	510	120	400	190	140	360	170	320	190	150	75	250	150	200	140	120
Vc = 40 m/min, *fz* = 0.12 mm/t																	

■ Caution for insert clamping

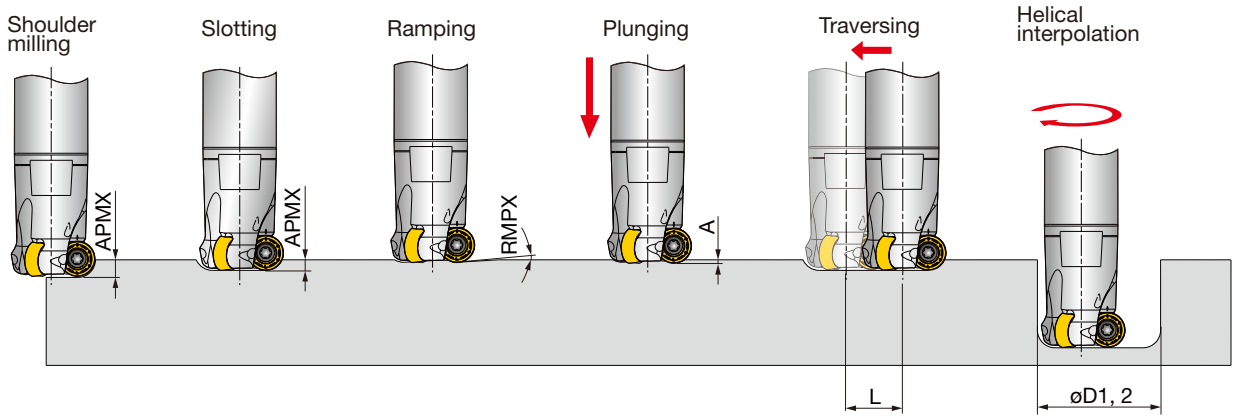
When clamping an insert, please carefully locate it in the seat, fasten the screw, and make sure there is no gap between it and the body.



Set the insert cavity to fit the protrusion on the body.



APPLICATION RANGE



Designation	Tool-ø DCX (mm)	Max. depth of cut APMX (mm)	Max. ramping angle RMPX	Max. plunging depth A (mm)	Machining length for removing uncut portion L (mm)	Min.machining øD1(mm)	*Max. machining øD2 (mm)
E/HRP10R020M...	20	5	2°	0.3	12	27	39
E/HRP10R025M...	25	5	3.1°	0.7	16	35	49
E/HRP10R032M...	32	5	8°	2.5	23	46	63
E/HRP12R032M...	32	6	9.2°	2.5	21	43	63
ERP10R035M32.0-04	35	5	8.2°	3	26	51	69
ERP12R040M32.0-04	40	6	3.8°	1.6	29	59	79
ERP16R040M32.0-02	40	8	7°	2.3	25	54	79
TRP10R040M16.0E05	40	5	6°	2.7	31	62	79
TRP12R050M22.0E05	50	6	4°	2.5	39	79	99
TRP12R052M22.0E05	52	6	4°	2.5	41	83	103
TRP12R063M22.0E06	63	6	3°	2.5	52	105	125
TRP12R066M27.0E06	66	6	2.8°	2.5	55	111	131
TRP16R063M22.0E05	63	8	3.3°	2.5	48	99	125
TRP16R066M27.0E05	66	8	3.1°	2.5	51	105	131

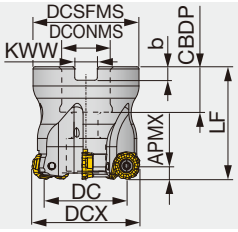
*For flat bottom hole

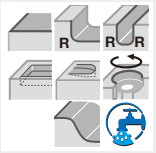
ROUNDSPLIT
TRC12/16

Face mill, for round inserts with 6mm or 8mm radius

GAMP = +0°, GAMF = -1°~ -5°





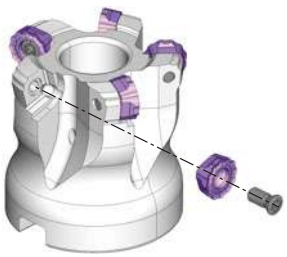


Designation	APMX	DCX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TRC12R040M16.0-04	6	28	4	40	35	40	16	18	8.2	5.6	0.2	With	RCMT1204...
TRC12R040M16.0E04	6	28	4	40	35	40	16	19	8.4	5.6	0.2	With	RCMT1204...
TRC12R050M22.0-05	6	38	5	50	47	50	22	20	10	6	0.4	With	RCMT1204...
TRC12R050M22.0E05	6	38	5	50	47	50	22	20	10.4	6.3	0.4	With	RCMT1204...
TRC12R050M22.2-05	6	38	5	50	47	50	22.225	20	8	5	0.4	With	RCMT1204...
TRC12R052M22.0E05	6	40	5	52	49	50	22	20	10.4	6.3	0.4	With	RCMT1204...
TRC12R063M22.0-06	6	51	6	63	59	50	22	20	10	6	0.7	With	RCMT1204...
TRC12R063M22.0E06	6	51	6	63	59	50	22	20	10.4	6.3	0.7	With	RCMT1204...
TRC12R063M22.2-06	6	51	6	63	59	50	22.225	20	8	5	0.7	With	RCMT1204...
TRC12R066M22.0E06	6	54	6	66	62	50	22	20	10.4	6.3	0.7	With	RCMT1204...
TRC12R080M27.0E07	6	68	7	80	76	50	27	22	12.4	7	1.1	With	RCMT1204...
TRC12R080M31.7-07	6	68	7	80	76	63	31.750	32	12.7	8	1.5	With	RCMT1204...
TRC16R050M22.0-04	8	34	4	50	47	50	22	20	10	6	0.4	With	RCMT1606...
TRC16R050M22.0E04	8	34	4	50	47	50	22	20	10.4	6.3	0.3	With	RCMT1606...
TRC16R050M22.2-04	8	34	4	50	47	50	22.225	20	8	5	0.4	With	RCMT1606...
TRC16R052M22.0E04	8	36	4	52	49	50	22	20	10.4	6.3	0.4	With	RCMT1606...
TRC16R063M22.0-05	8	47	5	63	59	50	22	20	10	6	0.6	With	RCMT1606...
TRC16R063M22.0E05	8	47	5	63	59	50	22	20	10.4	6.3	0.6	With	RCMT1606...
TRC16R063M22.2-05	8	47	5	63	59	50	22.225	20	8	5	0.7	With	RCMT1606...
TRC16R066M22.0E05	8	50	5	66	62	50	22	20	10.4	6.3	0.7	With	RCMT1606...
TRC16R080M27.0E06	8	64	6	80	76	50	27	22	12.4	7	1	With	RCMT1606...
TRC16R080M31.7-06	8	64	6	80	76	63	31.75	32	12.7	8	1.3	With	RCMT1606...
TRC16R100M31.7-07	8	84	7	100	96	63	31.75	32	12.7	8	1.6	With	RCMT1606...
TRC16R100M32.0E07	8	84	7	100	96	63	32	25	14.4	8	2.4	With	RCMT1606...
TRC16R125M38.1-08	8	109	8	125	98	63	38.1	43	15.9	10	3.6	With	RCMT1606...
TRC16R125M40.0E08	8	109	8	125	98	63	40	32	16.4	9	3	With	RCMT1606...

SPARE PARTS

Designation	Clamping screw	Grip	Shell locking bolt 1	Shell locking bolt 2	Torx bit
TRC12R040...	CSTB-4L090	H-TBS	-	FSHM8-30H	BT15S
TRC12R050 - 066...	CSTB-4L090	H-TBS	-	CM10X30H	BT15S
TRC12R080M27.0E07	CSTB-4L090	H-TBS	-	CM12X30H	BT15S
TRC12R080M31.7-07	CSTB-4L090	H-TBS	-	CM16X40H	BT15S
TRC16R050 - 052...	CSTB-5L120	H-TB	-	FSHM10-40H	BT20S
TRC16R063 - 066...	CSTB-5L120	H-TB	-	CM10X30H	BT20S
TRC16R080M27.0E06	CSTB-5L120	H-TB	-	CM12X30H	BT20S
TRC16R080M31.7-06	CSTB-5L120	H-TB	-	CM16X40H	BT20S
TRC16R100...	CSTB-5L120	H-TB	-	CM16X40H	BT20S
TRC16R125...	CSTB-5L120	H-TB	TMBA-M20H	-	BT20M

*Recommended clamping torque (N·m) :CSTB-4L090=3.5, CSTB-5L120=5



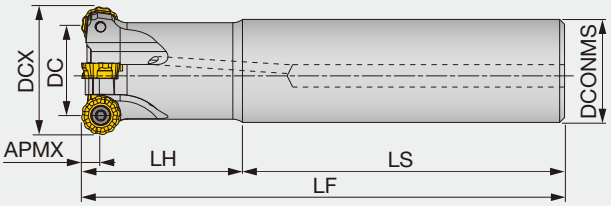
Reference pages: Inserts, Standard cutting conditions → H217

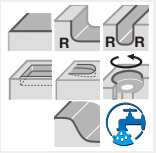
ROUNDSPLIT
ERC12/16

Endmill, shank type, for round inserts with 6mm or 8mm radius

GAMP = +0°, GAMF = -1°~ -5°







Designation	APMX	DCX	DC	CICT	DCONMS	LF	LH	LS	WT(kg)	Air hole	Insert
ERC12R032M32.0-03	6	32	20	3	32	150	70	80	0.8	With	RCMT1204...
ERC12R032M32.0-03L	6	32	20	3	32	250	150	100	1.3	With	RCMT1204...
ERC12R032M32.0-03LL	6	32	20	3	32	300	180	120	1.6	With	RCMT1204...
ERC12R033M32.0-03	6	33	21	3	32	150	70	80	0.8	With	RCMT1204...
ERC12R033M32.0-03L	6	33	21	3	32	250	150	100	1.4	With	RCMT1204...
ERC12R033M32.0-03LL	6	33	21	3	32	300	70	230	1.7	With	RCMT1204...
ERC12R040M32.0-04	6	40	28	4	32	150	50	100	0.8	With	RCMT1204...
ERC12R040M32.0-04L	6	40	28	4	32	250	50	200	1.5	With	RCMT1204...
ERC12R040M32.0-04LL	6	40	28	4	32	300	50	250	1.8	With	RCMT1204...
ERC12R050M42.0-05	6	50	38	5	42	150	50	100	1.5	With	RCMT1204...
ERC12R050M42.0-05L	6	50	38	5	42	250	50	200	2.6	With	RCMT1204...
ERC12R050M42.0-05LL	6	50	38	5	42	300	50	250	3	With	RCMT1204...
ERC16R040M32.0-02	8	40	24	2	32	150	50	100	0.8	With	RCMT1606...
ERC16R040M32.0-02L	8	40	24	2	32	250	50	200	1.4	With	RCMT1606...
ERC16R040M32.0-02LL	8	40	24	2	32	300	50	250	1.7	With	RCMT1606...
ERC16R050M42.0-03	8	50	34	3	42	150	50	100	1.4	With	RCMT1606...
ERC16R050M42.0-03L	8	50	34	3	42	250	50	200	2.4	With	RCMT1606...
ERC16R050M42.0-03LL	8	50	34	3	42	300	50	250	3	With	RCMT1606...

SPARE PARTS





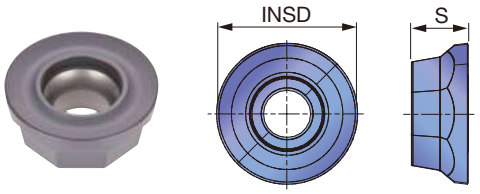
Designation	Clamping screw	Wewnch
ERC12R...	CSTB-4L090	T-15DB
ERC16R040...	CSTB-5L105	T-20DB
ERC16R050...	CSTB-5L120	T-20DB

*Recommended clamping torque (N·m) ：CSTB-4L090=3.5, CSTB-5L105=5, CSTB-5L120=5

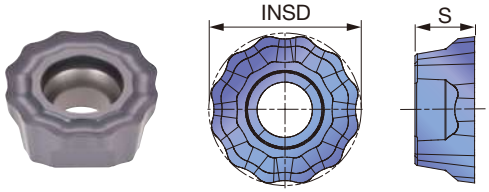
Reference pages: Inserts, Standard cutting conditions → H217

INSERT

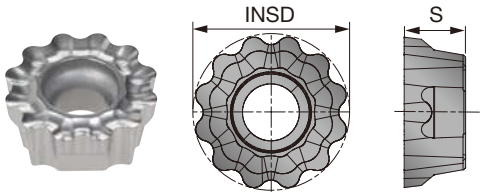
RCMT-MJ



RCMT-NMJ



RCMT-NAJ



		AH120	AH140	AH725	KS15F
P	Steel	☆		★	
M	Stainless		★	☆	
K	Cast iron	★		☆	
N	Non-ferrous				★
S	Superalloys	★		★	
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	APMX	Coated AH120	Coated AH140	Coated AH725	Uncoated KS15F	INSD	S
RCMT1204EN-MJ	6	●	●	●		12	4.8
RCMT1204EN-NMJ	6	●	●	●		12	4.8
RCMT1204FN-NAJ	6				●	12	4.8
RCMT1606EN-MJ	8	●	●	●		16	6.5
RCMT1606EN-NMJ	8	●	●	●		16	6.5
RCMT1606FN-NAJ	8				●	16	6.5

●: Line up

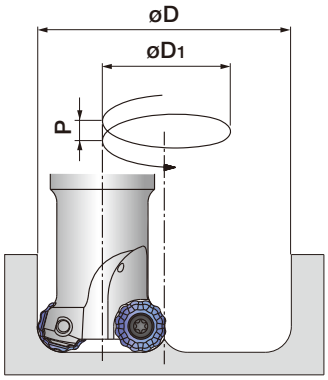
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness HB	Grade	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t) each chipbreaker MJ	NMJ	NAJ
P	Low carbon steels S15C, SS400, etc. C15E4, E275A, etc.	~ 200	AH725	100 - 220	0.2 - 0.7	0.17 - 0.3	-
P	High carbon steels S45C, S55C, etc. C45, C55, etc.	200 ~ 300	AH725	100 - 200	0.2 - 0.7	0.17 - 0.25	-
P	Alloyed steels SCM440, SCr415, etc. 42CrMo4, 20Cr4, etc.	150 ~ 300	AH725	100 - 200	0.2 - 0.7	0.17 - 0.25	-
P	Tool steels SK, SKH, etc. X40CrMoV5-1, etc.	~ 300	AH725	100 - 180	0.2 - 0.7	0.17 - 0.25	-
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-3, etc.	-	AH140	90 - 180	0.2 - 0.6	0.15 - 0.25	-
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.	150 ~ 250	AH120	140 - 250	0.2 - 0.7	0.17 - 0.3	-
K	Ductile cast irons FCD400, etc. 400-15S, etc.	150 ~ 250	AH120	140 - 250	0.2 - 0.7	0.17 - 0.3	-
N	Aluminium alloys Si < 13%	-	KS15F	500 - 1200	-	-	0.1 - 0.3
N	Aluminium alloys Si ≥ 13%	-	KS15F	100 - 300	-	-	0.1 - 0.3
S	Heat-resisting alloy Inconel 718, Ti-6Al-4V, etc.	-	AH725	20 - 50	0.2 - 0.6	0.15 - 0.25	-

· To remove excessive chip accumulation use an air blast.
· When chips stick to the cutting edges (aluminium machining), use a water soluble cutting fluid.

· Cutting conditions are limited by machine power and material rigidity. When the cutting width or depth is large, set Vc and fz below the recommended values and check the machine vibration and spindle load.

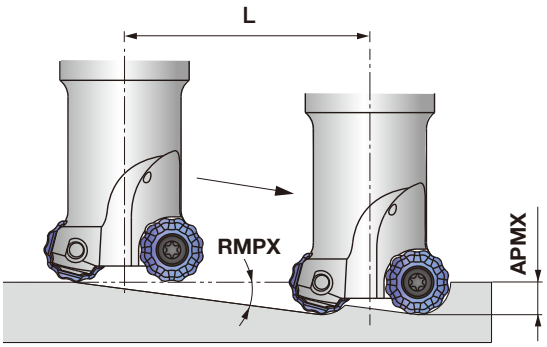
Holemaking with helical feed



Designation	Tool ø DCX (mm)	Min. machining diameter (mm)		Max. machining diameter (mm)		Pitch P (mm)
		øD	øD1	øD	øD1	
ERC12R032…	ø32	52	20	62	30	< 6
ERC12R033…	ø33	54	21	64	31	< 6
T/ERC12R040…	ø40	68	28	78	38	< 6
T/ERC12R050…	ø50	88	38	98	48	< 6
TRC12R063…	ø63	114	51	124	61	< 6
TRC12R080…	ø80	148	68	158	78	< 6
ERC16R040…	ø40	64	24	78	38	< 8
T/ERC16R050…	ø50	84	34	98	48	< 8
TRC16R063…	ø63	110	47	124	61	< 8
TRC16R080…	ø80	144	64	158	78	< 8
TRC16R100…	ø100	184	84	198	98	< 8
TRC16R125…	ø125	234	109	248	123	< 8

When holemaking with a helical feed, the pitch (P) needs to be set at lower values than that shown above.

Ramping



Designation	Tool ø DCX (mm)	Max. ramping angle RMPX	L: tool pass length when ramping angle is 2 degrees				
			*a*p (mm)				
			2	3	4	6	8
ERC12R032…	ø32	10°	57	85	114	171	–
ERC12R033…	ø33	9°	57	85	114	171	–
T/ERC12R040…	ø40	6°	57	85	114	171	–
T/ERC12R050…	ø50	4°	57	85	114	171	–
TRC12R063…	ø63	3°	57	85	114	171	–
TRC12R080…	ø80	2.3°	57	85	114	171	–
ERC16R040…	ø40	12°	57	85	114	171	229
T/ERC16R050…	ø50	7.4°	57	85	114	171	229
TRC16R063…	ø63	6°	57	85	114	171	229
TRC16R080…	ø80	4.3°	57	85	114	171	229
TRC16R100…	ø100	3°	57	85	114	171	229
TRC16R125…	ø125	2.4°	57	85	114	171	229

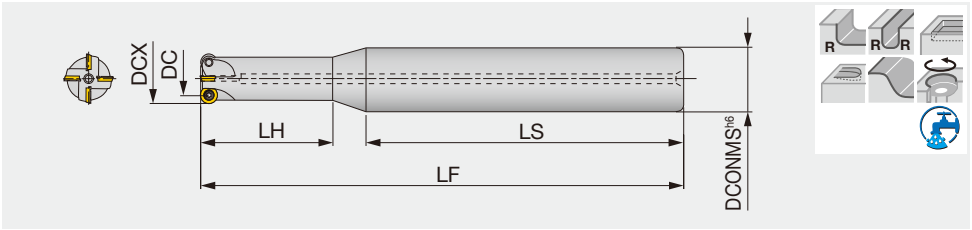
Tool pass length: L = *a*p / tan RMPX, Ramping angle needs to be set at smaller than 2 degrees in order to prevent chips from getting tangled.

EWD05/07/10

Endmill, shank type, for round inserts with 2.5 mm, 3.5 mm, or 5 mm radius

GAMP = 0°, GAMF = -3°~ +0.5°





Designation	APMX	DC	CICT	DCX	DCONMS	LS	LH	LF	Air hole	Insert
EWD05010R	2.5	5	2	10	20	80	20	130	With	RDMW05...
EWD05012R	2.5	7	3	12	20	80	20	130	With	RDMW05...
EWD07015R	3.5	8	3	15	20	100	40	150	With	RDMW07...
EWD05015R	2.5	10	4	15	20	100	40	150	With	RDMW05...
EWD10020R	5.0	10	2	20	25	120	40	170	With	RDMW10...
EWD07020R	3.5	13	4	20	25	120	40	170	With	RDMW07...
EWD05020R	2.5	15	5	20	25	120	40	170	With	RDMW05...
EWD10025R	5.0	15	3	25	32	125	45	195	With	RDMW10...
EWD07025R	3.5	18	5	25	32	125	45	195	With	RDMW07...

SPARE PARTS

Designation	Clamping screw	Lubricant	Wewnch
EWD050**R	CSTD-1.8	M-1000	T-6D
EWD070**R	CSTB-2.5S	M-1000	T-8D
EWD100**R	CSTB-3.5H	M-1000	T-15D

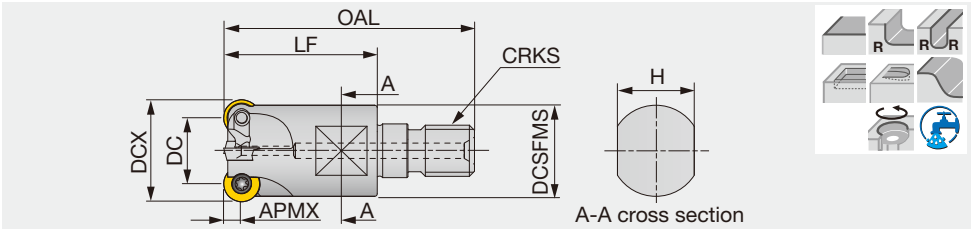
*Recommended clamping torque (N·m) :CSTD-1.8=0.7, CSTB-2.5S=1, CSTB-3.5H=3.5

HWD07-M

Endmill, modular type, for round inserts with 3.5 mm radius (TungFlex)

GAMP = 0°, GAMF = -3°~ +0.5°





Designation	APMX	DC	CICT	DCX	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole
HWD07R015MM08-03	3.5	8	3	15	42	25	10	12.8	M8	0.03	With
HWD07R020MM10-04	3.5	13	4	20	49	30	15	17.8	M10	0.06	With
HWD07R025MM12-05	3.5	18	5	25	57	35	17	20.8	M12	0.1	With
HWD07R030MM16-05	3.5	23	5	30	63	40	22	28.8	M16	0.2	With

Please see the page **H208** for TungFlex modular shank.

SPARE PARTS

Designation	Clamping screw	Lubricant	Wewnch
HWD07-M...	CSTB-2.5S	M-1000	T-8D

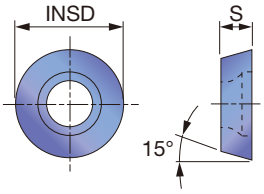
*Recommended clamping torque (N·m) :CSTB-2.5S=1

Reference pages: Inserts, Standard cutting conditions → H220, TungFlex → H208

INSERT

RDMW05/07/10





P	Steel	★	
M	Stainless		
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

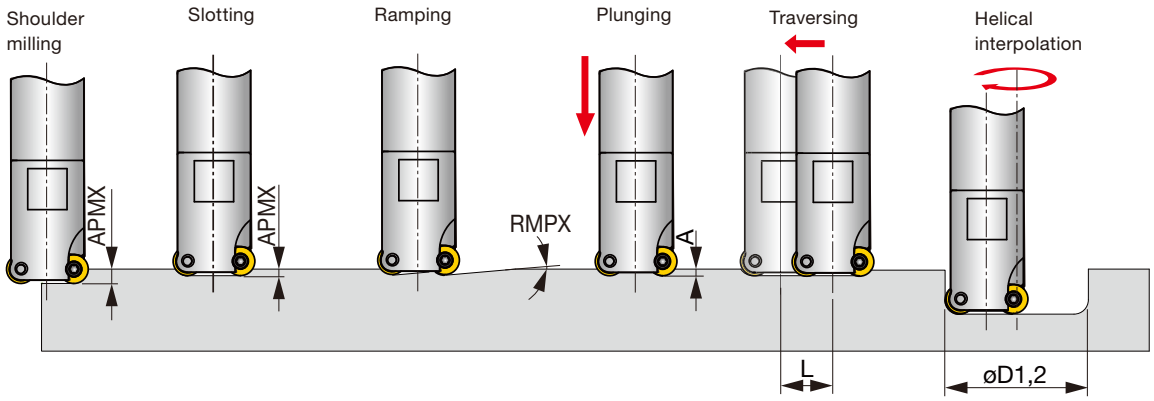
Designation	APMX	Coated AH120	INSD	S
RDMW0501M0	2.5	●	5	1.4
RDMW0702M0	3.5	●	7	2.38
RDMW1003M0	5.0	●	10	3.18

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)	Depth of cut: APMX (mm) Cutter dia. ø10, 12	Cutter dia. ø15, 20	Cutter dia. ø25
P	Carbon steels S15C, SS400, etc. C45, etc. < 300 HB	AH120	200 ~ 500	0.15 ~ 0.45	~ 0.5	~ 0.7	~ 1
P	Alloy steels S55C, SCM440, etc. 42CrMo4, etc. < 300 HB	AH120	120 ~ 350	0.15 ~ 0.35	~ 0.5	~ 0.7	~ 1
P	Die steels SKD61, etc. X40CrMoV5-1, etc. < 300 HB	AH120	100 ~ 300	0.1 ~ 0.3	~ 0.5	~ 0.7	~ 1
K	Cast irons FC250, etc. 250, etc.	AH120	200 ~ 500	0.2 ~ 0.5	~ 0.5	~ 0.7	~ 1
H	Hardened steels, Prehardened steels < 40HRC	AH120	70 ~ 200	0.1 ~ 0.25	~ 0.5	~ 0.7	~ 1

APPLICATION RANGE



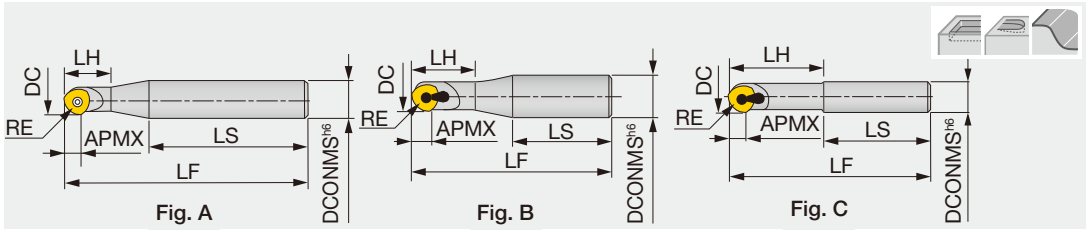
Designation	Tool-ø DCX	Max. depth of cut APMX	Max. ramping RMPX	Max. plunging depth A	Machining length for removing uncut portion L	Max. machining øD1	*Max. machining øD2
HWD07R015MM08-03	15	3.5	25°	2	ø*D*c - 6	23	28
HWD07R020MM10-04	20	3.5	11°	2	ø*D*c - 6	33	38
HWD07R025MM12-05	25	3.5	7°	2	ø*D*c - 6	43	48
HWD07R030MM16-05	30	3.5	5.5°	2	ø*D*c - 6	53	58

*For flat bottom hole

TBN1000

Ball nose endmill for semi-finishing





Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	RE	Insert	Fig.
TBN1100S	5	10	1	16	60	15	90	5	ZNCA1002FN2	A
TBN1120S	6	12	1	16	70	20	110	6	ZNCA1203FN	A
TBN1160S	8	16	1	20	85	25	130	8	ZNCA1603FN	A
TBN1200S	10	20	1	25	100	35	160	10	ZN**2004...	A
TBN1250S	12.5	25	1	32	100	45	175	12.5	ZN**2505...	B
TBN1300S	15	30	1	32	100	90	190	15	ZN**3005...	C

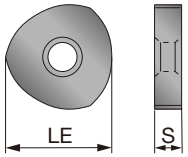
SPARE PARTS

Designation	Clamping screw	Clamp	Adjusting screw	Wewnch
TBN1100S	CSTB-2.5B	-	-	T-8D
TBN1120S	CSTB-3S	-	-	T-9D
TBN1160S	CSTB-4S	-	-	T-15D
TBN1200S	CSTA-5SS	-	-	T-15D
TBN1250S, 1300S	CSTA-5S	CP536	DS-6T	T-15D

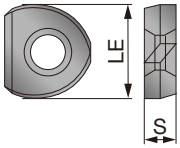
*Recommended clamping torque (N·m) : CSTB-2.5B=1.3, CSTB-3S=2.3, CSTB-4S/CSTA-5S/CSTA-5SS=3.5

INSERT

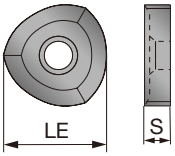
ZNCA-FN



ZNCA-FN2



ZNMM-EN



		UX30	TH10	LE	S
		Uncoated			
P	Steel	★			
M	Stainless				
K	Cast iron		★		
N	Non-ferrous				
S	Superalloys				
H	Hard materials				
Designation					
ZNCA1002FN2		●	●	7.958	2.5
ZNCA1203FN		●	●	9.735	3
ZNCA1603FN		●	●	12.772	3.5
ZNCA2004FN		●	●	15.862	4
ZNCA2505FN		●	●	19.826	5
ZNCA3005FN		●	●	23.618	5
ZNMM2004EN		●		15.862	4
ZNMM2505EN		●		19.826	5
ZNMM3005EN		●		23.618	5.5

★ : First choice
☆ : Second choice

●: Line up

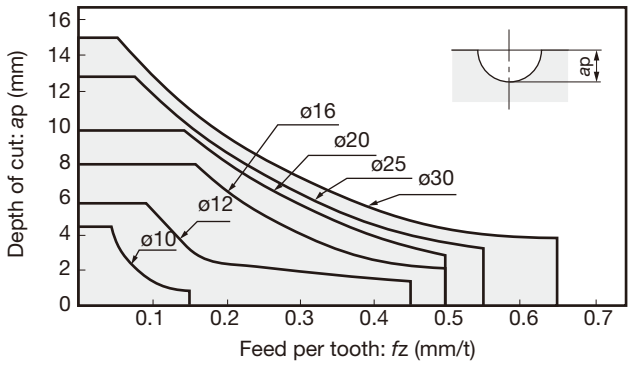
Reference pages: Standard cutting conditions→ H222

STANDARD CUTTING CONDITIONS

For finishing

ISO	Workpiece material	Grade	Cutting Speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)	Pick feed *Pf* (mm)
P	High carbon steel S45C, S55C, etc. C45, C55, etc.	UX30	80 - 120	0.1 - 0.3	0.3 - 0.5
P	Tool steel SK, SKH, etc. X153CrMoV12, etc.	UX30	60 - 100	0.08 - 0.25	0.3 - 0.5
K	Cast iron FC250, FCD400, etc. 250, 400-15S, etc.	TH10	80 - 120	0.1 - 0.5	0.3 - 0.5

GUIDELINES FOR SELECTING DEPTH OF CUT AND FEED

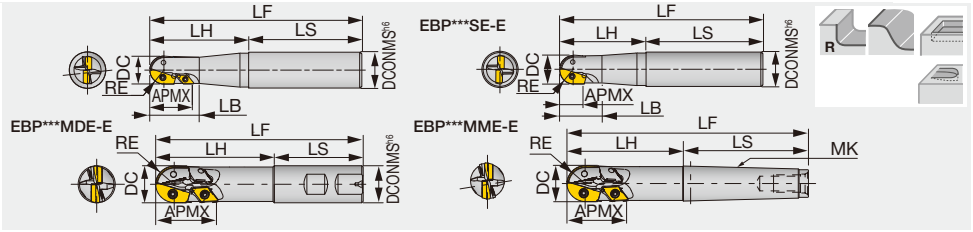


Workpiece material: Carbon steel (JIS S55C)
Insert grade: UX30
Machine power: ø10 ~ ø16: 7.5 kW
ø20 ~ ø30: 22.5 kW
No. of revolutions: ø10 ~ ø16: 2000 min^{-1}
ø20 ~ ø30: 1500 min^{-1}

EBP

Ball nose endmill for semi-finishing





Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	LB	RE	MK	Insert 1	Insert 2
EBP020SD-E	16	20	2	20	56	60	116	-	10	-	ZPET2004-MJ	-
EBP020SS	16	20	2	25	80	60	140	30	10	-	ZPET2004-MJ	-
EBP020MDE-E	29.5	20	2 (4)	20	56	70	126	-	10	-	ZPET2004-MJ	DCMW070204TN
EBP020MME-E	29.5	20	2 (4)	-	69	70	139	-	10	MK2	ZPET2004-MJ	DCMW070204TN
EBP020MSE	29.5	20	2 (4)	25	80	70	150	35	10	-	ZPET2004-MJ	DCMW070204TN
EBP020LSE	29.5	20	2 (4)	25	180	70	250	35	10	-	ZPET2004-MJ	DCMW070204TN
EBP025SD-E	21	25	2	25	60	70	130	-	12.5	-	ZPET2505-MJ	-
EBP025SS	21	25	2	32	80	70	150	35	12.5	-	ZPET2505-MJ	-
EBP025MDE-E	41	25	2 (4)	25	60	80	140	-	12.5	-	ZPET2505-MJ	DCMW11T304TN
EBP025MME-E	41	25	2 (4)	-	86	-	166	-	12.5	MK3	ZPET2505-MJ	DCMW11T304TN
EBP025MSE	41	25	2 (4)	32	100	80	180	50	12.5		ZPET2505-MJ	DCMW11T304TN
EBP025LSE	41	25	2 (4)	32	220	80	300	50	12.5	-	ZPET2505-MJ	DCMW11T304TN
EBP030SS	24	30	2	32	80	80	160	40	15	-	ZPET3006-MJ	-
EBP030MSE	45	30	2 (4)	32	100	100	200	55	15	-	ZPET3006-MJ	DCMW11T304TN
EBP030LSE	45	30	2 (4)	32	250	100	350	55	15	-	ZPET3006-MJ	DCMW11T304TN
EBP032SD-E	25	32	2	32	60		140	-	16	-	ZPET3206-MJ	-
EBP032MDE-E	46	32	2 (4)	32	60	100	160	-	16	-	ZPET3206-MJ	DCMW11T304TN
EBP032MME-E	46	32	2 (4)	-	109	100	209	-	16	MK4	ZPET3206-MJ	DCMW11T304TN

SPARE PARTS

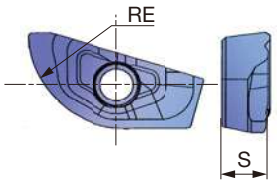


Designation	Clamping screw for Insert 1	Clamping screw for Insert 2	Lubricant	Wewnch 1 for Insert 1	Wewnch 2 for Insert 2
EBP020SS/SD-E	CSTD-3T	-	M-1000	T-10D	-
EBP025SS/SD-E	CSTB-4S	-	M-1000	T-15D	-
EBP030SS/032SD-E	CSTB-5S	-	M-1000	T-20D	-
EBP020*SE/M*E-E	CSTB-2.5S	CSTD-3T	M-1000	T-10D	T-8D
EBP025*SE/M*E-E	CSTB-4S	-	M-1000	T-15D	-
EBP030*SE/032M*E-E	CSTB-4S	CSTB-5S	M-1000	T-15D	T-20D

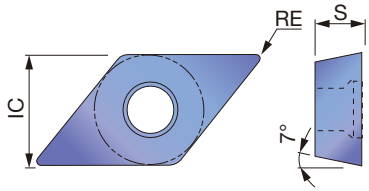
*Recommended clamping torque (N·m) : CSTB-2.5S=1.3, CSTD-3T=2.5, CSTB-4S=3.5, CSTB-5S=5

INSERT

ZPET-MJ (For R edge)



DCMW-TN (For P edge)



		AH120	AH330
P	Steel	☆	★
M	Stainless		
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys		
H	Hard materials	☆	

★ : First choice
☆ : Second choice

Designation	RE	Coated AH120	Coated AH330	IC	S
ZPET2004-MJ	10	●	●	-	4.5
ZPET2505-MJ	12.5	●	●	-	5.63
ZPET3006-MJ	15	●	●	-	6.75
DCMW070204TN	0.4	●	●	6.4	2.4
DCMW11T304TN	0.4	●	●	9.5	4

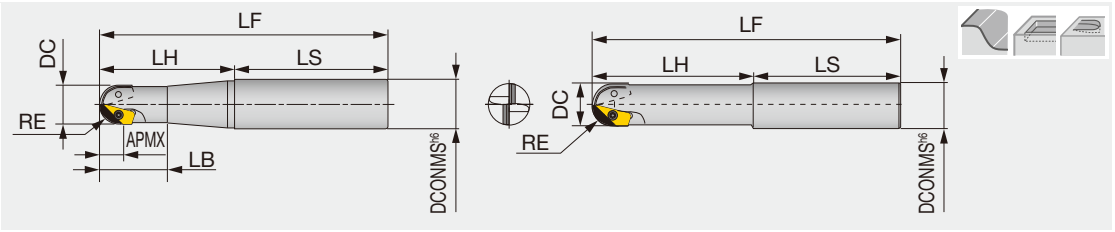
ZPET30... : 5 piece per package
●: Line up

Reference pages: Standard cutting conditions→ H224

EBB

Ball nose endmill for semi-finishing, for CBN inserts





Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	LB	RE	Insert
EBB020MS	12	20	2	25	80	70	150	35	10	ZPCW2003-QBN
EBB025MS	15.5	25	2	32	100	80	180	50	12.5	ZPCW25H3-QBN
EBB030MS	18	30	2	32	100	100	200	-	15	ZPCW30T3-QBN
EBB040MS	23	40	2	42	100	150	250	-	20	ZPCW4004-QBN
EBB050MS	28	50	2	50	100	150	250	-	25	ZPCW5004-QBN

SPARE PARTS



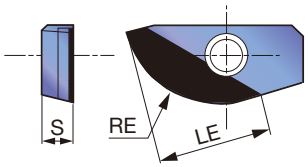


Designation	Clamping screw	Lubricant	Wewnch	Clamp set
EBB020MS	CSTB-3S	M-1000	T-9D	-
EBB025MS	CSTB-3.5	M-1000	T-15D	-
EBB030MS	CSTB-4S	M-1000	T-15D	-
EBB040MS	CSTB-5	M-1000	T-20D	CSP22
EBB050MS	CSTB-5	M-1000	T-20D	CSP22

*Recommended clamping torque (N·m) : CSTB-3S=2.3, CSTB-3.5/CSTB-4S=3.5, CSTB-5=5

INSERT

ZPCW-QBN



		CBN
P	Steel	
M	Stainless	
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	RE	CBN BX950	S	LE
ZPCW2003-QBN	10	●	3.18	12
ZPCW25H3-QBN	12.5	●	3.5	15.5
ZPCW30T3-QBN	15	●	3.97	18
ZPCW4004-QBN	20	●	4.76	23
ZPCW5004-QBN	25	●	4.76	28

●: Line up
BX950 : 1 piece per package

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	No. of revolutions n (min^{-1})	Feed per tooth fz (mm/t)	Depth of cut APMX (mm)	Pick feed Pf (mm)
K	Cast irons FC250, etc. 250, etc.	5,000 ~ 15,000	0.2 ~ 0.5	~ 1	~ 3
	Ductile cast irons FCD500, etc. 600-3, etc.	5,000 ~ 15,000	0.2 ~ 0.5	~ 1	~ 3

EBD

Ball nose endmill for roughing



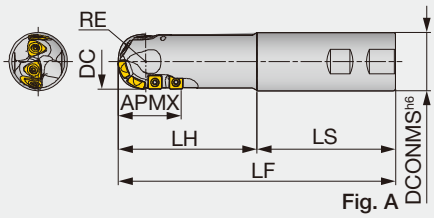


Fig. A

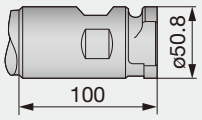
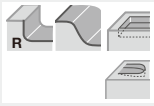


Fig. B



Combination shank

Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	RE	Fig.	Insert R	Insert P
EBD040SSE	45	40	4 (7)	42	100	100	200	20	A	ZDMT4005-MJ	SCMT09T308-23
EBD040MSE	45	40	4 (7)	42	100	150	250	20	A	ZDMT4005-MJ	SCMT09T308-23
EBD050SSE	59	50	4 (7)	42	100	100	200	25	A	ZDMT5006-MJ	SCMT120408-23
EBD050MSE	59	50	4 (7)	42	100	150	250	25	A	ZDMT5006-MJ	SCMT120408-23
EBD050SCE	59	50	4 (7)	50.8	100	100	200	25	B	ZDMT5006-MJ	SCMT120408-23
EBD050MCE	59	50	4 (7)	50.8	100	150	250	25	B	ZDMT5006-MJ	SCMT120408-23

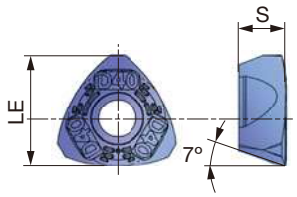
SPARE PARTS

Designation	Clamping screw	Lubricant	Wewnch
EBD040*SE	CSTB-4M	M-1000	T-15T
EBD050**-E	CSTB-5	M-1000	T-20T

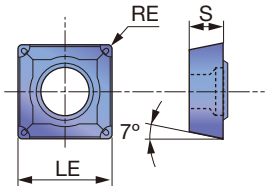
*Recommended clamping torque (N·m) : CSTB-4M=3.5, CSTB-5=5

INSERT

ZDMT-MJ (For R edge)



SCMT-23 (For P edge)



P	Steel	☆
M	Stainless	
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	
H	Hard materials	☆

★ : First choice
☆ : Second choice

Designation	RE	Coated AH120	LE	S
ZDMT4005-MJ	-	●	13	5.5
ZDMT5006-MJ	-	●	16.2	6.5
SCMT09T308-23	0.8	●	9.525	3.97
SCMT120408-23	0.8	●	12.7	4.76

●: Line up

Reference pages: Standard cutting conditions→ H226

STANDARD CUTTING CONDITIONS

EBP

ISO	Workpiece material	Grade	Machining type	Cutting speed *Vc* (m/min)	Table feed *vf* (mm/min)		
					Tool dia. ø20	Tool dia. ø25	Tool dia. ø30
P	Carbon steels S55C, etc. C55, etc. < 300 HB	AH120	(1)	200 (170 ~ 230)	760 (610 ~ 910)	610 (460 ~ 760)	510 (360 ~ 660)
		AH120	(2)	230 (200 ~ 260)	1100 (900 ~ 1300)	880 (680 ~ 1080)	730 (530 ~ 930)
		AH120	(3)	180 (150 ~ 200)	570 (420 ~ 350)	460 (310 ~ 610)	380 (230 ~ 530)
	Alloy steels SCM440, etc. 42CrMo4, etc. < 300 HB	AH120	(1)	180 (150 ~ 210)	680 (530 ~ 830)	550 (400 ~ 700)	450 (300 ~ 600)
		AH120	(2)	210 (180 ~ 240)	1000 (800 ~ 1200)	800 (600 ~ 400)	670 (470 ~ 870)
		AH120	(3)	160 (130 ~ 180)	510 (360 ~ 660)	400 (250 ~ 550)	340 (190 ~ 490)
	Die steels SKD11, etc. X96CrMoV12, etc. < 300 HB	AH330	(1)	150 (120 ~ 180)	570 (420 ~ 720)	460 (310 ~ 610)	380 (230 ~ 530)
		AH330	(2)	180 (150 ~ 210)	860 (660 ~ 1060)	690 (490 ~ 890)	570 (370 ~ 770)
		AH330	(3)	130 (100 ~ 150)	410 (260 ~ 560)	330 (180 ~ 480)	280 (130 ~ 430)
K	Cast irons FC250, etc. 250, etc.	AH120	(1)	200 (170 ~ 230)	950 (800 ~ 1100)	760 (610 ~ 910)	640 (490 ~ 790)
		AH120	(2)	230 (200 ~ 260)	1200 (900 ~ 1400)	1000 (700 ~ 1200)	830 (530 ~ 1030)
		AH120	(3)	180 (150 ~ 200)	570 (420 ~ 720)	460 (310 ~ 610)	380 (230 ~ 530)
H	Hardened steels Prehardened steels < 45 HRC	AH120	(1)	80 (60 ~ 100)	250 (150 ~ 350)	200 (100 ~ 300)	160 (100 ~ 260)
		AH120	(2)	100 (70 ~ 130)	310 (160 ~ 460)	250 (100 ~ 400)	210 (100 ~ 360)
		AH120	(3)	60 (40 ~ 80)	190 (140 ~ 240)	150 (100 ~ 200)	130 (80 ~ 180)

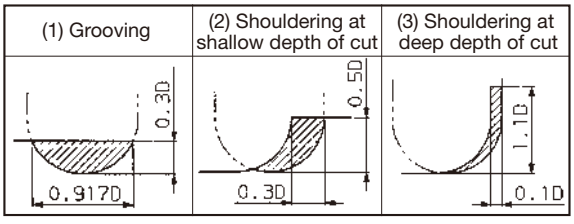
Notes:
- Cutting speeds shown in the left table are of the most outer diameter of the tool.
- When the depth of cut is the upper limit shown in the above figures, set the cutting conditions to the lowest values shown left.
- When using long edge types (MSE), set the cutting speed and feed to 60 to 80 % of values shown in the table.
- When using long shank types (LSE), set the cutting speed and feed to 20 to 50 % of values shown in the table, bearing in mind the overhang length.

EBD

ISO	Workpiece material	Grade	Machining type	Cutting speed *Vc* (m/min)	Table feed *vf* (mm/min)	
					Tool dia. ø40	Tool dia. ø50
P	Carbon steels S55C, etc. C55, etc. < 300 HB	AH120	(1)	180 (150 ~ 210)	490 (400 ~ 570)	390 (330 ~ 460)
		AH120	(2)	200 (170 ~ 230)	480 (410 ~ 550)	380 (330 ~ 440)
		AH120	(3)	160 (130 ~ 190)	260 (210 ~ 300)	200 (160 ~ 240)
	Alloy steels SCM440, etc. 42CrMo4, etc. < 300 HB	AH120	(1)	160 (130 ~ 190)	430 (350 ~ 510)	350 (280 ~ 410)
		AH120	(2)	180 (150 ~ 210)	430 (360 ~ 500)	340 (290 ~ 400)
		AH120	(3)	140 (110 ~ 170)	220 (180 ~ 270)	180 (140 ~ 220)
	Die steels SKD11, etc. X96CrMoV12, etc. < 300 HB	AH120	(1)	140 (110 ~ 170)	380 (300 ~ 460)	300 (240 ~ 370)
		AH120	(2)	160 (130 ~ 190)	380 (310 ~ 460)	310 (250 ~ 360)
		AH120	(3)	120 (90 ~ 150)	190 (140 ~ 240)	150 (120 ~ 190)
K	Cast irons FC250, etc. 250, etc.	AH120	(1)	200 (170 ~ 230)	640 (510 ~ 680)	510 (410 ~ 540)
		AH120	(2)	220 (190 ~ 250)	600 (510 ~ 680)	480 (410 ~ 540)
		AH120	(3)	180 (150 ~ 210)	340 (290 ~ 400)	280 (230 ~ 320)
H	Hardened steels Prehardened steels < 45 HRC	AH120	(1)	90 (70 ~ 110)	210 (160 ~ 260)	170 (130 ~ 210)
		AH120	(2)	100 (80 ~ 120)	200 (160 ~ 250)	160 (130 ~ 200)
		AH120	(3)	60 (50 ~ 90)	100 (80 ~ 140)	80 (60 ~ 120)

Notes:
- Cutting speeds shown in the left table are of the most outer diameter of the tool.
- The values of the cutting speeds and feeds shown in the table are of under general cutting conditions. The values should be modified depending on the power and rigidity of the machine to be used, and work holding conditions.
- When using the long shank type, the depth of cut, pick feed, cutting speed, and table feed should be reduced to 70 %-90 % of the values shown in the tables.

Machining types



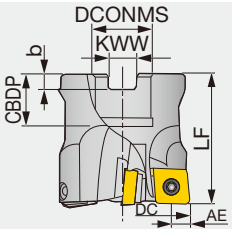
Z-FEEDMILL

TZP12

Plunge mill for roughing, with screw clamp system

GAMP = +26°, GAMF = -2°





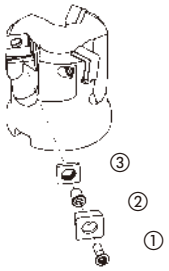


Designation	DC	CICT	DCONMS	CBDP	LF	b	KWW	WT(kg)	Insert
TZP12050R	50	3	22	20	50	6	10	0.38	APMT120416PR-MJ
TZP12050R-E	50	3	22	20	50	6.3	10.4	0.38	APMT120416PR-MJ
TZP12063R	63	3	22	20	50	6	10	0.72	APMT120416PR-MJ
TZP12063R-E	63	3	22	20	50	6.3	10.4	0.72	APMT120416PR-MJ
TZP12080R	80	4	31.75	32	63	8	12.7	1.51	APMT120416PR-MJ

SPARE PARTS

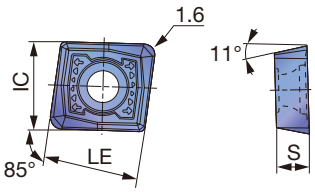
Designation	①Clamping screw	Lubricant	②Shim screw	③Shim	Wewnch1 (For ①)	Wewnch2 (For ②)
TZP12	CSTB-3.5T	M-1000	DTS5-3.5SS	ZSA1102	T-20D	P-3.5

*Recommended clamping torque (N·m) :CSTB-3.5T=5



INSERT

APMT120416-MJ



P	Steel	☆	★	
M	Stainless			
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys			
H	Hard materials			

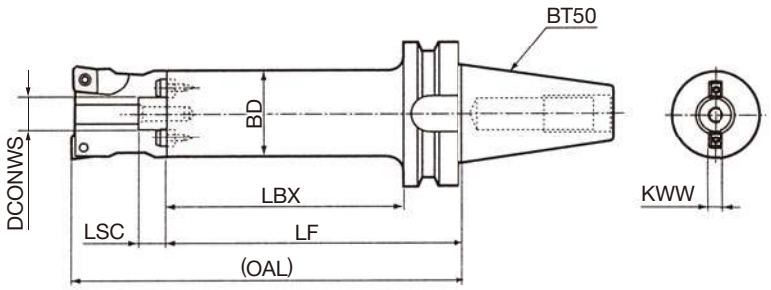
★ : First choice
☆ : Second choice

Designation	RE	AE	Coated AH120	Coated T3130	IC	LE	S
APMT120416PR-MJ	1.6	10	●	●	12.7	13.5	4.76

●: Line up

Reference pages: Standard cutting conditions→ H229

ARBOR



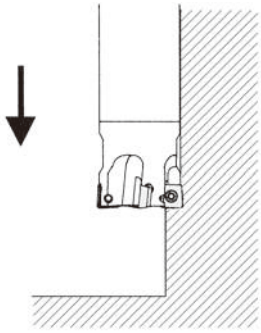
Designation	Dimension (mm)							WT (kg)	Applicable mill
	LF	LBX	(OAL)	BD	DCONWS	LSC	KWW		
BT50-FMC22-343-47	343	305	393	47	22	18	10	7.9	TZP12050R...
BT50-FMC22-293-47	293	255	343	47	22	18	10	7.2	TZP12050R...
BT50-FMC22-243-47	243	205	293	47	22	18	10	6.5	TZP12050R...
BT50-FMC22-433-59	433	395	483	59	22	18	10	12.2	TZP12063R...
BT50-FMC22-373-59	373	335	423	59	22	18	10	10.9	TZP12063R...
BT50-FMC22-308-59	308	270	358	59	22	18	10	9.5	TZP12063R...
BT50-FMA31.75-455-76	455	417	518	76	31.75	30	12.7	18.6	TZP12080R...
BT50-FMA31.75-375-76	375	337	438	76	31.75	30	12.7	15.8	TZP12080R...
BT50-FMA31.75-295-76	295	257	358	76	31.75	30	12.7	12.9	TZP12080R...

Note: (GL) is a length with TZP12 cutter mounted.

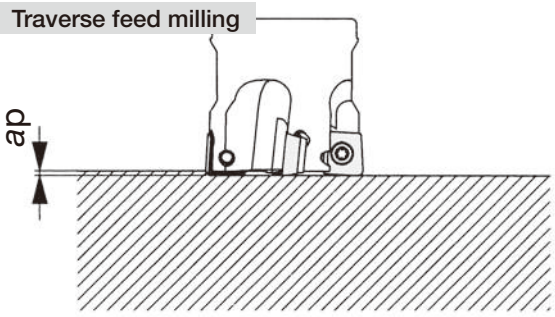
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting Speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Carbon steels, Alloy steels	AH120	100 ~ 200	0.1 ~ 0.3
		T3130	150 ~ 250	0.1 ~ 0.25
	Die steels < 300 HB	AH120	100 ~ 200	0.1 ~ 0.3
		T3130	150 ~ 250	0.1 ~ 0.25
	Prehardened steels < 45 HRC	AH120	60 ~ 120	0.1 ~ 0.2
K	Cast irons	AH120	100 ~ 200	0.1 ~ 0.3

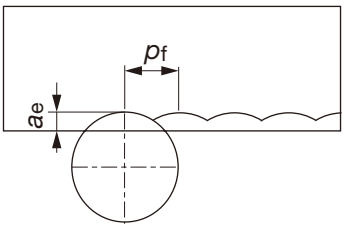
Z-feed milling



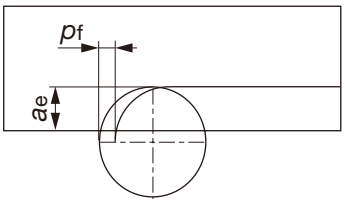
Traverse feed milling



Machining method (1)



Machining method (2)



Machining method	Z-feed milling		Traverse feed milling
	Pick feed p_f (mm)	Radial depth of cut *ae* (mm)	Depth of cut *ap* (mm)
(1)	Tool dia. øD/2	Within effective cutting edge length	~ 0.5
(2)	Within effective cutting edge length	Tool dia. øD/2	

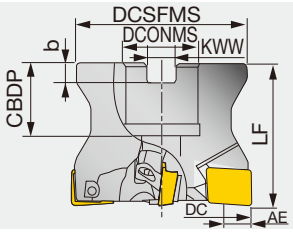
Note: In Z-feed milling, select either of the machining method (1) or (2) and decide the depth of cut according to the application.

TZP19

Plunge mill for roughing, with wedge clamp system

GAMP = +16°, GAMF = -2°



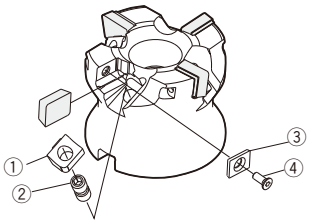


Designation	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Insert
TZP19080R	80	4	76	31.75	32	63	8	12.7	1.32	APMR190616PR-MJ
TZP19100R	100	5	96	31.75	32	63	8	12.7	2.41	APMR190616PR-MJ
TZP19125R	125	6	98	38.1	38	63	10	15.9	3.17	APMR190616PR-MJ

SPARE PARTS

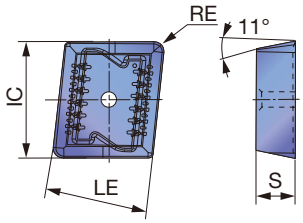
Designation	④Clamping screw	②Adjusting screw	③Shim	①Wedge	Wewnch1 (For ④)	Wewnch 2 (For ②)
TZP19	CSTA-4	FDS-8ST	ZSA1502	WPP16R	T-15D	T-27T

*Recommended clamping torque (N·m) : CSTA-4=3.5



INSERT

APMR190616-MJ



P	Steel	☆	★	
M	Stainless			
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys			
H	Hard materials			

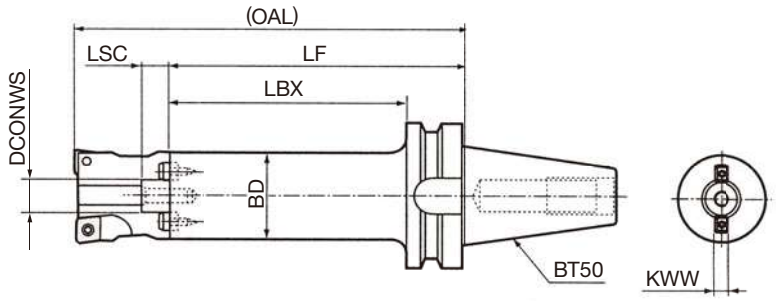
★ : First choice
☆ : Second choice

Designation	RE	AE	Coated AH120	Coated T3130	IC	LE	S
APMR190616PR-MJ	1.6	17	●	●	19.05	15.875	6.35

●: Line up

Reference pages: Standard cutting conditions → H231

ARBOR

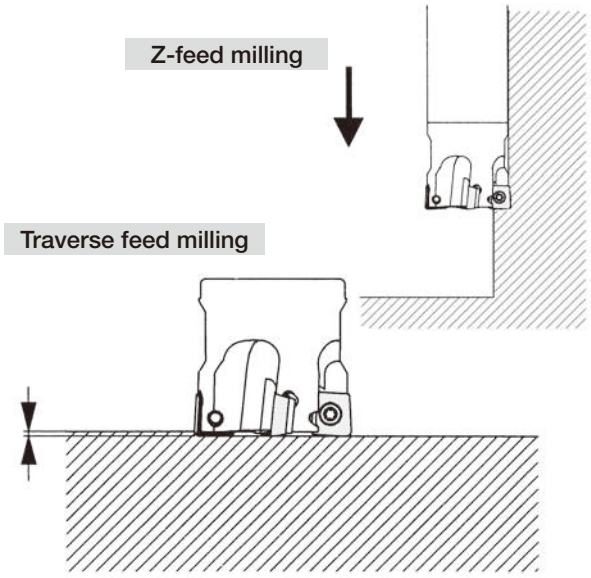


Designation	Dimension (mm)							WT (kg)	Applicable mill
	LF	LBX	(OAL)	BD	DCONWS	LSC	KWW		
BT50-FMA31.75-455-76	455	417	518	76	31.75	30	12.7	18.6	TZP19080R
BT50-FMA31.75-375-76	375	337	438	76	31.75	30	12.7	15.8	TZP19080R
BT50-FMA31.75-295-76	295	257	358	76	31.75	30	12.7	12.9	TZP19080R
BT50-FMA31.75-375-96	375	337	438	96	31.75	30	12.7	23	TZP19100R
BT50-FMA38.1-375-98	375	337	438	98	38.1	34	15.9	23.8	TZP19125R

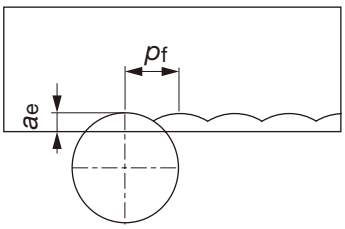
Note: (GL) is a length with TZP19 cutter mounted.

STANDARD CUTTING CONDITIONS

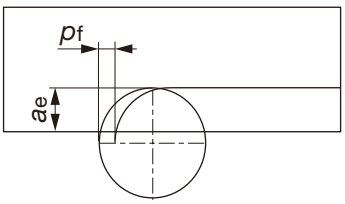
ISO	Workpiece material	Grade	Cutting Speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Carbon steels, Alloy steels	AH120	100 ~ 200	0.1 ~ 0.3
		T3130	150 ~ 250	0.1 ~ 0.25
	Die steels (JIS SKD) < 300 HB	AH120	100 ~ 200	0.1 ~ 0.3
		T3130	150 ~ 250	0.1 ~ 0.25
	Prehardened steels < 45 HRC	AH120	60 ~ 120	0.1 ~ 0.2
K	Cast irons (JIS FC and FCD)	AH120	100 ~ 200	0.1 ~ 0.3



Machining method (1)



Machining method (2)



Machining method	Z-feed milling		Traverse feed milling
	Pick feed p_f (mm)	Radial depth of cut *ae* (mm)	Depth of cut *ap* (mm)
(1)	Tool dia. øD/2	Within effective cutting edge length	~0.5
(2)	Within effective cutting edge length	Tool dia. øD/2	

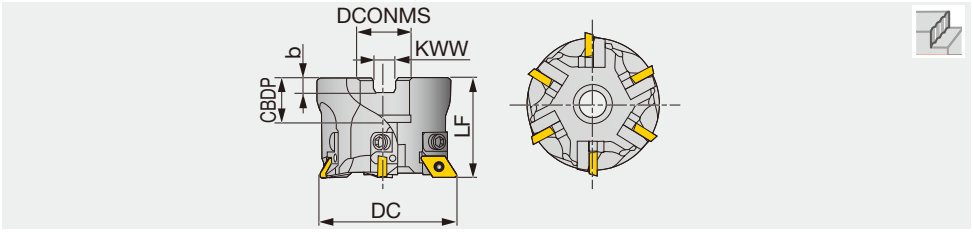
Note: In Z-feed milling, select either of the machining method (1) or (2) and decide the depth of cut according to the application.

TZF11

High precision plunge mill



GAMP = 0°, GAMF = -6°~ 0°

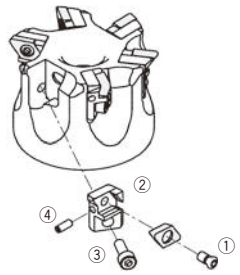


Designation	CICT	DC	DCONMS	CBDP	LF	b	KWW	WT(kg)	Insert
TZF11050R	4	50	22	20	45	6	10	0.38	DPCW11T3ZFR
TZF11050R-E	4	50	22	20	45	6.3	10.4	0.38	DPCW11T3ZFR
TZF11063R	6	63	22	20	45	6	10	0.72	DPCW11T3ZFR
TZF11063R-E	6	63	22	20	45	6.3	10.4	0.72	DPCW11T3ZFR
TZF11080R	7	80	31.75	32	63	8	12.7	1.51	DPCW11T3ZFR

SPARE PARTS

Designation	①Clamping screw	②Cartridge	Lubricant	③Cartridge fixing screw	④Cartridge fixing screw	Shell locking bolt	Wewnch (For ①)	Wewnch 1 (For ④)	Wewnch 2 (For ③)
TZF11050R*	CSTB-4S	SDUPR09CZ-11	M-1000	CM4X0.7X12	SSHM3-10	FSHM10-40	T-15D	P-1.5	P-3
TZF11063R*	CSTB-4S	SDUPR09CZ-11	M-1000	CM4X0.7X12	SSHM3-10	-	T-15D	P-1.5	P-3
TZF11080R	CSTB-4S	SDUPR09CZ-11	M-1000	CM4X0.7X12	SSHM3-10	-	T-15D	P-1.5	P-3

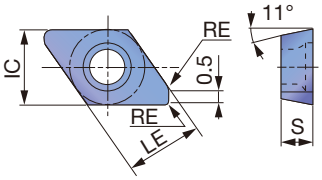
*Recommended clamping torque (N·m) ：CSTB-4S=3.5



INSERT

DPCW11T3

High precision ground insert (for plunging)



		Coated		Cermet				
		AH120	AH740	NS740				
P	Steel		☆	★				
M	Stainless							
K	Cast iron	★	☆					
N	Non-ferrous							
S	Superalloys							
H	Hard materials		☆					

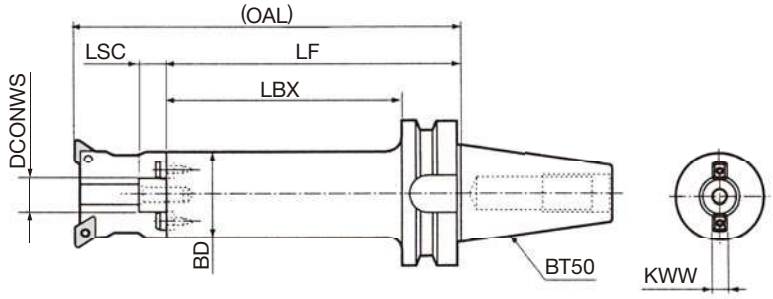
★ : First choice
☆ : Second choice

Designation	RE	AH120	AH740	NS740	LE	IC	S
DPCW11T3ZFR	1	●	●	●	9.5	9.5	4

●: Line up

Reference pages: Standard cutting conditions → H233

ARBOR



Designation	Dimension (mm)							WT (kg)	Applicable mill
	LF	LBX	(OAL)*	BD	DCONWS	LSC	KWW		
BT50-FMC22-343-47	343	305	388	47	22	18	10	7.9	TZF11050R...
BT50-FMC22-293-47	293	255	338	47	22	18	10	7.2	TZF11050R...
BT50-FMC22-243-47	243	205	288	47	22	18	10	6.5	TZF11050R...
BT50-FMC22-433-59	433	395	478	59	22	18	10	12.2	TZF11063R...
BT50-FMC22-373-59	373	335	418	59	22	18	10	10.9	TZF11063R...
BT50-FMC22-308-59	308	270	353	59	22	18	10	9.5	TZF11063R...
BT50-FMA31.75-455-76	455	417	518	76	31.75	30	12.7	18.6	TZF11080R...
BT50-FMA31.75-375-76	375	337	438	76	31.75	30	12.7	15.8	TZF11080R...
BT50-FMA31.75-295-76	295	257	358	76	31.75	30	12.7	12.9	TZF11080R...

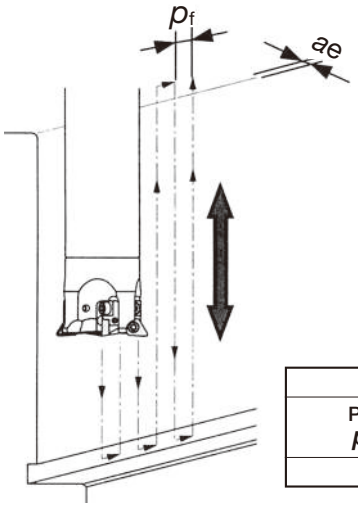
Note: (OAL) is a length with TZF11 cutter mounted.

STANDARD CUTTING CONDITIONS

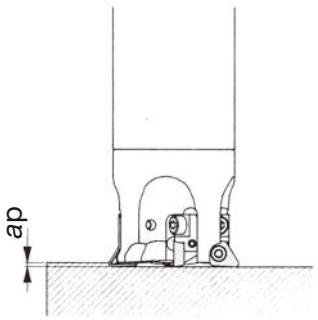
ISO	Workpiece material	Grade	Cutting Speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Carbon steels, Alloy steels, Mild steels < 300 HB	NS740	300 (150 ~ 400)	0.15 (0.05 ~ 0.2)
		AH740	250 (150 ~ 350)	0.15 (0.05 ~ 0.2)
K	Cast irons 250, etc.	AH120	300 (200 ~ 500)	0.15 (0.05 ~ 0.2)
	Ductile cast irons 600-3, etc.	AH740	250 (150 ~ 350)	0.15 (0.05 ~ 0.2)
H	Prehardened steels, Hard materials 40-55 HRC	AH740	150 (100 ~ 200)	0.1 (0.05 ~ 0.15)

- Dry cutting (or air blow) at a depth of cut up *ae* to 0.3 mm (allowable max. 0.5 mm) and a pick feed *pf* from 0.5 to 1.0 mm is recommended.
- TZF11 type cutters are not designed to adjust dynamic balance. Therefore, when the tool's overhang ratio (cutter diameter-to-length) exceeds 6:1, special care should be taken with the revolution speed. (At first, start the machining at 50 % of the speed shown in the table of the standard cutting conditions, and then gradually increase the speed whilst confirming safety.)
- To produce highly accurate surface finish, use the cutter on a machine with sufficient rigidity.

Z-feed milling



Traverse feed milling



Z-feed milling		Traverse feed milling
Pick feed *pf* (mm)	Radial depth of cut *ae* (mm)	Depth of cut *ap* (mm)
0.5 ~ 1	~ 0.5	~ 0.5

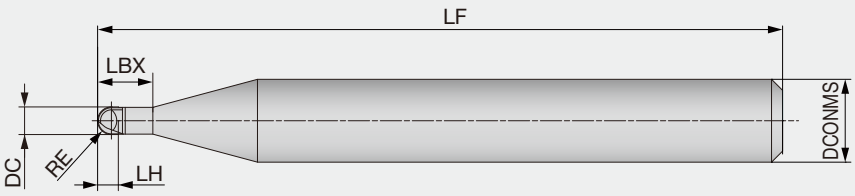
●Cautionary points in use

- Use the cutter for finish milling of vertical wall surfaces requiring long tool-overhang of L/D > 6.
- Radial cutting edge run-out should be adjusted within 0.01 mm.
- In addition to Z-feed milling, TZF11 type cutters can be also used for traverse feed milling. (*ap* ≤ 0.5 mm)

BBB2000

T-CBN ball nose endmill for dies and molds





Designation	BX850	NOF	RE	DC	LH	LBX	LF	DCONMS
BBB2006	●	2	0.3	0.6	0.5	1.2	50	6
BBB2008	●	2	0.4	0.8	0.6	1.6	50	6
BBB2010	●	2	0.5	1	0.7	2	50	6
BBB2020	●	2	1	2	1.5	4	50	6

●: Line up

Tolerance (BBB2000)

R	*R* Tolerance	Tolerance on shank
0.3 ~ 1	±0.005	h6

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hard-ness	No. of revolutions *n* (min^{-1})	Ball radius (RE) 0.3 Depth of cut APMX × *pf* (mm)	0.3 Feed rate (mm/min)	0.4 Depth of cut APMX × *pf* (mm)	0.4 Feed rate (mm/min)	0.5 Depth of cut APMX × *pf* (mm)	0.5 Feed rate (mm/min)	1 Depth of cut APMX × *pf* (mm)	1 Feed rate (mm/min)
H	Prehardened steel (NAK80, etc.) Die steel (JIS SKD61, etc.)	~ 52 HRC	50,000	0.02 × 0.03	2,000	0.03 × 0.05	2,000	0.05 × 0.05	3,000	0.10 × 0.10	5,000
	Die steel (JIS SKD11, DRM1 & 2, etc.)	~ 62 HRC	50,000	0.01 × 0.02	2,000	0.02 × 0.03	2,000	0.03 × 0.05	3,000	0.05 × 0.05	5,000
	High speed steel, Die steel (JIS SKH, DRM3, etc.)	~ 70 HRC	50,000	0.01 × 0.02	1,500	0.01 × 0.03	1,500	0.02 × 0.03	2,000	0.03 × 0.05	3,000

Notes:
- Depths of cut (APMX) shown in the table are the allowable maximum values.
- Mist cooling or air blow is recommended.
- The maximum number of revolutions of the machine to be used is lower than 50,000 min^{-1}, the revolutions and feed rate should be modified at same rate.
- Use smallest possible overhang.

Ball radius (RE)	Inclined angle of workpiece (θ1) / Effective neck length (Z)			
0.3	0°30′/1.25	1°/1.30	2°/1.35	3°/1.45
0.4	0°30′/1.65	1°/1.70	2°/1.80	3°/1.90
0.5	0°30′/2.05	1°/2.10	2°/2.25	3°/2.40
1	0°30′/4.15	1°/4.25	2°/4.50	3°/4.80

Endmill



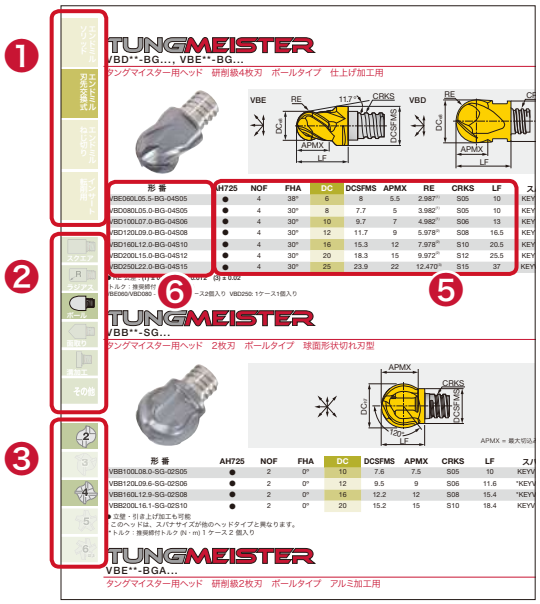
EndMill - Content structure

- Products are listed by application.
- Endmills in the catalog are our standard stock items.

How to use the page

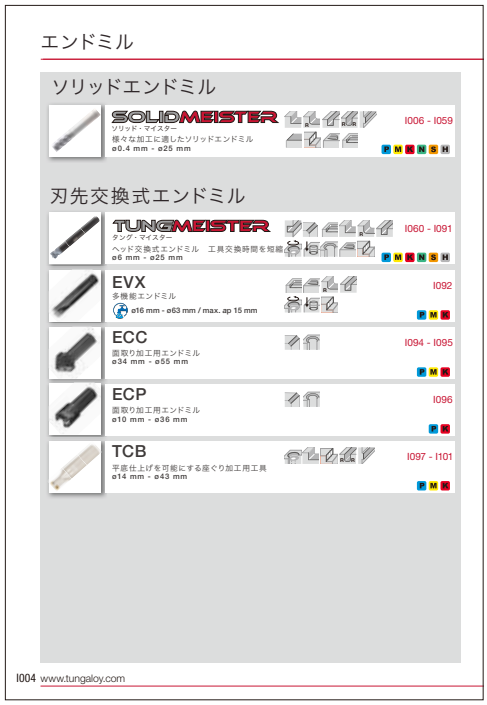
Method 1.

Select the tool type at the index on the right page, choose the application (❶), cutting edge shape (❷), and the number of cutting edges (❸), and check the designation you need (❻) in the dimension table (❺).



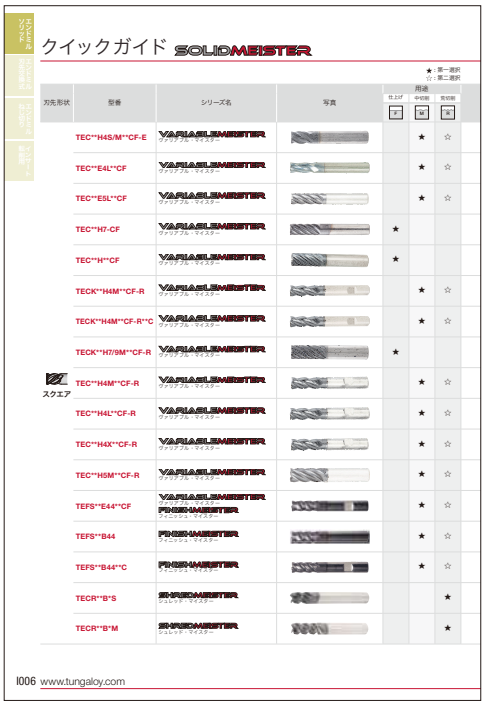
Method 2.

Select the tool series name on I004 – I005 and check the details on the product page.



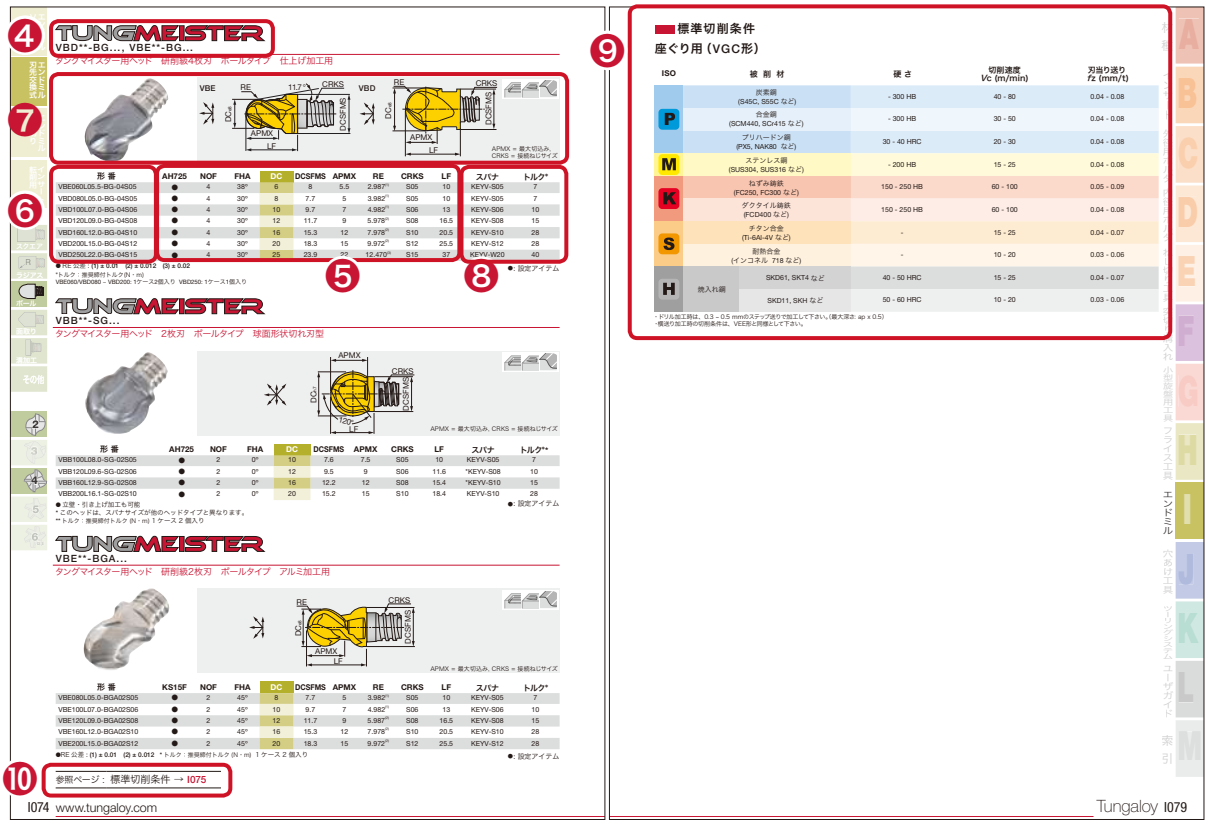
Method 3.

Select the application and the cutting edge shape from Quick Guide on I006-I013 and I060 - I061, and see the details on each page.



Icon

Edge shape	No. of cutting edges	Application		
Square	2	Shoulder milling	Side slotting	Hole enlarging
High feed	3	Deep shoulder milling	Side milling	Holemaking
Ball nose	4	Shoulder milling (with radius)	Pocketing	Counterboring
	5	Face milling	Ramping	Hole chamfering
	6 or more	Slotting	Profiling	Chamfering
		Slotting (with radius)	Plunging	Cutting-off



❶ : Application
❷ : Cutting edge shape
❸ : Number of cutting edges
❹ : Endmill series name
❺ : Dimension table
❻ : Endmill designation
❼ : Dimension drawing (conforming to ISO13399)
❽ : Spare parts
❾ : Standard cutting conditions
❿ : Reference page

Machining accuracy

F	Finishing
M	Medium cutting
R	Roughing
	Coolant hole

Workpiece material

P	Steel
M	Stainless steel
K	Cast iron
N	Non-ferrous metal
S	Superalloy
H	Hard material

When ordering
- Please specify the designation and quantity for solid or brazed endmills.
  e.g. **TEFS100E44-22C10CF72** ... 1 (one solid endmill per package)
- Please specify the designation and quantity for TungMeister heads.
  e.g. **VEE08L05.0R00-3S05** ... 2 (two heads per package)
- Please specify the designation and quantity for TungMeister shanks.
  e.g. **VSSD08L060805-S** ... 1 (one shank per package)

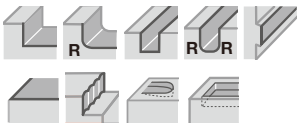
*Wrenches for TungMeister are sold separately.

Solid Endmill



SOLIDMEISTER

Solid endmill for a wide variety of applications
ø0.4 mm - ø25 mm



I006 - I059

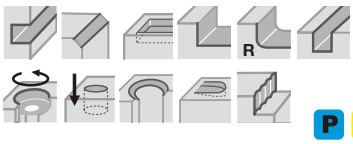
P M K N S H

Indexable Endmill



TUNGMEISTER

Endmills with exchangeable heads
for reduced tool change time
ø6 mm - ø25 mm



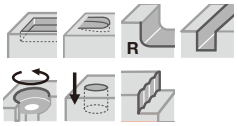
I060 - I091

P M K N S H



EVX

Multi-functional endmill in larger diameter
ø16 mm - ø63 mm / max. *a*p 15 mm



I092

P M K



ECC

Chamfering endmill for large length
ø34 mm - ø55 mm



I094 - I095

P M K



ECP

Chamfering endmill for small length
ø10 mm - ø36 mm



I096

P K



TCB

Counterboring tool for flat bottom finish
ø14 mm - ø43 mm



I097 - I101

P M K

Threading Endmill



THREADMILLING

I102

P M K N S H



SOLIDTHREAD

Solid threading tool series for machining small diameters, such as M1x0.25 and 0-80UNF.

I103 - I117



TUNGMEISTER

Head-changeable milling tool for less down-time than solid tapping tools.

I118 - I123



Indexable thread milling cutter

Many different types of inserts for various threading diameters and pitches, leading to the tool integration and reduced tool cost.

I124 - I127

Quick Guide SOLIDMEISTER

★ : First choice
☆ : Second choice

Edge shape	Designation	Name of the series	Appearance	Application		
				Finishing (F)	Medium cutting (M)	Roughing (R)
Square	TEC**H4S/M**CF-E	VARIABLEMEISTER			★	☆
	TEC**E4L**CF	VARIABLEMEISTER			★	☆
	TEC**E5L**CF	VARIABLEMEISTER			★	☆
	TEC**H7-CF	VARIABLEMEISTER		★		
	TEC**H**CF	VARIABLEMEISTER		★		
	TECK**H4M**CF-R	VARIABLEMEISTER			★	☆
	TECK**H4M**CF-R**C	VARIABLEMEISTER			★	☆
	TECK**H7/9M**CF-R	VARIABLEMEISTER		★		
	TEC**H4M**CF-R	VARIABLEMEISTER			★	☆
	TEC**H4L**CF-R	VARIABLEMEISTER			★	☆
	TEC**H4X**CF-R	VARIABLEMEISTER			★	☆
	TEC**H5M**CF-R	VARIABLEMEISTER			★	☆
	TEFS**E44**CF	VARIABLEMEISTER FINISHMEISTER			★	☆
	TEFS**B44	FINISHMEISTER			★	☆
	TEFS**B44**C	FINISHMEISTER			★	☆
	TECR**B*S	SHREDMEISTER				★
	TECR**B*M	SHREDMEISTER				★

Feature	Edge shape	Tool diameter	No. of cutting edges	ap	Helix angle	Workpiece material						Page
						P	M	K	N	S	H	
All round / Variable helix, Variable pitch	Chamfered / Corner radius	ø6 - ø20	4	1D, 2D	Variable	★	★	★	☆	☆	☆	I017
All round / Variable pitch	Chamfered	ø1 - ø25	4	2D	38	★	★	★	☆	☆	☆	I018
All round / Variable pitch	Chamfered	ø6 - ø20	5	2.5D	38	★	★	★	☆	☆	☆	I018
All round / Variable helix, Variable pitch	Chamfered / Corner radius	ø6 - ø20	7	2D-6D	Variable	★	★	★	☆	☆	★	I019
All round / Variable helix, Variable pitch	Chamfered	ø6 - ø20	6-20	2D	Variable	★	★	★	☆	☆	☆	I020
All round / Variable helix, Variable pitch	Corner radius	ø4 - ø20	4	2D	Variable	★	★	☆	☆	★	☆	I020
All round / Variable helix, Variable pitch	Corner radius	ø6 - ø16	4	2D	Variable	★	★	☆	☆	★	☆	I021
All round / Variable helix, Variable pitch	Corner radius	ø6 - ø20	7, 9	2D	Variable	★	★	☆	☆	★	☆	I021
All round / Variable helix, Variable pitch	Corner radius	ø6 - ø25	4	2D	Variable	★	★	☆	☆	★	☆	I022
All round / Variable helix, Variable pitch	Corner radius	ø1 - ø20	4	2D	Variable	★	★	☆	☆	★	★	I022
All round / Variable helix, Variable pitch	Corner radius	ø6 - ø20	4	2D	Variable	★	★	☆	☆	★	☆	I023
All round / Variable helix, Variable pitch	Corner radius	ø4 - ø20	5	2D	Variable	★	★	☆	☆	★	☆	I023
All round / Variable pitch, Edge combination	Chamfered	ø6 - ø25	4	2D	38	★	☆	★	☆	☆	☆	I025
All round / Edge combination	Chamfered	ø4 - ø25	4	2D	45	★	★	☆	☆	★	☆	I026
All round / Edge combination	Chamfered	ø6 - ø16	4	2D	45	★	★	☆	☆	★	☆	I026
All round / Serrated cutting edge	Chamfered	ø5 - ø20	4, 5, 7	1D	45	★	☆	★	☆	☆	★	I027
All round / Serrated cutting edge	Chamfered / Corner radius	ø5 - ø20	4, 5, 7	2D	45	★	☆	★	☆	☆	★	I027

Quick Guide SOLIDMEISTER

★ : First choice
☆ : Second choice

Edge shape	Designation	Name of the series	Appearance	Application: Finishing (F)	Application: Medium cutting (M)	Application: Roughing (R)
	TECR**B*MF	SHREDMEISTER				★
	TECR**B*L	SHREDMEISTER				★
	TECR**B*X	SHREDMEISTER				★
	TERF**A/E	SHREDMEISTER				★
	TECR**T4M	SHREDMEISTER				★
	TECP**H4L**CFR	SHREDMEISTER VARIABLEMEISTER				★
	TECP**E*L	SHREDMEISTER				★
Square	TEC**B4/6L	SOLIDMEISTER		★		
Square	TEC**B4/6X	SOLIDMEISTER		★		
	TECC**A/B2	SOLIDMEISTER		★	☆	☆
	TECS/TECCS**E3	SOLIDMEISTER		★	☆	☆
	TECC**B/E3	SOLIDMEISTER		★	☆	☆
	TEC**B3	SOLIDMEISTER			★	☆
	TECC**A/B4	SOLIDMEISTER		★	☆	☆
	TEC**B4	SOLIDMEISTER		★	☆	
	TEC**B4**R	SOLIDMEISTER		★	☆	
High feed	TEFF**N4	FEEDMEISTER				★

Feature	Edge shape	Tool diameter	No. of cutting edges	ap	Helix angle	Workpiece material						Page
						P	M	K	N	S	H	
All round / Serrated cutting edge	Chamfered	ø6 - ø25	4, 6	2D	45	★	☆	☆	☆	★	★	I028
All round / Serrated cutting edge	Chamfered	ø6 - ø20	4, 5, 7	3D	45	★	☆	★	☆	☆	★	I028
All round / Serrated cutting edge / Long neck	Chamfered	ø8 - ø16	4, 5	1.5D	45	★	☆	★	☆	☆	★	I028
All round / Serrated cutting edge	Chamfered	ø4 - ø20	3, 4	2D	30/38	★	☆	★	☆	☆	★	I029
All round / Serrated cutting edge	Chamfered	ø6 - ø20	4	2D	20	★	☆	★	☆	☆	★	I029
All round / Chip splitter, Variable helix, Variable pitch	Corner radius	ø6 - ø20	4	2D	Variable	★	☆	★	☆	☆	★	I030
All round / Chip splitter	Chamfered	ø5 - ø20	3, 4	2D	38	★	☆	★	☆	☆	★	I030
All round	Corner radius 0	ø6 - ø20	4, 6	3D, 4D	45	★	★	★	☆	☆	☆	I032
All round	Corner radius 0	ø10 - ø20	4, 6	4D, 5D, 6D	45	★	★	★	☆	☆	☆	I032
All round	Chamfered	ø2 - ø20	2	2D, 3D	30/45	★	★	★	☆	☆	☆	I033
All round	Chamfered	ø2 - ø16	3	1D	38	★	★	★	☆	☆	☆	I033
All round	Chamfered	ø2 - ø20	3	2D, 3D	38/45	★	★	★	☆	☆	☆	I034
All round	Corner radius 0	ø3 - ø18	3	2D, 3D	45	★	★	★	☆	☆	☆	I034
All round	Chamfered	ø2 - ø20	4	2D, 3D	30/45	★	★	★	☆	☆	☆	I035
All round	Corner radius 0	ø2 - ø20	4	2D, 3D	45	★	★	★	☆	☆	☆	I035
All round	Corner radius	ø6 - ø20	4	2D	45	★	★	★	☆	☆	☆	I036
All round / High feed geometry	-	ø6 - ø20	4	0.05D	-	★	★	☆	☆	★	★	I036

Quick Guide SOLIDMEISTER

★ : First choice
☆ : Second choice

Edge shape	Designation	Name of the series	Appearance	Application		
				Finishing F	Medium cutting M	Roughing R
High feed	TCFF**A3	FEEDMEISTER				★
Toroidal	TETR**A2**R	SOLIDMEISTER				★
	TECA**H3**CF-R	VARIABLEMEISTER			★	☆
	TECA**H4**CF-R	VARIABLEMEISTER			★	☆
	TECA**B2	SOLIDMEISTER		★	☆	☆
	TECA**B3	SOLIDMEISTER			★	☆
	TECA**F2	SOLIDMEISTER		★	☆	☆
	TECA**H3**CFR**C	VARIABLEMEISTER			★	☆
	TEAP**H3**CFR**C	VARIABLEMEISTER SHREDMEISTER				★
Square	TERC**E3	SHREDMEISTER				★
	TECR**B3**R	SHREDMEISTER				★
	TEC**A2	SOLIDMEISTER			★	
	TEC**A4	SOLIDMEISTER			★	☆
	TECH**B6	SOLIDMEISTER		★		
	TEC**B6	SOLIDMEISTER		★		
	TEC**D6	SOLIDMEISTER		★		
	TEC**A2**E	ECOMEISTER			★	☆

	Feature	Edge shape	Tool diameter	No. of cutting edges	ap	Helix angle	Workpiece material						Page
							P	M	K	N	S	H	
	All round / High feed geometry (ceramic)	-	ø4 - ø20	3	0.25-1D	-			☆	☆	★		I037
	All round	Corner radius	ø2 - ø10	2	0.5D, 1D	-	★	★	☆	☆	★	★	I038
	All round / Variable helix, Variable pitch	Corner radius	ø1 - ø25	3	1.5D, 2D	Variable	☆	☆	☆	★	☆	☆	I038
	All round / Variable helix / Relieved neck	Corner radius	ø6 - ø16	4	1.5D, 2D	Variable	☆	☆	☆	★	☆	☆	I040
	All round	Corner radius 0	ø4 - ø20	2	2D, 3D	45	☆	☆	☆	★	☆	☆	I040
	All round	Corner radius	ø4 - ø20	3	2D, 3D	45	☆	☆	☆	★	☆	☆	I041
	All round	Corner radius 0	ø4 - ø25	2	2D	55	☆	☆	☆	★	☆	☆	I041
	All round / Variable helix	Corner radius	ø6 - ø25	3	2D	Variable	☆	☆	☆	★	☆	☆	I042
	All round / Variable helix, Chip splitter / Long neck	Corner radius	ø10 - ø20	3	1.5D, 2D	Variable	☆	☆	☆	★	☆	☆	I042
	All round / Serrated cutting edge	Chamfered	ø6 - ø25	3	2D	38	☆	☆	☆	★	☆	☆	I043
	All round / Serrated cutting edge	Corner radius	ø6 - ø20	3	1D	45	☆	☆	☆	★	☆	☆	I043
	All round	Corner radius 0	ø0.4 - ø3	2	1.5D	30	★	☆	★	☆	☆	★	I044
	All round	Corner radius 0	ø4 - ø20	4	2D	30	★	☆	★	☆	☆	★	I045
	All round	Corner radius 0	ø6 - ø20	6	2D	45	★	☆	★	☆	☆	★	I046
	All round	Corner radius 0	ø6 - ø25	6	4D	45	★	☆	★	☆	☆	★	I046
	All round	Corner radius 0	ø6 - ø20	6	2D	50	★	☆	★	☆	☆	★	I047
	All round	Corner radius 0	ø1 - ø20	2	1D, 1.5D, 2D, 3D, 4D	30	★	★	★	☆	☆	☆	I047

Quick Guide SOLIDMEISTER

★ : First choice
☆ : Second choice

Edge shape	Designation	Name of the series	Appearance	Application		
				Finishing F	Medium cutting M	Roughing R
Square	TEC**A/E3**E	ECOMEISTER			★	☆
	TEC**B3**W	ECOMEISTER			★	☆
	TEC**A4**E	ECOMEISTER			★	☆
Ball	TEB**E4L**CF	VARIABLEMEISTER			★	☆
	TEBRF**T3/4	SHREDMEISTER				★
	TEB**A2-**C**M	SOLIDMEISTER		★	☆	
	TEB**A2-**C**H	SOLIDMEISTER		★	☆	
	TEB**A2-**C**M...	SOLIDMEISTER		★	☆	
	TEB**A2-**C**M...	SOLIDMEISTER		★	☆	
	TEB**A2-**C**-...	SOLIDMEISTER		★	☆	
	TEB**A2**E	ECOMEISTER			★	
	TEB**A3	SOLIDMEISTER		★	☆	
	TEB**A4	SOLIDMEISTER		★	☆	

Feature	Edge shape	Tool diameter	No. of cutting edges	ap	Helix angle	Workpiece material						Page
						P	M	K	N	S	H	
All round	Corner radius 0	ø2 - ø16	3	1D, 1.5D, 2D, 3D, 4D	30/38	★	★	★	☆	☆	☆	I048
All round	Corner radius 0	ø2 - ø20	3	1D	45	★	★	★	☆	☆	☆	I049
All round	Corner radius 0	ø2 - ø20	4	2D, 3D, 4D, 5D, 6D, 8D, 10D	30	★	★	★	☆	☆	☆	I050
All round / Variable pitch	R1.5-R8	ø3 - ø16	4	2D	38	★	★	☆	☆	★	★	I052
All round / Serrated cutting edge	R3-R10	ø6 - ø20	3, 4	2D	20	★	★	★	☆	☆	★	I052
All round	R0.2-R1.5	ø0.4 - ø3	2	1.5D	30	★	★	☆	☆	★	★	I053
All round	R0.5-R10	ø1 - ø20	2	1D	30	★	★	☆	☆	★	★	I054
All round	R1.5-R8	ø3 - ø16	2	2D	30	★	★	☆	☆	★	★	I055
All round / Tapered neck	R0.5-R6	ø1 - ø12	2	2D	30	★	★	☆	☆	★	★	I055
All round	R1.5-R8	ø3 - ø16	2	1, 1.5D	30	★	★	☆	☆	★	★	I056
All round	R1-R10	ø2 - ø20	2	1D, 1.5D, 2D, 3D	30	★	★	☆	☆	★	★	I056
All round	R1.5-R6	ø3 - ø12	3	1.5D	30	★	★	☆	☆	★	★	I057
All round	R1.5-R10	ø3 - ø20	4	1D, 1.5D	30	★	★	☆	☆	★	★	I057

Identification System

SOLIDMEISTER Designation system

❷ Endmill type	
C	Square endmill
CK	Square endmill for Ti
CA	Square endmill for aluminium
CC	Square endmill with chamfered
CH	Square endmill for finishing
B	Ball nose
FF	High feed
FS	FINISHMEISTER
CP	Chip splitter
CR/RC/RF	Rougher
TR	Tapered & radius
BRF	Ball nose & rougher

❶ Endmill Code	
TE	Solid Carbide
TC	Ceramic

❸ Cutting diameter (mm)	
004	0.4
045	4.5
100	10

❶	❷	❸			❻
TE	C	009	A	2	- 0135
TE	C	100	E	4L	- 22
			❹	❺	❻

❹ Helix angle	
N	0°
C	10°
T	20°
A	30°
E	38°
B	45°
D	50°
F	55°
H	Variable helix

❺ No. of flutes	
2	2 flutes
3	3 flutes
4	4 flutes
4M	4 flutes & medium length
4L	4 flutes & long length
4X	4 flutes & extra long length
4MF	4 flutes & medium length for hardened steel
44	4 variable pitch flutes

❻ Effective cutting length (mm)	
006	0.6
0135	1.35
06	6
20	20

AH725

- High thermal and chemical stability.
- High hardness 3500 HV makes higher speeds, machining of harder materials, and dry machining possible. The TiAlN coating can be applied at 800° C.
- Recommended for hardened steel, high-temperature and steel alloys.
- Improves and expedites finishing on dies and molds.
- Longer tool life in high speed machining.

AH750 / AH710

- Excellent for machining hard steel up to 70 HRC and high temperature alloys.
- The small grain size improves cutting edge strength and tends to chip less.

Tolerance

Diameter range	Cutting diameter DC^{e8}	Shank $DCONMS^{h6}$
< 3	-0.014 - 0.028	0 - 0.007
3 - 6	-0.02 - 0.038	0 - 0.008
6 - 10	-0.025 - 0.047	0 - 0.009
10 - 18	-0.032 - 0.059	0 - 0.011
18 - 30	-0.04 - 0.073	0 - 0.013

/04	4
/10 /1.5	10 / 1.5°
/14	14

⑦ Length of neck / Angle neck (mm)

C	Cylindrical
W	Weldon

⑧ Shank type

055	5.5
08	8
4	4

⑨ Shank diameter (mr

⑦	⑧	⑨		
/06	C	4	M	E66
/32	C	10	CF-	72
			⑩	⑪

⑩ Workpiece material / Additional feature

-	General
S	Stainless steel
M	Steel medium hardness ≤ 55 HRC
H	Steel high hardness ≥ 55 HRC
R02A	Aluminium
CF	VARIABLEMEISTER
R16	Corner radius: 1.6

⑪ Overall length / Corner radius

66	66 mm
180	180 mm
E**	Eco type
M	Medium
R08	Corner radius: 0.8

KS15F

- Suited for aluminum alloys and non-ferrous metals.
- Excellent edge sharpness for super mirror surface finish qulaity.

FX510

- Suitable for nickel-based heat-resistnt superalloys.
- SiAlON ceramic grade enables high speed milling.
- Also good for cast iron and specialty graphite materials.

SOLIDMEISTER



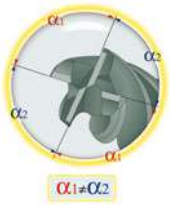
Powerful endmill with excellent performance

VariableMeister

VARIABLEMEISTER



High resistance to chatter
= Machining large cutting width
= Machining large cutting depth
/ long overhang



High resistance to chatter leading to highly efficient machining

- Suitable for machining large cutting depth and width where chattering is likely to occur.
- Capability of machining with long overhang allows the operations on various parts of workpieces.

Stable, long tool life

- Impacts on cutting edges are softened due to reduced vibration, resulting in longer, stable tool life.
- The combination of PVD coated grade with high wear resistance and robust substance.

FinishMeister

FINISHMEISTER



Roughing and finishing with one tool
+ Variable pitch design



Tool integration / Shortened tool change time

- Cutting depth at the level of roughing endmills is possible, and a single tool can handle semi-finishing to finishing with the conditions appropriately adjusted.
- A single tool completes the operation which used to require two tools, roughing and square endmills. shortening tool change time.

Hard to chatter, excellent chip control

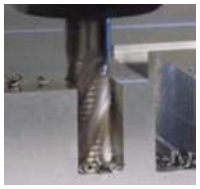
- Variable pitch design increases the resistance to chatter, delivering high efficiency in machining with long overhang and at high cutting speed.
- Serrated cutting edges produce small chips and provide stable machining even in slotting.

ShredMeister

SHREDMEISTER



Effective cutting edge length
= Tool diameter x 2



Significantly reduced time for roughing

- Long cutting edge and the capability of machining large depth of cut lead to highly efficient roughing.
- Unique serrated cutting edges produce small chips and provide high efficiency and stability in deep slotting.

Excellent sharpness and stable machining with long tool life

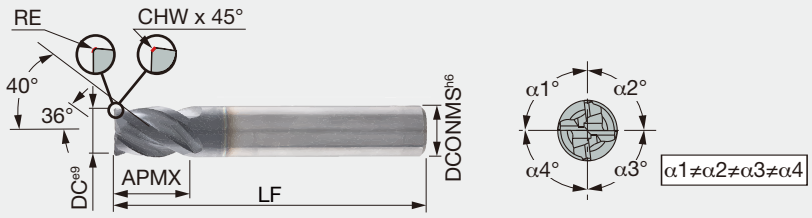
- Chamfer on corner tips that are easy to break is reinforced, providing stable machining even under high cutting conditions.
- The combination of PVD coated grade with high wear resistance and robust substance allows the design with high helix angle, providing excellent sharpness and long tool life.

Reference pages: Items → I017 - I059

VARIABLEMEISTER

TEC**H4S**CF-E

4 flute chatter dampening endmill, variable helix and variable pitch, short type



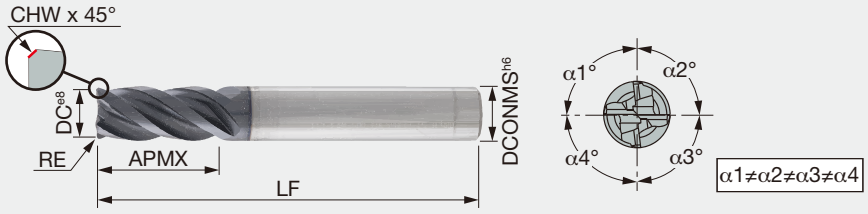
Designation	AH725	DC	DCONMS	NOF	CHW	RE	APMX	LF	Shank
TEC060H4S-06C06CF-E50	●	6	6	4	0.25	-	6	50	Cylindrical
TEC060H4S-06C06CF-R02E50	●	6	6	4	-	0.2	6	50	Cylindrical
TEC060H4S-06W06CF-E50	●	6	6	4	0.25	-	6	50	Weldon
TEC080H4S-08C08CF-E63	●	8	8	4	0.3	-	8	63	Cylindrical
TEC080H4S-08C08CF-R04E63	●	8	8	4	-	0.4	8	63	Cylindrical
TEC080H4S-08W08CF-E63	●	8	8	4	0.3	-	8	63	Weldon
TEC100H4S-10C10CF-E66	●	10	10	4	0.4	-	10	66	Cylindrical
TEC100H4S-10C10CFR.5E66	●	10	10	4	-	0.5	10	66	Cylindrical
TEC100H4S-10W10CF-E66	●	10	10	4	0.4	-	10	66	Weldon
TEC120H4S-12C12CF-E73	●	12	12	4	0.5	-	12	73	Cylindrical
TEC120H4S-12C12CF-R06E73	●	12	12	4	-	0.6	12	73	Cylindrical
TEC120H4S-12W12CF-E73	●	12	12	4	0.5	-	12	73	Weldon
TEC160H4S-16C16CF-E82	●	16	16	4	0.6	-	16	82	Cylindrical
TEC160H4S-16W16CF-E82	●	16	16	4	0.6	-	16	82	Weldon
TEC200H4S-20C20CF-E92	●	20	20	4	0.6	-	20	92	Cylindrical
TEC200H4S-20W20CF-E92	●	20	20	4	0.6	-	20	92	Weldon

●: Line up

VARIABLEMEISTER

TEC**H4M**CF-E

4 flute chatter dampening endmill, variable helix and variable pitch



Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LF	Shank
TEC060H4M-12C06CF-E57	●	6	6	4	0.25	12	57	Cylindrical
TEC060H4M-12W06CF-E57	●	6	6	4	0.25	12	57	Weldon
TEC080H4M-16C08CF-E63	●	8	8	4	0.3	16	63	Cylindrical
TEC080H4M-16W08CF-E63	●	8	8	4	0.3	16	63	Weldon
TEC100H4M-20C10CF-E72	●	10	10	4	0.4	20	72	Cylindrical
TEC100H4M-20W10CF-E72	●	10	10	4	0.4	20	72	Weldon
TEC120H4M-24C12CF-E83	●	12	12	4	0.5	24	83	Cylindrical
TEC120H4M-24W12CF-E83	●	12	12	4	0.5	24	83	Weldon
TEC160H4M-32C16CF-E92	●	16	16	4	0.6	32	92	Cylindrical
TEC160H4M-32W16CF-E92	●	16	16	4	0.6	32	92	Weldon
TEC200H4M-40C20CF-E104	●	20	20	4	0.6	40	104	Cylindrical
TEC200H4M-40W20CF-E104	●	20	20	4	0.6	40	104	Weldon

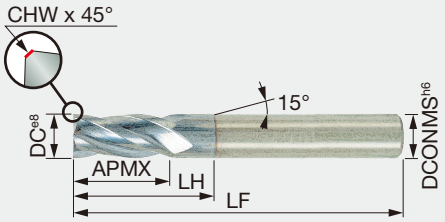
●: Line up

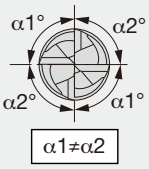
Reference pages: Standard cutting conditions → I024

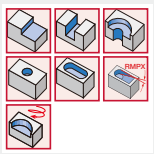
VARIABLEMEISTER

TEC**E4L**CF

4 flute chatter dampening endmill, variable helix and variable pitch, short type







Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF	Shank
TEC010E4L-2/04C04CF50	●	1	4	4	0.04	2.2	4	50	Cylindrical
TEC020E4L-4/06C04CF50	●	2	4	4	0.08	4.3	6.1	50	Cylindrical
TEC030E4L-8/11C06CF-57	●	3	6	4	0.1	8	11	57	Cylindrical
TEC040E4L-10/14C06CF-57	●	4	6	4	0.15	10	14	57	Cylindrical
TEC050E4L-12/17C06CF-57	●	5	6	4	0.18	12	17	57	Cylindrical
TEC060E4L-14/20C06CF-57	●	6	6	4	0.25	14	20	57	Cylindrical
TEC080E4L-18/26C08CFS63	●	8	8	4	-	18	26	63	Cylindrical
TEC080E4L-18/26C08CF-63	●	8	8	4	0.3	18	26	63	Cylindrical
TEC080E4L-18/26W08CF63	●	8	8	4	0.3	18	26	63	Weldon
TEC100E4L-22/32C10CFS72	●	10	10	4	-	22	32	72	Cylindrical
TEC100E4L-22/32C10CF-72	●	10	10	4	0.4	22	32	72	Cylindrical
TEC100E4L-22/32W10CF72	●	10	10	4	0.4	22	32	72	Weldon
TEC120E4L-26/38C12CFS83	●	12	12	4	-	26	38	83	Cylindrical
TEC120E4L-26/38C12CF-83	●	12	12	4	0.5	26	38	83	Cylindrical
TEC120E4L-26/38W12CF83	●	12	12	4	0.5	26	38	83	Weldon
TEC160E4L-34/50C16CF-100	●	16	16	4	0.6	34	50	100	Cylindrical
TEC160E4L-34/50W16CF-100	●	16	16	4	0.6	34	50	100	Weldon
TEC200E4L-42/60C20CF-110	●	20	20	4	0.6	42	60	110	Cylindrical
TEC200E4L-42/60W20CF-110	●	20	20	4	0.6	42	60	110	Weldon
TEC250E4L-50/65C25CF-121	●	25	25	4	0.6	50	65	121	Cylindrical
TEC250E4L-50/65W25CF121	●	25	25	4	0.6	50	65	121	Weldon

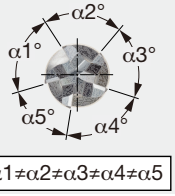
●: Line up

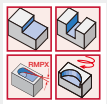
VARIABLEMEISTER

TEC**E5L**CF

4 flute chatter dampening endmill, variable helix and variable pitch







Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LF	Shank
TEC060E5L-15C06CF-57	●	6	6	5	0.2	15	57	Cylindrical
TEC080E5L-20C08CF-63	●	8	8	5	0.25	20	63	Cylindrical
TEC100E5L-25C10CF-72	●	10	10	5	0.3	25	72	Cylindrical
TEC120E5L-30C12CF-83	●	12	12	5	0.4	30	83	Cylindrical
TEC160E5L-40C16CF-100	●	16	16	5	0.5	40	100	Cylindrical
TEC200E5L-50C20CF-125	●	20	20	5	0.5	50	125	Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I024

TEC**H7-CF

7 flute chatter dampening endmill, variable helix and variable pitch, for high speed finishing



Designation	AH710	DC	DCONMS	NOF	RE	CHW	APMX	FHA	LF	Shank
TEC060H7-12C06CF-M57	●	6	6	7	-	-	12	37°	57	Cylindrical
TEC060H7-12C06CF-R02M57	●	6	6	7	0.2	-	12	37°	57	Cylindrical
TEC060H7-18C06CF-M65	●	6	6	7	-	0.2	18	37°	65	Cylindrical
TEC060H7-24C06CF-70	●	6	6	7	-	0.2	24	37°	70	Cylindrical
TEC060H7-36C06CF-90	●	6	6	7	-	0.2	36	37°	90	Cylindrical
TEC080H7-16C08CF-M63	●	8	8	7	-	-	16	37°	63	Cylindrical
TEC080H7-16C08CF-R04M63	●	8	8	7	0.4	-	16	37°	63	Cylindrical
TEC080H7-24C08CF-M90	●	8	8	7	-	0.2	24	37°	90	Cylindrical
TEC080H7-32C08CF-90	●	8	8	7	-	0.2	32	37°	90	Cylindrical
TEC080H7-48C08CF-110	●	8	8	7	-	0.2	48	37°	110	Cylindrical
TEC100H7-20C10CF-M72	●	10	10	7	-	-	20	37°	72	Cylindrical
TEC100H7-20C10CF-R05M72	●	10	10	7	0.5	-	20	37°	72	Cylindrical
TEC100H7-20W10CF-M72	●	10	10	7	-	-	20	37°	72	Weldon
TEC100H7-30C10CF-M100	●	10	10	7	-	0.3	30	37°	100	Cylindrical
TEC100H7-40C10CF-100	●	10	10	7	-	0.3	40	37°	100	Cylindrical
TEC100H7-60C10CF-130	●	10	10	7	-	0.3	60	37°	130	Cylindrical
TEC120H7-24C12CF-M83	●	12	12	7	-	-	24	37°	83	Cylindrical
TEC120H7-24C12CF-R06M83	●	12	12	7	0.6	-	24	37°	83	Cylindrical
TEC120H7-24W12CF-M83	●	12	12	7	-	-	24	37°	83	Weldon
TEC120H7-36C12CF-M110	●	12	12	7	-	0.3	36	37°	110	Cylindrical
TEC120H7-48C12CF-110	●	12	12	7	-	0.3	48	37°	110	Cylindrical
TEC120H7-72C12CF-140	●	12	12	7	-	0.3	72	37°	140	Cylindrical
TEC160H7-32C16CF-M92	●	16	16	7	-	-	32	37°	92	Cylindrical
TEC160H7-32C16CF-R08M92	●	16	16	7	0.8	-	32	37°	92	Cylindrical
TEC160H7-32W16CF-M92	●	16	16	7	-	-	32	37°	92	Weldon
TEC160H7-48C12CF-M131	●	16	16	7	-	0.3	48	37°	131	Cylindrical
TEC160H7-64C16CF-131	●	16	16	7	-	0.3	64	37°	131	Cylindrical
TEC160H7-96C16CF-175	●	16	16	7	-	0.3	96	37°	175	Cylindrical
TEC200H7-40C20CF-M104	●	20	20	7	-	-	40	37°	104	Cylindrical
TEC200H7-40C20CF-R10M104	●	20	20	7	1	-	40	37°	104	Cylindrical
TEC200H7-40W20CF-M104	●	20	20	7	-	-	40	37°	104	Weldon
TEC200H7-60C20CF-M140	●	20	20	7	-	0.4	60	37°	140	Cylindrical
TEC200H7-80C20CF-140	●	20	20	7	-	0.4	80	37°	140	Cylindrical

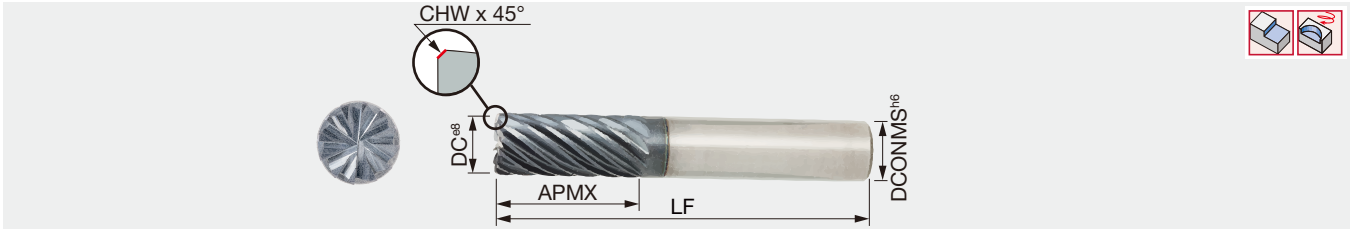
●: Line up

Reference pages: Standard cutting conditions → I024

VARIABLEMEISTER

TEC**H**CF

6-20 flute chatter dampening endmill, variable helix and variable pitch, for high speed finishing



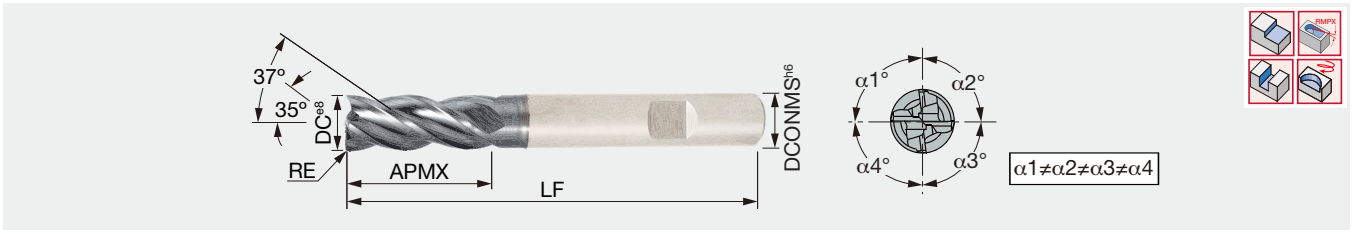
Designation	AH710	DC	DCONMS	NOF	CHW	APMX	LF	Shank
TEC060H6-12C06CF-H57	●	6	6	6	0.2	12	57	Cylindrical
TEC080H8-16C08CF-H63	●	8	8	8	0.2	16	63	Cylindrical
TEC100H10-20C10CF-H72	●	10	10	10	0.3	20	72	Cylindrical
TEC120H12-24C12CF-H83	●	12	12	12	0.3	24	83	Cylindrical
TEC160H16-32C16CF-H92	●	16	16	16	0.3	32	92	Cylindrical
TEC200H20-40C20CFH104	●	20	20	20	0.4	40	104	Cylindrical

●: Line up

VARIABLEMEISTER

TECK**H4M**CF-R

4 flute chatter dampening endmill, variable helix and variable pitch, for titanium machining



Designation	AH725	DC	DCONMS	NOF	RE	APMX	RMPX	LF	Shank
TECK040H4M-08C06CF-R02	●	4	6	4	0.2	8	5°	57	Cylindrical
TECK050H4M-10C06CF-R02	●	5	6	4	0.2	10	5°	57	Cylindrical
TECK060H4M-12C06CF-R02	●	6	6	4	0.2	12	5°	57	Cylindrical
TECK060H4M-12W06CF-R02	●	6	6	4	0.2	12	5°	57	Weldon
TECK080H4M-16C08CF-R04	●	8	8	4	0.4	16	5°	63	Cylindrical
TECK080H4M-16W08CF-R04	●	8	8	4	0.4	16	5°	63	Weldon
TECK100H4M-20C10CF-R05	●	10	10	4	0.5	20	5°	72	Cylindrical
TECK100H4M-20W10CF-R05	●	10	10	4	0.5	20	5°	72	Weldon
TECK120H4M-24C12CF-R06	●	12	12	4	0.6	24	5°	83	Cylindrical
TECK120H4M-24W12CF-R06	●	12	12	4	0.6	24	5°	83	Weldon
TECK160H4M-32C16CF-R08	●	16	16	4	0.8	32	5°	92	Cylindrical
TECK160H4M-32W16CF-R08	●	16	16	4	0.8	32	5°	92	Weldon
TECK200H4M-40C20CF-R10	●	20	20	4	1	40	5°	104	Cylindrical
TECK200H4M-40W20CF-R10	●	20	20	4	1	40	5°	104	Weldon

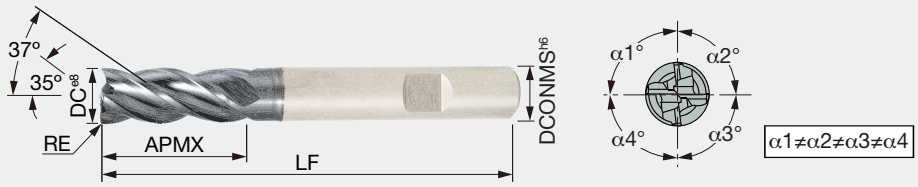
●: Line up

Reference pages: Standard cutting conditions → I024

VARIABLEMEISTER

TECK**H4M**CF-R**C

4 flute chatter dampening endmill, variable helix and variable pitch, for titanium machining



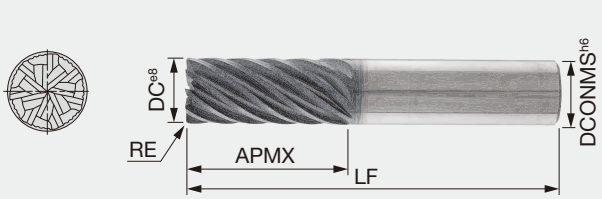
Designation	GH730	DC	DCONMS	NOF	RE	APMX	RMPX	LF	Coolant hole	Shank
TECK060H4M-12C06CF-R02C	●	6	6	4	0.2	12	5°	57	With	Cylindrical
TECK080H4M-16W08CF-R04C	●	8	8	4	0.4	16	5°	63	With	Weldon
TECK100H4M-20W10CF-R05C	●	10	10	4	0.5	20	5°	72	With	Weldon
TECK120H4M-24W12CF-R06C	●	12	12	4	0.6	24	5°	83	With	Weldon
TECK160H4M-32W16CF-R08C	●	16	16	4	0.8	32	5°	92	With	Weldon

●: Line up

VARIABLEMEISTER

TECK**H7/9M**CF-R

7 or 9 flute chatter dampening endmill, variable helix and variable pitch, for titanium machining



Designation	AH725	DC	DCONMS	NOF	RE	APMX	RMPX	LF	Shank
TECK060H7-13C06CF-R02T57	●	6	6	7	0.2	13	5°	57	Cylindrical
TECK060H7-13W06CF-R02T57	●	6	6	7	0.2	13	5°	57	Weldon
TECK080H7-19C08CF-R04T63	●	8	8	7	0.4	19	5°	63	Cylindrical
TECK080H7-19W08CF-R04T63	●	8	8	7	0.4	19	5°	63	Weldon
TECK100H7-22C10CF-R05T72	●	10	10	7	0.5	22	5°	72	Cylindrical
TECK100H7-22W10CF-R05T72	●	10	10	7	0.5	22	5°	72	Weldon
TECK120H7-26C12CF-R06T83	●	12	12	7	0.6	26	5°	83	Cylindrical
TECK120H7-26W12CF-R06T83	●	12	12	7	0.6	26	5°	83	Weldon
TECK160H9-32C16CF-R08T92	●	16	16	9	0.8	32	5°	92	Cylindrical
TECK160H9-32W16CF-R08T92	●	16	16	9	0.8	32	5°	92	Weldon
TECK200H9-38C20CF-R10T104	●	20	20	9	1	38	5°	104	Cylindrical
TECK200H9-38W20CF-R10T104	●	20	20	9	1	38	5°	104	Weldon

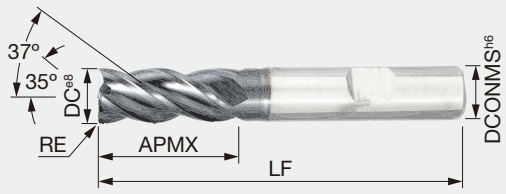
●: Line up

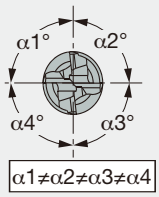
Reference pages: Standard cutting conditions → I024

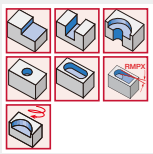
VARIABLEMEISTER

TEC**H4M**CF-R

7 or 9 flute chatter dampening endmill, variable helix and variable pitch, for titanium machining







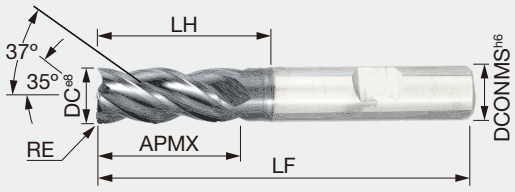
Designation	AH725	DC	DCONMS	NOF	RE	APMX	RMPX	LF	Shank
TEC060H4M-12C06CF-R02-57	●	6	6	4	0.2	12	5°	57	Cylindrical
TEC060H4M-12W06CF-R02-57	●	6	6	4	0.2	12	5°	57	Weldon
TEC080H4M-16C08CF-R04-63	●	8	8	4	0.4	16	5°	63	Cylindrical
TEC080H4M-16W08CF-R04-63	●	8	8	4	0.4	16	5°	63	Weldon
TEC100H4M-20C10CF-R05-72	●	10	10	4	0.5	20	5°	72	Cylindrical
TEC100H4M-20W10CF-R05-72	●	10	10	4	0.5	20	5°	72	Weldon
TEC120H4M-24C12CF-R06-83	●	12	12	4	0.6	24	5°	83	Cylindrical
TEC120H4M-24W12CF-R06-83	●	12	12	4	0.6	24	5°	83	Weldon
TEC140H4M-28C14CFR0.7-83	●	14	14	4	0.7	28	5°	83	Cylindrical
TEC140H4M-28W14CFR0.7-83	●	14	14	4	0.7	28	5°	83	Weldon
TEC160H4M-32C16CF-R08-92	●	16	16	4	0.8	32	5°	92	Cylindrical
TEC160H4M-32W16CF-R08-92	●	16	16	4	0.8	32	5°	92	Weldon
TEC200H4M-40C20CF-R10-104	●	20	20	4	1	40	5°	104	Cylindrical
TEC200H4M-40W20CF-R10-104	●	20	20	4	1	40	5°	104	Weldon
TEC250H4M-50C25CF-R12-121	●	25	25	4	1.2	50	5°	121	Cylindrical
TEC250H4M-50W25CF-R12-121	●	25	25	4	1.2	50	5°	121	Weldon

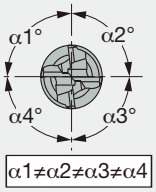
●: Line up

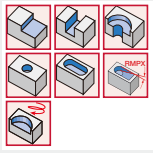
VARIABLEMEISTER

TEC**H4L**CF-R

4 flute chatter dampening endmill, variable helix and variable pitch, long neck type







Designation	AH725	DC	DCONMS	NOF	RE	APMX	RMPX	LH	LF	Shank
TEC010H4L-02/3C4CF-R.05	●	1	4	4	0.1	2	5°	3	50	Cylindrical
TEC020H4L-04/6C4CF-R01	●	2	4	4	0.1	4	5°	6	50	Cylindrical
TEC030H4L-06/9C4CF-R015	●	3	6	4	0.2	6	5°	9	57	Cylindrical
TEC040H4L-08/12C6CF-R02	●	4	6	4	0.2	8	5°	12	57	Cylindrical
TEC050H4L-10/15C6CF-R02	●	5	6	4	0.2	10	5°	15	57	Cylindrical
TEC060H4L-12/20C6CF-R02	●	6	6	4	0.2	12	5°	20	57	Cylindrical
TEC060H4L-12/20W6CF-R02	●	6	6	4	0.2	12	5°	20	57	Weldon
TEC080H4L-16/26C8CF-R04	●	8	8	4	0.4	16	5°	26	63	Cylindrical
TEC080H4L-16/26W8CF-R04	●	8	8	4	0.4	16	5°	26	63	Weldon
TEC100H4L-20/32C10CF-R05	●	10	10	4	0.5	20	5°	32	72	Cylindrical
TEC100H4L-20/32W10CF-R05	●	10	10	4	0.5	20	5°	32	72	Weldon
TEC120H4L-24/38C12CF-R06	●	12	12	4	0.6	24	5°	38	83	Cylindrical
TEC120H4L-24/38W12CF-R06	●	12	12	4	0.6	24	5°	38	83	Weldon
TEC160H4L-32/50C16CF-R08	●	16	16	4	0.8	32	5°	50	100	Cylindrical
TEC160H4L-32/50W16CF-R08	●	16	16	4	0.8	32	5°	50	100	Weldon
TEC200H4L-40/60C20CF-R10	●	20	20	4	1	40	5°	60	110	Cylindrical
TEC200H4L-40/60W20CF-R10		20	20	4	1	40	5°	60	110	Weldon

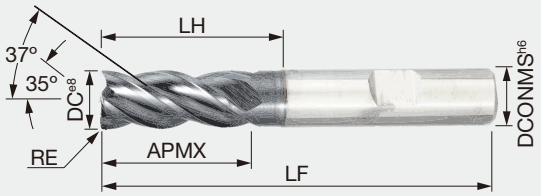
●: Line up

Reference pages: Standard cutting conditions → I024

VARIABLEMEISTER

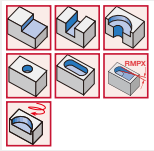
TEC**H4X**CF-R

4 flute chatter dampening endmill, variable helix and variable pitch, extra long neck type





α1≠α2≠α3≠α4



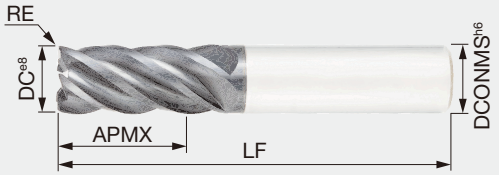
Designation	AH725	DC	DCONMS	NOF	RE	APMX	RMPX	LH	LF	Shank
TEC060H4X-12/25C06CF-R02	●	6	6	4	0.2	12	5°	25	61	Cylindrical
TEC060H4X-12/25W06CF-R02	●	6	6	4	0.2	12	5°	25	61	Weldon
TEC080H4X-16/32C08CF-R04	●	8	8	4	0.4	16	5°	32	68	Cylindrical
TEC080H4X-16/32W08CF-R04	●	8	8	4	0.4	16	5°	32	68	Weldon
TEC100H4X-20/40C10CF-R05	●	10	10	4	0.5	20	5°	40	80	Cylindrical
TEC100H4X-20/40W10CF-R05	●	10	10	4	0.5	20	5°	40	80	Weldon
TEC120H4X-24/50C12CF-R06	●	12	12	4	0.6	24	5°	50	95	Cylindrical
TEC120H4X-24/50W12CF-R06	●	12	12	4	0.6	24	5°	50	95	Weldon
TEC160H4X-32/64C16CF-R08	●	16	16	4	0.8	32	5°	64	115	Cylindrical
TEC160H4X-32/64W16CF-R08	●	16	16	4	0.8	32	5°	64	115	Weldon
TEC200H4X-40/75C20CF-R10	●	20	20	4	1	40	5°	75	125	Cylindrical
TEC200H4X-40/75W20CF-R10	●	20	20	4	1	40	5°	75	125	Weldon

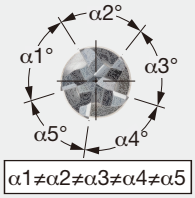
●: Line up

VARIABLEMEISTER

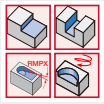
TEC**H5M**CF-R

5 flute chatter dampening endmill, variable helix and variable pitch





α1≠α2≠α3≠α4≠α5



Designation	AH725	DC	DCONMS	NOF	RE	APMX	RMPX	LF	Shank
TEC040H5M-09C06CF-R02-57	●	4	6	5	0.2	9	5°	57	Cylindrical
TEC050H5M-11C06CF-R02-57	●	5	6	5	0.2	11	5°	57	Cylindrical
TEC060H5M-13C06CF-R02-57	●	6	6	5	0.2	13	5°	57	Cylindrical
TEC060H5M-13W06CF-R02-57	●	6	6	5	0.2	13	5°	57	Weldon
TEC080H5M-19C08CF-R04-63	●	8	8	5	0.4	19	5°	63	Cylindrical
TEC080H5M-19W08CF-R04-63	●	8	8	5	0.4	19	5°	63	Weldon
TEC100H5M-22C10CF-R05-72	●	10	10	5	0.5	22	5°	72	Cylindrical
TEC100H5M-22W10CF-R05-72	●	10	10	5	0.5	22	5°	72	Weldon
TEC120H5M-26C12CFR0.6-83	●	12	12	5	0.6	26	5°	83	Cylindrical
TEC120H5M-26W12CF-R06-83	●	12	12	5	0.6	26	5°	83	Weldon
TEC160H5M-32C16CF-R08-92	●	16	16	5	0.8	32	5°	92	Cylindrical
TEC160H5M-32W16CF-R08-92	●	16	16	5	0.8	32	5°	92	Weldon
TEC200H5M-38C20CF-R10-104	●	20	20	5	1	38	5°	104	Cylindrical
TEC200H5M-38W20CF-R10-104	●	20	20	5	1	38	5°	104	Weldon

●: Line up

Reference pages: Standard cutting conditions → I024

VARIABLEMEISTER

STANDARD CUTTING CONDITIONS

Slotting / Roughing (*ae* = 0.4 x D or over)

ISO	Workpiece material	*Vc* (m/min)	*fz*(mm/t)			ap (Slotting)
			ø6 - ø8	ø10 - ø12	ø16 - ø20	
P	Carbon steel	140 - 180	0.03 - 0.045	0.035 - 0.055	0.05 - 0.07	2xD
P	Alloy steel	70 - 150	0.025 - 0.04	0.035 - 0.055	0.05 - 0.07	2xD
M	Stainless steel	60 - 100	0.025 - 0.045	0.035 - 0.05	0.04 - 0.065	1xD
K	Cast iron	80 - 180	0.025 - 0.05	0.035 - 0.065	0.05 - 0.075	2xD
N	Aluminium alloy	300 - 750	0.025 - 0.05	0.035 - 0.065	0.035 - 0.09	2xD
S	Titanium alloy	20 - 50	0.025 - 0.04	0.03 - 0.05	0.035 - 0.085	1xD
H	Hardened steel	20 - 30	0.01 - 0.02	0.02 - 0.04	0.03 - 0.06	0.5xD

Semi-finishing / Shouldering (*ae* = 0.1~0.4 x D)

ISO	Workpiece material	*Vc* (m/min)	*fz*(mm/t)			ap
			ø6 - ø8	ø10 - ø12	ø16 - ø20	
P	Carbon steel	150 - 220	0.035 - 0.075	0.075 - 0.09	0.085 - 0.1	2xD
P	Alloy steel	70 - 160	0.025 - 0.065	0.05 - 0.09	0.055 - 0.09	2xD
M	Stainless steel	80 - 130	0.03 - 0.05	0.04 - 0.06	0.05 - 0.065	2xD
K	Cast iron	130 - 220	0.035 - 0.065	0.05 - 0.075	0.075 - 0.09	2xD
N	Aluminium alloy	350 - 850	0.05 - 0.075	0.075 - 0.1	0.1 - 0.125	2xD
S	Titanium alloy	40 - 60	0.035 - 0.05	0.04 - 0.065	0.06 - 0.1	2xD
H	Hardened steel	30 - 70	0.015 - 0.045	0.03 - 0.05	0.05 - 0.075	2xD

Finishing (feed rate depending on required accuracy) / High feed machining at low depth of cut (*ae* = 0.05~0.1 x D)

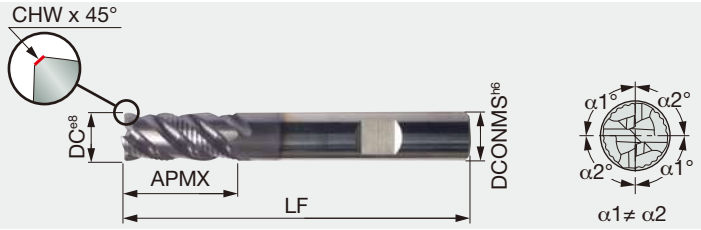
ISO	Workpiece material	*Vc* (m/min)	*fz*(mm/t)			ap
			ø6 - ø8	ø10 - ø12	ø16 - ø20	
P	Carbon steel	170 - 280	0.06 - 0.09	0.085 - 0.1	0.1 - 0.125	apmax
P	Alloy steel	110 - 220	0.06 - 0.09	0.085 - 0.1	0.1 - 0.125	apmax
M	Stainless steel	100 - 160	0.035 - 0.055	0.05 - 0.065	0.055 - 0.075	apmax
K	Cast iron	180 - 280	0.04 - 0.075	0.075 - 0.08	0.08 - 0.1	apmax
N	Aluminium alloy	350 - 900	0.055 - 0.09	0.085 - 0.125	0.125 - 0.18	apmax
S	Titanium alloy	50 - 70	0.04 - 0.065	0.05 - 0.075	0.075 - 0.11	apmax
H	Hardened steel	40 - 80	0.025 - 0.05	0.04 - 0.065	0.06 - 0.08	apmax

- When the depth of cut (ae) is closer to the upper limit, please start with a lower limit value of cutting speed (*Vc*).
- Please set the cutting speed and the feed rate lower for the items with long slot according to how chattering occurs.
- While air blow is recommended, water-soluble coolant will be good for stainless steel, titanium alloy, and heat-resistant alloy.
- When chattering occurs with low rigid machines or settings, reduce cutting speed and feed at an equal rate.
- When chattering occurs with long tool overhang, reduce cutting speed and feed by 20 to 40%.

FINISHMEISTER VARIABLEMEISTER

TEFS**E44**CF

4 flute endmill, 38° helix angle, variable pitch, roughing and finishing combination type



Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LF	Shank
TEFS060E44-14C06CF57	●	6	6	4	0.25	14	57	Cylindrical
TEFS060E44-14W06CF-57	●	6	6	4	0.25	14	57	Weldon
TEFS080E44-18C08CF63	●	8	8	4	0.3	18	63	Cylindrical
TEFS080E44-18W08CF-63	●	8	8	4	0.3	18	63	Weldon
TEFS100E44-22C10CF72	●	10	10	4	0.4	22	72	Cylindrical
TEFS100E44-22W10CF-72	●	10	10	4	0.4	22	72	Weldon
TEFS120E44-26C12CF83	●	12	12	4	0.5	26	83	Cylindrical
TEFS120E44-26W12CF-83	●	12	12	4	0.5	26	83	Weldon
TEFS140E44-30C14CF83	●	14	14	4	0.5	30	83	Cylindrical
TEFS140E44-30W14CF-83	●	14	14	4	0.5	30	83	Weldon
TEFS160E44-34C16CF92	●	16	16	4	0.6	34	92	Cylindrical
TEFS160E44-34W16CF-92	●	16	16	4	0.6	34	92	Weldon
TEFS200E44-42C20CF104	●	20	20	4	0.6	42	104	Cylindrical
TEFS200E44-42W20CF-104	●	20	20	4	0.6	42	104	Weldon
TEFS250E44-52C25CF121	●	25	25	4	0.6	52	121	Cylindrical
TEFS250E44-52W25CF-121	●	25	25	4	0.6	52	121	Weldon

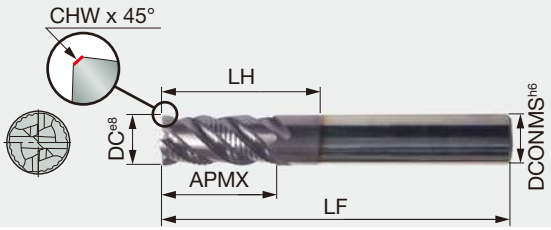
●: Line up

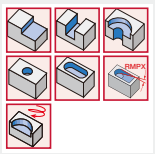
Reference pages: Standard cutting conditions → I031

FINISHMEISTER

TEFS**B44

4 flute endmill, 45° helix angle, roughing and finishing combination type





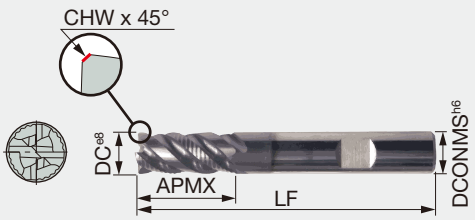
Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF	Shank
TEFS040B44-10C06-57	●	4	6	4	0.12	10	-	57	Cylindrical
TEFS050B44-12C06-57	●	5	6	4	0.18	12	-	57	Cylindrical
TEFS060B44-14/20C06-57	●	6	6	4	0.25	14	20	57	Cylindrical
TEFS060B4414/20W06-57	●	6	6	4	0.25	14	20	57	Weldon
TEFS060B44-14C06-57	●	6	6	4	0.25	14	-	57	Cylindrical
TEFS060B44-14W06-57	●	6	6	4	0.25	14	-	57	Weldon
TEFS080B44-18/26C08-63	●	8	8	4	0.3	18	26	63	Cylindrical
TEFS080B44-18/26W08-63	●	8	8	4	0.3	18	26	63	Weldon
TEFS080B44-18C08-63	●	8	8	4	0.3	18	-	63	Cylindrical
TEFS080B44-18W08-63	●	8	8	4	0.3	18	-	63	Weldon
TEFS100B44-22/32C10-72	●	10	10	4	0.3	22	32	72	Cylindrical
TEFS100B44-22/32W10-72	●	10	10	4	0.3	22	32	72	Weldon
TEFS100B44-22C10-72	●	10	10	4	0.3	22	-	72	Cylindrical
TEFS100B44-22W10-72	●	10	10	4	0.3	22	-	72	Weldon
TEFS120B44-26/38C12-83	●	12	12	4	0.4	26	38	83	Cylindrical
TEFS120B44-26/38W12-83	●	12	12	4	0.4	26	38	83	Weldon
TEFS120B44-26C12-83	●	12	12	4	0.4	26	-	83	Cylindrical
TEFS120B44-26W12-83	●	12	12	4	0.4	26	-	83	Weldon
TEFS140B44-30C14-83	●	14	14	4	0.4	30	-	83	Cylindrical
TEFS140B44-30W14-83	●	14	14	4	0.4	30	-	83	Weldon
TEFS160B44-34/50C16-100	●	16	16	4	0.6	34	50	100	Cylindrical
TEFS160B44-34/50W16-100	●	16	16	4	0.6	34	50	100	Weldon
TEFS160B44-34C16-92	●	16	16	4	0.6	34	-	92	Cylindrical
TEFS160B44-34W16-92	●	16	16	4	0.6	34	-	92	Weldon
TEFS200B44-42/62C20-125	●	20	20	4	0.6	42	62	125	Cylindrical
TEFS200B44-42/62W20-125	●	20	20	4	0.6	42	62	125	Weldon
TEFS200B44-42C20-104	●	20	20	4	0.6	42	-	104	Cylindrical
TEFS200B44-42W20-104	●	20	20	4	0.6	42	-	104	Weldon
TEFS250B44-52C25-121	●	25	25	4	0.6	52	-	121	Cylindrical
TEFS250B44-52W25-121	●	25	25	4	0.6	52	-	121	Weldon

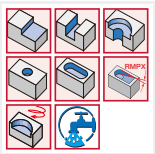
●: Line up

FINISHMEISTER

TEFS**B44**C

4 flute endmill, 45° helix angle, roughing and finishing combination type





Designation	GH730	DC	DCONMS	NOF	CHW	APMX	LF	Coolant hole	Shank
TEFS060B44-14C06-57C	●	6	6	4	0.25	14	57	With	Cylindrical
TEFS080B44-18W08-63C	●	8	8	4	0.3	18	63	With	Cylindrical
TEFS100B44-22W10-72C	●	10	10	4	0.3	22	72	With	Cylindrical
TEFS120B44-26W12-83C	●	12	12	4	0.4	26	83	With	Cylindrical
TEFS160B44-34W16-92C	●	16	16	4	0.6	34	92	With	Cylindrical

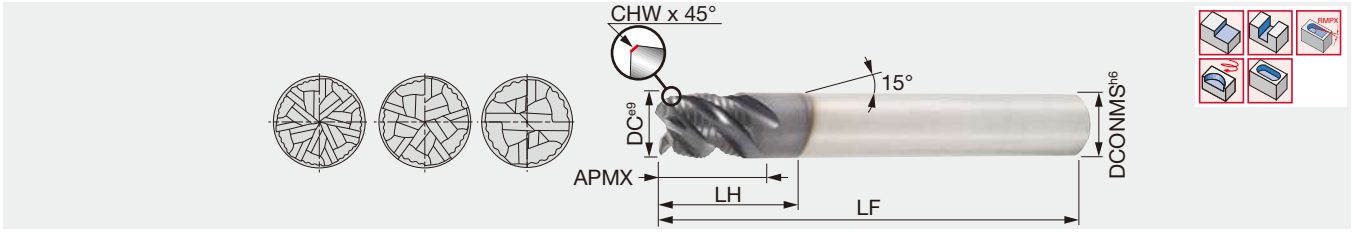
●: Line up

Reference pages: Standard cutting conditions → I031

SHREDMEISTER

TECR**B*S

4-7 flute roughing endmill, 45° helix angle, short type

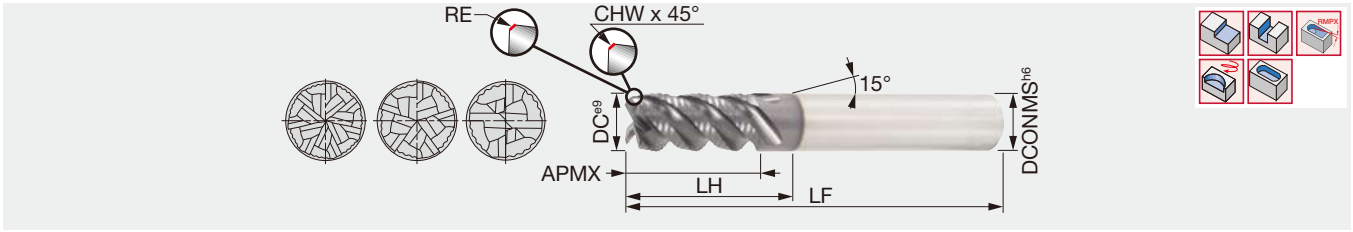


Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF		Shank
TECR050B4S-05W06-57	●	5	6	4	0.2	5	10	57	●	Weldon
TECR060B4S-06W06-57	●	6	6	4	0.25	6	-	57	●	Weldon
TECR080B4S-08W08-63	●	8	8	4	0.25	8	-	63	●	Weldon
TECR100B4S-10W10-72	●	10	10	4	0.3	10	-	72	●	Weldon
TECR120B4S-12W12-83	●	12	12	4	0.35	12	-	83	●	Weldon
TECR160B5S-16W16-92	●	16	16	5	0.4	16	-	92		Weldon
TECR200B7S-20W20-104	●	20	20	7	0.4	20	-	104		Weldon

●: Line up

TECR**B*M

4-7 flute roughing endmill, 45° helix angle



Designation	AH725	DC	DCONMS	NOF	CHW	RE	APMX	LH	LF		Shank
TECR050B4M-10C06-57	●	5	6	4	0.2	-	10	15	57	●	Cylindrical
TECR050B4M-10W06-57	●	5	6	4	0.2	-	10	15	57	●	Weldon
TECR060B4M-12C06-57	●	6	6	4	0.25	-	12	-	57	●	Cylindrical
TECR060B4M-12W06-57	●	6	6	4	0.25	-	12	-	57	●	Weldon
TECR080B4M-16C08-63	●	8	8	4	0.25	-	16	-	63	●	Cylindrical
TECR080B4M-16W08-63	●	8	8	4	0.25	-	16	-	63	●	Weldon
TECR100B4M-20C10-72	●	10	10	4	0.3	-	20	-	72	●	Cylindrical
TECR100B4M-20C10-72R10	●	10	10	4	-	1	20	-	72	●	Cylindrical
TECR100B4M-20W10-72	●	10	10	4	0.3	-	20	-	72	●	Weldon
TECR120B4M-24C12-83	●	12	12	4	0.35	-	24	-	83	●	Cylindrical
TECR120B4M-24C12-83R12	●	12	12	4	-	1.2	24	-	83	●	Cylindrical
TECR120B4M-24W12-83	●	12	12	4	0.35	-	24	-	83	●	Weldon
TECR120B4M-24W12-83R12	●	12	12	4	-	1.2	24	-	83	●	Weldon
TECR160B5M-32C16-92	●	16	16	5	0.4	-	32	-	92		Cylindrical
TECR160B5M-32C16-92R16	●	16	16	5	-	1.6	32	-	92		Cylindrical
TECR160B5M-32W16-92	●	16	16	5	0.4	-	32	-	92		Weldon
TECR160B5M-32W16-92R16	●	16	16	5	-	1.6	32	-	92		Weldon
TECR200B7M-40C20-104	●	20	20	7	0.4	-	40	-	104		Cylindrical
TECR200B7M-40W20-104	●	20	20	7	0.4	-	40	-	104		Weldon

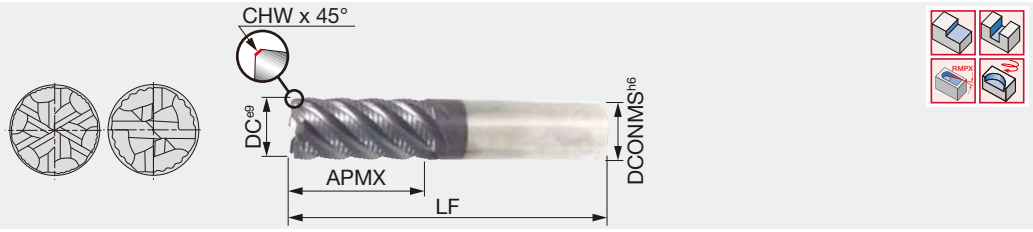
●: Line up

Reference pages: Standard cutting conditions → I031

SHREDMEISTER

TECR**B*MF

4 or 6 flute roughing endmill, 45° helix angle



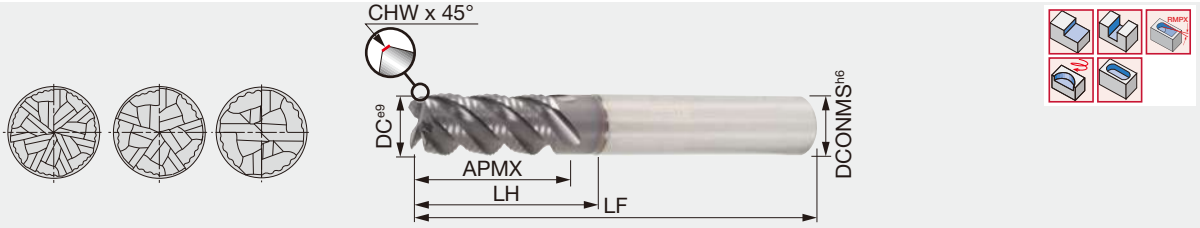
Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LF	Shank
TECR060B4MF-14W06-57	●	6	6	4	0.25	14	57	Weldon
TECR080B4MF-18W08-63	●	8	8	4	0.3	18	63	Weldon
TECR100B4MF-22W10-72	●	10	10	4	0.3	22	72	Weldon
TECR120B4MF-26W12-83	●	12	12	4	0.4	26	83	Weldon
TECR140B4MF-30W14-83	●	14	14	4	0.4	30	83	Weldon
TECR160B6MF-34W16-92	●	16	16	6	0.5	34	92	Weldon
TECR200B6MF-42W20-104	●	20	20	6	0.7	42	104	Weldon
TECR250B6MF-52W25-121	●	25	25	6	0.9	52	121	Weldon

●: Line up

SHREDMEISTER

TECR**B*L

4-7 flute roughing endmill, 45° helix angle, long neck type (3xD)

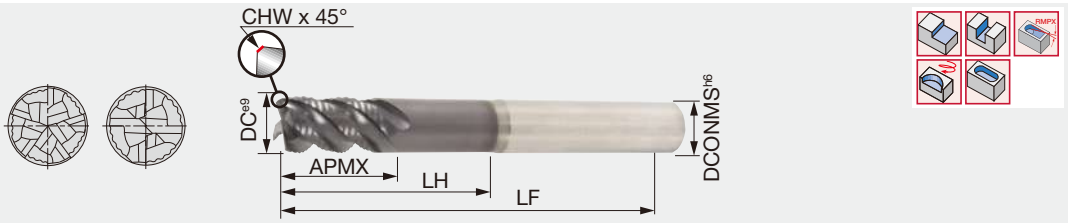


Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF		Shank
TECR060B4L-12/18W06-57	●	6	6	4	0.25	12	18	57	●	Weldon
TECR080B4L-16/24W08-63	●	8	8	4	0.25	16	24	63	●	Weldon
TECR100B4L-20/30W10-72	●	10	10	4	0.3	20	30	72	●	Weldon
TECR120B4L-24/36W12-83	●	12	12	4	0.35	24	36	83	●	Weldon
TECR160B5L-32/48W16-100	●	16	16	5	0.4	32	48	100		Weldon
TECR200B7L-40/60W20-110	●	20	20	7	0.4	40	60	110		Weldon

●: Line up

TECR**B*X

4-5 flute roughing endmill, 45° helix angle, long neck type (4xD)



Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF		Shank
TECR080B4X-12/32W08-68	●	8	8	4	0.25	12	32	68	●	Weldon
TECR100B4X-15/40W10-80	●	10	10	4	0.3	15	40	80	●	Weldon
TECR120B4X-18/48W12-100	●	12	12	4	0.35	18	48	100	●	Weldon
TECR160B5X-24/64W16-115	●	16	16	5	0.4	24	64	115		Weldon

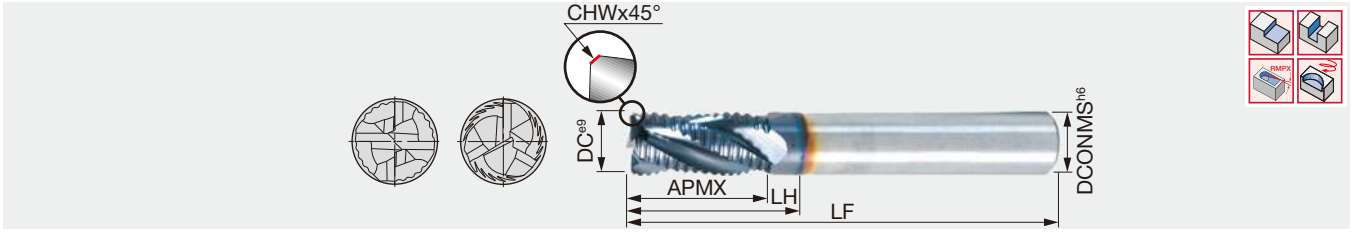
●: Line up

Reference pages: Standard cutting conditions → I031

SHREDMEISTER

TERF**A/E

3-4 flute roughing endmill, 30° or 38 helix angle, for alloy steel and stainless steel

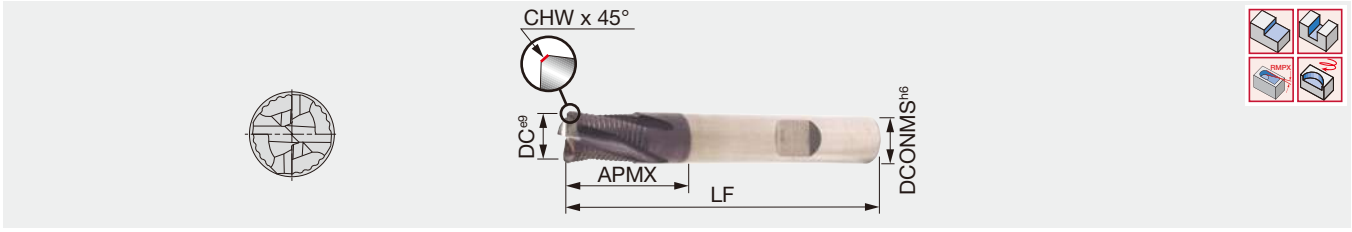


Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF	FHA	Shank
TERF040E3-08C06-57	●	4	6	3	0.25	8	13	57	38°	Cylindrical
TERF050E3-10C06-57	●	5	6	3	0.3	10	17	57	38°	Cylindrical
TERF060E3-13C06-57	●	6	6	3	0.3	13	21	57	38°	Cylindrical
TERF070E3-20C08-63	●	7	8	3	0.3	20	26	63	38°	Cylindrical
TERF080E3-20C08-63	●	8	8	3	0.3	20	28	63	38°	Cylindrical
TERF090A4-22C10-72	●	9	10	4	0.3	22	30	72	30°	Cylindrical
TERF100A4-22C10-72	●	10	10	4	0.3	22	30	72	30°	Cylindrical
TERF110A4-25C12-83	●	11	12	4	0.3	25	32	83	30°	Cylindrical
TERF120A4-25C12-83	●	12	12	4	0.4	25	37	83	30°	Cylindrical
TERF140A4-25C14-83	●	14	14	4	0.5	25	37	83	30°	Cylindrical
TERF160A4-32C16-92	●	16	16	4	0.5	32	44	92	30°	Cylindrical
TERF180A4-32C18-92	●	18	18	4	0.5	32	44	92	30°	Cylindrical
TERF200A4-38C20-104	●	20	20	4	0.6	38	55	104	30°	Cylindrical

●: Line up

TECR**T4M

4 flute roughing endmill, 20° helix angle



Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LF	Shank
TECR060T4M-10W06-57	●	6	6	4	0.3	10	57	Weldon
TECR080T4M-16W08-63	●	8	8	4	0.4	16	63	Weldon
TECR100T4M-20W10-72	●	10	10	4	0.4	20	72	Weldon
TECR120T4M-24W12-83	●	12	12	4	0.4	24	83	Weldon
TECR160T4M-32W16-92	●	16	16	4	0.5	32	92	Weldon
TECR200T4M-40W20-104	●	20	20	4	0.5	40	104	Weldon

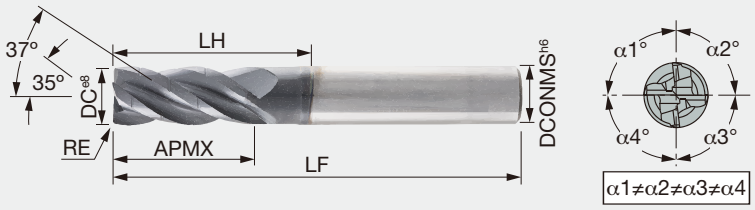
●: Line up

Reference pages: Standard cutting conditions → I031

SHREDMEISTER

TECP**H4L**CFR

4 flute roughing endmill, variable helix and variable pitch, with chip splitter, long overhang



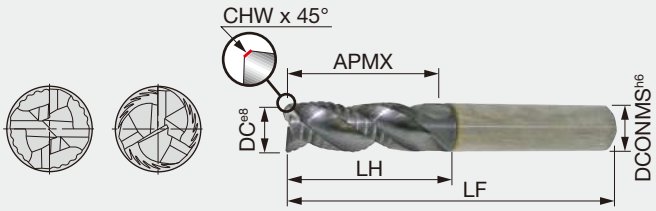
Designation	AH725	DC	DCONMS	NOF	RE	APMX	LH	LF	Shank
TECP060H4L-12/20C6CF-R02	●	6	6	4	0.2	12	20	57	Cylindrical
TECP060H4L-12/20W6CF-R02	●	6	6	4	0.2	12	20	57	Weldon
TECP080H4L-16/26C8CF-R04	●	8	8	4	0.4	16	26	63	Cylindrical
TECP080H4L-16/26W8CF-R04	●	8	8	4	0.4	16	26	63	Weldon
TECP100H4L-20/32C10CF-R05	●	10	10	4	0.5	20	32	72	Cylindrical
TECP100H4L-20/32W10CF-R05	●	10	10	4	0.5	20	32	72	Weldon
TECP120H4L-24/38C12CF-R06	●	12	12	4	0.6	24	38	83	Cylindrical
TECP120H4L-24/38W12CF-R06	●	12	12	4	0.6	24	38	83	Weldon
TECP160H4L-32/50C16CF-R08	●	16	16	4	0.8	32	50	100	Cylindrical
TECP160H4L-32/50W16CF-R08	●	16	16	4	0.8	32	50	100	Weldon
TECP200H4L-40/60C20CF-R10	●	20	20	4	1	40	60	110	Cylindrical
TECP200H4L-40/60W20CF-R10	●	20	20	4	1	40	60	110	Weldon

●: Line up

SHREDMEISTER

TECP**E*L

3 flute roughing endmill, 38° helix angle, with chip splitter



Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF	Shank
TECP050E3L-12/17W06S57	●	5	6	3	0.3	12	17	57	Weldon
TECP060E3L-14/20W06S57	●	6	6	3	0.4	14	20	57	Weldon
TECP080E3L-18/26W08S63	●	8	8	3	0.4	18	26	63	Weldon
TECP100E3L-22/32W10S72	●	10	10	3	0.4	22	32	72	Weldon
TECP120E3L-26/38W12S83	●	12	12	3	0.4	26	38	83	Weldon
TECP140E3L-30/44W14S100	●	14	14	3	0.6	30	44	100	Weldon
TECP160E3L-34/50W16S100	●	16	16	3	0.5	34	50	100	Weldon
TECP200E3L-42/62W20S125	●	20	20	3	0.5	42	62	125	Weldon

4 flute roughing endmill, 38° helix angle, with chip splitter

Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF	Shank
TECP050E4L-12/17W06S57	●	5	6	4	0.3	12	17	57	Weldon
TECP060E4L-14/20W06S57	●	6	6	4	0.4	14	20	57	Weldon
TECP080E4L-18/26W08S63	●	8	8	4	0.4	18	26	63	Weldon
TECP100E4L-22/32W10S72	●	10	10	4	0.4	22	32	72	Weldon
TECP120E4L-26/38W12S83	●	12	12	4	0.4	26	38	83	Weldon
TECP140E4L-30/44W14S100	●	14	14	4	0.6	30	44	100	Weldon
TECP160E4L-34/50W16S100	●	16	16	4	0.5	34	50	100	Weldon
TECP200E4L-42/62W20S125	●	20	20	4	0.5	42	62	125	Weldon

●: Line up

Reference pages: Standard cutting conditions → I031

FINISHMEISTER SHREDMEISTER

STANDARD CUTTING CONDITIONS

Slotting / Roughing (*ae* = 0.4 x D or over)

ISO	Material	*Vc* (m/min)	*fz*(mm/t)			*ap* (Slotting)
			ø6 - ø8	ø10 - ø12	ø16 - ø20	
P	Carbon steel	140 - 180	0.035 - 0.055	0.045 - 0.07	0.06 - 0.0825	2xD
P	Alloy steel	70 - 150	0.03 - 0.045	0.045 - 0.07	0.06 - 0.0825	2xD
M	Stainless steel	60 - 100	0.03 - 0.055	0.045 - 0.06	0.05 - 0.0675	1xD
K	Cast iron	80 - 180	0.03 - 0.06	0.045 - 0.08	0.06 - 0.09	2xD
N	Aluminium alloy	300 - 750	0.03 - 0.06	0.045 - 0.08	0.04 - 0.105	2xD
S	Titanium alloy	20 - 50	0.03 - 0.045	0.04 - 0.06	0.04 - 0.105	1xD
H	Hardened steel	20 - 30	0.015 - 0.025	0.025 - 0.07	0.06 - 0.075	0.5xD

Semi-finishing / Shouldering (*ae* = 0.1~0.4 x D)

ISO	Material	*Vc* (m/min)	*fz*(mm/t)			*ap*
			ø6 - ø8	ø10 - ø12	ø16 - ø20	
P	Carbon steel	150 - 220	0.045 - 0.09	0.09 - 0.11	0.1 - 0.12	2xD
P	Alloy steel	70 - 160	0.03 - 0.075	0.06 - 0.1	0.065 - 0.105	2xD
M	Stainless steel	80 - 130	0.035 - 0.06	0.055 - 0.07	0.06 - 0.075	2xD
K	Cast iron	130 - 220	0.045 - 0.075	0.06 - 0.09	0.09 - 0.105	2xD
N	Aluminium alloy	350 - 850	0.06 - 0.09	0.09 - 0.12	0.12 - 0.15	2xD
S	Titanium alloy	40 - 60	0.045 - 0.06	0.055 - 0.07	0.075 - 0.12	2xD
H	Hardened steel	30 - 70	0.02 - 0.055	0.045 - 0.07	0.06 - 0.09	2xD

Finishing (feed rate depending on required accuracy) / High feed machining at small width of cut (*ae* = 0.05~0.1 x D)

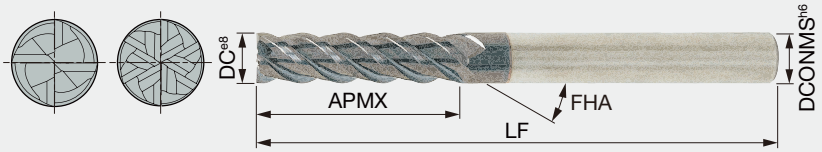
ISO	Material	*Vc* (m/min)	*fz*(mm/t)			*ap*
			ø6 - ø8	ø10 - ø12	ø16 - ø20	
P	Carbon steel	170 - 280	0.075 - 0.11	0.11 - 0.12	0.12 - 0.15	apmax
P	Alloy steel	110 - 220	0.075 - 0.11	0.11 - 0.12	0.12 - 0.15	apmax
M	Stainless steel	100 - 160	0.045 - 0.07	0.06 - 0.075	0.065 - 0.09	apmax
K	Cast iron	180 - 280	0.05 - 0.09	0.09 - 0.1	0.09 - 0.12	apmax
N	Aluminium alloy	350 - 900	0.065 - 0.11	0.11 - 0.15	0.15 - 0.22	apmax
S	Titanium alloy	50 - 70	0.055 - 0.075	0.06 - 0.09	0.09 - 0.12	apmax
H	Hardened steel	40 - 80	0.03 - 0.06	0.05 - 0.09	0.075 - 0.105	apmax

- When the depth of cut (ae) is closer to the upper limit, please start with a lower limit value of cutting speed (*Vc*).
- While air blow is recommended, water-soluble coolant will be good for stainless steel, titanium alloy, and heat-resistant alloy.
- When chattering occurs with low rigid machines or settings, reduce cutting speed and feed at an equal rate.
- When chattering occurs with long tool overhang, reduce cutting speed and feed by 20 to 40%.

SOLIDMEISTER

TECL**B4/6L

4 or 6 flute endmill, 45° helix angle, long neck type



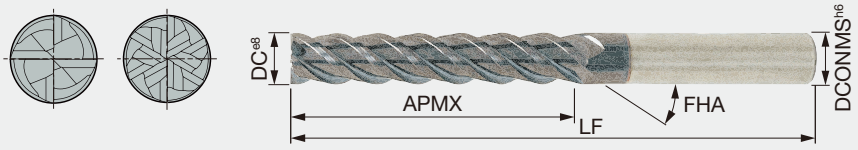
Designation	AH725	DC	DCONMS	NOF	APMX	FHA	LF		Shank
TEC060B4L-24C06-65	●	6	6	4	24	45°	65	●	Cylindrical
TEC060B4L-24W06-65	●	6	6	4	24	45°	65	●	Weldon
TEC080B4L-32C08-79	●	8	8	4	32	45°	79	●	Cylindrical
TEC080B4L-32W08-79	●	8	8	4	32	45°	79	●	Weldon
TEC100B4L-40C10-100	●	10	10	4	40	45°	100	●	Cylindrical
TEC100B4L-40W10-100	●	10	10	4	40	45°	100	●	Weldon
TEC120B4L-48C12-100	●	12	12	4	48	45°	100	●	Cylindrical
TEC120B4L-48W12-100	●	12	12	4	48	45°	100	●	Weldon
TEC140B4L-50C14-100	●	14	14	4	50	45°	100	●	Cylindrical
TEC140B4L-50W14-100	●	14	14	4	50	45°	100	●	Weldon
TEC160B6L-56C16-115	●	16	16	6	56	45°	115		Cylindrical
TEC160B6L-56W16-115	●	16	16	6	56	45°	115		Weldon
TEC200B6L-60C20-125	●	20	20	6	60	45°	125		Cylindrical
TEC200B6L-60W20-125	●	20	20	6	60	45°	125		Weldon

●: Line up

SOLIDMEISTER

TECX**B4/6X

4 or 6 flute endmill, 45° helix angle, extra long neck type



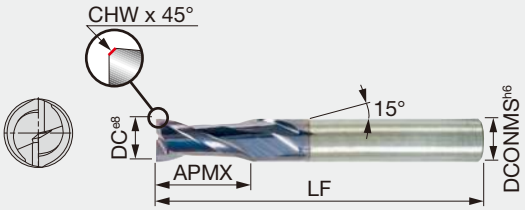
Designation	AH725	DC	DCONMS	NOF	APMX	FHA	LF		Shank
TEC100B4X-60C10-112	●	6	10	4	60	45°	112	●	Cylindrical
TEC100B4X-60W10-112	●	6	10	4	60	45°	112	●	Weldon
TEC120B4X-72C12-150	●	8	12	4	72	45°	150	●	Cylindrical
TEC120B4X-72W12-150	●	8	12	4	72	45°	150	●	Weldon
TEC160B6X-80C16-150	●	10	16	6	80	45°	150		Cylindrical
TEC160B6X-80W16-150	●	10	16	6	80	45°	150		Weldon
TEC200B6X-80C20-150	●	12	20	6	80	45°	150		Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I051

TECC**A/B2

2 flute slotting endmill, 30° or 45° helix angle

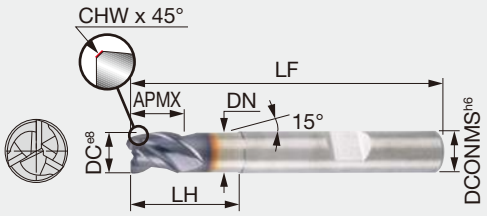


Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LF	FHA	Shank
TECC020B2-07C03-38	●	2	3	2	0.1	7	38	45°	Cylindrical
TECC030A2-10C03-38	●	3	3	2	0.1	10	38	30°	Cylindrical
TECC040A2-12C04-50	●	4	4	2	0.1	12	50	30°	Cylindrical
TECC050A2-14C05-50	●	5	5	2	0.15	14	50	30°	Cylindrical
TECC060A2-16C06-57	●	6	6	2	0.15	16	57	30°	Cylindrical
TECC080A2-20C08-63	●	8	8	2	0.15	20	63	30°	Cylindrical
TECC100A2-22C10-72	●	10	10	2	0.15	22	72	30°	Cylindrical
TECC120A2-25C12-83	●	12	12	2	0.25	25	83	30°	Cylindrical
TECC160A2-32C16-92	●	16	16	2	0.25	32	92	30°	Cylindrical
TECC200A2-38C20-104	●	20	20	2	0.25	38	104	30°	Cylindrical

●: Line up

TECS/TECCS**E3

3 flute slotting endmill, 38° helix angle, short type



Designation	AH725	DC	DCONMS	NOF	CHW	DN	APMX	LH	LF	Shank
TECS020E3-03W06-57	●	2	6	3	0.1	1.9	3	7	57	Weldon
TECS030E3-04W06-57	●	3	6	3	0.1	2.9	4	10	57	Weldon
TECS040E3-05W06-57	●	4	6	3	0.1	3.9	5	12	57	Weldon
TECS050E3-06W06-57	●	5	6	3	0.15	4.9	6	14	57	Weldon
TECCS060E3-07W06-57	●	6	6	3	0.15	5.9	7	16	57	Weldon
TECCS080E3-09W08-63	●	8	8	3	0.15	7.6	9	20	63	Weldon
TECCS100E3-11W10-72	●	10	10	3	0.15	9.5	11	22	72	Weldon
TECCS120E3-12W12-83	●	12	12	3	0.25	11.3	12	25	83	Weldon
TECCS160E3-16W16-92	●	16	16	3	0.25	15.2	16	32	92	Weldon

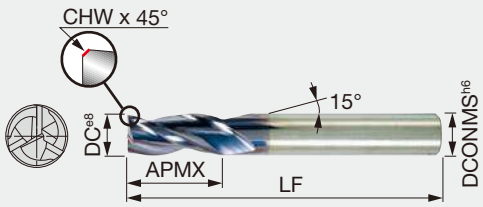
●: Line up

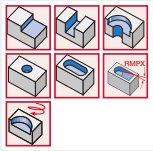
Reference pages: Standard cutting conditions → I051

SOLIDMEISTER

TECC**B/E3

3 flute slotting endmill, 38° or 45° helix angle





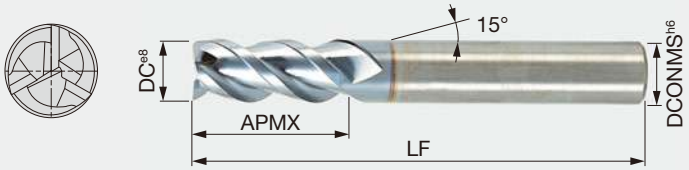
Designation	GH730	AH725	DC	DCONMS	NOF	CHW	APMX	LF	FHA	Shank
TECC020B3-07C03-38	●		2	3	3	0.1	7	38	45°	Cylindrical
TECC030E3-10C03-38	●		3	3	3	0.1	10	38	38°	Cylindrical
TECC040E3-12C04-50		●	4	4	3	0.1	12	50	38°	Cylindrical
TECC050E3-14C05-50		●	5	5	3	0.15	14	50	38°	Cylindrical
TECC060E3-16C06-57		●	6	6	3	0.15	16	57	38°	Cylindrical
TECC080E3-20C08-63		●	8	8	3	0.15	20	63	38°	Cylindrical
TECC100E3-22C10-72		●	10	10	3	0.15	22	72	38°	Cylindrical
TECC120E3-25C12-83		●	12	12	3	0.25	25	83	38°	Cylindrical
TECC160E3-32C16-92		●	16	16	3	0.25	32	92	38°	Cylindrical
TECC200E3-38C20-104		●	20	20	3	0.25	38	104	38°	Cylindrical

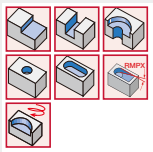
●: Line up

SOLIDMEISTER

TEC**B3

3 flute slotting endmill, 45° helix angle





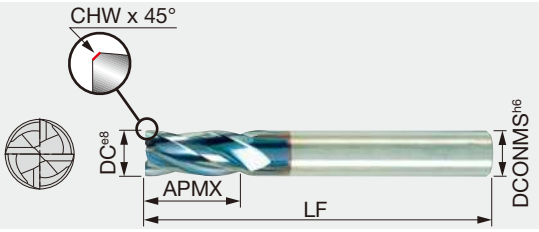
Designation	GH730	AH725	DC	NOF	DCONMS	APMX	LF	Shank
TEC030B3-10C06-57	●		3	3	6	10	57	Cylindrical
TEC040B3-12C06-57	●		4	3	6	12	57	Cylindrical
TEC050B3-14C06-57	●		5	3	6	14	57	Cylindrical
TEC060B3-16C06-57		●	6	3	6	16	57	Cylindrical
TEC070B3-16C07-60	●		7	3	7	16	60	Cylindrical
TEC080B3-20C08-63		●	8	3	8	20	63	Cylindrical
TEC090B3-20C09-67		●	9	3	9	20	67	Cylindrical
TEC100B3-22C10-72		●	10	3	10	22	72	Cylindrical
TEC120B3-25C12-83		●	12	3	12	25	83	Cylindrical
TEC140B3-25C14-75	●		14	3	14	25	75	Cylindrical
TEC180B3-32C18-92		●	18	3	18	32	92	Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I051

TECC**A/B4

4 flute endmill, 30° or 45° helix angle



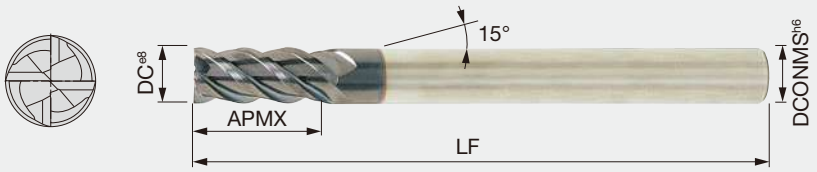
Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LF	FHA	Shank
TECC020B4-07C03-38	●	2	3	4	0.1	7	38	45°	Cylindrical
TECC030A4-10C03-38	●	3	3	4	0.1	10	38	30°	Cylindrical
TECC040A4-12C04-50	●	4	4	4	0.1	12	50	30°	Cylindrical
TECC050A4-14C05-50	●	5	5	4	0.15	14	50	30°	Cylindrical
TECC060A4-16C06-57	●	6	6	4	0.15	16	57	30°	Cylindrical
TECC080A4-20C08-63	●	8	8	4	0.15	20	63	30°	Cylindrical
TECC100A4-22C10-72	●	10	10	4	0.15	22	72	30°	Cylindrical
TECC120A4-25C12-83	●	12	12	4	0.25	25	83	30°	Cylindrical
TECC160A4-32C16-92	●	16	16	4	0.25	32	92	30°	Cylindrical
TECC200A4-38C20-104	●	20	20	4	0.25	38	104	30°	Cylindrical

●: Line up

SOLIDMEISTER

TEC**B4

4 flute endmill, 45° helix angle



Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEC020B4-07C06-57	●	2	6	4	7	57	Cylindrical
TEC030B4-10C06-57	●	3	6	4	10	57	Cylindrical
TEC040B4-12C06-57	●	4	6	4	12	57	Cylindrical
TEC050B4-14C06-57	●	5	6	4	14	57	Cylindrical
TEC060B4-16C06-57	●	6	6	4	16	57	Cylindrical
TEC080B4-20C08-63	●	8	8	4	20	63	Cylindrical
TEC100B4-22C10-72	●	10	10	4	22	72	Cylindrical
TEC120B4-25C12-83	●	12	12	4	25	83	Cylindrical
TEC140B4-25C14-83	●	14	14	4	25	83	Cylindrical
TEC160B4-32C16-92	●	16	16	4	32	92	Cylindrical
TEC180B4-32C18-92	●	18	18	4	32	92	Cylindrical
TEC200B4-38C20-104	●	20	20	4	38	104	Cylindrical

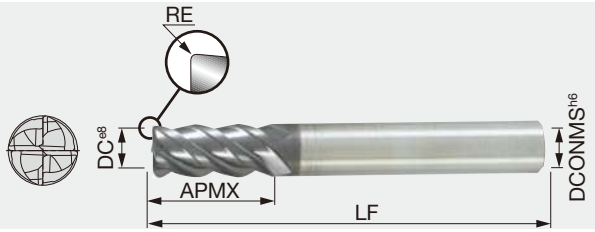
●: Line up

Reference pages: Standard cutting conditions → I051

SOLIDMEISTER

TEC**B4**R

4 flute radius endmill, 45° helix angle



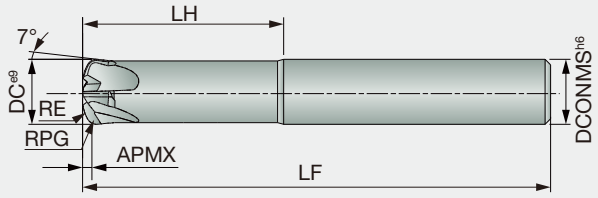
Designation	AH725	DC	DCONMS	NOF	RE	APMX	LF	Shank
TEC060B4-16C06R05-57	●	6	6	4	0.5	16	57	Cylindrical
TEC060B4-16C06R1-57	●	6	6	4	1	16	57	Cylindrical
TEC080B4-20C08R05-63	●	8	8	4	0.5	20	63	Cylindrical
TEC080B4-20C08R1-63	●	8	8	4	1	20	63	Cylindrical
TEC080B4-20C08R15-63	●	8	8	4	1.5	20	63	Cylindrical
TEC080B4-20C08R2-63	●	8	8	4	2	20	63	Cylindrical
TEC100B4-22C10R05-72	●	10	10	4	0.5	22	72	Cylindrical
TEC100B4-22C10R1-72	●	10	10	4	1	22	72	Cylindrical
TEC100B4-22C10R15-72	●	10	10	4	1.5	22	72	Cylindrical
TEC100B4-22C10R2-72	●	10	10	4	2	22	72	Cylindrical
TEC100B4-22C10R3-72	●	10	10	4	3	22	72	Cylindrical
TEC120B4-25C12R05-83	●	12	12	4	0.5	25	83	Cylindrical
TEC120B4-25C12R1-83	●	12	12	4	1	25	83	Cylindrical
TEC120B4-25C12R15-83	●	12	12	4	1.5	25	83	Cylindrical
TEC120B4-25C12R2-83	●	12	12	4	2	25	83	Cylindrical
TEC120B4-25C12R3-83	●	12	12	4	3	25	83	Cylindrical
TEC160B4-32C16R05-92	●	16	16	4	0.5	32	92	Cylindrical
TEC160B4-32C16R1-92	●	16	16	4	1	32	92	Cylindrical
TEC160B4-32C16R2-92	●	16	16	4	2	32	92	Cylindrical
TEC160B4-32C16R3-92	●	16	16	4	3	32	92	Cylindrical
TEC200B4-38C20R05-104	●	20	20	4	0.5	38	104	Cylindrical
TEC200B4-38C20R1-104	●	20	20	4	1	38	104	Cylindrical
TEC200B4-38C20R2-104	●	20	20	4	2	38	104	Cylindrical
TEC200B4-38C20R3-104	●	20	20	4	3	38	104	Cylindrical
TEC200B4-38C20R4-104	●	20	20	4	4	38	104	Cylindrical

●: Line up

FEEDMEISTER

TEFF**N4

4 flute high feed endmill



Designation	AH750	DC	DCONMS	NOF	RPG(1)	RE	APMX	LH	LF	Max. fz (mm/t)
TEFF060N4-030/20C06R10M	●	6	6	4	1.0	5.3	0.3	20	57	0.3
TEFF080N4-035/26C08R13M	●	8	8	4	1.3	7	0.4	26	63	0.4
TEFF100N4-040/30C10R16M	●	10	10	4	1.6	8.8	0.5	30	72	0.5
TEFF120N4-045/34C12R20M	●	12	12	4	2.0	10.6	0.6	34	83	0.5
TEFF160N4-055/42C16R26M	●	16	16	4	2.6	14	0.8	42	92	0.6
TEFF200N4-060/46C20R32M	●	20	20	4	3.2	17.7	1	46	104	0.7

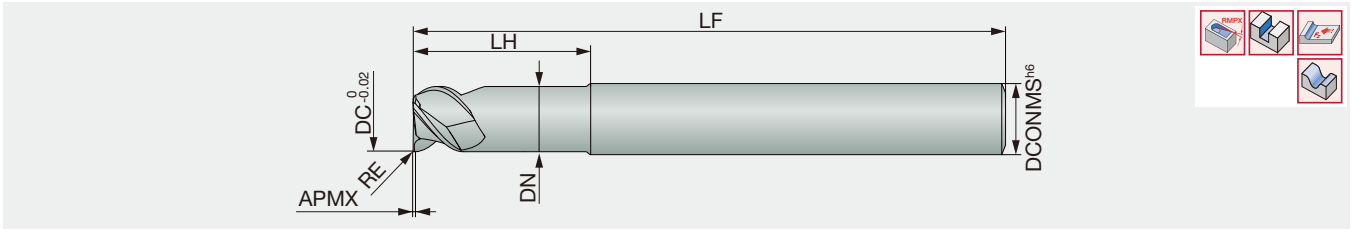
(1) R0 should be used for programming.

●: Line up

Reference pages: TEC**B4**R: Standard cutting conditions → I051
TEFF**N4: Standard cutting conditions → I037

TCFF**A3

3 flute high feed endmill



Designation	FX510	DC	DCONMS	NOF	DN	RE	APMX	LH	LF
TCFF060A3-06/15C6-50	●	6	6	3	5.5	0.42	0.25	15	50
TCFF080A3-08/20C8-57	●	8	8	3	7.5	0.56	0.4	20	57
TCFF100A3-08/25C10-65	●	10	10	3	9.5	0.7	0.5	25	65
TCFF120A3-10/30C12-72	●	12	12	3	11.5	1.1	0.6	30	72
TCFF160A3-12/35C16-83	●	16	16	3	15.5	1.9	0.75	35	83
TCFF200A3-15/40C20-93	●	20	20	3	19.5	2.5	1	40	93

Caution: ●: Line up
High speed machining generates heat in the tool and chuck holder. Thermal expansion of the holder will often lead to tool damage. Use an air coolant during machining to cool the tool holder.
Milling chucks are recommended for the toolholder to be used.
*Use the above corner radius values for programming.

FEEDMEISTER

STANDARD CUTTING CONDITIONS

Shape machining (roughing) TEFF**N4...

ISO	Workpiece material	Vc (m/min)	fz(mm/t)		
			ø6 - ø8	ø10 - ø12	ø16 - ø20
P	Carbon steel	140 - 180	0.25 - 0.48	0.35 - 0.67	0.52 - 0.9
P	Alloy steel (30-40HRC)	120 - 130	0.2 - 0.28	0.3 - 0.38	0.43 - 0.57
M	Stainless steel	120	0.25 - 0.3	0.35 - 0.43	0.52 - 0.6
K	Cast iron	160 - 180	0.3 - 0.45	0.45 - 0.6	0.6 - 0.8
H	Hardened steel (-49HRC)	100	0.16 - 0.2	0.25 - 0.33	0.4 - 0.48
H	Hardened steel (50-60HRC)	60 - 80	0.1 - 0.16	0.16 - 0.3	0.2 - 0.45

· Please be aware that the maximum depth of cut (apmax) and the feed (*fz*) will depend on each tool diameter.
· While air blow is recommended, water-soluble coolant will be good for stainless steel, titanium alloy, and heat-resistant alloy.
· When chattering occurs with low rigid machines or settings, reduce cutting speed and feed at an equal rate.
· When chattering occurs with long tool overhang, reduce cutting speed and feed by 20 to 40%.

Shape machining (roughing) TCFF**A3...

ISO	Workpiece material	Vc (m/min)	fz(mm/t)		
			ø6 - ø8	ø10 - ø12	ø16 - ø20
K	Cast iron	250 - 1000	0.1 - 0.15	0.17 - 0.19	0.23 - 0.25
K	Nodular cast iron	250 - 1000	0.1 - 0.15	0.17 - 0.19	0.23 - 0.25
K	Malleable cast iron	250 - 1000	0.1 - 0.15	0.17 - 0.19	0.23 - 0.25
N	Non-ferrous metal / Graphite	500 - 1500	0.1 - 0.15	0.17 - 0.19	0.23 - 0.25
S	Nickel based alloy	250 - 1000	0.1 - 0.13	0.15 - 0.18	0.20 - 0.22

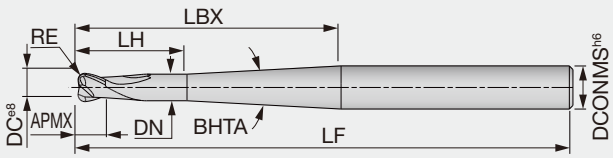
*Dry cutting at the cutting speed more than 250m/min is recommended for machining nickel based alloy.

SOLIDMEISTER

TETR**A2**R

2 flute toroidal endmill





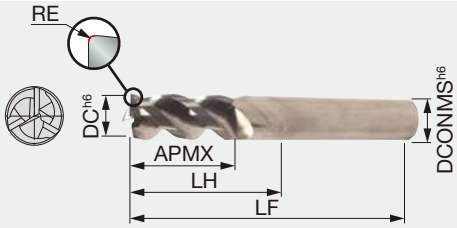
Designation	AH725	DC	DCONMS	NOF	DN	RE	APMX	LH	LBX	BHTA	LF	Shank
TETR020A2-2/08C06R05M80	●	2	6	2	1.9	0.5	2	8	40	3.6°	80	Cylindrical
TETR030A2-2/12C06R05M80	●	3	6	2	2.8	0.5	2	12	40	3.3°	80	Cylindrical
TETR040A2-3/16C06R1M80	●	4	6	2	3.7	1	3	16	40	2.8°	80	Cylindrical
TETR060A2-4/25C08R2M100	●	6	8	2	5.6	2	4	25	66	2.0°	100	Cylindrical

●: Line up

VARIABLEMEISTER

TECA**H3**CF-R

3 flute endmill, 39°-41° variable helix, center cutting edge, for aluminium machining



Designation	KS15F	DC	DCONMS	NOF	RE	APMX	LH	LF	Shank
TECA010H3-04C06CF-R.05	●	1	6	3	0.05	4	6	57	Cylindrical
TECA015H3-04/06C06CF-R01	●	1.5	6	3	0.1	4	6	57	Cylindrical
TECA020H3-05/08C06CF-R01	●	2	6	3	0.1	5	8	57	Cylindrical
TECA025H3-05/08C06CF-R01	●	2.5	6	3	0.1	5	8	57	Cylindrical
TECA030H3-07/12C06CF-R01	●	3	6	3	0.1	7	12	57	Cylindrical
TECA040H3-10/16C06CF-R02	●	4	6	3	0.2	10	16	57	Cylindrical
TECA050H3-12/20C06CF-R02	●	5	6	3	0.2	12	20	57	Cylindrical
TECA060H3-09/18C06CF-R02	●	6	6	3	0.2	9	18	57	Cylindrical
TECA060H3-09/18C06CF-R04	●	6	6	3	0.4	9	18	57	Cylindrical
TECA060H3-09/18C06CF-R08	●	6	6	3	0.8	9	18	57	Cylindrical
TECA060H3-09/30C06CF-R02	●	6	6	3	0.2	9	30	65	Cylindrical
TECA060H3-09/30C06CF-R04	●	6	6	3	0.4	9	30	65	Cylindrical
TECA060H3-09/30C06CF-R08	●	6	6	3	0.8	9	30	65	Cylindrical
TECA060H3-14/24C06CF-R02	●	6	6	3	0.2	14	24	60	Cylindrical
TECA080H3-12/24C08CF-R02	●	8	8	3	0.2	12	24	63	Cylindrical
TECA080H3-12/24C08CF-R04	●	8	8	3	0.4	12	24	63	Cylindrical
TECA080H3-12/24C08CF-R08	●	8	8	3	0.8	12	24	63	Cylindrical
TECA080H3-12/24C08CF-R30	●	8	8	3	3	12	24	63	Cylindrical
TECA080H3-12/40C08CF-R02	●	8	8	3	0.2	12	40	79	Cylindrical
TECA080H3-12/40C08CF-R04	●	8	8	3	0.4	12	40	79	Cylindrical
TECA080H3-12/40C08CF-R08	●	8	8	3	0.8	12	40	79	Cylindrical
TECA080H3-18/32C08CF-R02	●	8	8	3	0.2	18	32	68	Cylindrical
TECA100H3-15/30C10CF-R02	●	10	10	3	0.2	15	30	72	Cylindrical
TECA100H3-15/30C10CF-R04	●	10	10	3	0.4	15	30	72	Cylindrical
TECA100H3-15/30C10CF-R08	●	10	10	3	0.8	15	30	72	Cylindrical
TECA100H3-15/30C10CF-R16	●	10	10	3	1.6	15	30	72	Cylindrical
TECA100H3-15/30C10CF-R30	●	10	10	3	3	15	30	72	Cylindrical
TECA100H3-15/50C10CF-R02	●	10	10	3	0.2	15	50	92	Cylindrical
TECA100H3-15/50C10CF-R04	●	10	10	3	0.4	15	50	92	Cylindrical
TECA100H3-15/50C10CF-R08	●	10	10	3	0.8	15	50	92	Cylindrical
TECA100H3-15/50C10CF-R16	●	10	10	3	1.6	15	50	92	Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I051

Designation	KS15F	DC	DCONMS	NOF	RE	APMX	LH	LF	Shank
TECA100H3-15/50C10CF-R20	●	10	10	3	2	15	50	92	Cylindrical
TECA100H3-15/50C10CF-R30	●	10	10	3	3	15	50	92	Cylindrical
TECA100H3-22/40C10CF-R02	●	10	10	3	0.2	22	40	80	Cylindrical
TECA100H3-22/40C10CF-R30	●	10	10	3	3	22	40	80	Cylindrical
TECA120H3-18/36C12CF-R02	●	12	12	3	0.2	18	36	83	Cylindrical
TECA120H3-18/36C12CF-R04	●	12	12	3	0.4	18	36	83	Cylindrical
TECA120H3-18/36C12CF-R08	●	12	12	3	0.8	18	36	83	Cylindrical
TECA120H3-18/36C12CF-R16	●	12	12	3	1.6	18	36	83	Cylindrical
TECA120H3-18/36C12CF-R20	●	12	12	3	2	18	36	83	Cylindrical
TECA120H3-18/36C12CF-R25	●	12	12	3	2.5	18	36	83	Cylindrical
TECA120H3-18/36C12CF-R30	●	12	12	3	3	18	36	57	Cylindrical
TECA120H3-18/60C12CF-R02	●	12	12	3	0.2	18	60	100	Cylindrical
TECA120H3-18/60C12CF-R04	●	12	12	3	0.4	18	60	100	Cylindrical
TECA120H3-18/60C12CF-R08	●	12	12	3	0.8	18	60	100	Cylindrical
TECA120H3-18/60C12CF-R16	●	12	12	3	1.6	18	60	100	Cylindrical
TECA120H3-18/60C12CF-R20	●	12	12	3	2	18	60	100	Cylindrical
TECA120H3-18/60C12CF-R25	●	12	12	3	2.5	18	60	100	Cylindrical
TECA120H3-18/60C12CF-R30	●	12	12	3	3	18	60	100	Cylindrical
TECA160H3-24/48C16CF-R02	●	16	16	3	0.2	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R04	●	16	16	3	0.4	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R08	●	16	16	3	0.8	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R16	●	16	16	3	1.6	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R20	●	16	16	3	2	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R25	●	16	16	3	2.5	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R30	●	16	16	3	3	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R32	●	16	16	3	3.2	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R40	●	16	16	3	4	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R50	●	16	16	3	5	24	48	92	Cylindrical
TECA160H3-24/80C16CF-R02	●	16	16	3	0.2	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R04	●	16	16	3	0.4	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R08	●	16	16	3	0.8	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R16	●	16	16	3	1.6	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R20	●	16	16	3	2	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R25	●	16	16	3	2.5	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R30	●	16	16	3	3	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R32	●	16	16	3	3.2	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R40	●	16	16	3	4	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R50	●	16	16	3	5	24	80	128	Cylindrical
TECA160H3-34/64C16CF-R02	●	16	16	3	0.2	34	64	115	Cylindrical
TECA200H3-30/100C20CF-R02	●	20	20	3	0.2	30	100	150	Cylindrical
TECA200H3-30/100C20CF-R04	●	20	20	3	0.4	30	100	150	Cylindrical
TECA200H3-30/100C20CF-R08	●	20	20	3	0.8	30	100	150	Cylindrical
TECA200H3-30/100C20CF-R32	●	20	20	3	3.2	30	100	150	Cylindrical
TECA200H3-30/100C20CF-R40	●	20	20	3	4	30	100	150	Cylindrical
TECA200H3-30/100C20CF-R50	●	20	20	3	5	30	100	150	Cylindrical
TECA200H3-30/60C20CF-R02	●	20	20	3	0.2	30	60	110	Cylindrical
TECA200H3-30/60C20CF-R04	●	20	20	3	0.4	30	60	110	Cylindrical
TECA200H3-30/60C20CF-R08	●	20	20	3	0.8	30	60	110	Cylindrical
TECA200H3-30/60C20CF-R16	●	20	20	3	1.6	30	60	110	Cylindrical
TECA200H3-30/60C20CF-R20	●	20	20	3	2	30	60	110	Cylindrical
TECA200H3-30/60C20CF-R32	●	20	20	3	3.2	30	60	110	Cylindrical
TECA200H3-30/60C20CF-R40	●	20	20	3	4	30	60	110	Cylindrical
TECA200H3-30/60C20CF-R50	●	20	20	3	5	30	60	110	Cylindrical
TECA200H3-42/80C20CF-R02	●	20	20	3	0.2	42	80	130	Cylindrical
TECA250H3-38/125C25CF-R02	●	25	25	3	0.2	38	125	185	Cylindrical
TECA250H3-38/125C25CF-R08	●	25	25	3	0.8	38	125	185	Cylindrical
TECA250H3-38/125C25CF-R16	●	25	25	3	1.6	38	125	185	Cylindrical
TECA250H3-38/125C25CF-R20	●	25	25	3	2	38	125	185	Cylindrical
TECA250H3-38/125C25CF-R40	●	25	25	3	4	38	125	185	Cylindrical
TECA250H3-38/125C25CF-R50	●	25	25	3	5	38	125	185	Cylindrical
TECA250H3-38/75C25CF-R02	●	25	25	3	0.2	38	75	130	Cylindrical
TECA250H3-38/75C25CF-R04	●	25	25	3	0.4	38	75	130	Cylindrical
TECA250H3-38/75C25CF-R16	●	25	25	3	1.6	38	75	130	Cylindrical
TECA250H3-38/75C25CF-R20	●	25	25	3	2	38	75	130	Cylindrical
TECA250H3-38/75C25CF-R32	●	25	25	3	3.2	38	75	130	Cylindrical
TECA250H3-38/75C25CF-R50	●	25	25	3	5	38	75	130	Cylindrical
TECA250H3-52/100C25CF-R02	●	25	25	3	0.2	52	100	156	Cylindrical

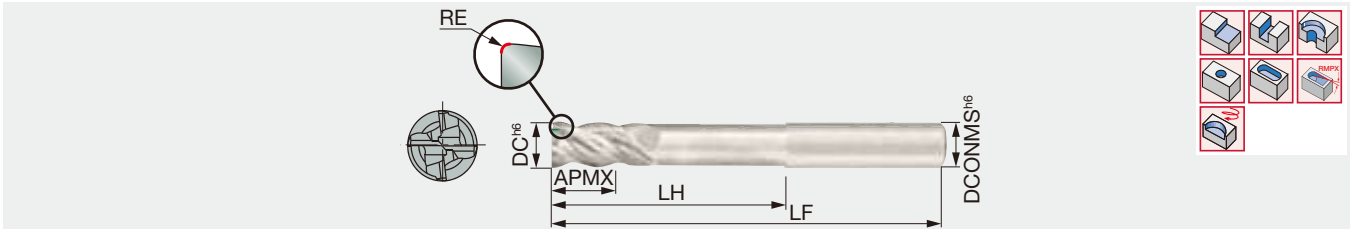
●: Line up

Reference pages: Standard cutting conditions → I051

SOLIDMEISTER VARIABLEMEISTER

TECA**H4**CF-R

4 flute endmill, variable helix and variable pitch, relieved neck type, for aluminium machining (1.5xD, 2xD)

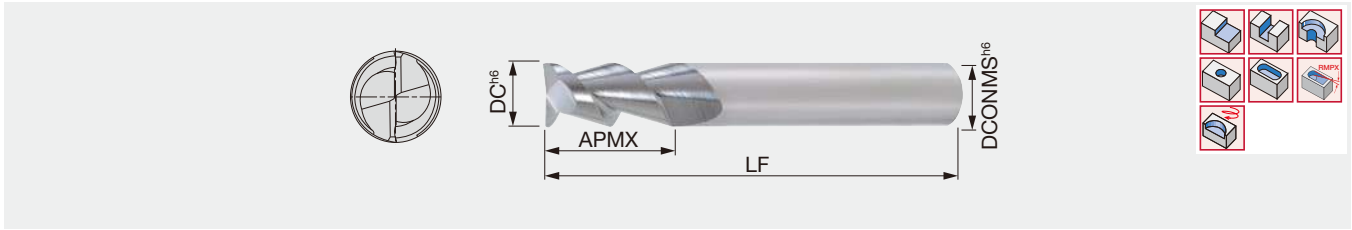


Designation	KS15F	DC	DCONMS	NOF	RE	APMX	LH	LF	Shank
TECA060H4-09/30C06CF-R02	●	6	6	4	0.2	9	30	65	Cylindrical
TECA060H4-12/18C06CF-R02	●	6	6	4	0.2	12	18	57	Cylindrical
TECA080H4-12/40C08CF-R02	●	8	8	4	0.2	12	40	79	Cylindrical
TECA080H4-16/24C08CF-R02	●	8	8	4	0.2	16	24	63	Cylindrical
TECA100H4-15/50C10CF-R02	●	10	10	4	0.2	15	50	92	Cylindrical
TECA100H4-20/30C10CF-R02	●	10	10	4	0.2	20	30	72	Cylindrical
TECA120H4-18/60C12CF-R02	●	12	12	4	0.2	18	60	100	Cylindrical
TECA120H4-24/36C12CF-R02	●	12	12	4	0.2	24	36	83	Cylindrical
TECA160H4-24/80C16CF-R02	●	16	16	4	0.2	24	80	128	Cylindrical
TECA160H4-32/48C16CF-R02	●	16	16	4	0.2	32	48	100	Cylindrical

●: Line up

TECA**B2

2 flute slotting endmill, 45° helix angle, for aluminium machining



Designation	KS15F	DC	DCONMS	NOF	APMX	LF	Shank
TECA040B2-12C06-57	●	4	6	2	12	57	Cylindrical
TECA050B2-14C06-57	●	5	6	2	14	57	Cylindrical
TECA060B2-16C06-57	●	6	6	2	16	57	Cylindrical
TECA080B2-20C08-63	●	8	8	2	20	63	Cylindrical
TECA100B2-22C10-72	●	10	10	2	22	72	Cylindrical
TECA120B2-25C12-83	●	12	12	2	25	83	Cylindrical
TECA160B2-32C16-92	●	16	16	2	32	92	Cylindrical
TECA200B2-38C20-104	●	20	20	2	38	104	Cylindrical

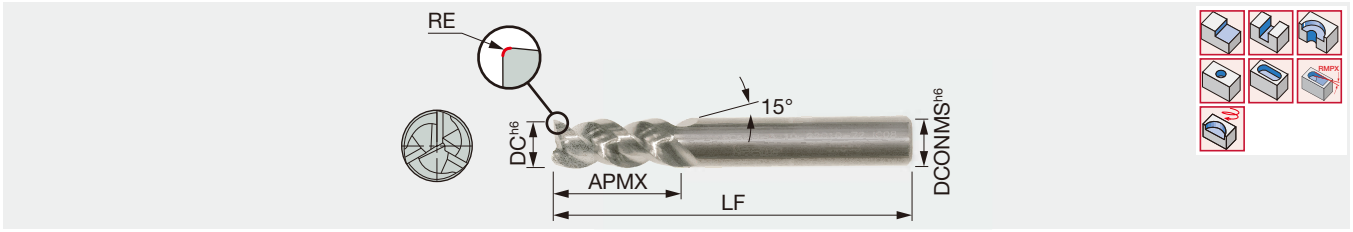
●: Line up

Reference pages: Standard cutting conditions → I051

SOLIDMEISTER

TECA**B3

3 flute endmill, 45° helix angle, for aluminium machining



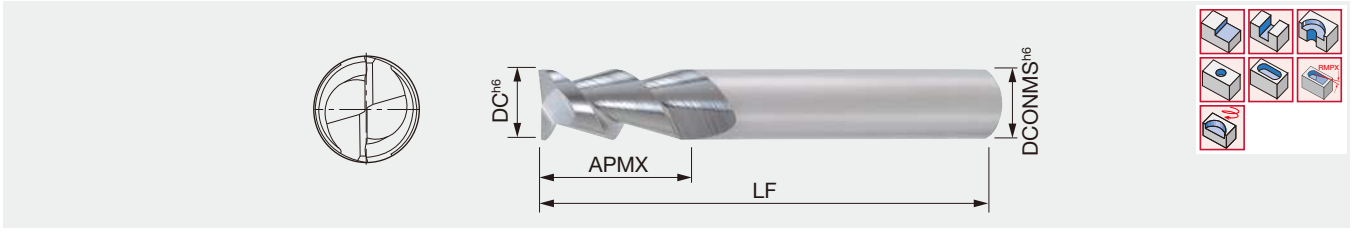
Designation	KS15F	DC	DCONMS	NOF	RE	APMX	LF	Shank
TECA040B3-12C06-57	●	4	6	3	0.1	12	57	Cylindrical
TECA040B3-12W06-57	●	4	6	3	0.1	12	57	Weldon
TECA050B3-14C06-57	●	5	6	3	0.2	14	57	Cylindrical
TECA050B3-14W06-57	●	5	6	3	0.2	14	57	Weldon
TECA060B3-16C06-57	●	6	6	3	0.2	16	57	Cylindrical
TECA060B3-16W06-57	●	6	6	3	0.2	16	57	Weldon
TECA080B3-20C08-63	●	8	8	3	0.2	20	63	Cylindrical
TECA080B3-20C08R30-63	●	8	8	3	3	20	63	Cylindrical
TECA080B3-20W08-63	●	8	8	3	0.2	20	63	Weldon
TECA100B3-22C10-72	●	10	10	3	0.2	22	72	Cylindrical
TECA100B3-22W10-72	●	10	10	3	0.2	22	72	Weldon
TECA100B3-25C10R30-72	●	10	10	3	3	25	72	Cylindrical
TECA100B3-25C10R40-72	●	10	10	3	4	25	72	Cylindrical
TECA120B3-25C12-83	●	12	12	3	0.2	25	83	Cylindrical
TECA120B3-25W12-83	●	12	12	3	0.2	25	83	Weldon
TECA120B3-30C12R30-83	●	12	12	3	3	30	83	Cylindrical
TECA120B3-30C12R40-83	●	12	12	3	4	30	83	Cylindrical
TECA140B3-30C14-83	●	14	14	3	0.2	30	83	Cylindrical
TECA140B3-30W14-83	●	14	14	3	0.2	30	83	Weldon
TECA160B3-32C16-92	●	16	16	3	0.2	32	92	Cylindrical
TECA160B3-32W16-92	●	16	16	3	0.2	32	92	Weldon
TECA200B3-38C20-104	●	20	20	3	0.2	38	104	Cylindrical
TECA200B3-38W20-104	●	20	20	3	0.2	38	104	Weldon

●: Line up

SOLIDMEISTER

TECA**F2

2 flute slotting endmill, 55° helix angle, for aluminium machining



Designation	KS15F	DC	DCONMS	NOF	APMX	LF	Shank
TECA040F2-11C04-50	●	4	4	2	11	50	Cylindrical
TECA060F2-13C06-57	●	6	6	2	13	57	Cylindrical
TECA080F2-20C08-63	●	8	8	2	20	63	Cylindrical
TECA100F2-22C10-72	●	10	10	2	22	72	Cylindrical
TECA120F2-25C12-83	●	12	12	2	25	83	Cylindrical
TECA160F2-32C16-92	●	16	16	2	32	92	Cylindrical
TECA200F2-38C20-104	●	20	20	2	38	104	Cylindrical
TECA250F2-45C25-121	●	25	25	2	45	121	Cylindrical

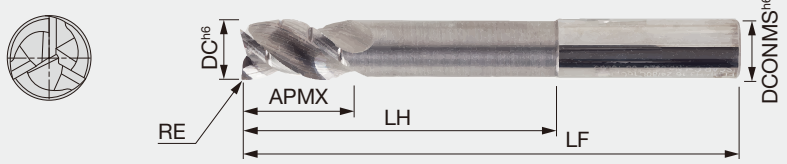
●: Line up

Reference pages: Standard cutting conditions → I051

VARIABLEMEISTER SHREDMEISTER

TEAP**H3**CFR**C

3 flute endmill, variable helix, with chip splitter, relieved neck type, for aluminium machining



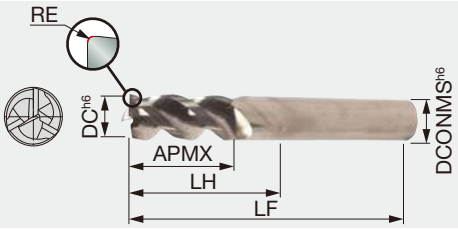
Designation	KS15F	DC	DCONMS	NOF	RE	APMX	LH	LF	Coolant hole	Shank
TEAP100H3-15/50C10CFR02C	●	10	10	3	0.2	15	50	92	With	Cylindrical
TEAP100H3-22/40C10CFR02C	●	10	10	3	0.2	22	40	80	With	Cylindrical
TEAP120H3-18/60C12CFR02C	●	12	12	3	0.2	18	60	100	With	Cylindrical
TEAP120H3-26/48C12CFR02C	●	12	12	3	0.2	26	48	93	With	Cylindrical
TEAP160H3-24/80C16CFR02C	●	16	16	3	0.2	24	80	128	With	Cylindrical
TEAP160H3-34/64C16CFR02C	●	16	16	3	0.2	34	64	115	With	Cylindrical
TEAP200H3-42/80C20CFR02C	●	20	20	3	0.2	42	80	130	With	Cylindrical
TEAP200H3-30/100C20CFR02C	●	20	20	3	0.2	30	100	150	With	Cylindrical

●: Line up

VARIABLEMEISTER

TECA**H3**CFR**C

3 flute endmill, variable helix, center cutting edge, for aluminium machining



Designation	KS15F	DC	DCONMS	NOF	RE	APMX	LH	LF	Coolant hole	Shank
TECA060H3-12/18C06CF-R02C	●	6	6	3	0.2	12	18	57	With	Cylindrical
TECA060H3-12/30C06CF-R02C	●	6	6	3	0.2	12	30	65	With	Cylindrical
TECA080H3-16/24C08CF-R02C	●	8	8	3	0.2	16	24	63	With	Cylindrical
TECA080H3-16/40C08CF-R02C	●	8	8	3	0.2	16	40	79	With	Cylindrical
TECA100H3-20/30C10CF-R02C	●	10	10	3	0.2	20	30	72	With	Cylindrical
TECA100H3-20/50C10CF-R02C	●	10	10	3	0.2	20	50	100	With	Cylindrical
TECA120H3-24/36C12CF-R02C	●	12	12	3	0.2	24	36	83	With	Cylindrical
TECA120H3-24/60C12CF-R02C	●	12	12	3	0.2	24	60	100	With	Cylindrical
TECA160H3-32/48C16CF-R02C	●	16	16	3	0.2	32	48	92	With	Cylindrical
TECA160H3-32/80C16CF-R02C	●	16	16	3	0.2	32	80	128	With	Cylindrical
TECA250H3-50/75C25CF-R02C	●	25	25	3	0.2	50	75	130	With	Cylindrical

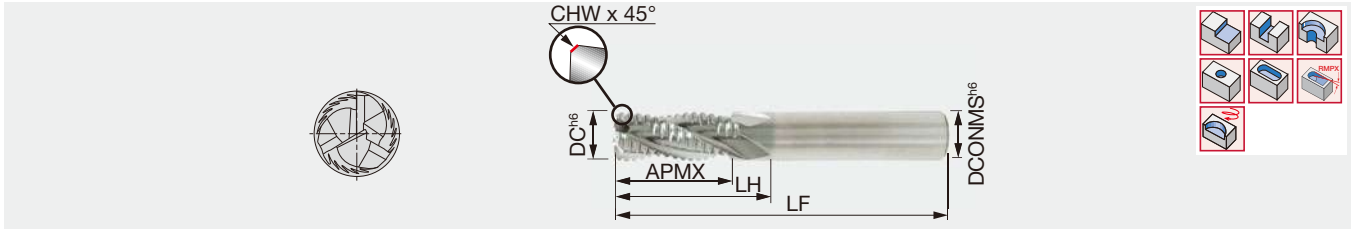
●: Line up

Reference pages: Standard cutting conditions → I051

SHREDMEISTER

TERC**E3

3 flute roughing endmill, 38° helix angle, for aluminium alloy and non-ferrous metal



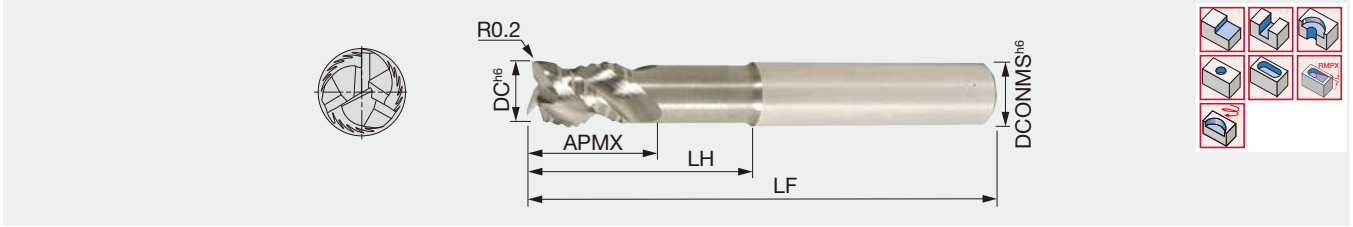
Designation	KS15F	DC	DCONMS	NOF	CHW	APMX	LH	LF	Shank
TERC060E3-13C06-57	●	6	6	3	0.5	13	21	57	Cylindrical
TERC080E3-20C08-63	●	8	8	3	0.5	20	28	63	Cylindrical
TERC100E3-22C10-72	●	10	10	3	0.6	22	30	72	Cylindrical
TERC120E3-25C12-83	●	12	12	3	0.6	25	37	83	Cylindrical
TERC140E3-25C14-83	●	14	14	3	0.6	25	37	83	Cylindrical
TERC160E3-32C16-92	●	16	16	3	0.6	32	44	92	Cylindrical
TERC200E3-38C20-104	●	20	20	3	0.7	38	55	104	Cylindrical
TERC250E3-45C25-121	●	25	25	3	0.7	45	64	121	Cylindrical

●: Line up

SHREDMEISTER

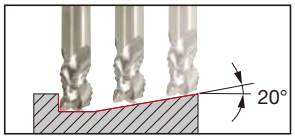
TECR**B3**R

3 flute roughing endmill, 45° helix angle, relieved neck type, for aluminium machining



Designation	KS15F	DC	DCONMS	NOF	APMX	LH	LF	Shank
TECR060B3-09/21C06R02A57	●	6	6	3	9	21	57	Cylindrical
TECR060B3-09/21W06R02A57	●	6	6	3	9	21	57	Weldon
TECR060B3-09/30C06R02A65	●	6	6	3	9	30	65	Cylindrical
TECR060B3-09/30W06R02A65	●	6	6	3	9	30	65	Weldon
TECR080B3-12/27C08R02A63	●	8	8	3	12	27	63	Cylindrical
TECR080B3-12/27W08R02A63	●	8	8	3	12	27	63	Weldon
TECR080B3-12/40C08R02A78	●	8	8	3	12	40	78	Cylindrical
TECR080B3-12/40W08R02A78	●	8	8	3	12	40	78	Weldon
TECR100B3-12/31C10R02A72	●	10	10	3	12	31	72	Cylindrical
TECR100B3-12/31W10R02A72	●	10	10	3	12	31	72	Weldon
TECR100B3-12/50C10R02A100	●	10	10	3	12	50	100	Cylindrical
TECR100B3-12/50W10R02A100	●	10	10	3	12	50	100	Weldon
TECR120B3-12/37C12R02A83	●	12	12	3	12	37	83	Cylindrical
TECR120B3-12/37W12R02A83	●	12	12	3	12	37	83	Weldon
TECR120B3-14/55C12R02A100	●	12	12	3	14	55	100	Cylindrical
TECR120B3-14/55W12R02A100	●	12	12	3	14	55	100	Weldon
TECR160B3-14/43C16R02A92	●	16	16	3	14	43	92	Cylindrical
TECR160B3-14/43W16R02A92	●	16	16	3	14	43	92	Weldon
TECR160B3-18/80C16R02A150	●	16	16	3	18	80	150	Cylindrical
TECR160B3-18/80W16R02A150	●	16	16	3	18	80	150	Weldon
TECR200B3-17/53C20R02A104	●	20	20	3	17	53	104	Cylindrical
TECR200B3-17/53W20R02A104	●	20	20	3	17	53	104	Weldon
TECR200B3-22/80C20R02A150	●	20	20	3	22	80	150	Cylindrical
TECR200B3-22/80W20R02A150	●	20	20	3	22	80	150	Weldon

●: Line up



Rampdown angle

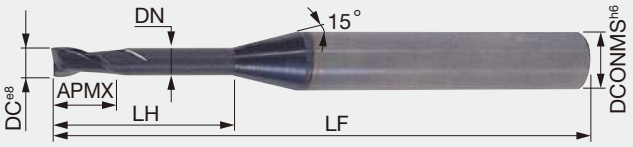
Reference pages: Standard cutting conditions → I051

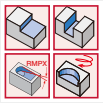
SOLIDMEISTER

TEC**A2

2 flute rib processing endmill, 30° helix angle, for hardened steel up to 55 HRC







Designation	AH750	DC	DCONMS	NOF	DN	APMX	LH	LF	Shank
TEC004A2-006/02C4M45	●	0.4	4	2	0.37	0.6	2	45	Cylindrical
TEC004A2-006/04C4M45	●	0.4	4	2	0.37	0.6	4	45	Cylindrical
TEC005A2-007/02C4M45	●	0.5	4	2	0.45	0.7	2	45	Cylindrical
TEC005A2-007/04C4M45	●	0.5	4	2	0.45	0.7	4	45	Cylindrical
TEC005A2-007/06C4M45	●	0.5	4	2	0.45	0.7	6	45	Cylindrical
TEC006A2-009/02C4M45	●	0.6	4	2	0.55	0.9	2	45	Cylindrical
TEC006A2-009/04C4M45	●	0.6	4	2	0.55	0.9	4	45	Cylindrical
TEC006A2-009/06C4M45	●	0.6	4	2	0.55	0.9	6	45	Cylindrical
TEC007A2-010/02C4M45	●	0.7	4	2	0.65	1	2	45	Cylindrical
TEC008A2-012/04C4M45	●	0.8	4	2	0.75	1.2	4	45	Cylindrical
TEC008A2-012/06C4M45	●	0.8	4	2	0.75	1.2	6	45	Cylindrical
TEC008A2-012/08C4M45	●	0.8	4	2	0.75	1.2	8	45	Cylindrical
TEC009A2-0135/06C4M45	●	0.9	4	2	0.85	1.35	6	45	Cylindrical
TEC009A2-0135/08C4M45	●	0.9	4	2	0.85	1.35	8	45	Cylindrical
TEC009A2-0135/10C4M45	●	0.9	4	2	0.85	1.35	10	45	Cylindrical
TEC010A2-015/04C4M45	●	1	4	2	0.97	1.5	4	45	Cylindrical
TEC010A2-015/06C4M45	●	1	4	2	0.97	1.5	6	45	Cylindrical
TEC010A2-015/08C4M45	●	1	4	2	0.95	1.5	8	45	Cylindrical
TEC010A2-015/10C4M45	●	1	4	2	0.95	1.5	10	45	Cylindrical
TEC010A2-015/12C4M45	●	1	4	2	0.93	1.5	12	45	Cylindrical
TEC010A2-015/16C4M50	●	1	4	2	0.93	1.5	16	50	Cylindrical
TEC012A2-018/06C4M45	●	1.2	4	2	1.17	1.8	6	45	Cylindrical
TEC012A2-018/08C4M45	●	1.2	4	2	1.15	1.8	8	45	Cylindrical
TEC012A2-018/10C4M45	●	1.2	4	2	1.15	1.8	10	45	Cylindrical
TEC012A2-018/16C4M50	●	1.2	4	2	1.13	1.8	16	50	Cylindrical
TEC014A2-021/06C4M45	●	1.4	4	2	1.35	2.1	6	45	Cylindrical
TEC014A2-021/08C4M45	●	1.4	4	2	1.35	2.1	8	45	Cylindrical
TEC014A2-021/10C4M45	●	1.4	4	2	1.35	2.1	10	45	Cylindrical
TEC015A2-023/06C4M45	●	1.5	4	2	1.47	2.3	6	45	Cylindrical
TEC015A2-023/08C4M45	●	1.5	4	2	1.45	2.3	8	45	Cylindrical
TEC015A2-023/10C4M45	●	1.5	4	2	1.45	2.3	10	45	Cylindrical
TEC015A2-023/12C4M45	●	1.5	4	2	1.43	2.3	12	45	Cylindrical
TEC015A2-023/16C4M50	●	1.5	4	2	1.41	2.3	16	50	Cylindrical
TEC015A2-023/18C4M55	●	1.5	4	2	1.41	2.3	18	55	Cylindrical
TEC015A2-023/20C4M55	●	1.5	4	2	1.41	2.3	20	55	Cylindrical
TEC016A2-024/06C4M45	●	1.6	4	2	1.57	2.4	6	45	Cylindrical
TEC016A2-024/08C4M45	●	1.6	4	2	1.55	2.4	8	45	Cylindrical
TEC016A2-024/10C4M45	●	1.6	4	2	1.55	2.4	10	45	Cylindrical
TEC016A2-024/18C4M55	●	1.6	4	2	1.53	2.4	18	55	Cylindrical
TEC016A2-024/20C4M55	●	1.6	4	2	1.53	2.4	20	55	Cylindrical
TEC016A2-024/26C4M60	●	1.6	4	2	1.53	2.4	26	60	Cylindrical
TEC018A2-027/06C4M45	●	1.8	4	2	1.77	2.7	6	45	Cylindrical
TEC018A2-027/08C4M45	●	1.8	4	2	1.75	2.7	8	45	Cylindrical
TEC018A2-027/10C4M45	●	1.8	4	2	1.75	2.7	10	45	Cylindrical
TEC018A2-027/12C4M45	●	1.8	4	2	1.73	2.7	12	45	Cylindrical
TEC020A2-030/06C4M45	●	2	4	2	1.97	3	6	45	Cylindrical
TEC020A2-030/08C4M45	●	2	4	2	1.95	3	8	45	Cylindrical
TEC020A2-030/10C4M45	●	2	4	2	1.95	3	10	45	Cylindrical
TEC020A2-030/12C4M45	●	2	4	2	1.93	3	12	45	Cylindrical
TEC020A2-030/16C4M50	●	2	4	2	1.91	3	16	50	Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I051

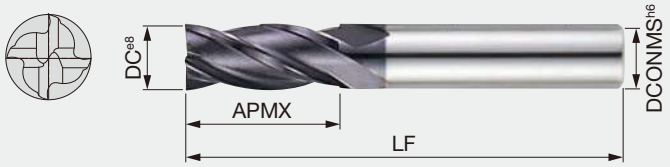
Designation	AH750	DC	DCONMS	NOF	DN	APMX	LH	LF	Shank
TEC020A2-030/20C4M55	●	2	4	2	1.89	3	20	55	Cylindrical
TEC020A2-030/30C4M70	●	2	4	2	1.89	3	30	70	Cylindrical
TEC025A2-037/08C4M45	●	2.5	4	2	2.4	3.7	8	45	Cylindrical
TEC025A2-037/10C4M45	●	2.5	4	2	2.4	3.7	10	45	Cylindrical
TEC025A2-037/12C4M45	●	2.5	4	2	2.4	3.7	12	45	Cylindrical
TEC025A2-037/16C4M55	●	2.5	4	2	2.4	3.7	16	55	Cylindrical
TEC025A2-037/20C4M60	●	2.5	4	2	2.4	3.7	20	60	Cylindrical
TEC025A2-037/30C4M80	●	2.5	4	2	2.4	3.7	30	80	Cylindrical
TEC030A2-045/08C6M45	●	3	6	2	2.85	4.5	8	45	Cylindrical
TEC030A2-045/10C6M45	●	3	6	2	2.85	4.5	10	45	Cylindrical
TEC030A2-045/12C6M45	●	3	6	2	2.85	4.5	12	45	Cylindrical
TEC030A2-045/16C6M55	●	3	6	2	2.85	4.5	16	55	Cylindrical
TEC030A2-045/20C6M60	●	3	6	2	2.85	4.5	20	60	Cylindrical
TEC030A2-045/30C6M70	●	3	6	2	2.85	4.5	30	70	Cylindrical
TEC030A2-045/40C6M90	●	3	6	2	2.85	4.5	40	90	Cylindrical

●: Line up

SOLIDMEISTER

TEC**A4

4 flute endmill, 30° helix angle, for hardened steel up to 65 HRC



Designation	AH750	DC	DCONMS	NOF	APMX	LF	Shank
TEC040A4-11C06-50	●	4	6	4	11	50	Cylindrical
TEC050A4-13C06-50	●	5	6	4	13	50	Cylindrical
TEC060A4-13C06-50	●	6	6	4	13	50	Cylindrical
TEC070A4-16C08-63	●	7	8	4	16	63	Cylindrical
TEC080A4-19C08-63	●	8	8	4	19	63	Cylindrical
TEC090A4-19C10-72	●	9	10	4	19	72	Cylindrical
TEC100A4-22C10-72	●	10	10	4	22	72	Cylindrical
TEC120A4-26C12-73	●	12	12	4	26	73	Cylindrical
TEC140A4-26C14-83	●	14	14	4	26	83	Cylindrical
TEC160A4-32C16-92	●	16	16	4	32	92	Cylindrical
TEC180A4-32C18-100	●	18	18	4	32	100	Cylindrical
TEC200A4-38C20-104	●	20	20	4	38	104	Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I051

TECH**B6

6 flute endmill, 45° helix angle, for hardened steel up to 65 HRC



Designation	AH750	DC	DCONMS	NOF	APMX	LF	Shank
TECH060B6-16C06-57	●	6	6	6	16	57	Cylindrical
TECH060B6-16W06-57	●	6	6	6	16	57	Weldon
TECH080B6-20C08-63	●	8	8	6	20	63	Cylindrical
TECH080B6-20W08-63	●	8	8	6	20	63	Weldon
TECH100B6-22C10-72	●	10	10	6	22	72	Cylindrical
TECH100B6-22W10-72	●	10	10	6	22	72	Weldon
TECH120B6-25C12-83	●	12	12	6	25	83	Cylindrical
TECH120B6-25W12-83	●	12	12	6	25	83	Weldon
TECH160B6-32C16-92	●	16	16	6	32	92	Cylindrical
TECH160B6-32W16-92	●	16	16	6	32	92	Weldon
TECH200B6-38C20-104	●	20	20	6	38	104	Cylindrical
TECH200B6-38W20-104	●	20	20	6	38	104	Weldon

●: Line up

SOLIDMEISTER

TEC**B6

6 flute endmill, 45° helix angle, extra long neck type, for hardened steel up to 65 HRC



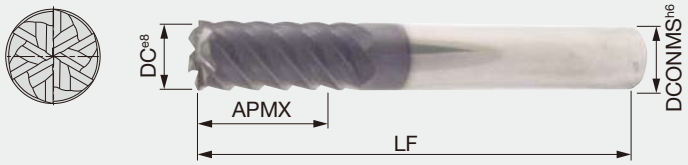
Designation	AH750	DC	DCONMS	NOF	APMX	LF	Shank
TEC060B6-26C06-70	●	6	6	6	26	70	Cylindrical
TEC080B6-36C08-90	●	8	8	6	36	90	Cylindrical
TEC100B6-46C10-100	●	10	10	6	46	100	Cylindrical
TEC120B6-56C12-110	●	12	12	6	56	110	Cylindrical
TEC160B6-66C16-130	●	16	16	6	66	130	Cylindrical
TEC200B6-76C20-140	●	20	20	6	76	140	Cylindrical
TEC250B6-92C25-180	●	25	25	6	92	180	Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I051

TEC**D6

6 flute endmill, 50° helix angle, for hardened steel up to 65 HRC



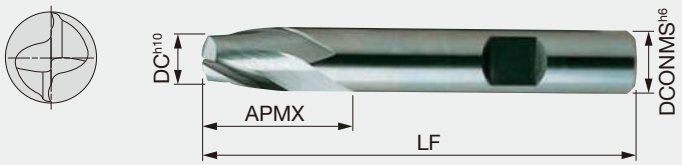
Designation	AH750	DC	DCONMS	NOF	APMX	LF	Shank
TEC060D6-13C06H57	●	6	6	6	13	57	Cylindrical
TEC080D6-20C08H63	●	8	8	6	20	63	Cylindrical
TEC100D6-22C10H72	●	10	10	6	22	72	Cylindrical
TEC120D6-25C12H83	●	12	12	6	25	83	Cylindrical
TEC140D6-30C14H83	●	14	14	6	30	83	Cylindrical
TEC160D6-32C16H92	●	16	16	6	32	92	Cylindrical
TEC200D6-38C20H104	●	20	20	6	38	104	Cylindrical

●: Line up

ECOMEISTER

TEC**A2**E

2 flute endmill, 30° helix angle, short type



Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEC020A2-03W06-E50	●	2	6	2	3	50	Weldon
TEC030A2-04W06-E50	●	3	6	2	4	50	Weldon
TEC040A2-05W06-E54	●	4	6	2	5	54	Weldon
TEC045A2-05W06-E54	●	4.5	6	2	5	54	Weldon
TEC050A2-06W06-E54	●	5	6	2	6	54	Weldon
TEC060A2-07W06-E54	●	6	6	2	7	54	Weldon
TEC080A2-09W08-E58	●	8	8	2	9	58	Weldon
TEC100A2-11W10-E66	●	10	10	2	11	66	Weldon
TEC180A2-18W18-E84	●	18	18	2	18	84	Weldon
TEC200A2-20W20-E92	●	20	20	2	20	92	Weldon

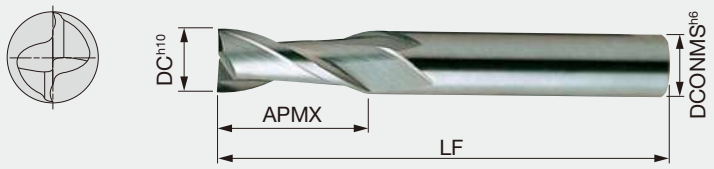
●: Line up

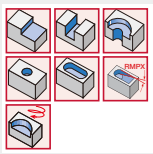
Reference pages: Standard cutting conditions → I051

ECOMEISTER

TEC**A2**E

2 flute endmill, 30° helix angle





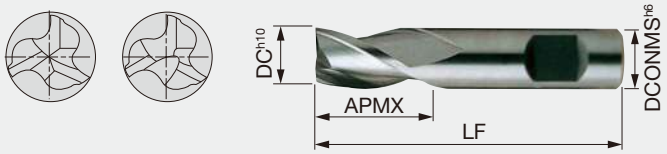
Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEC010A2-03C04-E50	●	1	4	2	3	50	Cylindrical
TEC015A2-045C04-E50	●	1.5	4	2	4.5	50	Cylindrical
TEC020A2-08C02-E32	●	2	2	2	8	32	Cylindrical
TEC025A2-08C025-E32	●	2.5	2.5	2	8	32	Cylindrical
TEC030A2-12C03-E38	●	3	3	2	12	38	Cylindrical
TEC035A2-12C035-E32	●	3.5	3.5	2	12	32	Cylindrical
TEC040A2-12C04-E50	●	4	4	2	12	50	Cylindrical
TEC050A2-14C05-E50	●	5	5	2	14	50	Cylindrical
TEC055A2-16C055-E50	●	5.5	5.5	2	16	50	Cylindrical
TEC060A2-16C06-E50	●	6	6	2	16	50	Cylindrical
TEC070A2-20C07-E60	●	7	7	2	20	60	Cylindrical
TEC080A2-20C08-E63	●	8	8	2	20	63	Cylindrical
TEC090A2-20C09-E60	●	9	9	2	20	60	Cylindrical
TEC100A2-22C10-E72	●	10	10	2	22	72	Cylindrical
TEC120A2-22C12-E70	●	12	12	2	22	70	Cylindrical
TEC140A2-25C14-E75	●	14	14	2	25	75	Cylindrical
TEC160A2-25C16-E75	●	16	16	2	25	75	Cylindrical
TEC200A2-32C20-E100	●	20	20	2	32	100	Cylindrical

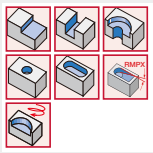
●: Line up

ECOMEISTER

TEC**A/E3**E

3 flute endmill, 30° or 38° helix angle, short type





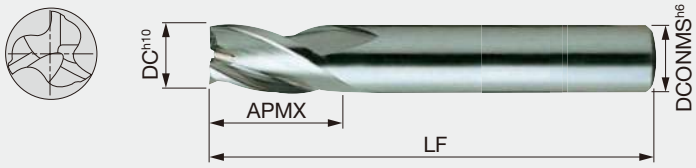
Designation	AH725	DC	DCONMS	NOF	APMX	LF	FHA	Shank
TEC020E3-04C06-E35	●	2	6	3	4	35	38°	Cylindrical
TEC025E3-05C06-E36	●	2.5	6	3	5	36	38°	Cylindrical
TEC030E3-05C06-E36	●	3	6	3	5	36	38°	Cylindrical
TEC035A3-06W06-E37	●	3.5	6	3	6	37	30°	Weldon
TEC040E3-07C06-E39	●	4	6	3	7	39	38°	Cylindrical
TEC045A3-08W06-E38	●	4.5	6	3	8	38	30°	Weldon
TEC050A3-08C06-E39	●	5	6	3	8	39	30°	Cylindrical
TEC055A3-08W06-E39	●	5.5	6	3	8	39	30°	Weldon
TEC060E3-08C06-E39	●	6	6	3	8	39	38°	Cylindrical
TEC070A3-10W08-E42	●	7	8	3	10	42	30°	Weldon
TEC080E3-11C08-E43	●	8	8	3	11	43	38°	Cylindrical
TEC090A3-11W10-E48	●	9	10	3	11	48	30°	Weldon
TEC100E3-13C10-E50	●	10	10	3	13	50	38°	Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I051

TEC**A/E3**E

3 flute endmill, 30° or 38° helix angle



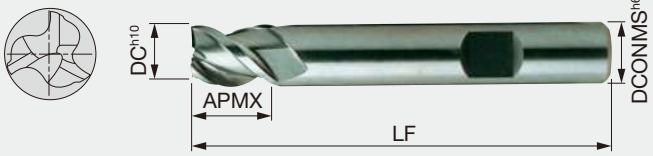
Designation	AH725	DC	DCONMS	NOF	APMX	LF	FHA	Shank
TEC020E3-08C02-E32	●	2	2	3	8	32	38°	Cylindrical
TEC030E3-12C03-E38	●	3	3	3	12	38	38°	Cylindrical
TEC040E3-12C04-E50	●	4	4	3	12	50	38°	Cylindrical
TEC050E3-14C05-E50	●	5	5	3	14	50	38°	Cylindrical
TEC060E3-16C06-E50	●	6	6	3	16	50	38°	Cylindrical
TEC070E3-20C07-E60	●	7	7	3	20	60	38°	Cylindrical
TEC080E3-20C08-E63	●	8	8	3	20	63	38°	Cylindrical
TEC090A3-20C09-E60	●	9	9	3	20	60	30°	Cylindrical
TEC100E3-22C10-E72	●	10	10	3	22	72	38°	Cylindrical
TEC120E3-22C12-E73	●	12	12	3	22	73	38°	Cylindrical
TEC140A3-25C14-E75	●	14	14	3	25	75	30°	Cylindrical
TEC160A3-25C16-E75	●	16	16	3	25	75	30°	Cylindrical

●: Line up

ECOMEISTER

TEC**B3**W

3 flute endmill, 45° helix angle, short type



Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEC020B3-03W06-50	●	2	6	3	3	50	Weldon
TEC030B3-04W06-50	●	3	6	3	4	50	Weldon
TEC040B3-05W06-54	●	4	6	3	5	54	Weldon
TEC050B3-06W06-54	●	5	6	3	6	54	Weldon
TEC060B3-07W06-54	●	6	6	3	7	54	Weldon
TEC080B3-09W08-58	●	8	8	3	9	58	Weldon
TEC100B3-11W10-66	●	10	10	3	11	66	Weldon
TEC120B3-12W12-73	●	12	12	3	12	73	Weldon
TEC140B3-14W14-75	●	14	14	3	14	75	Weldon
TEC160B3-16W16-82	●	16	16	3	16	82	Weldon
TEC200B3-20W20-92	●	20	20	3	20	92	Weldon

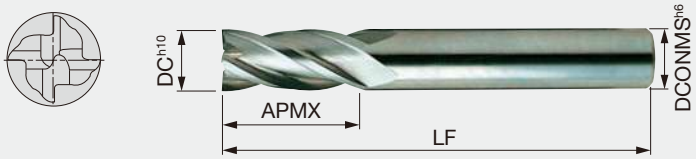
●: Line up

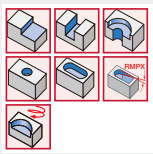
Reference pages: Standard cutting conditions → I051

ECOMEISTER

TEC**A4**E

4 flute endmill, 30° helix angle



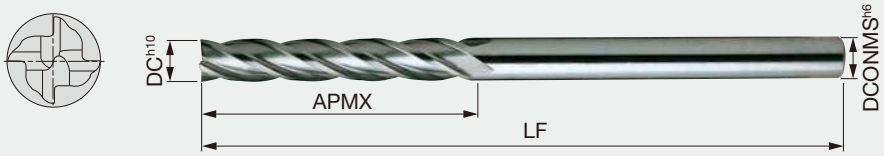


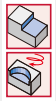
Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEC020A4-08C02-E32	●	2	2	4	8	32	Cylindrical
TEC025A4-08C025-E32	●	2.5	2.5	4	8	32	Cylindrical
TEC030A4-12C03-E38	●	3	3	4	12	38	Cylindrical
TEC040A4-12C04-E50	●	4	4	4	12	50	Cylindrical
TEC050A4-14C05-E50	●	5	5	4	14	50	Cylindrical
TEC055A4-16C055-E50	●	5.5	5.5	4	16	50	Cylindrical
TEC060A4-16C06-E50	●	6	6	4	16	50	Cylindrical
TEC070A4-20C07-E60	●	7	7	4	20	60	Cylindrical
TEC080A4-20C08-E60	●	8	8	4	20	60	Cylindrical
TEC090A4-20C09-E60	●	9	9	4	20	60	Cylindrical
TEC100A4-22C10-E72	●	10	10	4	22	72	Cylindrical
TEC120A4-22C12-E73	●	12	12	4	22	73	Cylindrical
TEC140A4-25C14-E75	●	14	14	4	25	75	Cylindrical
TEC160A4-25C16-E82	●	16	16	4	25	82	Cylindrical
TEC200A4-32C20-E104	●	20	20	4	32	104	Cylindrical

●: Line up

TEC**A4**E

4 flute endmill, 30° helix angle, extra long neck type





Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEC030A4-30C03-E75	●	3	3	4	30	75	Cylindrical
TEC040A4-30C04-E75	●	4	4	4	30	75	Cylindrical
TEC050A4-40C05-E100	●	5	5	4	40	100	Cylindrical
TEC060A4-50C06-E150	●	6	6	4	50	150	Cylindrical
TEC080A4-50C08-E150	●	8	8	4	50	150	Cylindrical
TEC100A4-60C10-E150	●	10	10	4	60	150	Cylindrical
TEC120A4-75C12-E150	●	12	12	4	75	150	Cylindrical
TEC140A4-65C14-E150	●	14	14	4	65	150	Cylindrical
TEC160A4-65C16-E150	●	16	16	4	65	150	Cylindrical
TEC200A4-65C20-E150	●	20	20	4	65	150	Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I051

SOLIDMEISTER
STANDARD CUTTING CONDITIONS

Slotting / Roughing

ISO	Workpiece material	Vc (m/min)	fz(mm/t) ø6 - ø8	fz(mm/t) ø10 - ø12	fz(mm/t) ø16 - ø20	ap (Slotting)
P	Carbon steel	140 - 180	0.025 - 0.035	0.03 - 0.045	0.04 - 0.055	1xD
P	Alloy steel	70 - 150	0.02 - 0.03	0.03 - 0.045	0.04 - 0.055	1xD
M	Stainless steel	60 - 100	0.02 - 0.035	0.03 - 0.04	0.035 - 0.045	0.5xD
K	Cast iron	80 - 180	0.02 - 0.04	0.03 - 0.05	0.04 - 0.06	1xD
N	Aluminium alloy	300 - 750	0.02 - 0.04	0.03 - 0.05	0.03 - 0.07	1xD
S	Titanium alloy	20 - 50	0.02 - 0.03	0.025 - 0.04	0.03 - 0.07	0.25xD
H	Hardened steel	20 - 30	0.01 - 0.015	0.02 - 0.045	0.04 - 0.05	0.2xD

Semi-finishing / Shouldering (ae = 0.1-0.4 x D)

ISO	Workpiece material	Vc (m/min)	fz(mm/t) ø6 - ø8	fz(mm/t) ø10 - ø12	fz(mm/t) ø16 - ø20	ap
P	Carbon steel	150 - 220	0.03 - 0.06	0.06 - 0.07	0.07 - 0.08	2xD
P	Alloy steel	70 - 160	0.02 - 0.05	0.04 - 0.065	0.045 - 0.07	2xD
M	Stainless steel	80 - 130	0.025 - 0.04	0.035 - 0.045	0.04 - 0.05	2xD
K	Cast iron	130 - 220	0.03 - 0.05	0.04 - 0.06	0.06 - 0.07	2xD
N	Aluminium alloy	350 - 850	0.04 - 0.06	0.06 - 0.08	0.08 - 0.1	2xD
S	Titanium alloy	40 - 60	0.03 - 0.04	0.035 - 0.05	0.05 - 0.08	2xD
H	Hardened steel	30 - 70	0.015 - 0.035	0.035 - 0.055	0.045 - 0.06	2xD

Finishing (feed rate depending on required accuracy) / High feed machining at low depth of cut (ae = 0.05-0.1 x D)

ISO	Workpiece material	Vc (m/min)	fz(mm/t) ø6 - ø8	fz(mm/t) ø10 - ø12	fz(mm/t) ø16 - ø20	ap
P	Carbon steel	170 - 280	0.05 - 0.07	0.07 - 0.08	0.08 - 0.1	apmax
P	Alloy steel	110 - 220	0.05 - 0.07	0.07 - 0.08	0.08 - 0.1	apmax
M	Stainless steel	100 - 160	0.03 - 0.045	0.04 - 0.05	0.045 - 0.06	apmax
K	Cast iron	180 - 280	0.035 - 0.06	0.06 - 0.065	0.065 - 0.08	apmax
N	Aluminium alloy	350 - 900	0.045 - 0.07	0.07 - 0.1	0.1 - 0.15	apmax
S	Titanium alloy	50 - 70	0.035 - 0.05	0.04 - 0.06	0.06 - 0.085	apmax
H	Hardened steel	40 - 80	0.02 - 0.04	0.04 - 0.06	0.05 - 0.07	apmax

- When the depth of cut (ae) is closer to the upper limit, please start with a lower limit value of cutting speed (Vc).
- The items with long slot (2xD or over) and the items with 5 cutting edges or more are not suitable for slotting operation.
- When using AH750, reducing cutting speed by 20 to 30% is effective for extending tool life.
- While air blow is recommended, water-soluble coolant will be good for stainless steel, titanium alloy, and heat-resistant alloy.
- When chattering occurs with low rigid machines or settings, reduce cutting speed and feed at an equal rate.
- When chattering occurs with long tool overhang, reduce cutting speed and feed by 20 to 40% (Variable/FinishMeister is recommended for such operations).
- In slotting of high hardened steel, heat-resistant alloy, and some types of stainless steel, start with ap=0.2xD and increase the value gradually while checking the status of the operation.
- In shoulder milling of high hardened steel and heat-resistant alloy, the cutting width should be started at ae=0.05xD and increase the value gradually while checking the status of the operation.
- The items with many cutting edges are good for finishing and high feed machining of small width of cut.
- VariableMeister is suitable for machining large depth of cut.
- Low feed in finishing is recommended for good surface roughness.

VARIABLEMEISTER

TEB**E4L**CF

4 flute chatter dampening ball nose endmill (2xD), 38°helix angle, variable pitch, relieved neck type, for high hardened metal



Designation	AH710	DC	DCONMS	NOF	APMX	LH	LF	Shank
TEB030E4L-06/09C06CFH57	●	3	6	4	6	9	57	Cylindrical
TEB040E4L-08/12C06CFH57	●	4	6	4	8	12	57	Cylindrical
TEB050E4L-10/15C06CFH57	●	5	6	4	10	15	57	Cylindrical
TEB060E4L-12/18C06CFH57	●	6	6	4	12	18	57	Cylindrical
TEB080E4L-16/24C08CFH63	●	8	8	4	16	24	63	Cylindrical
TEB100E4L-20/30C10CFH72	●	10	10	4	20	30	72	Cylindrical
TEB120E4L-24/36C12CFH83	●	12	12	4	24	36	83	Cylindrical
TEB160E4L-32/48C16CFH92	●	16	16	4	32	48	92	Cylindrical

●: Line up

SHREDMEISTER

TEBRF**T3/4

3 or 4 flute ball nose roughing endmill, 20° helix angle, long edge type, for hardened steel up to 55 HRC



Designation	AH750	DC	DCONMS	NOF	RE	APMX	LF	Shank
TEBRF060T3-16C06M57	●	6	6	3	3	16	57	Cylindrical
TEBRF080T3-16C08M63	●	8	8	3	4	16	63	Cylindrical
TEBRF100T4-22C10M72	●	10	10	4	5	22	72	Cylindrical
TEBRF120T4-26C12M83	●	12	12	4	6	26	83	Cylindrical
TEBRF140T4-26C14M83	●	14	14	4	7	26	83	Cylindrical
TEBRF160T4-32C16M92	●	16	16	4	8	32	92	Cylindrical
TEBRF180T4-32C18M92	●	18	18	4	9	32	92	Cylindrical
TEBRF200T4-38C20M104	●	20	20	4	10	38	104	Cylindrical

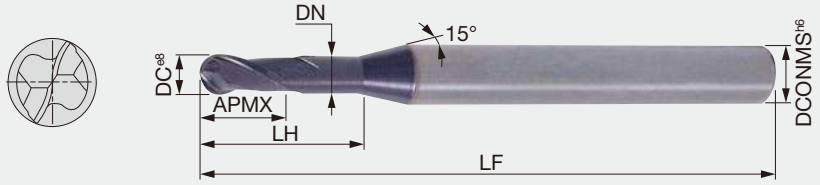
●: Line up

Reference pages: Standard cutting conditions → I059

SOLIDMEISTER

TEB**A2-**C**M

2 flute ball nose rib processing endmill, 30° helix angle, for hardened steel up to 55 HRC



Designation	AH750	DC	DCONMS	NOF	DN	APMX	LH	LF	Shank
TEB004A2-006/02C4M45	●	0.4	4	2	0.36	0.6	2	45	Cylindrical
TEB004A2-006/03C4M45	●	0.4	4	2	0.36	0.6	3	45	Cylindrical
TEB005A2-007/02C4M45	●	0.5	4	2	0.45	0.7	2	45	Cylindrical
TEB005A2-007/04C4M45	●	0.5	4	2	0.45	0.7	4	45	Cylindrical
TEB005A2-007/06C4M45	●	0.5	4	2	0.45	0.7	6	45	Cylindrical
TEB006A2-009/02C4M45	●	0.6	4	2	0.55	0.9	2	45	Cylindrical
TEB006A2-009/04C4M45	●	0.6	4	2	0.55	0.9	4	45	Cylindrical
TEB008A2-012/04C4M45	●	0.8	4	2	0.75	1.2	4	45	Cylindrical
TEB008A2-012/06C4M45	●	0.8	4	2	0.75	1.2	6	45	Cylindrical
TEB010A2-015/04C4M45	●	1	4	2	0.97	1.5	4	45	Cylindrical
TEB010A2-015/06C4M45	●	1	4	2	0.97	1.5	6	45	Cylindrical
TEB010A2-015/08C4M45	●	1	4	2	0.95	1.5	8	45	Cylindrical
TEB010A2-015/10C4M45	●	1	4	2	0.95	1.5	10	45	Cylindrical
TEB010A2-015/12C4M45	●	1	4	2	0.93	1.5	12	45	Cylindrical
TEB010A2-015/16C4M50	●	1	4	2	0.93	1.5	16	50	Cylindrical
TEB012A2-018/08C4M45	●	1.2	4	2	1.17	1.8	8	45	Cylindrical
TEB012A2-018/12C4M45	●	1.2	4	2	1.13	1.8	12	45	Cylindrical
TEB014A2-021/08C4M45	●	1.4	4	2	1.35	2.1	8	45	Cylindrical
TEB014A2-021/16C4M50	●	1.4	4	2	1.31	2.1	16	50	Cylindrical
TEB015A2-023/06C4M45	●	1.5	4	2	1.47	2.3	6	45	Cylindrical
TEB015A2-023/08C4M45	●	1.5	4	2	1.45	2.3	8	45	Cylindrical
TEB015A2-023/10C4M45	●	1.5	4	2	1.45	2.3	10	45	Cylindrical
TEB015A2-023/12C4M45	●	1.5	4	2	1.43	2.3	12	45	Cylindrical
TEB015A2-023/20C4M55	●	1.5	4	2	1.39	2.3	20	55	Cylindrical
TEB016A2-024/08C4M45	●	1.6	4	2	1.55	2.4	8	45	Cylindrical
TEB016A2-024/12C4M45	●	1.6	4	2	1.53	2.4	12	45	Cylindrical
TEB018A2-027/08C4M45	●	1.8	4	2	1.75	2.7	8	45	Cylindrical
TEB018A2-027/12C4M45	●	1.8	4	2	1.73	2.7	12	45	Cylindrical
TEB018A2-027/16C4M50	●	1.8	4	2	1.71	2.7	16	50	Cylindrical
TEB020A2-030/06C4M45	●	2	4	2	1.97	3	6	45	Cylindrical
TEB020A2-030/10C4M45	●	2	4	2	1.93	3	10	45	Cylindrical
TEB020A2-030/12C4M50	●	2	4	2	1.93	3	12	50	Cylindrical
TEB020A2-030/16C4M50	●	2	4	2	1.91	3	16	50	Cylindrical
TEB020A2-030/20C4M55	●	2	4	2	1.89	3	20	55	Cylindrical
TEB020A2-030/30C4M70	●	2	4	2	1.89	3	30	70	Cylindrical
TEB030A2-045/08C6M50	●	3	6	2	2.85	4.5	8	50	Cylindrical
TEB030A2-045/10C6M50	●	3	6	2	2.85	4.5	10	50	Cylindrical
TEB030A2-045/12C6M50	●	3	6	2	2.85	4.5	12	50	Cylindrical
TEB030A2-045/16C6M55	●	3	6	2	2.85	4.5	16	55	Cylindrical
TEB030A2-045/20C6M60	●	3	6	2	2.85	4.5	20	60	Cylindrical
TEB030A2-045/30C6M70	●	3	6	2	2.85	4.5	30	70	Cylindrical
TEB030A2-045/35C6M80	●	3	6	2	2.85	4.5	35	80	Cylindrical

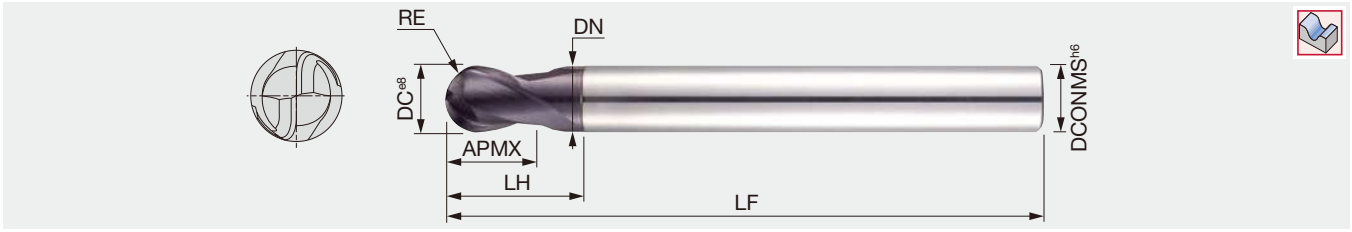
●: Line up

Reference pages: Standard cutting conditions → I059

SOLIDMEISTER

TEB**A2-**C**H

2 flute ball nose endmill, 30° helix angle, short type, for hardened steel with 55 to 70 HRC



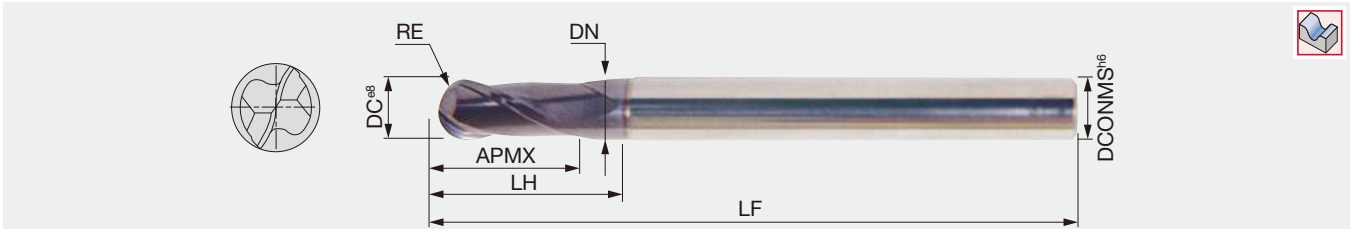
Designation	AH750	DC	DCONMS	NOF	DN	RE±0.01	APMX	LH	LF	Shank
TEB010A2-01/02C04H50	●	1	4	2	0.95	0.5	1	2.2	50	Cylindrical
TEB020A2-02/04C06H50	●	2	6	2	1.9	1	2	4	50	Cylindrical
TEB030A2-03/06C06H60	●	3	6	2	2.9	1.5	3	6	60	Cylindrical
TEB040A2-04/08C06H70	●	4	6	2	3.9	2	4	8	70	Cylindrical
TEB050A2-05/10C06H80	●	5	6	2	4.9	2.5	5	10	80	Cylindrical
TEB060A2-06/12C06H90	●	6	6	2	5.9	3	6	12	90	Cylindrical
TEB080A2-08/16C08H100	●	8	8	2	7.9	4	8	16	100	Cylindrical
TEB100A2-10/20C10H100	●	10	10	2	9.9	5	10	20	100	Cylindrical
TEB120A2-12/24C12H110	●	12	12	2	11.9	6	12	24	110	Cylindrical
TEB160A2-16/32C16H140	●	16	16	2	15.8	8	16	32	140	Cylindrical
TEB200A2-20/40C20H160	●	20	20	2	19.8	10	20	40	160	Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I059

TEB**A2-**C**M...

2 flute ball nose rib processing endmill, 30° helix angle, for hardened steel up to 65 HRC

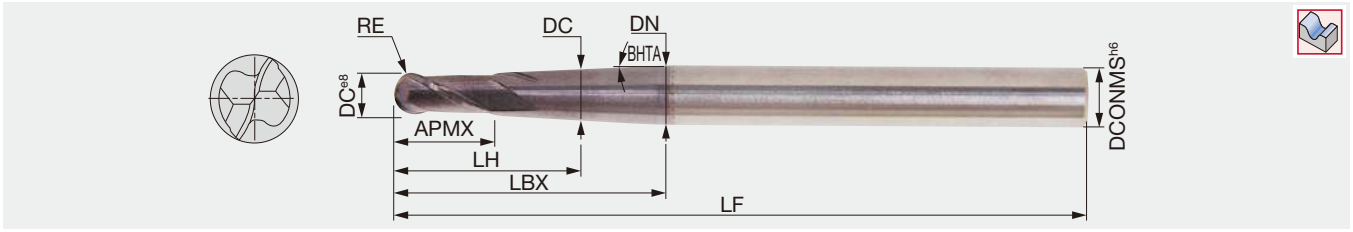


Designation	AH750	DC	DCONMS	NOF	DN	RE	APMX	LH	LF	Shank
TEB030A2-08C03M100	●	3	3	2	-	1.5	8	-	100	Cylindrical
TEB030A2-08C06M70	●	3	6	2	-	1.5	8	-	70	Cylindrical
TEB040A2-08C06M70	●	4	6	2	-	2	8	-	70	Cylindrical
TEB040A2-08C04M100	●	4	4	2	-	2	8	-	100	Cylindrical
TEB050A2-12C06M80	●	5	6	2	-	2.5	12	-	80	Cylindrical
TEB060A2-10C06M120	●	6	6	2	-	3	10	-	120	Cylindrical
TEB060A2-12/22C06M80	●	6	6	2	5.8	3	12	22	80	Cylindrical
TEB080A2-14/27C08M90	●	8	8	2	7.8	4	14	27	90	Cylindrical
TEB100A2-18/31C10M100	●	10	10	2	9.8	5	18	31	100	Cylindrical
TEB120A2-22/35C12M110	●	12	12	2	11.8	6	22	35	110	Cylindrical
TEB160A2-30/50C16M140	●	16	16	2	15.8	8	30	50	140	Cylindrical

●: Line up

TEB**A2-**C**M...

2 flute ball nose endmill, tapered neck type, for hardened steel up to 65 HRC



Designation	AH750	DC	DCONMS	NOF	DN	RE±0.01	APMX	LH	LBX	BHTA	LF	Shank
TEB010A2-02/04/3.0C06M80	●	1	6	2	5	0.5	2	4	42	3°	80	Cylindrical
TEB020A2-04/06/3.0C06M80	●	2	6	2	5.7	1	4	6	41	3°	80	Cylindrical
TEB030A2-06/08/3.0C06M70	●	3	6	2	5.6	1.5	6	8	32	3°	70	Cylindrical
TEB040A2-08/10/1.5C06M90	●	4	6	2	6	2	8	10	49	1.5°	90	Cylindrical
TEB050A2-10/12/1.5C08M110	●	5	8	2	7.6	2.5	10	12	61	1.5°	110	Cylindrical
TEB060A2-12/15/1.5C08M110	●	6	8	2	8	3	12	15	53	1.5°	110	Cylindrical
TEB080A2-14/17/1.5C10M120	●	8	10	2	10	4	14	17	55	1.5°	120	Cylindrical
TEB100A2-18/21/1.5C12M130	●	10	12	2	12	5	18	21	59	1.5°	130	Cylindrical

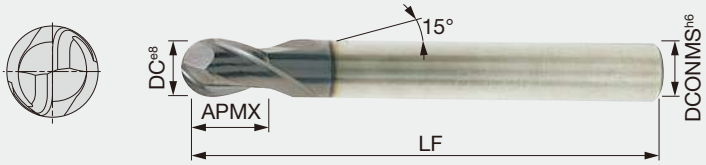
●: Line up

Reference pages: Standard cutting conditions → I059

SOLIDMEISTER

TEB**A2-**C**-...

2 flute ball nose endmill, 30° helix angle, short type



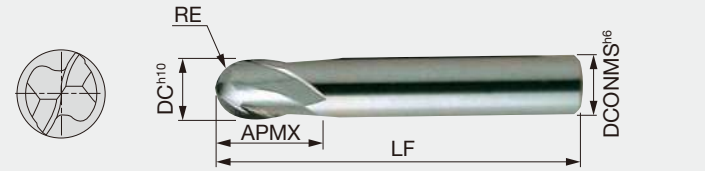
Designation	AH750	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEB030A2-05C06-57	●	●	3	6	2	5	57	Cylindrical
TEB040A2-07C06-57	●	●	4	6	2	7	57	Cylindrical
TEB050A2-08C06-57	●	●	5	6	2	8	57	Cylindrical
TEB060A2-08C06-57	●	●	6	6	2	8	57	Cylindrical
TEB080A2-11C08-63	●	●	8	8	2	11	63	Cylindrical
TEB100A2-13C10-72	●	●	10	10	2	13	72	Cylindrical
TEB120A2-14C12-83	●	●	12	12	2	14	83	Cylindrical
TEB160A2-16C16-92	●	●	16	16	2	16	92	Cylindrical
TEB200A2-20C20-104	●	●	20	20	2	20	104	Cylindrical

●: Line up

ECOMEISTER

TEB**A2**E

2 flute ball nose endmill, 30° helix angle, short type



Designation	AH725	DC	DCONMS	NOF	RE	APMX	LF	Shank
TEB020A2-04C06-E48	●	2	6	2	1	4	48	Cylindrical
TEB020A2-06C03-E38	●	2	3	2	1	6	38	Cylindrical
TEB025A2-04C06-E48	●	2.5	6	2	1.25	4	48	Cylindrical
TEB030A2-04C06-E48	●	3	6	2	1.5	4	48	Cylindrical
TEB040A2-06C06-E50	●	4	6	2	2	6	50	Cylindrical
TEB040A2-08W06-E57	●	4	6	2	2	8	57	Weldon
TEB060A2-07C06-E51	●	6	6	2	3	7	51	Cylindrical
TEB060A2-10W06-E57	●	6	6	2	3	10	57	Weldon
TEB080A2-09C08-E59	●	8	8	2	4	9	59	Cylindrical
TEB100A2-10C10-E60	●	10	10	2	5	10	60	Cylindrical
TEB120A2-14C12-E71	●	12	12	2	6	14	71	Cylindrical
TEB180A2-18C18-E76	●	18	18	2	9	18	76	Cylindrical
TEB200A2-20C20-E82	●	20	20	2	10	20	82	Cylindrical

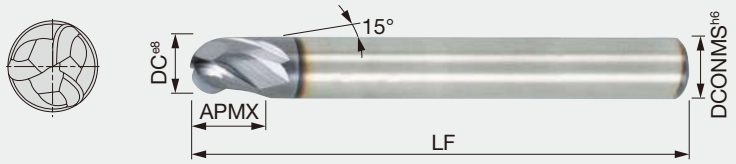
●: Line up

Reference pages: Standard cutting conditions → I059

SOLIDMEISTER

TEB**A3

3 flute ball nose endmill, 30° helix angle, short type



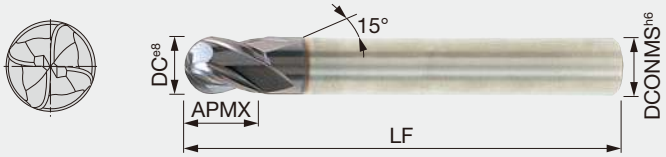
Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEB030A3-05C06-57	●	3	6	3	5	57	Cylindrical
TEB040A3-07C06-57	●	4	6	3	7	57	Cylindrical
TEB050A3-08C06-57	●	5	6	3	8	57	Cylindrical
TEB060A3-08C06-57	●	6	6	3	8	57	Cylindrical
TEB080A3-11C08-63	●	8	8	3	11	63	Cylindrical
TEB100A3-13C10-72	●	10	10	3	13	72	Cylindrical
TEB120A3-14C12-83	●	12	12	3	14	83	Cylindrical

●: Line up

SOLIDMEISTER

TEB**A4

4 flute ball nose endmill, 30° helix angle, short type



Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEB030A4-05C06-57	●	3	6	4	5	57	Cylindrical
TEB040A4-07C06-50	●	4	6	4	7	50	Cylindrical
TEB050A4-08C06-57	●	5	6	4	8	57	Cylindrical
TEB060A4-08C06-57	●	6	6	4	8	57	Cylindrical
TEB080A4-11C08-63	●	8	8	4	11	63	Cylindrical
TEB100A4-13C10-72	●	10	10	4	13	72	Cylindrical
TEB120A4-14C12-83	●	12	12	4	14	83	Cylindrical
TEB200A4-20C20-104	●	20	20	4	20	104	Cylindrical

●: Line up

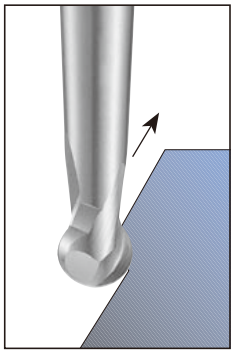
Reference pages: Standard cutting conditions → I059

Ball Nose Characteristics

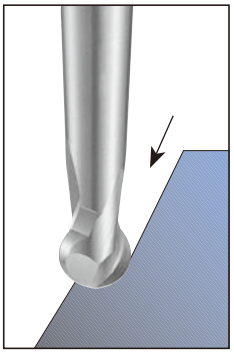
- Die & mold making, turbine manufacturing and aircraft industry, etc.
- Useful for intricate-shaped surfaces.
- Profiling of up to 70 HRC high hardened steels and alloy steels, nickel based alloys, titanium alloys.
- Ultra-fine grain carbide which increases both toughness and hardness.
- Suitable for dry and high speed cutting.
- Special sphere shaped tool geometry provides increased tool life and enables higher speed and feed operations.

Milling Features

- Operating angle 208º - 212º
- Excellent surface roughness and high milling process.
- Enables milling with high speed and feed in back milling mode.



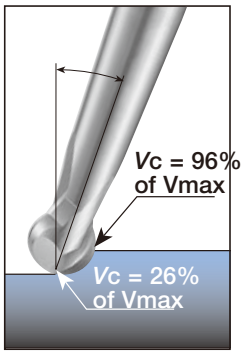
Favorable Back Milling ✓



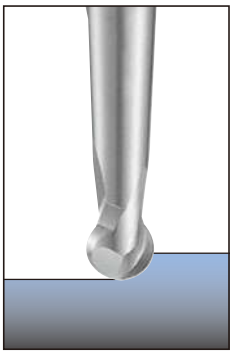
Unfavorable Drilling

Operating Recommendations

- It is recommended to machine with the tool inclined at a 15º angle. This technique eliminates cutting at nearly zero speed at the tool axis. Cutting is more efficient, and tool life substantially improves.
- Decreased cutting force.
- Excellent surface roughness and brightness.



Favorable Profiling ✓



Unfavorable Profiling

STANDARD CUTTING CONDITIONS - Ball nose type

Shape machining (roughing to semi-finishing)

ISO	Workpiece material	Vc (m/min)	fz(mm/t) ø3 - ø6	fz(mm/t) ø8 - ø12	fz(mm/t) ø16 - ø20	ap
P	Carbon steel	125 - 200	0.02 - 0.055	0.04 - 0.08	0.06 - 0.11	0.05 - 0.12xD
P	Alloy steel (30 - 40HRC)	100 - 150	0.01 - 0.035	0.03 - 0.05	0.045 - 0.06	0.04 - 0.1xD
M	Stainless steel	110	0.015 - 0.03	0.03 - 0.04	0.05 - 0.06	0.05 - 0.1xD
K	Cast iron	150 - 180	0.03 - 0.06	0.06 - 0.09	0.09 - 0.12	0.08 - 0.15xD
H	Hardened steel (- 49HRC)	70 - 80	0.008 - 0.02	0.025 - 0.03	0.03 - 0.04	0.04 - 0.08xD
H	Hardened steel (50 - 60HRC)	30 - 40	0.005 - 0.008	0.007 - 0.013	0.009 - 0.02	0.03 - 0.06xD

Finishing

ISO	Workpiece material	Vc (m/min)	fz(mm/t) ø6 - ø8	fz(mm/t) ø10 - ø12	fz(mm/t) ø16 - ø20	ap
P	Carbon steel	170 - 280	0.017 - 0.046	0.034 - 0.068	0.051 - 0.094	0.02xD
P	Alloy steel (30 - 40HRC)	120 - 165	0.008 - 0.03	0.025 - 0.043	0.038 - 0.051	0.01xD
M	Stainless steel	150	0.012 - 0.026	0.025 - 0.034	0.042 - 0.051	0.01xD
K	Cast iron	200 - 220	0.025 - 0.051	0.051 - 0.077	0.076 - 0.102	0.03xD
H	Hardened steel (- 49HRC)	100	0.007 - 0.017	0.021 - 0.026	0.025 - 0.034	0.01xD
H	Hardened steel (50 - 60HRC)	40 - 50	0.004 - 0.007	0.006 - 0.011	0.007 - 0.017	0.01xD

· When using AH750, reducing cutting speed by 20 to 30% is effective for extending tool life.
· While air blow is recommended, water-soluble coolant will be good for stainless steel, titanium alloy, and heat-resistant alloy.
· When chattering occurs with low rigid machines or settings, reduce cutting speed and feed at an equal rate.
· When chattering occurs with long tool overhang, reduce cutting speed and feed by 20 to 40% (VariableMeister is recommended for such operations).

GRADE PRIORITIES FOR SOLID CARBIDE ENDMILLS

In most cases the best performance can be attained without using coolant for specific grades. However, it should be noted that if for any reason coolant must be used, it could possibly affect tool life and sometimes cause insert failure, due to thermal shock.

Material Groups	ISO P Steel	ISO H Hard Materials	ISO M Stainless	ISO S Superalloys	ISO K Cast Iron	ISO N Non-ferrous
	Harder AH750 AH725 Tougher	Harder AH750 AH725 Tougher	Harder AH725 Tougher	Harder AH750 AH725 KS15F Tougher	Harder AH750 AH725 Tougher	Harder AH725 KS15F Tougher

■ First choise

Quick Guide TUNGMEISTER

★ : First choice
☆ : Second choice

Edge shape	Appearance	Appearance	Application	Feature	Edge shape	No. of cutting edges	Tool diameter	Slot width	CRKS	Helix angle	Workpiece material						Page
											P	M	K	N	S	H	
Square	VEH***		Semi-finishing	All round / Variable helix, Variable pitch	Corner radius	4	ø8 - ø20	-	S05 - S12	不等	★	★	★	☆	★	☆	I064
	VEE**-03...		Finishing	All round	Corner radius 0	3	ø8 - ø12	-	S05 - S08	45	★	★	★	☆	★	☆	I064
	VEE**-04..., VED**-04...		Finishing	All round	Corner radius	4	ø6 - ø20	-	S05 - S12	30/45	★	★	★	☆	★	☆	I065
	VEE**-03...		Finishing	For key way / All round	Corner radius	3	ø7.7 - ø19.7	-	S05 - S12	38	★	★	★	☆	★	☆	I065
	VEE**I...		Finishing	All round / Variable pitch	Corner radius / Chamfered	4	ø8 - ø25	-	S05 - S15	38	★	★	★	☆	★	☆	I066
	VEE**R...		Roughing	All round / Serrated cutting edge	Chamfered	4, 5, 6	ø8 - ø25	-	S05 - S15	45	★	★	★	☆	★	☆	I066
	VEE**C...		Semi-finishing	All round / Edge combination	Chamfered	4	ø8 - ø25	-	S05 - S15	45	★	★	★	☆	★	☆	I067
	VEE**A02...		Finishing	All round	Corner radius	2	ø10 - ø12	-	S06 - S08	45			☆	★			I067
	VEE**A03...		Finishing	All round	Corner radius	3	ø8 - ø20	-	S05 - S12	45			☆	★			I068
	VED**-06..., VEE**-06...		Finishing	All round	Corner radius / Chamfered	6	ø8 - ø12	-	S05 - S08	30/45/50	☆	☆	☆		★	★	I068
	VED**-08/10..., VEE**-08/10...		Finishing	All round	Corner radius / Chamfered	8, 10	ø16 - ø25	-	S10 - S15	30/50	☆	☆	☆		★	★	I069
Radius	VRB**-02.../ VRC**-02...		Finishing	All round	Corner radius	2	ø10 - ø20	-	S06 - S12	0/15	★	★	★	☆	★	☆	I069
	VRD**-06...		Finishing	All round	Corner radius	6	ø8 - ø16	-	S05 - S10	30	★	★	★	☆	★	☆	I070
High feed	VFX**-02...		Roughing	All round/ High feed	High feed	2	ø10 - ø20	-	S06 - S12	-	★	★	★	☆	★	★	I072
	VFX**-04...		Roughing	All round/ High feed	High feed	4	ø12, ø16	-	S08, S10	-	★	★	★	☆	★	★	I072
Ball	VBB**-BM...		Roughing	All round	Ball	2	ø8 - ø16	-	S05 - S10	0	★	★	★	☆	★	☆	I073
	VBB**-BG...		Semi-finishing	All round	Ball	2	ø8 - ø16	-	S05 - S10	0	★	★	★	☆	★	☆	I073
	VBD**-BG...		Finishing	All round	Ball	2	ø8 - ø16	-	S05 - S10	30	★	★	★	☆	★	☆	I073
	VBD**-BG.../ VBE**-BG...		Finishing	All round	Ball	4	ø6 - ø25	-	S05 - S15	30/38	★	★	★	☆	★	☆	I074
	VBB**-SG...		Finishing	All round / Sphere	Ball	2	ø10 - ø20	-	S05 - S15	0	★	★	★	☆	★	☆	I074

★ : First choice
☆ : Second choice

Edge shape	Appearance	Appearance	Application	Feature	Edge shape	No. of cutting edges	Tool diameter	Slot width	CRKS	Helix angle	Workpiece material						Page
											P	M	K	N	S	H	
Ball	VBE**-BGA...		Finishing	All round	Ball	2	ø8 - ø20	-	S05 - S12	45			☆	★			I074
Spot drilling and chamfering	VCP**-02...		Finishing	For chamfering / 30°, 45°, 60°	Chamfered (with center cutting edge)	2	ø8 - ø16.5	-	S05 - S10	0	★	★	★	☆	★	☆	I076
Chamfering	VCA**-04/06...		Finishing	For chamfering / 45°	Chamfered (without center cutting edge)	4, 6	ø10 - ø20	-	S06 - S12	0	★	★	★	☆	★	☆	I080
	VCW**-02...		Finishing	For chamfering / with back chamfering edge	Chamfered (with center cutting edge)	2	ø11.8	-	S06	0	★	★	★	☆	★	☆	I080
	VCR**-02...		Finishing	For chamfering / R chamfering	Chamfered (without center cutting edge)	2	ø8 - ø20	-	S05 - S12	0	★	★	★	☆	★	☆	I080
Spot drilling	VDP**-02...		Finishing	For Spot drilling	Holemaking	2	ø3.28 - ø6.46	-	S05 - S10	0	★	★	★	☆	★	☆	I076
Counter-boring	VGC**-02...		Finishing	For Counterboring	Corner radius	2	ø7.8 - ø16	-	S05 - S10	10	★	★	★	☆	★	☆	I078
Threading	VST**-3...		Finishing	For slotting	Corner radius	3	ø15.7 - ø17.7	1.2-3.17	S06	0	★	★	★	☆	★	☆	I082
	VST**-4/6...		Finishing	For slotting	Corner radius	4, 6	ø21.7 - ø27.7	0.76-10	S08, S10	0	★	★	★	☆	☆	☆	I083
	VTB**-06...		Finishing	For slotting	Corner radius	6	ø13.5 - ø25	2-8	S05 - S10	0	★	★	★	☆	★	☆	I084
	VTB** C15-06...		Finishing	For slottingt	Chamfered	6	ø13.5	2	S05	0	★	★	★	☆	★	☆	I084
Chamfering	VST**A45...		Finishing	For chamfering / 45°	Chamfered	3, 4	ø17.7 - ø21.7	3.4-5.5	S06, S08	0	★	★	★	☆	★	☆	I083
Threading	VMT***IS		Finishing	Threading	Full profile	3~6	ø10 - ø16	-	S05, S06 S08	-	★	★	★	☆	★	☆	I118
Threading	VTR***IS		Finishing	Threading	Partial profile	3, 4	ø15.7 - ø21.7	-	S06, S08	-	★	★	★	☆	★	☆	I119

TUNGMEISTER



Choose the best head-shank combination **for more efficiency!** Minimize setup time while **maximizing productivity!**

1 Wide range of cutting heads

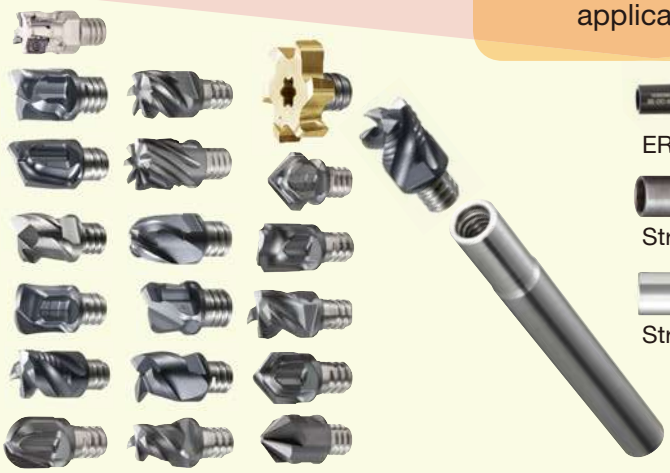
23 kinds of cutting heads are available. The head exchange is easy and highly accurate with the precision thread.

Flexible combinations

TungMeister can be applied to all kinds of endmill machining applications.

2 Three kinds of shank material

Users can choose the most suitable combination according to the machining parameters, length and rigidity required.





ER collet



Adaptor for TungFlex



Straight shank & neck



Straight shank & taper neck



Straight shank & neck (carbide)



Straight (for grooving)

Steel: For general purpose
Carbide: For highly accurate machining due to excellent rigidity
Tungsten: Reduced chattering due to high vibration damping capacity

Reduces tool changeover times drastically!!

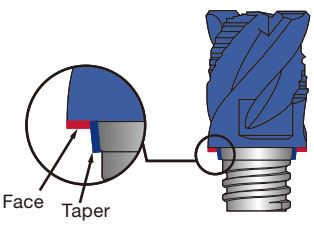
- Machine downtime is decreased considerably.
- Enables users to only change cutting head, simplifying set-ups.

Increases productivity by 90%

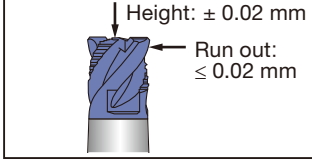


Highly accurate repeatability

- Accuracy can be maintained by touching the taper and face.
- Repeatability is guaranteed and is not a concern for machine operators.



■Head exchange accuracy



Reference pages: Items → I064 - I091

TUNGMEISTER
DESIGNATION SYSTEM

V	SS	D10	L070	S	06	-	W	-	A
①	②	③	④	⑤	⑥		⑦		⑧

Shank

① Series	
V	TungMeister

② Shank type	
SS	Straight neck
TS	Taper neck
SC	Slotting
ST	for T-Slotting
AD	TungFlex adapter
ER	ER collet holder

③ Shank diameter (mm)	
D08	ø8
D10	ø10
D12	ø12
D16	ø16
D20	ø20
D25	ø25
D32	ø32
VSC, VAD type	
100	ø10
120	ø12
130	ø13
180	ø18
210	ø21
VER type	
11	Collet size
16	Collet size

④ Length (mm)	
L070	70

⑤ Shape of shank	
S	Cylindrical
W	Weldon

⑥ Connection screw size	
05	S05
06	S06
08	S08
10	S10
12	S12
15	S15

⑦ Shank material	
S	Steel
C	Carbide
W	Tungsten

⑧ Additional feature	
A	with coolant hole
M	Thread size (TungFlex adapters)

Head

- Square endmill

V	E	E	080	L05.0	R00	-	03	S05
①	②	③	④	⑤	⑥	⑦	⑧	⑨

- Ball nose endmill

V	B	D	200	L15.0	-	BG	-	04	S12
①	②	③	④	⑤		⑥	⑦	⑧	⑨

① Series	
V	TungMeister

② Cutting edge	
E	Square
B	Ball nose
R	Radius
FX	for high feed
CA	for chamfering
CP	Spot drilling
CW	for chamfering (front and back)
CR	for R chamfering
GC	for counter boring
DP	for center drilling
S	for slotting
T	for T-slot milling
MT	Threading (full profile)
TR	Threading (partial profile)

③ Helix angle / Rake face	
B	0°
C	15°
D	30°
E	38° - 50°
F	60°
T	Land
H	Variable helix

④ Diameter (mm)	
060	ø6
200	ø20

⑤ Cutting edge length (mm)	
Length	
L07.0	7
L15.0	15
Groove width	
W1.50	1.5
W1.57	1.57
W10.0	10

⑥ Corner shape / Angle	
Nose radius	
R00	Sharp edge
R005	R0.05
R01	R0.1
R05	R0.5
R10	R1.0
Chamfer type	
C15	0.15 x 45°
C30	0.3 x 45°
C60	0.6 x 45°
Chamfering head	
A30	30°
A60	60°
R chamfering head	
R10	R1.0
R16	R1.6
Ball nose	
SG	Sphere / high precision
BM	Ball / general purpose
BG	Ball / high precision
IS**	ISO metric, pitch**
UN**	Unified, **TPI
W**	Whitworth, pitch**

⑦ Additional feature	
I	Variable pitch
A	for aluminium
R	for roughing
C	Roughing + finishing

⑧ The number of flutes	
General purpose	
02	2
06	6
Grooving head VST type	
03	3
04	4

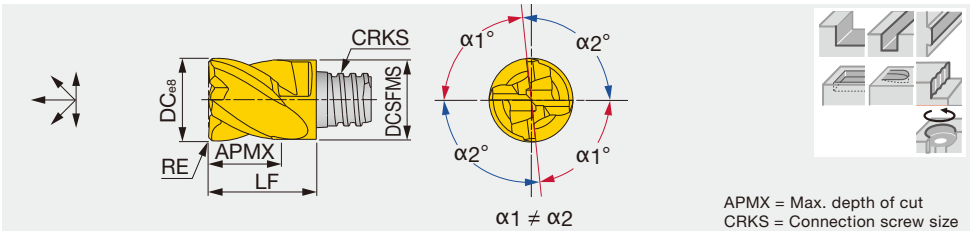
⑨ Connection screw size	
S05	S05
S06	S06
S08	S08
S10	S10
S12	S12
S15	S15

TUNGMEISTER

VEH...

4 flute square head, for general purpose (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEH080L05.0R05I04S05	●	4	35 - 39	8	7.7	5	0.5	S05	10	KEYV-S05	7
VEH080L05.0R10I04S05	●	4	35 - 39	8	7.7	5	1	S05	10	KEYV-S05	7
VEH100L07.0R05I04S06	●	4	35 - 39	10	9.7	7	0.5	S06	13	KEYV-S06	10
VEH100L07.0R10I04S06	●	4	35 - 39	10	9.7	7	1	S06	13	KEYV-S06	10
VEH120L09.0R05I04S08	●	4	35 - 39	12	11.7	9	0.5	S08	16.5	KEYV-S08	15
VEH120L09.0R10I04S08	●	4	35 - 39	12	11.7	9	1	S08	16.5	KEYV-S08	15
VEH160L12.0R05I04S10	●	4	35 - 39	16	15.3	12	0.5	S10	20.5	KEYV-S10	28
VEH160L12.0R10I04S10	●	4	35 - 39	16	15.3	12	1	S10	20.5	KEYV-S10	28
VEH200L15.0R05I04S12	●	4	35 - 39	20	18.3	15	0.5	S12	25.5	KEYV-S12	28
VEH200L15.0R10I04S12	●	4	35 - 39	20	18.3	15	1	S12	25.5	KEYV-S12	28

* Recommended clamping torque (N·m)
2 pieces per package

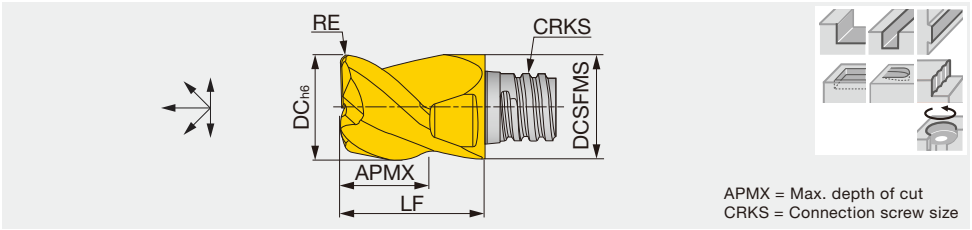
●: Line up

TUNGMEISTER

VEE**-03...

4 flute square head, for general purpose (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque*
VEE080L05.0R00-03S05	●	3	45°	8	7.7	5	S05	10	KEYV-S05	7
VEE100L07.0R00-03S06	●	3	45°	10	9.7	7	S06	13	KEYV-S06	10
VEE120L09.0R00-03S08	●	3	45°	12	11.7	9	S08	16.5	KEYV-S08	15

* Recommended clamping torque (N · m)
2 pieces per package

●: Line up

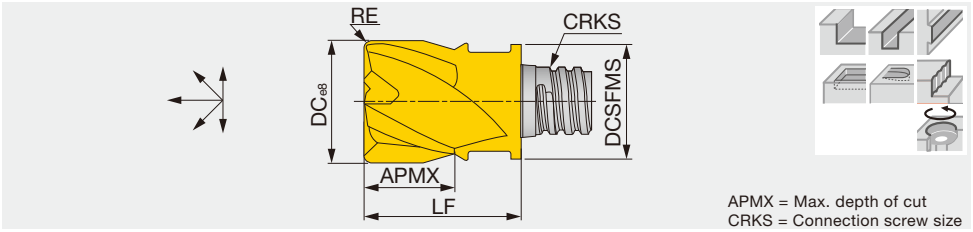
Reference pages: Standard cutting conditions → I070 - I071

TUNGMEISTER

VEE**-04..., VED**-04...

4 flute square head, for general purpose (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE060L05.0R00-04S05	●	4	45°	6	8	5	-	S05	10	KEYV-S05	7
VEE080L05.0R00-04S05	●	4	45°	8	7.7	5	-	S05	10	KEYV-S05	7
VED080L05.0R05-04S05	●	4	30°	8	7.7	5	0.5	S05	10	KEYV-S05	7
VED080L05.0R10-04S05	●	4	30°	8	7.7	5	1	S05	10	KEYV-S05	7
VED080L05.0R15-04S05	●	4	30°	8	7.7	5	1.5	S05	10	KEYV-S05	7
VEE100L07.0R00-04S06	●	4	45°	10	9.7	7	-	S06	13	KEYV-S06	10
VED100L07.0R05-04S06	●	4	30°	10	9.7	7	0.5	S06	13	KEYV-S06	10
VEE100L07.0R05-04S06	●	4	45°	10	9.7	7	0.5	S06	13	KEYV-S06	10
VED100L07.0R10-04S06	●	4	30°	10	9.7	7	1	S06	13	KEYV-S06	10
VEE100L07.0R10-04S06	●	4	45°	10	9.7	7	1	S06	13	KEYV-S06	10
VEE120L09.0R00-04S08	●	4	45°	12	11.7	9	-	S08	16.5	KEYV-S08	15
VED120L09.0R05-04S08	●	4	30°	12	11.7	9	0.5	S08	16.5	KEYV-S08	15
VEE120L09.0R05-04S08	●	4	45°	12	11.7	9	0.5	S08	16.5	KEYV-S08	15
VED120L09.0R10-04S08	●	4	30°	12	11.7	9	1	S08	16.5	KEYV-S08	15
VEE120L09.0R10-04S08	●	4	45°	12	11.7	9	1	S08	16.5	KEYV-S08	15
VEE160L12.0R00-04S10	●	4	45°	16	15.3	12	-	S10	20.5	KEYV-S10	28
VED160L12.0R05-04S10	●	4	30°	16	15.3	12	0.5	S10	20.5	KEYV-S10	28
VEE160L12.0R05-04S10	●	4	45°	16	15.3	12	0.5	S10	20.5	KEYV-S10	28
VED160L12.0R10-04S10	●	4	30°	16	15.3	12	1	S10	20.5	KEYV-S10	28
VEE160L12.0R10-04S10	●	4	45°	16	15.3	12	1	S10	20.5	KEYV-S10	28
VED160L12.0R15-04S10	●	4	30°	16	15.3	12	1.5	S10	20.5	KEYV-S10	28
VEE160L12.0R15-04S10	●	4	45°	16	15.3	12	1.5	S10	20.5	KEYV-S10	28
VED160L12.0R20-04S10	●	4	30°	16	15.3	12	2	S10	20.5	KEYV-S10	28
VEE160L12.0R20-04S10	●	4	45°	16	15.3	12	2	S10	20.5	KEYV-S10	28
VED160L12.0R30-04S10	●	4	30°	16	15.3	12	3	S10	20.5	KEYV-S10	28
VEE160L12.0R30-04S10	●	4	45°	16	15.3	12	3	S10	20.5	KEYV-S10	28
VED160L12.0R40-04S10	●	4	30°	16	15.3	12	4	S10	20.5	KEYV-S10	28
VEE160L12.0R40-04S10	●	4	45°	16	15.3	12	4	S10	20.5	KEYV-S10	28
VEE200L15.0R00-04S12	●	4	45°	20	18.3	15	-	S12	25.5	KEYV-S12	28
VED200L15.0R05-04S12	●	4	30°	20	18.3	15	0.5	S12	25.5	KEYV-S12	28
VED200L15.0R10-04S12	●	4	30°	20	18.3	15	1	S12	25.5	KEYV-S12	28
VED200L15.0R20-04S12	●	4	30°	20	18.3	15	2	S12	25.5	KEYV-S12	28
VED200L15.0R30-04S12	●	4	30°	20	18.3	15	3	S12	25.5	KEYV-S12	28

* Recommended clamping torque (N·m)
2 pieces per package

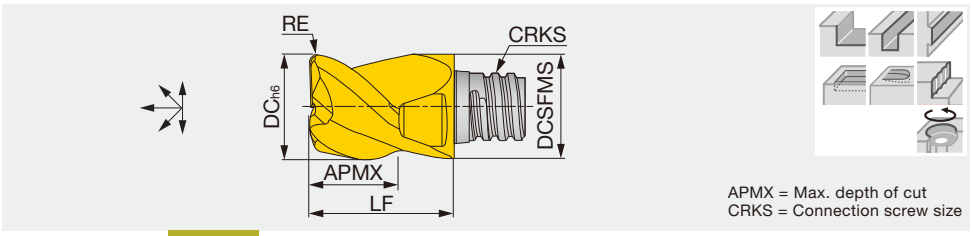
●: Line up

TUNGMEISTER

VEE**-03...

3 flute square head, for key way (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE077L04.0R02-03S05	●	3	38°	7.7	7.7	4	0.2	S05	10	KEYV-S05	7
VEE097L05.0R03-03S06	●	3	38°	9.7	9.7	5	0.3	S06	13	KEYV-S06	10
VEE117L07.0R03-03S08	●	3	38°	11.7	11.7	7	0.3	S08	16.5	KEYV-S08	15
VEE157L08.0R03-03S10	●	3	38°	15.7	15.3	8	0.3	S10	20.5	KEYV-S10	28
VEE197L12.0R04-03S12	●	3	38°	19.7	18.3	12	0.4	S12	25.5	KEYV-S12	28

* Recommended clamping torque(N・m)
2 pieces per package

●: Line up

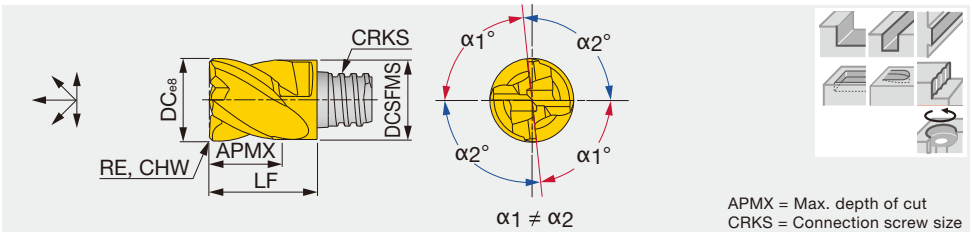
Reference pages: Standard cutting conditions → I070 - I071

TUNGMEISTER

VEE**I...

4 flute square head, variable pitch, for chatter dampening (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque*
VEE080L05.0C30I04S05	●	4	38°	8	7.7	5	-	0.3	S05	10	KEYV-S05	7
VEE100L07.0C40I04S06	●	4	38°	10	9.7	7	-	0.4	S06	13	KEYV-S06	10
VEE120L09.0C50I04S08	●	4	38°	12	11.7	9	-	0.5	S08	16.5	KEYV-S08	15
VEE160L12.0C60I04S10	●	4	38°	16	15.3	12	-	0.6	S10	20.5	KEYV-S10	28
VEE200L15.0C60I04S12	●	4	38°	20	18.3	15	-	0.6	S12	25.5	KEYV-S12	28
VEE250L22.0C60I04S15	●	4	38°	25	23.9	22	-	0.6	S15	37	KEYV-W20	40
VEE250L22.0R00I04S15	●	4	38°	25	23.9	22	-	-	S15	37	KEYV-W20	40
VEE250L22.0R05I04S15	●	4	38°	25	23.9	22	0.5	-	S15	37	KEYV-W20	40
VEE250L22.0R10I04S15	●	4	38°	25	23.9	22	1	-	S15	37	KEYV-W20	40
VEE250L22.0R20I04S15	●	4	38°	25	23.9	22	2	-	S15	37	KEYV-W20	40
VEE250L22.0R30I04S15	●	4	38°	25	23.9	22	3	-	S15	37	KEYV-W20	40

●: Line up

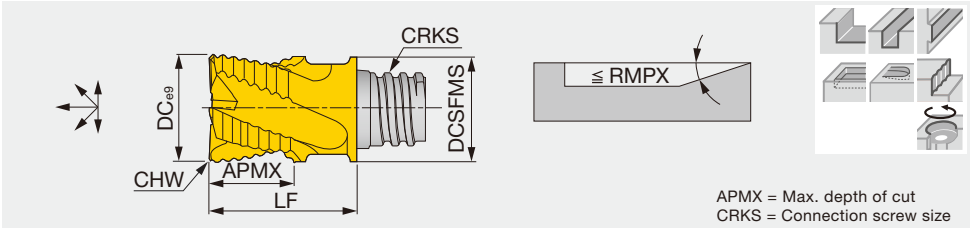
* Recommended clamping torque(N・m)
VEE080 ~ VEE200: 2 pieces per package
VEE250: 1 piece per package

TUNGMEISTER

VEE**R...

4 flute square head, variable pitch, for chatter dampening (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	CHW	CRKS	LF	RMPX	Wrench	Torque*
VEE080L05.0C25R04S05	●	4	45°	8	7.7	5	0.25	S05	10	90°	KEYV-S05	7
VEE100L07.0C30R04S06	●	4	45°	10	9.7	7	0.3	S06	13	90°	KEYV-S06	10
VEE120L09.0C35R04S08	●	4	45°	12	11.7	9	0.35	S08	16.5	90°	KEYV-S08	15
VEE160L12.0C40R05S10	●	5	45°	16	15.3	12	0.4	S10	20.5	7°	KEYV-S10	28
VEE200L15.0C40R06S12	●	6	45°	20	18.3	15	0.4	S12	25.5	3°	KEYV-S12	28
VEE250L22.0C50R06S15	●	6	45°	25	23.9	22	0.5	S15	37	3°	KEYV-W20	40

●: Line up

* Recommended clamping torque (N・m)
VEE080 ~ VEE200: 2 pieces per package
VEE250: 1 piece per package

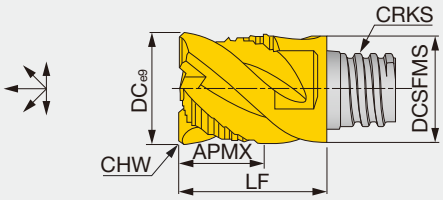
Reference pages: Standard cutting conditions → I070 - I071

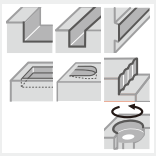
TUNGMEISTER

VEE**C...

Square head, roughing and finishing combination type (TungMeister)







APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	CHW	CRKS	LF	Wrench	Torque*
VEE080L05.0C30C04S05	●	4	45°	8	7.7	5	0.3	S05	10	KEYV-S05	7
VEE100L07.0C30C04S06	●	4	45°	10	9.7	7	0.3	S06	13	KEYV-S06	10
VEE120L09.0C40C04S08	●	4	45°	12	11.7	9	0.4	S08	16.5	KEYV-S08	15
VEE160L12.0C60C04S10	●	4	45°	16	15.3	12	0.6	S10	20.5	KEYV-S10	28
VEE200L15.0C60C04S12	●	4	45°	20	18.3	15	0.6	S12	25.5	KEYV-S12	28
VEE250L22.0C60C04S15	●	4	45°	25	23.9	22	0.6	S15	37	KEYV-W20	40

* Recommended clamping torque(N・m)
VEE080 ~ VEE200: 2 pieces per package
VEE250: 1 piece per package

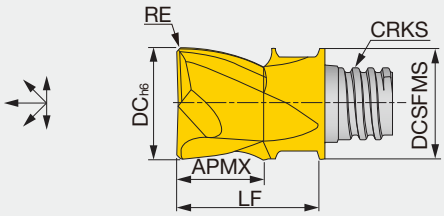
●: Line up

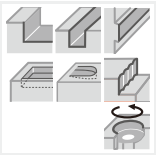
TUNGMEISTER

VEE**A02...

2 flute square head, for aluminium machining (TungMeister)







APMX = Max. depth of cut
CRKS = Connection screw size

Designation	KS15F	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE100L07.0R05A02S06	●	2	45°	10	9.7	7	0.5	S06	13	KEYV-S06	10
VEE100L07.0R10A02S06	●	2	45°	10	9.7	7	1	S06	13	KEYV-S06	10
VEE120L09.0R05A02S08	●	2	45°	12	11.7	9	0.5	S08	16.5	KEYV-S08	15

* Recommended clamping torque(N·m)
2 pieces per package

●: Line up

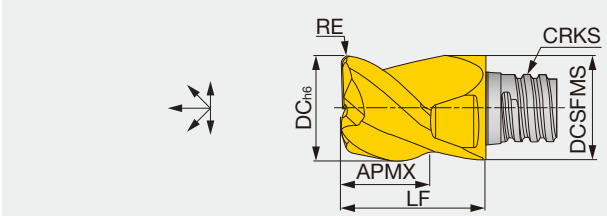
Reference pages: Standard cutting conditions → I070 - I071

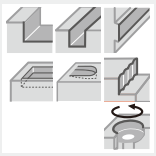
TUNGMEISTER

VEE**A03...

3 flute square head, for aluminium machining (TungMeister)







APMX = Max. depth of cut
CRKS = Connection screw size

Designation	KS15F	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE080L05.0R05A03S05	●	3	45°	8	7.7	5	0.5	S05	10	KEYV-S05	7
VEE100L06.0R05A03S06	●	3	45°	10	9.7	6	0.5	S06	13	KEYV-S06	10
VEE100L06.0R10A03S06	●	3	45°	10	9.7	6	1	S06	13	KEYV-S06	10
VEE120L08.0R05A03S08	●	3	45°	12	11.7	8	0.5	S08	16.5	KEYV-S08	15
VEE120L08.0R10A03S08	●	3	45°	12	11.7	8	1	S08	16.5	KEYV-S08	15
VEE160L10.0R00A03S10	●	3	45°	16	15.3	10	-	S10	20.5	KEYV-S10	28
VEE160L10.0R10A03S10	●	3	45°	16	15.3	10	1	S10	20.5	KEYV-S10	28
VEE160L10.0R20A03S10	●	3	45°	16	15.3	10	2	S10	20.5	KEYV-S10	28
VEE200L12.0R05A03S12	●	3	45°	20	18.3	12	0.5	S12	25.5	KEYV-S12	28
VEE200L12.0R10A03S12	●	3	45°	20	18.3	12	1	S12	25.5	KEYV-S12	28
VEE200L12.0R20A03S12	●	3	45°	20	18.3	12	2	S12	25.5	KEYV-S12	28

* Recommended clamping torque(N·m)
2 pieces per package

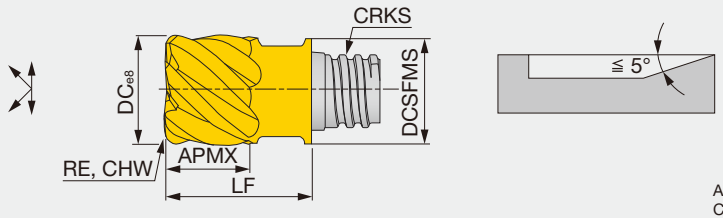
●: Line up

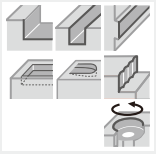
TUNGMEISTER

VED**-06..., VEE**-06...

6 flute square head, for difficult-to-cut material (TungMeister)







APMX = Max. depth of cut
CRKS = Connection screw size

Designation	Grades AH725	Grades AH750	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque*
VEE080L05.0R05-06S05	●		6	45°	8	7.7	5	0.5	-	S05	10	KEYV-S05	7
VEE080L05.0R10-06S05	●		6	45°	8	7.7	5	1	-	S05	10	KEYV-S05	7
VEE080L05.0R15-06S05	●		6	45°	8	7.7	5	1.5	-	S05	10	KEYV-S05	7
VEE080L05.0C10-06S05		●	6	50°	8	7.7	5	-	0.1	S05	10	KEYV-S05	7
VEE100L07.0R00-06S06	●		6	45°	10	9.7	7	-	-	S06	13	KEYV-S06	10
VED100L07.0R05-06S06	●		6	30°	10	9.7	7	0.5	-	S06	13	KEYV-S06	10
VEE100L07.0R05-06S06	●		6	45°	10	9.7	7	0.5	-	S06	13	KEYV-S06	10
VED100L07.0R10-06S06	●		6	30°	10	9.7	7	1	-	S06	13	KEYV-S06	10
VEE100L07.0R10-06S06	●		6	45°	10	9.7	7	1	-	S06	13	KEYV-S06	10
VED100L07.0R15-06S06	●		6	30°	10	9.7	7	1.5	-	S06	13	KEYV-S06	10
VEE100L07.0R15-06S06	●		6	45°	10	9.7	7	1.5	-	S06	13	KEYV-S06	10
VEE100L07.0C10-06S06		●	6	50°	10	9.7	7	-	0.1	S06	13	KEYV-S06	10
VEE120L09.0R00-06S08	●		6	45°	12	11.7	9	-	-	S08	16.5	KEYV-S08	15
VED120L09.0R05-06S08	●		6	30°	12	11.7	9	0.5	-	S08	16.5	KEYV-S08	15
VED120L09.0R10-06S08	●		6	30°	12	11.7	9	1	-	S08	16.5	KEYV-S08	15
VEE120L09.0R10-06S08	●		6	45°	12	11.7	9	1	-	S08	16.5	KEYV-S08	15
VEE120L09.0R15-06S08	●		6	45°	12	11.7	9	1.5	-	S08	16.5	KEYV-S08	15
VEE120L09.0C10-06S08		●	6	50°	12	11.7	9	-	0.1	S08	16.5	KEYV-S08	15

●: Line up

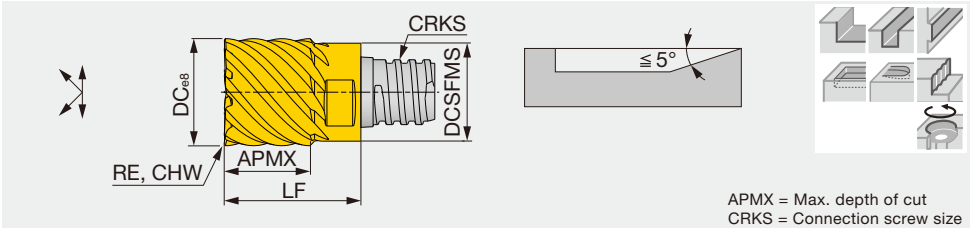
* Recommended clamping torque(N·m)
2 pieces per package

Reference pages: Standard cutting conditions → I070 - I071

TUNGMEISTER
VED**-08,10..., VEE**-08,10...

8-10 flute square head, for difficult-to-cut material (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	Grades AH725	AH750	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque*
VED160L12.0R05-08S10	●		8	30°	16	15.3	12	0.5	-	S10	20.5	KEYV-S10	28
VED160L12.0R10-08S10	●		8	30°	16	15.3	12	1	-	S10	20.5	KEYV-S10	28
VED160L12.0R16-08S10	●		8	30°	16	15.3	12	1.6	-	S10	20.5	KEYV-S10	28
VED160L12.0R20-08S10	●		8	30°	16	15.3	12	2	-	S10	20.5	KEYV-S10	28
VEE160L12.0C20-08S10		●	8	50°	16	15.3	12	-	0.2	S10	20.5	KEYV-S10	28
VED200L15.0R10-10S12	●		10	30°	20	18.3	15	1	-	S12	25.5	KEYV-S12	28
VED200L15.0R20-10S12	●		10	30°	20	18.3	15	2	-	S12	25.5	KEYV-S12	28
VEE200L15.0C20-10S12		●	10	50°	20	18.3	15	-	0.2	S12	25.5	KEYV-S12	28
VED250L22.0R10-10S15	●		10	30°	25	23.9	22	1	-	S15	37	KEYV-W20	40
VED250L22.0R20-10S15	●		10	30°	25	23.9	22	2	-	S15	37	KEYV-W20	40

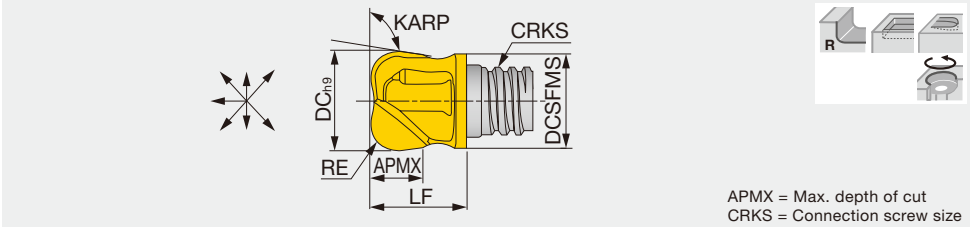
●: Line up

* Recommended clamping torque(N·m)
VED/VEE160 ~ VED/VEE200: 2 pieces per package
VED250: 1 piece per package

TUNGMEISTER
VRB**-02..., VRC**-02...

2 flute radius head (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	KARP	CRKS	LF	Wrench	Torque*
VRC100L07.0R05-02S06	●	2	15°	10	9.5	7	0.5	95°	S06	12.4	KEYV-S06	10
VRC100L07.0R10-02S06	●	2	15°	10	9.5	7	1	95°	S06	12.4	KEYV-S06	10
VRB100L06.0R20-02S06	●	2	0°	10	9.2	6	2	97°	S06	12.4	KEYV-S06	10
VRB120L05.7R30-02S06	●	2	0°	12	9.5	5.7	3	97°	S06	9.1	**KEYV-S08	10
VRB120L05.4R40-02S06	●	2	0°	12	9.5	5.4	4	97°	S06	9.1	**KEYV-S08	10
VRB120L06.3R16-02S08	●	2	0°	12	11.5	5.9	1.6	97°	S08	11.1	KEYV-S08	15
VRB120L06.2R20-02S08	●	2	0°	12	11.5	6.2	2	97°	S08	11.1	KEYV-S08	15
VRB120L06.1R25-02S08	●	2	0°	12	11.5	5.8	2.5	97°	S08	11.1	KEYV-S08	15
VRB120L06.1R30-02S08	●	2	0°	12	11.5	5.7	3	97°	S08	11.1	KEYV-S08	15
VRB120L05.9R40-02S08	●	2	0°	12	11.5	5.5	4	97°	S08	11.1	KEYV-S08	15
VRB160L08.0R50-02S10	●	2	0°	16	15.2	8	5	97°	S10	20.2	KEYV-S10	28
VRB200L11.1R30-02S12	●	2	0°	20	18.3	11	3	97°	S12	17	KEYV-S12	28
VRB200L11.5R40-02S12	●	2	0°	20	18.3	11.3	4	97°	S12	17.3	KEYV-S12	28
VRB200L11.5R50-02S12	●	2	0°	20	18.3	11.3	5	97°	S12	17.3	KEYV-S12	28
VRB200L11.4R60-02S12	●	2	0°	20	18.3	11.2	6	97°	S12	17.3	KEYV-S12	28
VRB200L11.3R80-02S12	●	2	0°	20	18.3	11.1	8	97°	S12	17.3	KEYV-S12	28

●: Line up

Note: Suitable for contouring operation.
** The wrench size for these heads is different from the ones for the other head types.
* Recommended clamping torque(N·m)
2 pieces per package

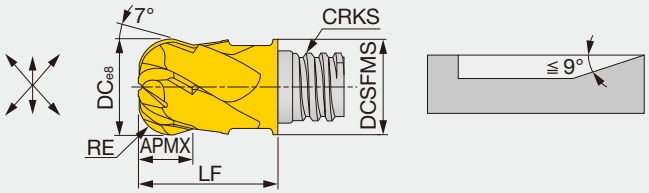
Reference pages: Standard cutting conditions → I070 - I071

TUNGMEISTER

VRD**-06...

Radius head with 6 ground flutes (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VRD080L04.0R20-06S05	●	6	30°	8	7.7	4	2	S05	10	KEYV-S05	7
VRD100L05.0R30-06S06	●	6	30°	10	9.7	5	3	S06	13	KEYV-S06	10
VRD120L07.0R40-06S08	●	6	30°	12	11.7	7	4	S08	16.5	KEYV-S08	15
VRD160L09.0R50-06S10	●	6	30°	16	15.3	9	5	S10	20.5	KEYV-S10	28

●: Line up

* Recommended clamping torque(N·m)
2 pieces per package

STANDARD CUTTING CONDITIONS

Shoulder milling (VEH, VEE: 3 flutes, VED/VEE: 4 flutes, VEE-A, VEE-I, VEE-R, VEE-C, VRB, VRC, VRD)

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t) Tool diameter: DC (mm) 6	8	10	12	16	20	25	Depth of cut *ap* (mm)	Pick feed Pf (mm)
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.	- 300 HB	80 - 180	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x øDc	0.25 x øDc
P	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.	- 300 HB	60 - 140	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x øDc	0.25 x øDc
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	60 - 120	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x øDc	0.25 x øDc
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	- 200 HB	40 - 100	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x øDc	0.25 x øDc
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.	150 - 250 HB	80 - 200	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x øDc	0.25 x øDc
K	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250 HB	80 - 200	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x Dc	0.25 x øDc
N	Aluminium alloys Si < 13%	-	200 - 700	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x øDc	0.25 x øDc
N	Aluminium alloys Si ≥13%	-	100 - 300	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x øDc	0.25 x øDc
S	Titanium alloys Ti-6Al-4V, etc.	-	40 - 80	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x øDc	0.05 x øDc
S	Heat-resistant alloys Inconel 718, etc.	-	20 - 40	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x øDc	0.05 x øDc
H	Hardened steel SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	40 - 50 HRC	40 - 80	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x øDc	0.05 x øDc
H	Hardened steel SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	20 - 60	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x øDc	0.05 x øDc

Slot milling (VEH, VEE: 3 flutes, VED/VEE: 4 flutes, VEE-A, VEE-I, VEE-R, VEE-C, VRB, VRC, VRD)

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t) Tool diameter: DC (mm) 6	8	10	12	16	20	25	Depth of cut *ap* (mm)
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.	- 300 HB	80 - 180	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x øDc
P	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.	- 300 HB	60 - 140	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x øDc
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	60 - 120	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x øDc
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	- 200 HB	40 - 100	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x øDc
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.	150 - 250 HB	80 - 200	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x øDc
K	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250 HB	80 - 200	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.10	0.5 x øDc
N	Aluminium alloys Si < 13%	-	200 - 700	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x øDc
N	Aluminium alloys Si ≥13%	-	100 - 300	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x øDc
S	Titanium alloys Ti-6Al-4V, etc.	-	40 - 80	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x øDc
S	Heat-resistant alloys Inconel 718, etc.	-	20 - 40	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x øDc
H	Hardened steel SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	40 - 50 HRC	40 - 80	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.2 x øDc
H	Hardened steel SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	20 - 60	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.2 x øDc

Shoulder milling (VED / VEE: 6 flutes, VED / VEE: 8, 10 flutes)

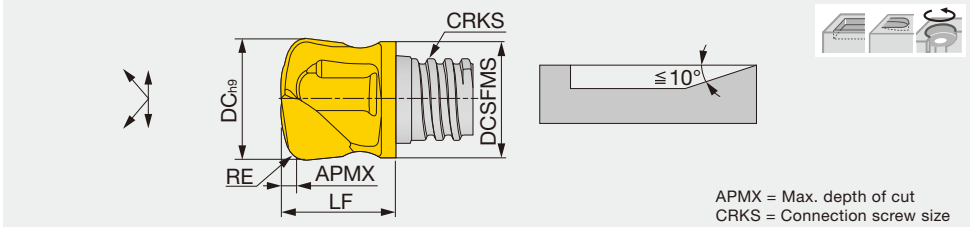
ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t) Tool diameter: DC (mm) 8	10	12	16	20	25	Depth of cut *ap* (mm)	Pick feed Pf (mm)
S	Titanium alloys Ti-6Al-4V, etc.	-	60 - 120	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x øDc	0.02 x øDc
S	Heat-resistant alloys Inconel 718, etc.	-	30 - 60	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x øDc	0.02 x øDc
H	Hardened steel SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	40 - 50 HRC	80 - 160	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x øDc	0.02 x øDc
H	Hardened steel SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	40 - 90	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x øDc	0.02 x øDc

TUNGMEISTER

VFX**-02...

2 fulte head for high feed milling (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE(1)	CRKS	LF	Wrench	Torque*	fz(mm/t)
VFX100L00.6R20-02S06	●	2	0°	10	9.6	0.6	2	S06	12.5	KEYV-S06	10	0.3-0.6
VFX120L01.0R25-02S08	●	2	0°	12	11.5	1.0	2.5	S08	11.1	KEYV-S08	15	0.5-1.0
VFX160L01.1R30-02S10	●	2	0°	16	15.2	1.1	3	S10	20	KEYV-S10	28	0.55-1.1
VFX200L01.5R33-02S12	●	2	0°	20	18.3	1.5	3.3	S12	17.5	KEYV-S12	28	0.75-1.5

(1) Corner radius for CAM programming

●: Line up

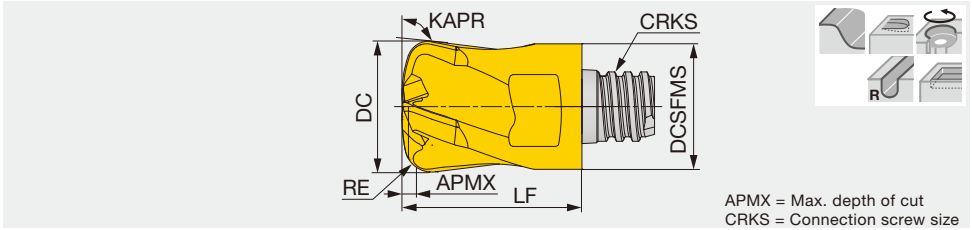
Note: Please use tapered neck shank or tungsten shank for VFX head.
* Recommended clamping torque (N·m)
2 pieces per package

TUNGMEISTER

VFX**-04...

4 fulte head for high feed milling (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	KAPR	CRKS	LF	Wrench	Torque*	fz(mm/t)
VFX120L0.60R18H04S08	●	4	20°	12	11.5	0.6	1.8	97°	S08	16.5	KEYV-S08	15	0.16-0.67
VFX160L0.80R22H04S10	●	4	20°	16	15.4	0.8	2.2	97°	S10	20.5	KEYV-S10	28	0.2-0.75

* Recommended clamping torque (N·m)
2 pieces per package

●: Line up

STANDARD CUTTING CONDITIONS

High feed milling (VFX)

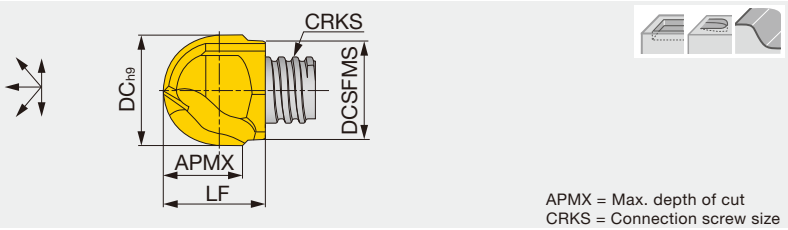
ISO	Workpiece material	Hardness	Cutting speed *Vc* (m/min)	ø10		ø12		ø16		ø20		Width of cut *ae* (mm)
				Feed per tooth *fz* (mm/t)	Depth of cut *ap* (mm)	Feed per tooth *fz* (mm/t)	Depth of cut *ap* (mm)	Feed per tooth *fz* (mm/t)	Depth of cut *ap* (mm)	Feed per tooth *fz* (mm/t)	Depth of cut *ap* (mm)	
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.	- 300 HB	100 - 200	0.3 - 0.7		0.4 - 0.8		0.5 - 0.9		0.6 - 1		0.6 x ø*Dc*
P	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.	- 300 HB	80 - 180	0.2 - 0.6		0.3 - 0.7		0.4 - 0.8		0.5 - 0.9		0.6 x ø*Dc*
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	80 - 160	0.2 - 0.5		0.2 - 0.5		0.3 - 0.6		0.3 - 0.6		0.6 x ø*Dc*
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	- 200 HB	60 - 100	0.2 - 0.6		0.2 - 0.6		0.3 - 0.7		0.3 - 0.7		0.6 x ø*Dc*
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.	150 - 250 HB	100 - 220	0.3 - 0.7		0.4 - 0.8		0.5 - 0.9		0.6 - 1		0.6 x ø*Dc*
K	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250 HB	100 - 220	0.2 - 0.6		0.3 - 0.7		0.4 - 0.8		0.5 - 0.9		0.6 x ø*Dc*
S	Titanium alloys Ti-6Al-4V, etc.	-	40 - 80	0.2 - 0.5		0.2 - 0.5		0.2 - 0.6		0.2 - 0.6		0.25 x ø*Dc*
S	Heat-resistant alloys Inconel 718, etc.	-	20 - 40	0.1 - 0.3		0.1 - 0.3		0.1 - 0.3		0.1 - 0.3		0.25 x ø*Dc*
H	Hardened steel SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	40 - 50 HRC	40 - 80	0.2 - 0.4		0.2 - 0.4		0.3 - 0.5		0.3 - 0.5		0.45 x ø*Dc*
H	Hardened steel SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	20 - 60	0.1 - 0.2		0.1 - 0.2		0.1 - 0.3		0.1 - 0.3		0.25 x ø*Dc*

Feed per tooth should not exceed the maximum value for each product.

TUNGMEISTER
VBB**-BM...

2 flute ball nose head for roughing (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque*
VBB080L08.0-BM-02S05	●	2	0°	8	7.6	8	S05	10	KEYV-S05	7
VBB100L10.0-BM-02S06	●	2	0°	10	9.5	10	S06	12.4	KEYV-S06	10
VBB120L12.0-BM-02S08	●	2	0°	12	11.5	11.5	S08	15.3	KEYV-S08	15
VBB160L16.0-BM-02S10	●	2	0°	16	15.2	16	S10	19.1	KEYV-S10	28

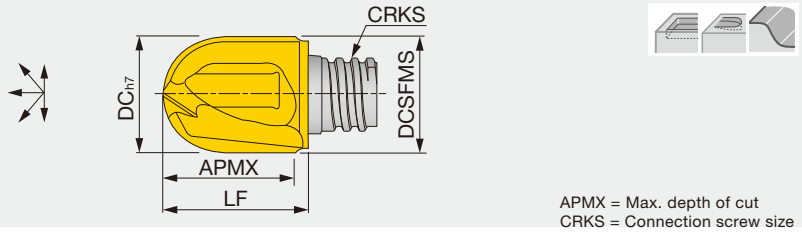
●: Line up

* Recommended clamping torque(N·m)
2 pieces per package

TUNGMEISTER
VBB**-BG...

2 flute ball nose head for semi-finishing (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH750	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque*
VBB080L08.0-BG-02S05	●	2	0°	8	7.6	8	S05	10	KEYV-S05	7
VBB100L10.0-BG-02S06	●	2	0°	10	9.6	10	S06	12.4	KEYV-S06	10
VBB120L12.0-BG-02S08	●	2	0°	12	11.5	12	S08	15.3	KEYV-S08	15
VBB160L16.0-BG-02S10	●	2	0°	16	15.2	16	S10	19.1	KEYV-S10	28

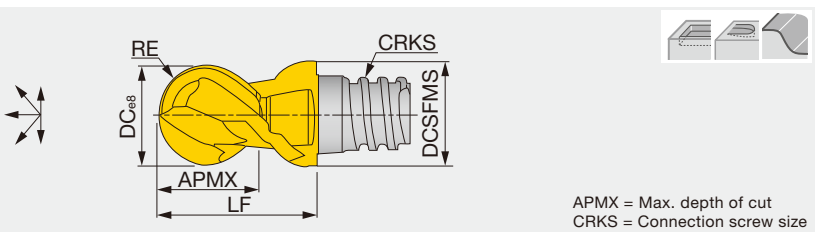
●: Line up

* Recommended clamping torque(N·m)
2 pieces per package

TUNGMEISTER
VBD**-BG...

Ball nose head with 2 ground flutes for finishing (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VBD080L05.0-BG-02S05	●	2	30°	8	7.7	5	3.982(1)	S05	10	KEYV-S05	7
VBD100L07.0-BG-02S06	●	2	30°	10	9.7	7	4.982(1)	S06	13	KEYV-S06	10
VBD120L09.0-BG-02S08	●	2	30°	12	11.7	9	5.978(2)	S08	16.5	KEYV-S08	15
VBD160L09.5-BG-02S10	●	2	30°	16	15.3	9	7.978(2)	S10	20.5	KEYV-S10	28

●: Line up

RE tolerance: (1) ± 0.010 (2) ± 0.012
* Recommended clamping torque(N·m)
2 pieces per package

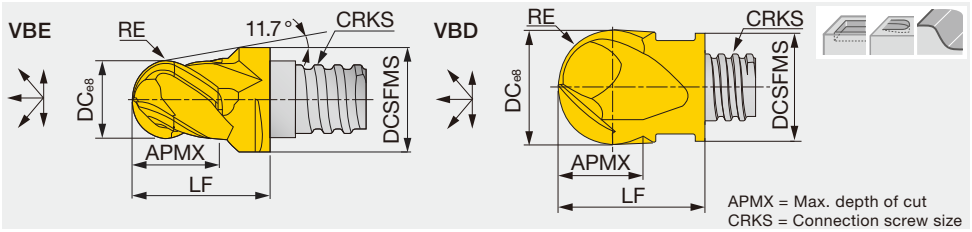
Reference pages: Standard cutting conditions → I075

TUNGMEISTER

VBD**-BG..., VBE**-BG...

Ball nose head with 4 ground flutes for finishing (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VBE060L05.5-BG-04S05	●	4	38°	6	8	5.5	2.987(1)	S05	10	KEYV-S05	7
VBD080L05.0-BG-04S05	●	4	30°	8	7.7	5	3.982(1)	S05	10	KEYV-S05	7
VBD100L07.0-BG-04S06	●	4	30°	10	9.7	7	4.982(1)	S06	13	KEYV-S06	10
VBD120L09.0-BG-04S08	●	4	30°	12	11.7	9	5.978(2)	S08	16.5	KEYV-S08	15
VBD160L12.0-BG-04S10	●	4	30°	16	15.3	12	7.978(2)	S10	20.5	KEYV-S10	28
VBD200L15.0-BG-04S12	●	4	30°	20	18.3	15	9.972(2)	S12	25.5	KEYV-S12	28
VBD250L22.0-BG-04S15	●	4	30°	25	23.9	22	12.470(3)	S15	37	KEYV-W20	40

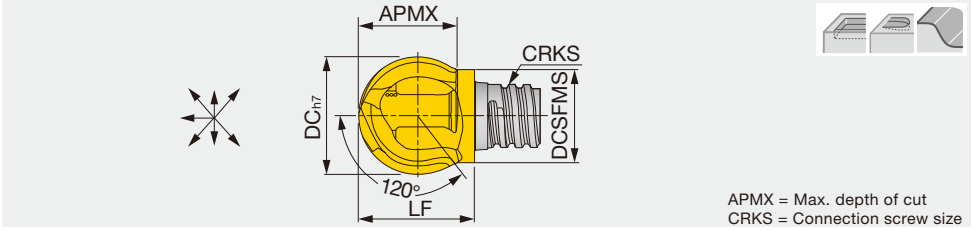
RE tolerance: **(1) ± 0.01 (2) ± 0.012 (3) ± 0.02**
●: Line up
* Recommended clamping torque(N·m)
VBE060/VBD080 ~ VBD200: 2 pieces per package, VBD250: 1 piece per package

TUNGMEISTER

VBB**-SG...

2 flute ball nose head, with spherical designed edge (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque*
VBB100L08.0-SG-02S05	●	2	0°	10	7.6	7.5	S05	10	KEYV-S05	7
VBB120L09.6-SG-02S06	●	2	0°	12	9.5	9	S06	11.6	*KEYV-S08	10
VBB160L12.9-SG-02S08	●	2	0°	16	12.2	12	S08	15.4	*KEYV-S10	15
VBB200L16.1-SG-02S10	●	2	0°	20	15.2	15	S10	18.4	KEYV-S10	28

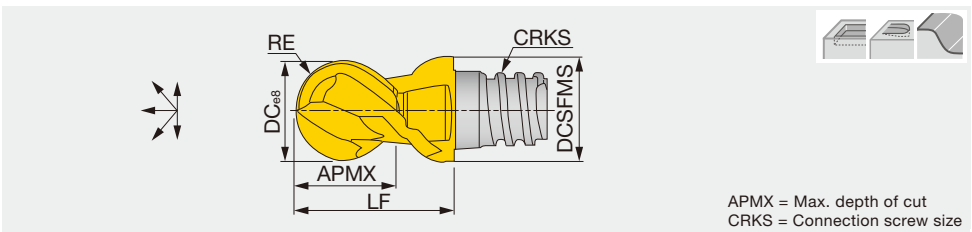
Also capable of pull cutting on the vertical wall
●: Line up
* The wrench size for these heads is different from the ones for the other head types.
* Recommended clamping torque(N·m) 2 pieces per package

TUNGMEISTER

VBE**-BGA...

Ball nose head with 2 ground flutes for aluminium machining (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	KS15F	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VBE080L05.0-BGA02S05	●	2	45°	8	7.7	5	3.982(1)	S05	10	KEYV-S05	7
VBE100L07.0-BGA02S06	●	2	45°	10	9.7	7	4.982(1)	S06	13	KEYV-S06	10
VBE120L09.0-BGA02S08	●	2	45°	12	11.7	9	5.987(2)	S08	16.5	KEYV-S08	15
VBE160L12.0-BGA02S10	●	2	45°	16	15.3	12	7.978(2)	S10	20.5	KEYV-S10	28
VBE200L15.0-BGA02S12	●	2	45°	20	18.3	15	9.972(2)	S12	25.5	KEYV-S12	28

RE tolerance: **(1) ± 0.01 (2) ± 0.012** * Recommended clamping torque(N·m) 2 pieces per package
●: Line up

Reference pages: Standard cutting conditions → I075

STANDARD CUTTING CONDITIONS

Standard cutting conditions: Roughing (VBB-BM / BG / SG, VBD-BG, VBE-BGA)

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (m/min)	Feed per tooth: *fz* (mm/t) Tool diameter: DC (mm) 6	8	10	12	16	20	25	Depth of cut *ap* (mm)	Pick feed *Pf* (mm)
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.	- 300 HB	100 - 200	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x øDc	0.4 x øDc
	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.	- 300 HB	80 - 180	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x øDc	0.4 x øDc
	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	80 - 160	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x øDc	0.4 x øDc
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	- 200 HB	60 - 100	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x øDc	0.4 x øDc
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.	150 - 250 HB	100 - 220	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x øDc	0.4 x øDc
	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250 HB	100 - 220	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x øDc	0.4 x øDc
N	Aluminium alloys Si < 13%	-	200 - 700	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x øDc	0.4 x øDc
	Aluminium alloys Si ≥13%	-	100 - 300	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x øDc	0.4 x øDc
S	Titanium alloys Ti-6Al-4V, etc.	-	40 - 80	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x øDc	0.2 x øDc
	Heat-resistant alloys Inconel 718, etc.	50 - 60 HRC	20 - 40	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x øDc	0.2 x øDc
H	Hardened steel SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	-	40 - 80	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x øDc	0.2 x øDc
	Hardened steel SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	20 - 60	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x øDc	0.2 x øDc

Standard cutting conditions: Profiling for semi-finishing and finishing (VBB-BM / BG / SG, VBD-BG, VBE-BGA)

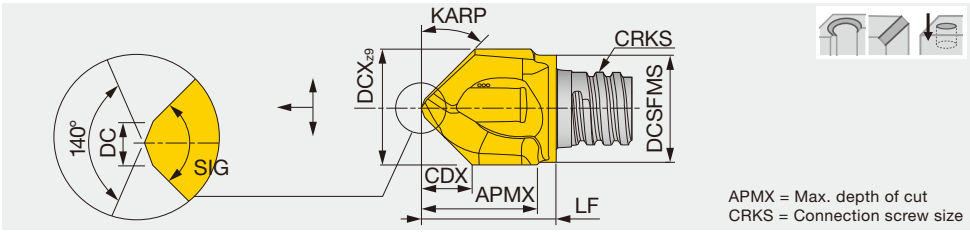
ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (m/min)	Feed per tooth: *fz* (mm/t) Tool diameter: DC (mm) 6	8	10	12	16	20	25	Depth of cut *ap* (mm)	Pick feed *Pf* (mm)
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.	- 300 HB	120 - 250	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x øDc	0.15 x øDc
	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.	- 300 HB	100 - 220	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x øDc	0.15 x øDc
	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	100 - 200	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x øDc	0.15 x øDc
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	- 200 HB	80 - 120	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x øDc	0.15 x øDc
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.	150 - 250 HB	120 - 280	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x øDc	0.15 x øDc
	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250 HB	120 - 280	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x øDc	0.15 x øDc
N	Aluminium alloys Si < 13%	-	300 - 1000	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x øDc	0.15 x øDc
	Aluminium alloys Si ≥13%	-	150 - 400	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x øDc	0.15 x øDc
S	Titanium alloys Ti-6Al-4V, etc.	-	50 - 100	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.08 x øDc	0.1 x øDc
	Heat-resistant alloys Inconel 718, etc.	50 - 60 HRC	30 - 50	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.08 x øDc	0.1 x øDc
H	Hardened steel SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	-	50 - 100	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.08 x øDc	0.1 x øDc
	Hardened steel SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	30 - 80	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.08 x øDc	0.1 x øDc

TUNGMEISTER

VCP**-02...

2 flute head, for spot drilling and chamfering (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	SIG	FHA	DCX	DCSFMS	APMX	CDX	CRKS	LF	DC	KARP	Wrench	Torque*
VCP100L09.5A30-02S06	●	2	60°	0°	10	9.5	8.5	7.5	S06	11.75	1.5	60°	KEYV-S06	10
VCP120L12.0A30-02S08	●	2	60°	0°	12	11.5	11	9.2	S08	15.4	1.5	60°	KEYV-S08	15
VCP160L15.0A30-02S10	●	2	60°	0°	16	15.2	16	12	S10	20.2	2.5	60°	KEYV-S10	28
VCP080L07.7A45-02S05	●	2	90°	0°	8	7.6	7.5	3.7	S05	9.75	1	45°	KEYV-S05	7
VCP083L07.9A45-02S05	●	2	90°	0°	8.3	7.6	7.5	3.8	S05	10	1	45°	KEYV-S05	7
VCP100L09.0A45-02S06	●	2	90°	0°	10	9.5	9.5	4.4	S06	11.75	1.5	45°	KEYV-S06	10
VCP104L09.0A45-02S06	●	2	90°	0°	10.4	9.5	9.5	4.6	S06	11.75	1.5	45°	KEYV-S06	10
VCP120L12.0A45-02S08	●	2	90°	0°	12	11.5	11.5	5.4	S08	15.4	1.5	45°	KEYV-S08	15
VCP124L12.0A45-02S08	●	2	90°	0°	12.4	11.5	11.5	5.6	S08	15.4	1.5	45°	KEYV-S08	15
VCP160L15.0A45-02S10	●	2	90°	0°	16	15.2	15	7.1	S10	18.8	1.5	45°	KEYV-S10	28
VCP165L15.0A45-02S10	●	2	90°	0°	16.5	15.2	15	7.1	S10	18.8	1.5	45°	KEYV-S10	28
VCP100L09.5A60-02S06	●	2	120°	0°	10	9.5	9.5	2.7	S06	12.7	1.5	30°	KEYV-S06	10
VCP120L12.0A60-02S08	●	2	120°	0°	12	11.5	11.5	3.3	S08	15.2	1.5	30°	KEYV-S08	15
VCP160L15.5A60-02S10	●	2	120°	0°	16	15.2	16	4.4	S10	19.9	1.5	30°	KEYV-S10	28

●: Line up

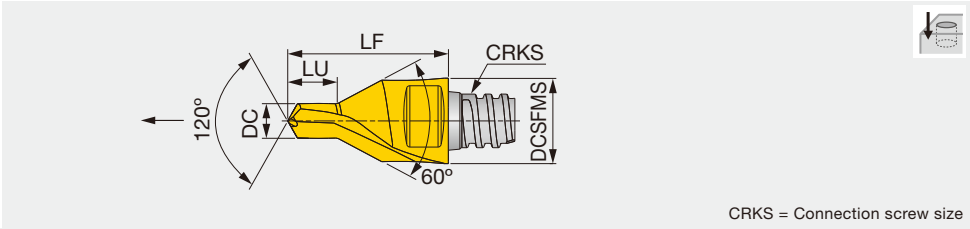
Minimum hole diameter ø1.5 mm
* Recommended clamping torque(N·m)
2 pieces per package

TUNGMEISTER

VDP**-02...

2 flute head, with chamfered edge, for spot drilling (TungMeister)





CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	LU	CRKS	LF	Wrench	Torque*
VDP328L04.6A30-02S05	●	2	0°	3.28	8	4.6	S05	15	KEYV-S05	7
VDP412L05.9A30-02S06	●	2	0°	4.12	10	5.9	S06	19	KEYV-S06	10
VDP513L07.2A30-02S08	●	2	0°	5.13	12	7.2	S08	23	KEYV-S08	15
VDP646L08.9A30-02S10	●	2	0°	6.46	16	8.9	S10	28	KEYV-S10	28

●: Line up

* Recommended clamping torque(N·m)
2 pieces per package

Reference pages: Standard cutting conditions → I077

STANDARD CUTTING CONDITIONS

Drilling (VCP, VDP)

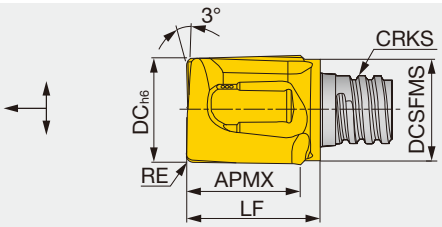
ISO	Workpiece material		Hardness	Cutting speed *Vc* (m/min)	Feed: *f* (mm/rev)				
					VDP328	VDP412	VDP513	VDP646	VCP
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.		- 300 HB	40 - 80	0.04 - 0.08	0.05 - 0.10	0.05 - 0.10	0.06 - 0.12	0.06 - 0.12
P	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.		- 300 HB	30 - 50	0.04 - 0.08	0.05 - 0.10	0.05 - 0.10	0.06 - 0.12	0.06 - 0.12
P	Prehardened steel PX5, NAK80, etc.		30 - 40 HRC	20 - 30	0.04 - 0.08	0.05 - 0.10	0.05 - 0.10	0.06 - 0.12	0.06 - 0.12
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.		- 200 HB	15 - 25	0.04 - 0.08	0.05 - 0.10	0.05 - 0.10	0.06 - 0.12	0.06 - 0.12
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.		150 - 250 HB	60 - 100	0.05 - 0.09	0.07 - 0.12	0.07 - 0.12	0.12 - 0.18	0.12 - 0.18
K	Ductile cast irons FCD400, etc. 400-15S, etc.		150 - 250 HB	60 - 100	0.04 - 0.08	0.05 - 0.10	0.05 - 0.10	0.10 - 0.15	0.10 - 0.15
S	Titanium alloys Ti-6Al-4V, etc.		-	15 - 25	0.04 - 0.07	0.04 - 0.07	0.04 - 0.07	0.04 - 0.07	0.04 - 0.07
S	Heat-resistant alloys Inconel 718, etc.		-	10 - 20	0.03 - 0.06	0.03 - 0.06	0.03 - 0.06	0.03 - 0.06	0.03 - 0.06
H	Hardened steel	SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	40 - 50 HRC	15 - 25	0.04 - 0.07	0.04 - 0.07	0.04 - 0.07	0.04 - 0.07	0.04 - 0.07
H	Hardened steel	SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	10 - 20	0.03 - 0.06	0.03 - 0.06	0.03 - 0.06	0.03 - 0.06	0.03 - 0.06

TUNGMEISTER

VGC**-02...

2 flute head, for counterboring (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VGC078L08.0R02-02S05	●	2	10°	7.8	7.6	7.7	0.2	S05	10	KEYV-S05	7
VGC080L08.0R04-02S05	●	2	10°	8	7.6	7.7	0.4	S05	10	KEYV-S05	7
VGC080L08.0R10-02S05	●	2	10°	8	7.6	7.7	1	S05	10	KEYV-S05	7
VGC080L08.0R20-02S05	●	2	10°	8	7.6	7.7	2	S05	10	KEYV-S05	7
VGC098L09.0R03-02S06	●	2	10°	9.8	9.5	9	0.3	S06	12.4	KEYV-S06	10
VGC100L09.0R04-02S06	●	2	10°	10	9.5	9	0.4	S06	12.4	KEYV-S06	10
VGC100L09.0R10-02S06	●	2	10°	10	9.5	9	1	S06	12.4	KEYV-S06	10
VGC100L09.0R20-02S06	●	2	10°	10	9.5	9	2	S06	12.4	KEYV-S06	10
VGC117L10.0R03-02S08	●	2	10°	11.7	11.5	10	0.3	S08	14.2	KEYV-S08	15
VGC120L10.0R04-02S08	●	2	10°	12	11.5	10	0.4	S08	14.2	KEYV-S08	15
VGC120L10.0R10-02S08	●	2	10°	12	11.5	10	1	S08	14.2	KEYV-S08	15
VGC120L10.0R20-02S08	●	2	10°	12	11.5	10	2	S08	14.2	KEYV-S08	15
VGC157L15.0R03-02S10	●	2	10°	15.7	15.2	15	0.3	S10	19	KEYV-S10	28
VGC160L15.0R04-02S10	●	2	10°	16	15.2	14.9	0.4	S10	19	KEYV-S10	28
VGC160L15.0R08-02S10	●	2	10°	16	15.2	14.9	0.8	S10	19	KEYV-S10	28

Also capable of drilling with step feed (Max. depth = ap x 0.5)
* Recommended clamping torque(N·m)
2 pieces per package

●: Line up

Reference pages: Standard cutting conditions → I079

Counter boring (VGC)

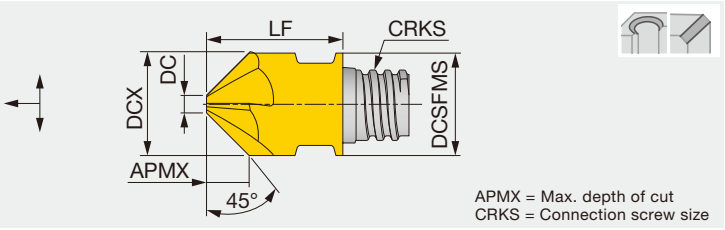
ISO	Workpiece material		Hardness	Cutting speed *Vc* (m/min)	Feed per tooth *fz*(mm/t)
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.		- 300 HB	40 - 80	0.04 - 0.08
	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.		- 300 HB	30 - 50	0.04 - 0.08
	Prehardened steel PX5, NAK80, etc.		30 - 40 HRC	20 - 30	0.04 - 0.08
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.		- 200 HB	15 - 25	0.04 - 0.08
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.		150 - 250 HB	60 - 100	0.05 - 0.09
	Ductile cast irons FCD400, etc. 400-15S, etc.		150 - 250 HB	60 - 100	0.04 - 0.08
S	Titanium alloys Ti-6Al-4V, etc.		-	15 - 25	0.04 - 0.07
	Heat-resistant alloys Inconel 718, etc.		-	10 - 20	0.03 - 0.06
H	Hardened steel	SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	40 - 50 HRC	15 - 25	0.04 - 0.07
		SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	10 - 20	0.03 - 0.06

TUNGMEISTER

VCA**-04,06...

4 or 6 flute head, without center cutting edge, for countersinking and chamfering (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DCX	DCSFMS	APMX	DC	CRKS	LF	Wrench	Torque*
VCA100L04.0A45-04S06	●	4	0°	10	10	4	1.95	S06	13	KEYV-S06	10
VCA120L05.0A45-04S08	●	4	0°	12	12	5	1.95	S08	16.5	KEYV-S08	15
VCA127L05.3A45-04S08	●	4	0°	12.7	12.7	5.3	1.98	S08	16.5	KEYV-S08	15
VCA160L06.5A45-06S10	●	6	0°	16	16	6.5	3	S10	20.3	KEYV-S10	28
VCA200L07.5A45-06S12	●	6	0°	20	18.3	7.5	5	S12	25.5	KEYV-S12	28

* Recommended clamping torque(N·m)
2 pieces per package

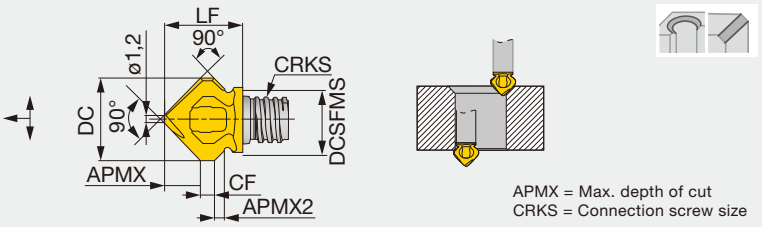
●: Line up

TUNGMEISTER

VCW**-02...

2 flute head, for front and back chamfering (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	APMX2	CF	CRKS	LF	Wrench	Torque*
VCW118L05.0A45-02S06	●	2	0°	11.8	9.3	5	1.2	2	S06	11.2	KEYV-S08	10

Also capable of reverse chamfering
* The wrench size for these heads is different from the ones for the other head types.
* Recommended clamping torque(N·m)
2 pieces per package

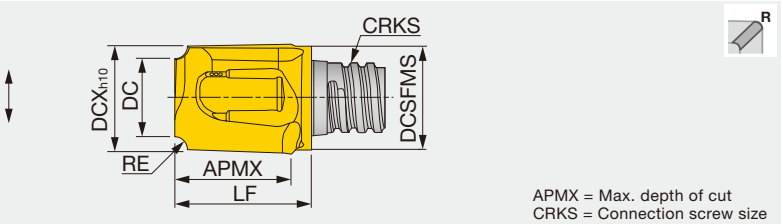
●: Line up

TUNGMEISTER

VCR**-02...

2 flute head, for concave radius chamfering (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DCX	DCSFMS	DC	APMX	RE	CRKS	LF	Wrench	Torque*
VCR080L07.5R10-02S05	●	2	0°	8	7.6	5.8	7.5	1	S05	10.5	KEYV-S05	7
VCR100L09.5R16-02S06	●	2	0°	10	9.5	6.8	9.5	1.6	S06	12.5	KEYV-S06	10
VCR100L09.5R25-02S06	●	2	0°	10	9.5	5.1	9.5	2.5	S06	12.5	KEYV-S06	10
VCR127L12.0R30-02S08	●	2	0°	12.7	12.2	6.5	12	3	S08	15.6	KEYV-S08	15
VCR127L12.0R40-02S08	●	2	0°	12.7	12.2	4.7	12	4	S08	15.6	KEYV-S08	15
VCR160L15.0R50-02S10	●	2	0°	16	15.2	6.2	15	5	S10	19.1	KEYV-S10	28
VCR200L07.0R60-02S12	●	2	0°	20	18.3	8	7	6	S12	17.4	KEYV-S12	28

* Recommended clamping torque(N·m)
2 pieces per package

●: Line up

Reference pages: Standard cutting conditions → I080

STANDARD CUTTING CONDITIONS

Chamfering and countersinking (VCA, VCW, VCR, VCP)

ISO	Workpiece material		Hardness	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.		- 300 HB	60 - 100	0.06 - 0.12
P	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.		- 300 HB	50 - 80	0.06 - 0.12
P	Prehardened steel PX5, NAK80, etc.		30 - 40 HRC	40 - 70	0.06 - 0.12
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.		- 200 HB	30 - 50	0.06 - 0.12
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.		150 - 250 HB	80 - 120	0.06 - 0.12
K	Ductile cast irons FC250, FC300, etc. 400-15S, etc.		150 - 250 HB	80 - 120	0.06 - 0.12
N	Aluminium alloys		-	100 - 200	0.08 - 0.15
S	Titanium alloys Ti-6Al-4V, etc.		-	30 - 50	0.05 - 0.1
S	Heat-resistant alloys Inconel 718, etc.		-	20 - 40	0.04 - 0.08
H	Hardened steel	SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	40 - 50 HRC	30 - 50	0.05 - 0.1
H	Hardened steel	SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	20 - 40	0.04 - 0.08

TOLERANCE OF TOOL DIAMETER

Basic dimensions (mm)		Permissible dimensional deviations (μm)						
>	≤	e8	e9	h6	h7	h9	h10	z9
6	10	-25 -47	-25 -61	0 -9	0 -15	0 -36	0 -58	+78 +42
10	14	-32 -59	-32 -75	0 -11	0 -18	0 -43	0 -70	+93 +50
14	18	-32 -59	-32 -75	0 -11	0 -18	0 -43	0 -70	+103 +60
18	30	-40 -73	-40 -92	0 -13	0 -21	0 -52	0 -84	-

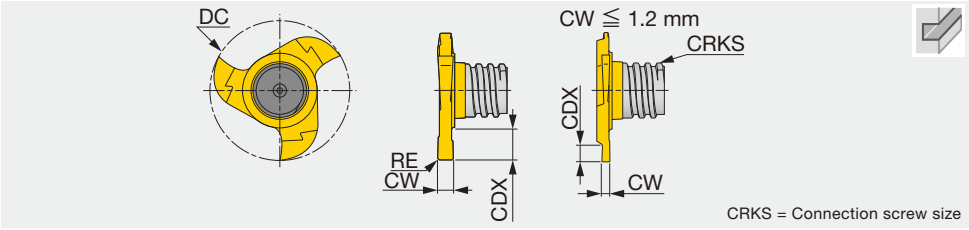
JISB0401-2: 1998 (ISO286-2: 1988) extract

TUNGMEISTER

VST**-3...

3 tooth slotting head, 1.2-3.17 mm slot width (TungMeister)





Designation	GH130	NOF	FHA	DC	CW$^{+0.02}$	RE	CRKS	CDX	Wrench	Torque*
VST157W1.50R010-3S06	●	3	0°	15.7	1.5	0.1	S06	2.8	KEYV-177	10
VST157W1.57R020-3S06	●	3	0°	15.7	1.57	0.2	S06	2.8	KEYV-177	10
VST157W2.00R020-3S06	●	3	0°	15.7	2	0.2	S06	2.8	KEYV-177	10
VST157W2.39R020-3S06	●	3	0°	15.7	2.39	0.2	S06	2.8	KEYV-177	10
VST157W2.50R020-3S06	●	3	0°	15.7	2.5	0.2	S06	2.8	KEYV-177	10
VST157W3.00R020-3S06	●	3	0°	15.7	3	0.2	S06	2.8	KEYV-177	10
VST157W3.17R020-3S06	●	3	0°	15.7	3.17	0.2	S06	2.8	KEYV-177	10
VST177W1.20R005-3S06	●	3	0°	17.7	1.2(1)	0.05	S06	3.8	KEYV-177	10
VST177W1.40R005-3S06	●	3	0°	17.7	1.4(1)	0.05	S06	3.8	KEYV-177	10
VST177W1.50R010-3S06	●	3	0°	17.7	1.5	0.1	S06	3.8	KEYV-177	10
VST177W1.57R020-3S06	●	3	0°	17.7	1.57	0.2	S06	3.8	KEYV-177	10
VST177W1.70R005-3S06	●	3	0°	17.7	1.7(1)	0.05	S06	3.8	KEYV-177	10
VST177W2.00R020-3S06	●	3	0°	17.7	2	0.2	S06	3.8	KEYV-177	10
VST177W2.20R110-3S06	●	3	0°	17.7	2.2	1.1	S06	3.8	KEYV-177	10
VST177W2.39R020-3S06	●	3	0°	17.7	2.39	0.2	S06	3.8	KEYV-177	10
VST177W2.50R020-3S06	●	3	0°	17.7	2.5	0.2	S06	3.8	KEYV-177	10
VST177W3.00R020-3S06	●	3	0°	17.7	3	0.2	S06	3.8	KEYV-177	10
VST177W3.17R020-3S06	●	3	0°	17.7	3.17	0.2	S06	3.8	KEYV-177	10

●: Line up

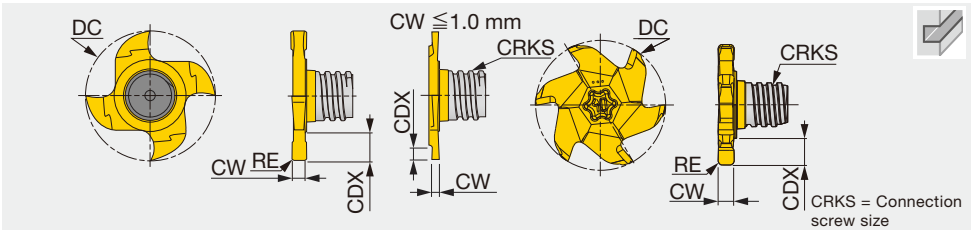
(1) CW is based on DIN471/472.
* Recommended clamping torque(N·m)
2 pieces per package

Reference pages: Standard cutting conditions → I085

TUNGMEISTER
VST**-4,6...

4 or 6 tooth slotting head, 0.76-10.0 mm slot width (TungMeister)





Designation	GH130	NOF	FHA	DC	CW* 0.02	RE	CRKS	CDX	Wrench	Torque*
VST217W0.76R000-4S08	●	4	0°	21.7	0.76(1)	-	S08	1.5	KEYV-217	15
VST217W0.86R000-4S08	●	4	0°	21.7	0.86(1)	-	S08	1.7	KEYV-217	15
VST217W0.96R000-4S08	●	4	0°	21.7	0.96(1)	-	S08	1.9	KEYV-217	15
VST217W1.00R005-4S08	●	4	0°	21.7	1	0.05	S08	2	KEYV-217	15
VST217W1.20R005-4S08	●	4	0°	21.7	1.2(1)	0.05	S08	4.5	KEYV-217	15
VST217W1.40R005-4S08	●	4	0°	21.7	1.4(1)	0.05	S08	4.5	KEYV-217	15
VST217W1.57R000-4S08	●	4	0°	21.7	1.57	-	S08	4.5	KEYV-217	15
VST217W1.70R010-4S08	●	4	0°	21.7	1.7(1)	0.1	S08	4.5	KEYV-217	15
VST217W1.95R020-4S08	●	4	0°	21.7	1.95(1)	0.2	S08	4.5	KEYV-217	15
VST217W2.00R020-4S08	●	4	0°	21.7	2	0.2	S08	4.5	KEYV-217	15
VST217W2.25R020-4S08	●	4	0°	21.7	2.25(1)	0.2	S08	4.5	KEYV-217	15
VST217W2.39R020-4S08	●	4	0°	21.7	2.39	0.2	S08	4.5	KEYV-217	15
VST217W2.50R020-4S08	●	4	0°	21.7	2.5	0.2	S08	4.5	KEYV-217	15
VST217W2.75R020-4S08	●	4	0°	21.7	2.75(1)	0.2	S08	4.5	KEYV-217	15
VST217W3.00R020-4S08	●	4	0°	21.7	3	0.2	S08	4.5	KEYV-217	15
VST217W3.17R020-4S08	●	4	0°	21.7	3.17	0.2	S08	4.5	KEYV-217	15
VST217W3.25R020-4S08	●	4	0°	21.7	3.25(1)	0.2	S08	4.5	KEYV-217	15
VST217W4.00R020-4S08	●	4	0°	21.7	4	0.2	S08	4.5	KEYV-217	15
VST217W4.25R020-4S08	●	4	0°	21.7	4.25(1)	0.2	S08	4.5	KEYV-217	15
VST217W4.75R020-4S08	●	4	0°	21.7	4.75	0.2	S08	4.5	KEYV-217	15
VST217W5.25R020-4S08	●	4	0°	21.7	5.25(1)	0.2	S08	4.5	KEYV-217	15
VST277W2.50R020-6S10	●	6	0°	27.7	2.5	0.2	S10	6	KEYV-T40L	28
VST277W5.25R020-6S10	●	6	0°	27.7	5.25	0.2	S10	6	KEYV-T40L	28
VST277W10.0R020-6S10	●	6	0°	27.7	10	0.2	S10	6	KEYV-T40L	28

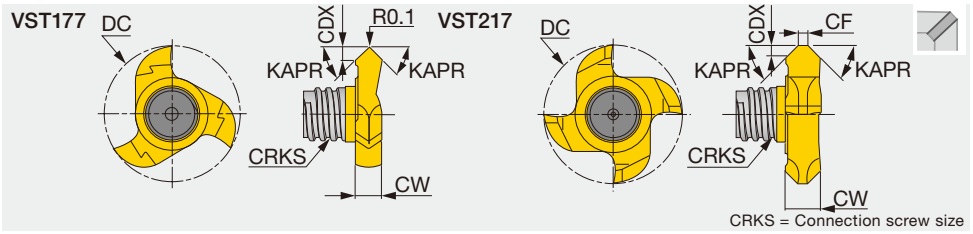
(1) CW is based on DIN471/472.
* Recommended clamping torque(N·m)
2 pieces per package

●: Line up

TUNGMEISTER
VST**A45...

3 or 4 tooth slotting head, for chamfering (TungMeister)





Designation	GH130	NOF	FHA	DC	CW	KAPR	CRKS	CDX	CF	Wrench	Torque*
VST177L01.40A45-3S06	●	3	0°	17.7	3.4	45°	S06	1.4	-	KEYV-177	10
VST217L01.70A45-4S08	●	4	0°	21.7	5.5	45°	S08	1.7	1.5	KEYV-217	15

●: Line up

* Recommended clamping torque(N·m)
2 pieces per package

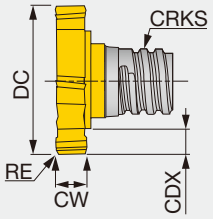
Reference pages: Standard cutting conditions → I085

TUNGMEISTER

VTB**-06...

6 tooth T-slotting head, 3-8 mm slot width (TungMeister)





CRKS = Connection screw size

Designation	GH130	NOF	FHA	DC $^{0}_{-0.05}$	CW$^{\pm 0.02}$	CDX	CRKS	RE	Wrench	Torque*
VTB135W3.00R04-06S05	●	6	0°	13.5	3	2.65	S05	0.4	KEYV-T20	7
VTB135W4.00R04-06S05	●	6	0°	13.5	4	2.65	S05	0.4	KEYV-T20	7
VTB160W2.00R04-06S06	●	6	0°	16	2	2.9	S06	0.4	KEYV-T20	10
VTB160W3.00R04-06S06	●	6	0°	16	3	2.9	S06	0.4	KEYV-T25	10
VTB160W4.00R04-06S06	●	6	0°	16	4	2.9	S06	0.4	KEYV-T25	10
VTB165W2.00R04-06S06	●	6	0°	16.5	2	3.15	S06	0.4	KEYV-T20	10
VTB165W3.00R04-06S06	●	6	0°	16.5	3	3.15	S06	0.4	KEYV-T25	10
VTB165W4.00R04-06S06	●	6	0°	16.5	4	3.15	S06	0.4	KEYV-T25	10
VTB195W4.00R04-06S08	●	6	0°	19.5	4	3.45	S08	0.4	KEYV-T30L	15
VTB195W5.00R04-06S08	●	6	0°	19.5	5	3.45	S08	0.4	KEYV-T30L	15
VTB195W6.00R04-06S08	●	6	0°	19.5	6	3.45	S08	0.4	KEYV-T30L	15
VTB225W5.00R04-06S08	●	6	0°	22.5	5	4.95	S08	0.4	KEYV-T40L	15
VTB225W6.00R04-06S08	●	6	0°	22.5	6	4.95	S08	0.4	KEYV-T40L	15
VTB225W8.00R04-06S08	●	6	0°	22.5	8	4.95	S08	0.4	KEYV-T40L	15
VTB250W6.00R04-06S08	●	6	0°	25	6	5.9	S08	0.4	KEYV-T50L	15
VTB250W8.00R04-06S08	●	6	0°	25	8	5.9	S08	0.4	KEYV-T50L	15
VTB250W5.00R04-06S10	●	6	0°	25	5	4.3	S10	0.4	KEYV-T50L	28
VTB250W6.00R04-06S10	●	6	0°	25	6	4.3	S10	0.4	KEYV-T50L	28
VTB250W8.00R04-06S10	●	6	0°	25	8	4.3	S10	0.4	KEYV-T50L	28

* Recommended clamping torque(N·m)
2 pieces per package

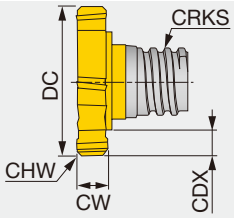
●: Line up

TUNGMEISTER

VTB**C15-06...

6 tooth T-slotting head, with chamfered edge, 2 mm slot width (TungMeister)





CRKS = Connection screw size

Designation	GH130	NOF	FHA	DC $^{0}_{-0.05}$	CW$^{\pm 0.05}$	CDX	CRKS	CHW	Wrench	Torque*
VTB135W2.00C15-06S05	●	6	0°	13.5	2	2.65	S05	0.15	KEYV-T20	7

* Recommended clamping torque(N·m)
2 pieces per package

●: Line up

Reference pages: Standard cutting conditions → I085

STANDARD CUTTING CONDITIONS

Slotting (VST, VTB)

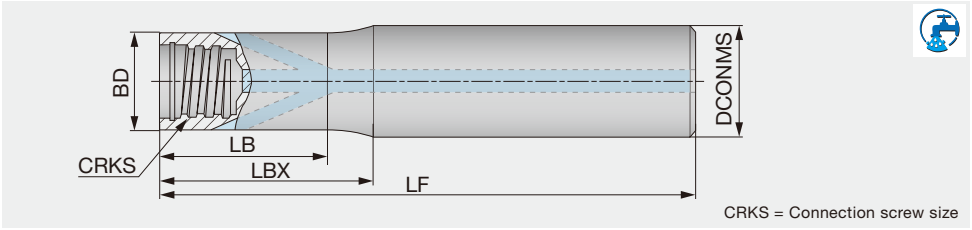
ISO	Workpiece material	Hardness HB	VST type		VTB type	
			Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.	- 300	80 - 180	0.05 - 0.15	80 - 180	0.08 - 0.18
	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.	- 300	60 - 120	0.04 - 0.12	60 - 120	0.05 - 0.15
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	- 200	50 - 120	0.04 - 0.12	50 - 120	0.05 - 0.15
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.	150 - 250	100 - 200	0.05 - 0.15	100 - 200	0.08 - 0.18
	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250	100 - 200	0.04 - 0.12	100 - 200	0.05 - 0.15
N	Aluminium alloys Si < 13%	-	200 - 600	0.05 - 0.15	200 - 600	0.08 - 0.18
	Aluminium alloys Si ≥13%	-	100 - 300	0.03 - 0.13	100 - 300	0.05 - 0.15
S	Titanium alloys Ti-6Al-4V, etc.	-	40 - 60	0.04 - 0.12	40 - 60	0.05 - 0.15
	Heat-resistant alloys Inconel 718, etc.	-	15 - 35	0.02 - 0.1	15 - 35	0.02 - 0.1

TUNGMEISTER

VSSD**-W-A

Cylindrical shank + straight neck, with coolant hole (TungMeister)



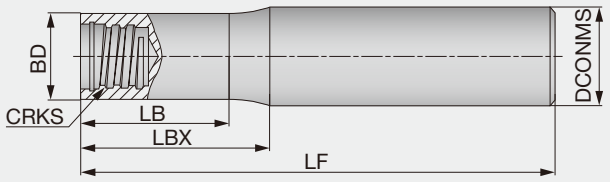


CRKS = Connection screw size

Designation	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VSSD10L070S06-W-A	10	9.6	70	20	19	S06	Cylindrical	Tungsten
VSSD10L090S06-W-A	10	9.6	90	40	39	S06	Cylindrical	Tungsten
VSSD10L110S06-W-A	10	9.6	110	60	59	S06	Cylindrical	Tungsten
VSSD12L070S08-W-A	12	11.5	70	20	19	S08	Cylindrical	Tungsten
VSSD12L090S08-W-A	12	11.5	90	40	39	S08	Cylindrical	Tungsten
VSSD12L110S08-W-A	12	11.5	110	60	59	S08	Cylindrical	Tungsten
VSSD12L130S08-W-A	12	11.5	130	80	79	S08	Cylindrical	Tungsten
VSSD16L070S10-W-A	16	15.2	70	20	18.5	S10	Cylindrical	Tungsten
VSSD16L090S10-W-A	16	15.2	90	40	36.5	S10	Cylindrical	Tungsten
VSSD16L110S10-W-A	16	15.2	110	60	58.5	S10	Cylindrical	Tungsten
VSSD16L130S10-W-A	16	15.2	130	80	78.5	S10	Cylindrical	Tungsten
VSSD20L090S12-W-A	20	18.3	90	40	37	S12	Cylindrical	Tungsten
VSSD20L130S12-W-A	20	18.3	130	80	77	S12	Cylindrical	Tungsten

Cylindrical shank + straight neck (TungMeister)



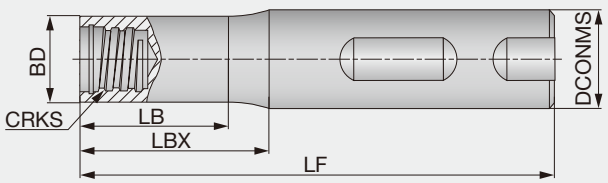


CRKS = Connection screw size

Designation	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VSSD08L060S05-S	8	7.6	60	15	12.5	S05	Cylindrical	Steel
VSSD08L070S05-C	8	7.6	70	20	18.5	S05	Cylindrical	Carbide
VSSD08L090S05-C	8	7.6	90	40	38.5	S05	Cylindrical	Carbide
VSSD08L110S05-C	8	7.6	110	60	58.5	S05	Cylindrical	Carbide
VSSD10L070S06-C	10	9.6	70	20	18.5	S06	Cylindrical	Carbide
VSSD10L075S06-S	10	9.6	75	20	17.5	S06	Cylindrical	Steel
VSSD10L090S06-C	10	9.6	90	40	38.5	S06	Cylindrical	Carbide
VSSD10L110S06-C	10	9.6	110	60	58.5	S06	Cylindrical	Carbide
VSSD10L150S06-C	10	9.6	150	100	98.5	S06	Cylindrical	Carbide
VSSD12L070S08-C	12	11.5	70	20	17	S08	Cylindrical	Carbide
VSSD12L090S08-C	12	11.5	90	40	38	S08	Cylindrical	Carbide
VSSD12L090S08-S	12	11.5	90	16	13.5	S08	Cylindrical	Steel
VSSD12L110S08-C	12	11.5	110	60	58	S08	Cylindrical	Carbide
VSSD12L130S08-C	12	11.5	130	80	78	S08	Cylindrical	Carbide
VSSD16L090S10-C	16	15.2	90	40	38	S10	Cylindrical	Carbide
VSSD16L100S10-S	16	15.2	100	20	18	S10	Cylindrical	Steel
VSSD16L110S10-C	16	15.2	110	60	58	S10	Cylindrical	Carbide
VSSD16L130S10-C	16	15.2	130	80	78	S10	Cylindrical	Carbide
VSSD16L150S10-C	16	15.2	150	100	98	S10	Cylindrical	Carbide
VSSD20L090S12-C	20	18.3	90	40	37	S12	Cylindrical	Carbide
VSSD20L120S12-S	20	18.3	120	25	20.5	S12	Cylindrical	Steel
VSSD20L130S12-C	20	18.3	130	80	77	S12	Cylindrical	Carbide
VSSD20L200S12-C	20	18.3	200	120	117	S12	Cylindrical	Carbide
VSSD25L120S15-C	25	23.9	120	60	58	S15	Cylindrical	Carbide
VSSD25L135S15-S	25	23.9	135	35	33	S15	Cylindrical	Steel
VSSD25L170S15-C	25	23.9	170	100	98	S15	Cylindrical	Carbide
VSSD25L250S15-C	25	23.9	250	150	148	S15	Cylindrical	Carbide

Weldon shank + straight neck (TungMeister)





CRKS = Connection screw size

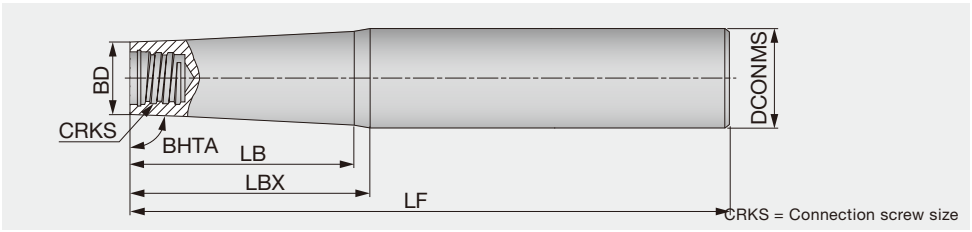
Designation	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VSSD12L055W05-S	12	7.6	55	3.8	-	S05	Weldon	Steel
VSSD16L065W06-S	16	9.6	65	6	-	S06	Weldon	Steel
VSSD16L065W08-S	16	11.5	65	4	-	S08	Weldon	Steel
VSSD20L070W10-S	20	15.2	70	4	-	S10	Weldon	Steel
VSSD25L075W12-S	25	18.3	75	6	-	S12	Weldon	Steel

TUNGMEISTER

VTSD...

Cylindrical shank + tapered neck (TungMeister)





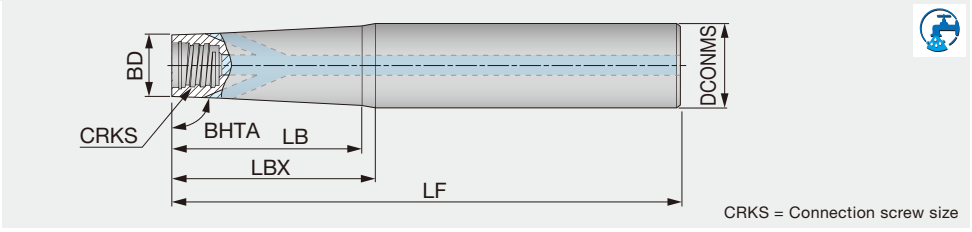
Designation	BHTA	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VTSD12L080S05-S	85°	12	7.6	80	25	-	S05	Cylindrical	Steel
VTSD12L100S05-S	89°	12	7.6	100	35	29	S05	Cylindrical	Steel
VTSD12L110S05-C	89°	12	7.6	110	60	56	S05	Cylindrical	Carbide
VTSD12L130S05-C	89°	12	7.6	130	80	77	S05	Cylindrical	Carbide
VTSD16L125S06-S	85°	16	9.6	125	34	31	S06	Cylindrical	Steel
VTSD16L130S08-C	89°	16	11.5	130	80	76.5	S08	Cylindrical	Carbide
VTSD16L140S08-S	85°	16	11.5	140	22	19	S08	Cylindrical	Steel
VTSD16L150S05-C	89°	16	7.6	150	100	91	S05	Cylindrical	Carbide
VTSD16L150S06-C	89°	16	9.6	150	100	94.5	S06	Cylindrical	Carbide
VTSD16L150S08-C	89°	16	11.5	150	100	98	S08	Cylindrical	Carbide
VTSD16L160S06-S	89°	16	9.6	160	55	46.5	S06	Cylindrical	Steel
VTSD16L170S06-C	89°	16	9.6	170	120	116.5	S06	Cylindrical	Carbide
VTSD20L140S10-S	85°	20	15.2	140	27.5	-	S10	Cylindrical	Steel
VTSD20L170S08-C	89°	20	11.5	170	120	112	S08	Cylindrical	Carbide
VTSD20L170S08-S	89°	20	11.5	170	80	69.5	S08	Cylindrical	Steel
VTSD20L170S10-C	89°	20	15.2	170	120	119	S10	Cylindrical	Carbide
VTSD20L190S10-C	89°	20	15.2	190	140	-	S10	Cylindrical	Carbide
VTSD20L190S10-S	89°	20	15.2	190	80	73	S10	Cylindrical	Steel
VTSD20L210S10-C	89°	20	15.2	210	160	-	S10	Cylindrical	Carbide
VTSD25L160S12-S	85°	25	18.3	160	40	-	S12	Cylindrical	Steel
VTSD25L170S10-S	85°	25	15.2	170	56	-	S10	Cylindrical	Steel
VTSD25L180S12-C	89°	25	18.3	180	120	115	S12	Cylindrical	Carbide
VTSD25L210S12-S	89°	25	18.3	210	100	94.5	S12	Cylindrical	Steel
VTSD25L250S12-C	89°	25	18.3	250	140	136.5	S12	Cylindrical	Carbide
VTSD32L155S15-S	85°	32	23.9	155	45	-	S15	Cylindrical	Steel
VTSD32L190S12-S	85°	32	18.3	190	80	-	S12	Cylindrical	Steel
VTSD32L220S15-S	85°	32	23.9	220	100	-	S15	Cylindrical	Steel
VTSD32L250S15-C	89°	32	23.9	250	150	145	S15	Cylindrical	Carbide
VTSD32L300S15-C	89°	32	23.9	300	200	198	S15	Cylindrical	Carbide

TUNGMEISTER

VTSD**-W-A

Cylindrical shank + tapered neck, with coolant hole (TungMeister)



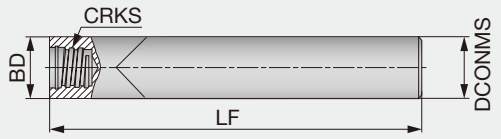


Designation	BHTA	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VTSD12L110S06-W-A	89°	12	9.6	110	60	59	S06	Cylindrical	Tungsten
VTSD16L170S06-W-A	89°	16	9.6	170	120	116	S06	Cylindrical	Tungsten

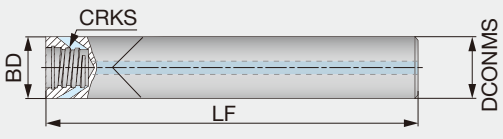
TUNGMEISTER
VSC...

Cylindrical shank for VST slotting heads (TungMeister)

VSC type



VSC-A type



CRKS = Connection screw size

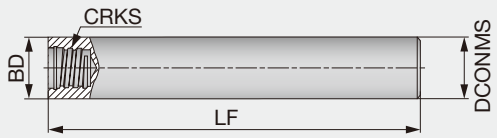
Designation	DCONMS	BD	LF	CRKS	Coolant hole	Shank shape	Shank material
VSC100L100S06-C	10	10	100	S06	Without	Cylindrical	Carbide
VSC120L100S08-C-A	12	12	100	S08	With	Cylindrical	Carbide

VSC shank should be used with VST slotting head.
If other types of heads are used, please be sure not to exceed the maximum depth of cut for each head (See ap for each head).
VSC shank does not have external clearance, and it may interfere with the workpiece during machining.

TUNGMEISTER
VSTD...

Cyrindrical shank for VTB slotting head (TungMeister)





CRKS = Connection screw size

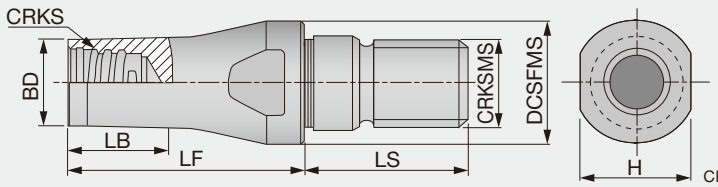
Designation	DCONMS	BD	LF	CRKS	Shank shape	Shank material
VSTD08L070S05-S	8	8	70	S05	Cylindrical	Steel
VSTD10L080S06-S	10	10	80	S06	Cylindrical	Steel
VSTD12L090S08-S	12	12	90	S08	Cylindrical	Steel
VSTD16L100S10-S	16	16	100	S10	Cylindrical	Steel

VSTD shank should be used with VTB slotting head.
If other types of heads are used, please be sure not to exceed the maximum depth of cut for each head (See ap for each head).
VSTD shank does not have external clearance, and it may interfere with the workpiece during machining.

TUNGMEISTER TUNGFLEX
VAD**-M...

Adapter for TungFlex conversion





CRKS = Connection screw size

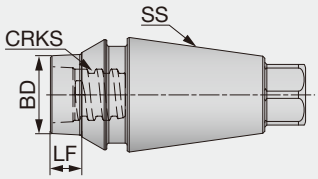
Designation	BD	DCSFMS	LF	LS	LB	CRKS	CRKSMS	H
VAD130L016S08-S-M8	11.7	13	16	17.5	6	S08	M8	11
VAD130L025S08-S-M8	11.7	13	25	17.5	20	S08	M8	11
VAD180L020S08-S-M10	11.7	18	20	20	12	S08	M10	13
VAD180L025S08-S-M10	11.7	18	25	20	15	S08	M10	11
VAD210L020S08-S-M12	11.7	21	20	20	10	S08	M12	12.75
VAD210L025S08-S-M12	11.7	21	25	20	13	S08	M12	12.75

TUNGMEISTER

VER...

Adapter for ER collect chucks





CRKS = Connection screw size

Designation	SS	BD	LF	CRKS
VER11CL006S05-S	ER11	7.92	6	S05
VER11CL020S05-S	ER11	7.92	20	S05
VER16CL012S05-S	ER16	7.92	12	S05
VER16CL020S05-S	ER16	7.92	20	S05
VER16CL010S06-S	ER16	9.92	10	S06
VER16CL020S06-S	ER16	9.92	20	S06
VER16CL006S08-S	ER16	11.6	6	S08
VER16CL020S08-S	ER16	11.6	20	S08

TORQUE WRENCHES

Appearance		Designation	Stock	Connection screw size	TM Head description	Torque (N.m)
Handle		TORQUEWRENCH5-50NM9x12	●	-	-	-
Open wrenches for cylindrical heads		TM-WRENCH-6-05	●	S05	VED, VEE VEE-I, VEE-R VEE-C, VEE-A VRD, VBD-BG VBE-BGA VDP, VCA	7
		TM-WRENCH-8-06	●	S06		10
		TM-WRENCH-10-08	●	S08		15
		TM-WRENCH-13-10	●	S10		28
		TM-WRENCH-16-12	●	S12		28
		TM-WRENCH-20-15	●	S15		40
Open wrenches for 2 flute heads		TM-WRENCH-4E-05	●	S05	VRB, VRC VFX, VBB-BM VBB-BG VCP, VGC VCW, VCR	7
		TM-WRENCH-5E-06	●	S06		10
		TM-WRENCH-7E-08	●	S08		15
		TM-WRENCH-8E-10	●	S10		28
		TM-WRENCH-9E-12	●	S12		28
90° adaptor for Torx bits		INSERT-TOOL-9X12MM	●	-	-	-
Torx bits sockets		BIT-SOCKET-T20-DRIVE	●	S05, S06	VTB135 VTB160W2.00 VTB165W2.00	7, 10
		BIT-SOCKET-T25-DRIVE	●	S06	VTB160W3.00 VTB160W4.00	10
		BIT-SOCKET-T30-DRIVE	●	S08	VTB165W3.00	15
		BIT-SOCKET-T40-DRIVE	●	S08, S10	VTB165W4.00 VTB195	15, 28
		BIT-SOCKET-T50-DRIVE	●	S08, S10	VST277 VTB225 VTB250	15, 28

WRENCH

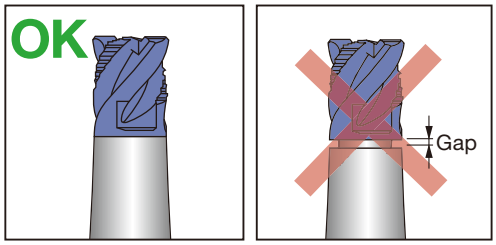
KEYV-..., KEYV-S..., KEYV-T..., KEYV-T**L, KEYV-W20

Appearance	Designation	Connection screw size	Torque (N·m)	Applicable head
	KEYV-S05	S05	7	Square Ball Radius Drilling Chamfering Counter boring
	KEYV-S06	S06	10	
	KEYV-S08	S08	15	
	KEYV-S10	S10	28	
	KEYV-S12	S12	28	
	KEYV-W20	S15	40	
	KEYV-177	S06	10	Slotting VST type
	KEYV-217	S08	15	
	KEYV-T40L	S08	15	Slotting VST, VTB type
		S10	28	
	KEYV-T20	S05	7	Slotting VTB type
		S06	10	
	KEYV-T25	S06	10	
	KEYV-T30L	S08	15	
	KEYV-T50L	S08	15	
		S10	28	

Note: Wrenches are sold separately.

CAUTIONARY POINTS IN USE

- The cutting heads specified by Tungaloy must be used. Avoid using alternate heads that are not Tungaloy products as this will damage the shank and can cause severe accident or injury.
- Before setting the head, clean the connection screw with an air blast or a wiping cloth to remove chips and other foreign matter that may remain.
- Do not apply the lubricant to the connection screw.
- Please use the correct “Wrench” with the correct cutting head. Tighten the head slowly until the face of the head contacts the shank. (Please refer to the picture shown on the right.) Do not re-tightening or over-tightening. Excessive tightening may cause the cutting head to break.
- Do not apply excessive force or a hammer when tightening or exchanging the cutting heads.



EVX

Multi purpose endmill, shank type, with center cutting edge

Standard type GAMP = +2˚~ +5˚, GAMF = -10˚~ -3.5˚
Long type GAMP = +5˚, GAMF = -4˚~ -2˚



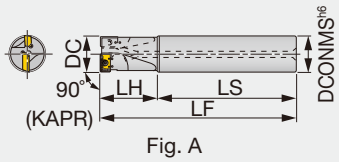


Fig. A

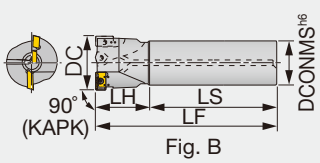
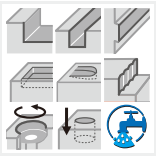


Fig. B



Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	Coolant hole	Fig.	Insert
EVX08016RSA	7	16	2	16	90	30	120	With	A	XXMU08...
EVX08016RS	7	16	2	16	90	30	120	Without	A	XXMU08...
EVX08016RLA	7	16	2	16	135	40	175	With	A	XXMU08...
EVX08016RL	7	16	2	16	135	40	175	Without	A	XXMU08...
EVX10020RSA	9	20	2	20	90	30	120	With	A	XXMU10...
EVX10020RS	9	20	2	20	90	30	120	Without	A	XXMU10...
EVX10020RLA	9	20	2	20	135	50	185	With	A	XXMU10...
EVX10020RL	9	20	2	20	135	50	185	Without	A	XXMU10...
EVX12025RSA	11.5	25	2	25	100	40	140	With	A	XXMU12...
EVX12025RS	11.5	25	2	25	100	40	140	Without	A	XXMU12...
EVX12025RLA	11.5	25	2	25	150	70	220	With	A	XXMU12...
EVX12025RL	11.5	25	2	25	150	70	220	Without	A	XXMU12...
EVX16032RSA	15	32	2	32	110	50	160	With	A	XXMU16...
EVX16032RS	15	32	2	32	110	50	160	Without	A	XXMU16...
EVX16032RLA	15	32	2	32	175	80	255	With	A	XXMU16...
EVX16032RL	15	32	2	32	175	80	255	Without	A	XXMU16...
EVX12040RSA	11.5	40	2	42	120	60	180	With	B	XXMU12, WCMT05...
EVX12040RS	11.5	40	2	42	120	60	180	Without	B	XXMU12, WCMT05...
EVX12040RLA	11.5	40	2	42	210	100	310	With	B	XXMU12, WCMT05...
EVX12040RL	11.5	40	2	42	210	100	310	Without	B	XXMU12, WCMT05...
EVX16050RSA	15	50	2	42	160	50	210	With	B	XXMU16, WCMT06...
EVX16050RS	15	50	2	42	160	50	210	Without	B	XXMU16, WCMT06...
EVX16050RLA	15	50	2	42	310	50	360	With	B	XXMU16, WCMT06...
EVX16050RL	15	50	2	42	310	50	360	Without	B	XXMU16, WCMT06...
EVX16063RSA	15	63	2	42	190	50	240	With	B	XXMU16, WCMT06...
EVX16063RS	15	63	2	42	190	50	240	Without	B	XXMU16, WCMT06...
EVX16063RLA	15	63	2	42	310	50	360	With	B	XXMU16, WCMT06...
EVX16063RL	15	63	2	42	310	50	360	Without	B	XXMU16, WCMT06...

SPARE PARTS







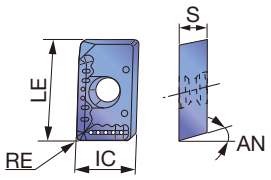
Designation	Clamping screw 1	Clamping screw 2	Lubricant	Wrench 1	Wrench 2
EVX08016R...	-	CSPB-2.2	M-1000	IP-7D	-
EVX10020R...	-	CSPB-2.5	M-1000	IP-8D	-
EVX12025R...	-	CSPD-3	M-1000	IP-10D	-
EVX16032R...	CSPB-3.5	-	M-1000	IP-15D	-
EVX12040R...	-	CSPD-3	M-1000	IP-10D	-
EVX16050, 63R...	CSPB-3.5	CSTB-3.5D	M-1000	IP-15D	T-9D

* Recommended clamping torque (N·m): CSPB-2.2=1, CSPB-2.5=1.3, CSPB-3.5=3.5, CSPD-3=2.5, CSTB-3.5D=2.3

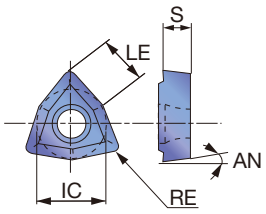
Reference pages: Standard cutting conditions → I093

INSERT

XXMU-MJ



WCMT-D4



P	Steel	★	★	
M	Stainless	★		★
K	Cast iron		★	
N	Non-ferrous			
S	Superalloys			
H	Hard materials	★		

★ : First choice
☆ : Second choice

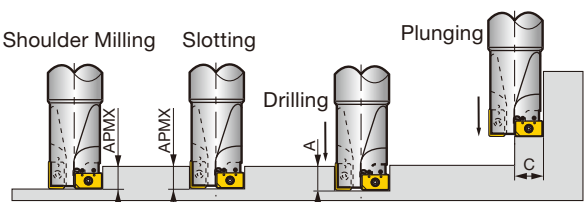
Designation	RE	Coated AH3135	Coated AH120	Coated AH140	LE	IC	S	AN
XXMU08T204PR-MJ	0.4	●	●	●	8.2	5.6	2.78	10°
XXMU10H308PR-MJ	0.8	●	●	●	10.6	6.8	3.5	11°
XXMU12X408PR-MJ	0.8	●	●	●	13.2	7.9	4.2	11°
XXMU16X508PR-MJ	0.8	●	●	●	16.8	11.1	5	11°
WCMT050308-D4	0.8		●	●	5.4	7.94	3.18	7°
WCMT06T308-D4	0.8		●	●	6.5	9.525	3.97	7°

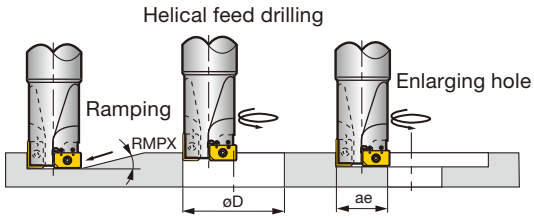
●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Tool diameter: ø16 - 20 Cutting speed *Vc* (m/min)	Tool diameter: ø16 - 20 Feed per tooth *fz* (mm/t) Slotting	Tool diameter: ø16 - 20 Feed per tooth *fz* (mm/t) Drilling	Tool diameter: ø25 - 63 Cutting speed *Vc* (m/min)	Tool diameter: ø25 - 63 Feed per tooth *fz* (mm/t) Slotting	Tool diameter: ø25 - 63 Feed per tooth *fz* (mm/t) Drilling
P	Carbon steels S50C, etc. C55, etc. < 300 HBt	AH3135	100 - 180	0.05 - 0.2	0.03 - 0.08	120 - 200	0.08 - 0.25	0.05 - 0.1
P	Alloy steels SCM440, etc. 42CrMo4, etc. < 300 HB	AH3135	80 - 160	0.05 - 0.15	0.03 - 0.08	100 - 180	0.08 - 0.2	0.05 - 0.1
P	Die steels SKD11, etc. X96CrMoV12, etc. < 300 HB	AH3135	60 - 120	0.05 - 0.13	0.03 - 0.06	80 - 150	0.08 - 0.15	0.03 - 0.08
M	Stainless steels SUS304, etc. X5CrNi18 9, etc.	AH3135	70 - 140	0.05 - 0.15	0.03 - 0.08	90 - 160	0.08 - 0.2	0.03 - 0.08
K	Cast irons FC250, etc. 250, etc.	AH120	100 - 180	0.05 - 0.25	0.03 - 0.1	120 - 200	0.08 - 0.25	0.05 - 0.1

APPLICATION RANGE



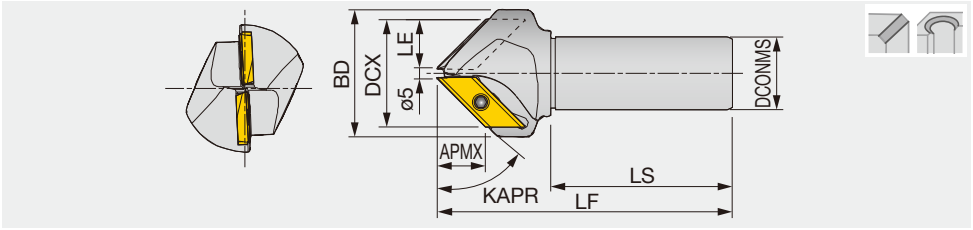


Designation	Tool dia. DC	Max. depth of cut (APMX)	Max. drilling depth (A)	Max. cutting width in plunging (C)	Max. ramping angle RMPX	Min. machining hole dia. (øDmin)	Max. machining hole dia. (øDmax)	Max. cutting width in enlarging hole (ae)
EVX08016R...	16	7	8	8	3°	19.2	30	14
EVX10020R...	20	9	10	10	3°	24	38	18
EVX12025R...	25	11.5	12.5	12.5	3°	30	48	23
EVX16032R...	32	15	16	16	3°	38.4	62	30
EVX12040RS/L (A)	40	11.5	20	20	3°	48	78	38
EVX16050RS/L (A)	50	15	25	25	3°	60	98	48
EVX16063RS/L (A)	63	15	31.5	31.5	3°	75.6	124	61

ECC31

Chamfering endmill, screw clamp system, for large parallelogram inserts





Designation	DCX	CICT	KAPR	BD	LE	APMX	DCONMS	LS	LF	Insert
ECC31005R-30	34	1	60°	40	14.5	25.5	32	80	130.2	XCET3104...
ECC31005R-45	46	2	45°	56	20.5	20.5	32	80	130.1	XCET3104...
ECC31005R-60	55	2	30°	72	25.5	14.5	32	80	130.1	XCET3104...

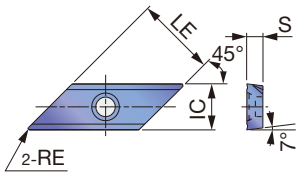
SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
ECC31...	CSTB-5S	M-1000	T-20D

* Recommended clamping torque: CSTB-5S=5

INSERT

XCET31



		Coated			Cermet	Un-coated
		AH3135	AH330	AH120	NS740	UX30
P	Steel	★	☆	☆	★	☆
M	Stainless	★	★			
K	Cast iron		★	★		
N	Non-ferrous					
S	Superalloys					
H	Hard materials	☆				

★ : First choice
☆ : Second choice

Designation	RE	Coated AH3135	Coated AH330	Coated AH120	Cermet NS740	Un-coated UX30	LE	IC	S
XCET310404ER	0.4	●	●	●	●	●	22	12.7	4.5

●: Line up

STANDARD CUTTING CONDITIONS

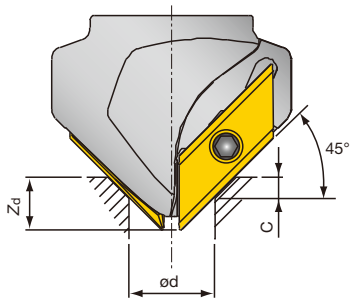
ISO	Workpiece material	Grade	No. of revolutions: *n* (min-1)	Feed per tooth: *fz* (mm/t)
P	Carbon steels S55C, etc. C55, etc. Alloy steels SCM440, etc. 42CrMo4, etc. < 300 HB	NS740	1000 - 3000 - 7000	0.1 - 0.25
		UX30	700 - 2000 - 4900	0.1 - 0.25
	Die steels SKD61, etc. X40CrMoV5-1, etc. < 300 HB	AH3135	1000 - 3000 - 7000	0.1 - 0.2
M	Stainless steels SUS304, etc. X5CrNi18-10, etc. < 250 HB	AH3135	1000 - 3000 - 7000	0.1 - 0.25
K	Cast irons FC250, etc. 250, etc.	AH330	1000 - 3000 - 7000	0.1 - 0.25

Notes:
- When the hole diameter to be chamfered is small or the cutting edges near the front end of tool are used, use at higher side of the revolution range shown in the Table.
  In contrast, when the hole diameter to be chamfered is large or the cutting edges far from the tool's front end are used, use the lower side of the revolution range shown in the Table.
- When chamfering a small diameter hole (smaller than ø10 mm) in a plungemilling mode, peck-feeding should not be used.
- When the hole diameter to be chamfered is smaller than ø10 mm or the cutting edges near the tool's front end are used, the feed should be set within 0.15 mm/t.

Guidelines for programming

Z-axis plunging depth Zd (mm) in 45° cha mfering of hole

Hole dia. ød (mm)	Size of chamfering C (mm)						
	0.5	1	1.5	2	3	4	5
5	0.7	1.2	1.7	2.2	3.2	-	-
6	1.2	1.7	2.2	2.7	3.7	-	-
6.8	1.6	2.1	2.6	3.1	4.1	-	-
8	2.2	2.7	3.2	3.7	4.7	-	-
8.5	2.4	2.9	3.4	3.9	4.9	-	-
10	3.2	3.7	4.2	4.7	5.7	6.7	7.7
10.2	3.3	3.8	4.3	4.8	5.8	6.8	7.8
12	4.2	4.7	5.2	5.7	6.7	7.7	8.7
14	5.2	5.7	6.2	6.7	7.7	8.7	9.7
16	6.2	6.7	7.2	7.7	8.7	9.7	10.7
17.5	6.9	7.4	7.9	8.4	9.4	10.4	11.4
20	8.2	8.7	9.2	9.7	10.7	11.7	12.7
21	8.7	9.2	9.7	10.2	11.2	12.2	13.2
24	10.2	10.7	11.2	11.7	12.7	13.7	14.7
30	13.2	13.7	14.2	14.7	15.7	16.7	17.7
33	14.7	15.2	15.7	16.2	17.2	18.2	19.2
36	16.2	16.7	17.2	17.7	18.7	19.7	-
42	19.2	19.7	20.2	-	-	-	-

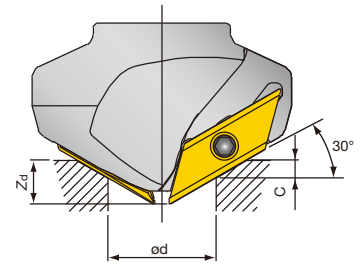


Tool: ECC31005R-45

Note: When the hole depth is smaller than the Z-axis plunging depth (Zd), special care should be taken to avoid an interference between the tool's front end and the bottom of the hole.

Z-axis plunging depth Zd (mm) in 30° chamfering of hole

Hole dia. ød (mm)	Size of chamfering C (mm)						
	0.5	1	1.5	2	2.5	3	3.5
5	0.6	1.1	1.6	2.1	-	-	-
6	0.9	1.4	1.9	2.4	-	-	-
6.8	1.1	1.6	2.1	2.6	-	-	-
8	1.4	1.9	2.4	2.9	-	-	-
8.5	1.6	2.1	2.6	3.1	-	-	-
10	2	2.5	3	3.5	4	4.5	5
10.2	2.1	2.6	3.1	3.6	4.1	4.6	5.1
12	2.6	3.1	3.6	4.1	4.6	5.1	5.6
16	3.7	4.2	4.7	5.2	5.7	6.2	6.7
17.5	4.2	4.7	5.2	5.7	6.2	6.7	7.2
20	4.9	5.4	5.9	6.4	6.9	7.4	7.9
21	5.2	5.7	6.2	6.7	7.2	7.7	8.2
24	6.1	6.6	7.1	7.6	8.1	8.6	9.1
30	7.8	8.3	8.8	9.3	9.8	10.3	10.8
33	8.7	9.2	9.7	10.2	10.7	11.2	11.7
36	9.5	10	10.5	11	11.5	12	12.5
38	10.1	10.6	11.1	11.6	12.1	12.6	13.1
42	11.2	11.7	12.2	12.7	13.2	13.7	14.2
46	12.4	12.9	13.4	13.9	14.4	-	-
48	13	13.5	14	14.5	-	-	-
52	14.1	-	-	-	-	-	-

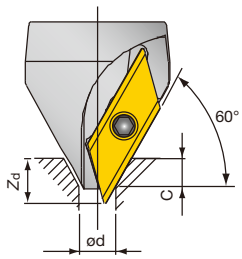


Tool: ECC31005R-30

Note: When the hole depth is smaller than the Z-axis plunging depth (Zd), special care should be taken to avoid an interference between the tool's front end and the bottom of the hole.

Z-axis plunging depth Zd (mm) in 60° chamfering of hole

Hole dia. ød (mm)	Size of chamfering C (mm)							
	0.5	1	1.5	2	2.5	3	3.5	4
5	0.8	1.3	1.8	2.3	2.8	-	-	-
6	1.7	2.2	2.7	3.2	3.7	-	-	-
6.8	2.4	2.9	3.4	3.9	4.4	-	-	-
8	3.4	3.9	4.4	4.9	5.4	-	-	-
8.5	3.8	4.3	4.8	5.3	5.8	-	-	-
10	5.1	5.6	6.1	6.6	7.1	7.6	8.1	8.6
10.2	5.3	5.8	6.3	6.8	7.3	7.8	8.3	8.8
12	6.9	7.4	7.9	8.4	8.9	9.4	9.9	10.4
16	10.3	10.8	11.3	11.8	12.3	12.8	13.3	13.8
17.5	11.6	12.1	12.6	13.1	13.6	14.1	14.6	15.1
20	13.7	14.2	14.7	15.2	15.7	16.2	16.7	17.2
21	14.6	15.1	15.6	16.1	16.6	17.1	17.6	18.1
24	17.2	17.7	18.2	18.7	19.2	19.7	20.2	20.7
30	22.4	22.9	23.4	23.9	24.4	24.9	25.4	-
33	24.9	25.4	-	-	-	-	-	-



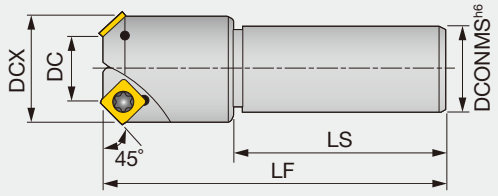
Tool: ECC31005R-60

Note: When the hole depth is smaller than the Z-axis plunging depth (Zd), special care should be taken to avoid an interference between the tool's front end and the bottom of the hole.

ECP4400R

Chamfering endmill, screw clamp system, for square inserts





Designation	DC	CICT	DCX	DCONMS	LF	LS	Insert
ECP440AR	10	1	27.5	32	130	80	SPMA422*N
ECP4423R	23	2	40.3	32	130	80	SPMA422*N
ECP4436R	36	3	53.3	32	130	80	SPMA422*N

SPARE PARTS

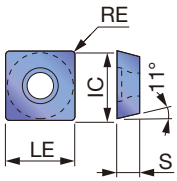



Designation	Clamping screw	Wrench
ECP44...	CSTA-4	T-15D

* Recommended clamping torque: CSTA-4=3.5

INSERT

SPMA42

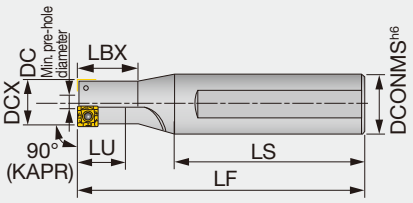


| | | Cermet | | Un-coated | | |

TCB

Counterboring endmill, monoblock type

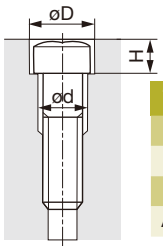




Designation	DCX	CICT	DC	LU	LBX	LF	LS	DCONMS	Insert
TCB100F16	10	1	2.8	13	17	86	60	16	SPMP771...
TCB110F16	11	1	2.8	14	18.7	87	60	16	SPMP771...
TCB120F20	12	1	3.6	15	20.5	89	60	20	SPMP771...
TCB130F20	13	2	4.5	16	22.2	91	60	20	SPMP771...
TCB-140	14	1	4	11	18	117	80	25	SPMP831...
TCB140F25	14	2	5.5	18	24	113	80	25	SPMP771...
TCB150F25	15	2	6.5	19	25.7	114	80	25	SPMP771...
TCB160F25	16	2	7.5	20	27.5	116	80	25	SPMP771...
TCB170F25	17	2	6.6	13	21	114	80	25	SPMP831...
TCB175F25	17.5	2	7.1	14	22	115	80	25	SPMP831...
TCB180F25	18	2	7.5	15	23	116	80	25	SPMP831...
TCB190F25	19	2	8.5	15	24	118	80	25	SPMP831...
TCB-200	20	2	8.2	16	25	120	80	25	SPMP042...
TCB200F25	20	2	8.2	16	25	120	80	25	SPMP042...
TCB210F25	21	2	9	17	26	122	80	25	SPMP042...
TCB220F25	22	2	10	18	28	124	80	25	SPMP042...
TCB-230	23	2	11	19	29	126	80	25	SPMP042...
TCB230F25	23	2	11	19	29	126	80	25	SPMP042...
TCB240F25	24	2	12	20	-	128	80	25	SPMP042...
TCB250F25	25	2	13	25	-	130	80	25	SPMP042...
TCB-260	26	2	14	21	33	132	80	32	SPMP042...
TCB-290	29	2	14	23	36	138	80	32	SPMM322...
TCB-320	32	2	16.9	40	-	144	80	32	SPMM322...
TCB-350	35	2	14	43	-	150	80	32	SPMM432...
TCB-390	39	2	17.9	48	-	158	80	32	SPMM432...
TCB-430	43	2	21.7	53	-	171	85	42	SPMM432...

Tool diameter tolerance	Applicable tolerance range of hole diameter
+0.2 / 0	+0.3 / 0

Countersink dimensions of bolt hole



Thread size	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27
øD (mm)	11	14	17.5	20	23	26	29	32	35	39	43
H (mm)	6.5	8.6	10.8	13	15.2	17.5	19.5	21.5	23.5	25.5	29
ød (mm)	6	9	11	14	16	18	20	22	24	26	30
Applicable tool	TCB110	TCB140	TCB175	TCB200	TCB230	TCB260	TCB290	TCB320	TCB350	TCB390	TCB430

SPARE PARTS





Designation	Clamping screw	Wrench
TCB100... - TCB160...	CSTB-2L040	T-6D
TCB-140...	CSTB-2.2S	T-7D
TCB170... - TCB190...	CSTB-2.2	T-7D
TCB200... - TCB260...	CSTA-NO3	T-9D
TCB-290 - TCB-320	CSTA-NO5	T-9D
TCB-350 - TCB-430	CSTA-4	T-15D

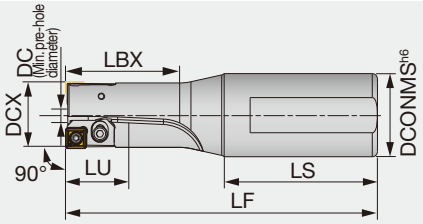
* Recommended clamping torque: CSTB-2L040=0.7, CSTB-2.2S / CSTB-2.2=1, CSTA-NO3 / CSTA-NO5=2.3 CSTA-4=3.5

Reference pages: Inserts, Standard cutting conditions → I100

TCB

Counterboring endmill, cartridge type





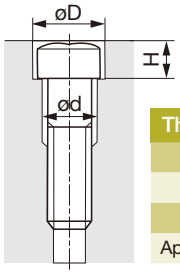
LU: Maximum hole depth

Body designation	DCX	DCONMS	DC	LU	LS	LBX	LF	WT(kg)	Cartridge set designation	Shim plate Designation	Shim plate Thickness	Insert
TCB260-290F32	26	32	13.2	40	59	43	120	0.6	TCB04CA-26-29	-	-	SPMP042...
TCB260-290F32	27	32	14.2	40	59	43	120	0.6	TCB04CA-26-29	AP16050	0.5	SPMP042...
TCB260-290F32	28	32	15.2	40	59	43	120	0.6	TCB04CA-26-29	AP16100	1	SPMP042...
TCB260-290F32	29	32	16.2	40	59	43	120	0.6	TCB04CA-26-29	AP16150	1.5	SPMP042...
TCB300-340F32	30	32	14.2	45	59	55	130	0.6	TCB32CA-30-39	-	-	SPMM322...
TCB300-340F32	31	32	15.2	45	59	55	130	0.6	TCB32CA-30-39	AP16050	0.5	SPMM322...
TCB300-340F32	32	32	16.2	45	59	55	130	0.6	TCB32CA-30-39	AP16100	1	SPMM322...
TCB300-340F32	33	32	17.2	45	59	55	130	0.6	TCB32CA-30-39	AP16150	1.5	SPMM322...
TCB300-340F32	34	32	18.2	45	59	55	130	0.6	TCB32CA-30-39	AP16200	2	SPMM322...
TCB350-390F32	35	32	19	50	59	70	140	0.7	TCB32CA-30-39	-	-	SPMM322...
TCB350-390F32	36	32	20	50	59	70	140	0.7	TCB32CA-30-39	AP16050	0.5	SPMM322...
TCB350-390F32	37	32	21	50	59	70	140	0.7	TCB32CA-30-39	AP16100	1	SPMM322...
TCB350-390F32	38	32	22	50	59	70	140	0.7	TCB32CA-30-39	AP16150	1.5	SPMM322...
TCB350-390F32	39	32	23	50	59	70	140	0.7	TCB32CA-30-39	AP16200	2	SPMM322...
TCB400-440F32	40	32	18	55	59	80	150	1	TCB43CA-40-59	-	-	SPMM432...
TCB400-440F32	41	32	19	55	59	80	150	1	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB400-440F32	42	32	20	55	59	80	150	1	TCB43CA-40-59	AP21100	1	SPMM432...
TCB400-440F32	43	32	21	55	59	80	150	1	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB400-440F32	44	32	22	55	59	80	150	1	TCB43CA-40-59	AP21200	2	SPMM432...
TCB450-490F32	45	32	23	65	59	90	160	1.2	TCB43CA-40-59	-	-	SPMM432...
TCB450-490F32	46	32	24	65	59	90	160	1.2	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB450-490F32	47	32	25	65	59	90	160	1.2	TCB43CA-40-59	AP21100	1	SPMM432...
TCB450-490F32	48	32	26	65	59	90	160	1.2	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB450-490F32	49	32	27	65	59	90	160	1.2	TCB43CA-40-59	AP21200	2	SPMM432...
TCB500-540F32	50	32	28	70	59	97	165	1.5	TCB43CA-40-59	-	-	SPMM432...
TCB500-540F32	51	32	29	70	59	97	165	1.5	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB500-540F32	52	32	30	70	59	97	165	1.5	TCB43CA-40-59	AP21100	1	SPMM432...
TCB500-540F32	53	32	31	70	59	97	165	1.5	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB500-540F32	54	32	32	70	59	97	165	1.5	TCB43CA-40-59	AP21200	2	SPMM432...
TCB550-590F32	55	32	33	75	59	105	175	1.9	TCB43CA-40-59	-	-	SPMM432...
TCB550-590F32	56	32	34	75	59	105	175	1.9	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB550-590F32	57	32	35	75	59	105	175	1.9	TCB43CA-40-59	AP21100	1	SPMM432...
TCB550-590F32	58	32	36	75	59	105	175	1.9	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB550-590F32	59	32	37	75	59	105	175	1.9	TCB43CA-40-59	AP21200	2	SPMM432...

The cartridge sets and shim plates are included.

Tool diameter tolerance	Applicable tolerance range of hole diameter
+0.2 / 0	+0.3 / 0

Countersink dimensions of bolt hole



Thread size	M16	M18	M20	M22	M24	M27	M30	M33	M36
øD (mm)	26	29	32	35	39	43	48	54	58
H (mm)	17.5	19.5	21.5	23.5	25.5	29	32	35	38
ød (mm)	18	20	22	24	26	30	33	36	39
Applicable tool	TCB260	TCB290	TCB320	TCB350	TCB390	TCB430	TCB480	TCB540	TCB580

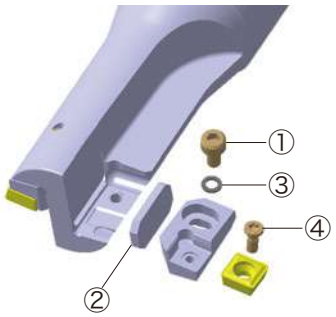
Reference pages: Inserts, Standard cutting conditions → I100

Body
SPARE PARTS

Designation	① Cartridge screw	② Shim plate	② Shim plate	② Shim plate	② Shim plate	Wrench for cartridge	③ Washer
TCB260-290F32	CM3×0.5×6	AP16050	AP16100	AP16150		P-2.5	3.2X6X0.5
TCB300-340F32	CM3×0.5×6	AP16050	AP16100	AP16150	AP16200	P-2.5	3.2X6X0.5
TCB350-390F32	CM3×0.5×6	AP16050	AP16100	AP16150	AP16200	P-2.5	3.2X6X0.5
TCB400-440F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5
TCB450-490F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5
TCB500-540F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5
TCB550-590F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5

Cartridge set
SPARE PARTS

Designation	④ Insert screw	Wrench
TCB04CA-26-29	CSTA-NO3	T-9D
TCB32CA-30-39	CSTA-NO5	T-9D
TCB32CA-30-39	CSTA-NO5	T-9D
TCB43CA-40-59	CSTA-4	T-15D
TCB43CA-40-59	CSTA-4	T-15D
TCB43CA-40-59	CSTA-4	T-15D
TCB43CA-40-59	CSTA-4	T-15D



* Recommended clamping torque: CSTA-NO3 / CSTA-NO5=2.3, CSTA-4=3.5

Fine adjustment shim plates (sold separately)
SPARE PARTS

Designation	Thickness
AP16005	0.05
AP16020	0.2
AP21005	0.05
AP21020	0.2

Cautions in preparing the cartridge type cutter

- Firmly press the cartridge in the arrowed direction while tightening the screw to install the cartridge on the cutter body. (Fig.1)
- Ensure that the shim plates thickness are always the same on both sides to equalize the tool diameter.
- Ensure to locate the shim plate fit within the cartridge pocket. (Fig.2)
- Use thin shim plates (not included) for fine diameter adjustments in ø0.1 mm increments.
- When using multiple shim plates in one pocket for a diameter adjustment, always use the thinest shim plates at the bottom to prevent them from dislocating during machining. (Fig.3)
- Ensure that the top shim is always in contact with the rim of the cartridge pocket to prevent it from dislocation during machining. (Fig.4)


Fig.1

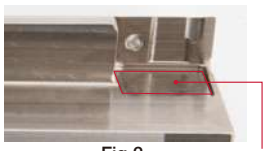


Fig.2

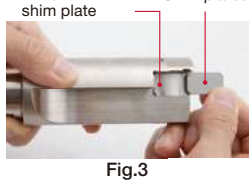


Fig.3



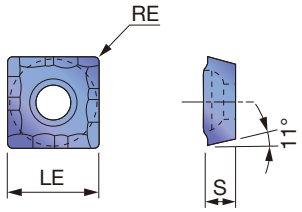
Fig.4

CUSTOM-BUILT TOOL SERVICE

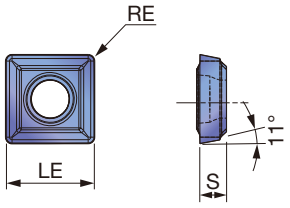
Tungaloy also designs and fabricates semi-standard or tailor-made tools with the TCB inserts according to the desired tool specifications. Contact your Tungaloy representative for further details.

INSERT

SPMP/SPMM



SPMP-CG



P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	☆	☆
H	Hard materials	☆	☆

★ : First choice
☆ : Second choice

Designation	RE	Coated		LE	S
		T313W	AH6030		
SPMP771-CG	0.4		●	5.4	1.61
SPMP831-CG	0.4		●	6.35	2.38
SPMP042ER-CG	0.8		●	7.94	3.18
SPMM322ER-CG	0.8		●	9.53	3.18
SPMM432ER-CG	0.8		●	12.7	4.76
SPMP831DS	0.4	●		6.35	2.38
SPMP042ERD	0.8	●		7.94	3.18
SPMM322ERD	0.8	●		9.53	3.18
SPMM432ERD	0.8	●		12.7	4.76

●: Line up

STANDARD CUTTING CONDITIONS

Counterboring

ISO	Workpiece material	Cutting speed *Vc* (m/min)	Feed : *f* (mm/rev)	
			ø10 - 12 (z = 1)	ø13 - 59 (z = 2)
P	Carbon steel	80 - 200	0.03 - 0.08	0.1 - 0.3
M	Stainless steel	80 - 150	0.03 - 0.05	0.06 - 0.15
K	Grey cast iron	80 - 200	0.05 - 0.1	0.1 - 0.4
N	Non-ferrous	100 - 300	0.05 - 0.2	0.1 - 0.4
S	Superalloys	50 - 80	0.03 - 0.05	0.06 - 0.15
H	Hard materials	50 - 80	0.03 - 0.05	0.06 - 0.15

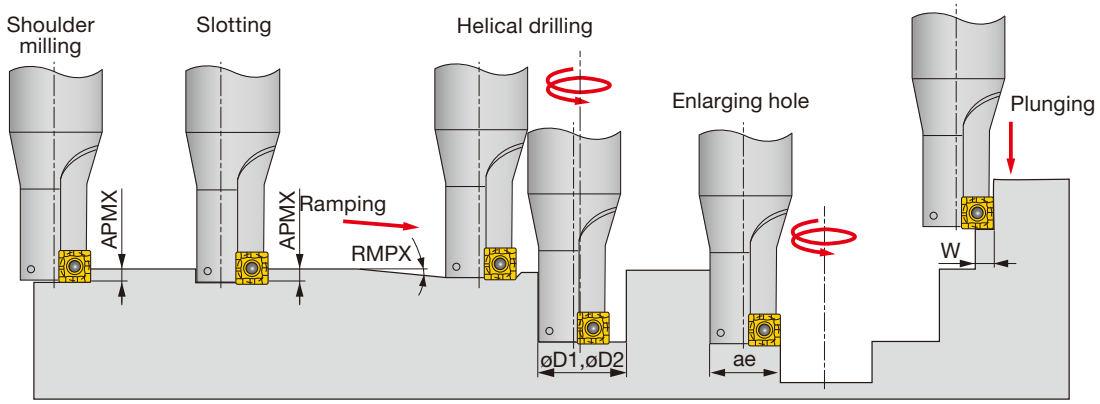
Milling

ISO	Workpiece material	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Carbon steel	80 - 200	0.05 - 0.15
M	Stainless steel	80 - 150	0.05 - 0.1
K	Grey cast iron	80 - 200	0.05 - 0.2
N	Non-ferrous	100 - 300	0.1 - 0.2
S	Superalloys	50 - 80	0.05 - 0.08
H	Hard materials	50 - 80	0.05 - 0.08

Internal boring (With one cutting edge)

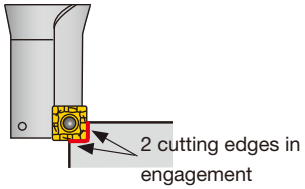
ISO	Workpiece material	Cutting speed *Vc* (m/min)	Depth of cut *ap* (mm)	Feed : *f* (mm/rev)
P	Carbon steel	80 - 200	0.5 -	0.05 - 0.15
M	Stainless steel	80 - 150	0.5 -	0.05 - 0.1
K	Grey cast iron	80 - 200	0.5 -	0.05 - 0.2
N	Non-ferrous	100 - 300	0.5 -	0.1 - 0.2
S	Superalloys	50 - 80	0.5 -	0.05 - 0.08
H	Hard materials	50 - 80	0.5 -	0.05 - 0.08

APPLICATION



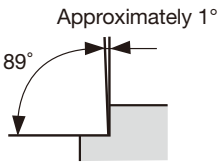
Designation	Tool dia. DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max.cutting width in plunging W	Min. machinable hole dia. øD1	Max. machinable hole dia. øD2	Max. cutting width in enlarging hole ae
TCB100F16	10	4	-	4	-	-	-
TCB110F16	11	4	2.1°	4	12	20	10
TCB120F20	12	4	2.1°	4	14	22	11
TCB130F20	13	4	2.1°	4	17	24	12
TCB-140	14	5	3°	5	20	25	13
TCB140F25	14	4	1.9°	4	19	26	13
TCB150F25	15	4	1.6°	4	21	28	14
TCB160F25	16	4	1.3°	4	23	30	15
TCB170F25	17	5	2.5°	5	25	32	16
TCB175F25	17.5	5	2.2°	5	25.5	33	16.5
TCB180F25	18	5	2°	5	26	34	17
TCB190F25	19	5	1.5°	5	27	36	18
TCB200F25	20	6	3°	6	29	38	19
TCB210F25	21	6	2.5°	6	30	40	20
TCB220F25	22	6	2°	6	31	42	21
TCB230F25	23	6	1.6°	6	32	44	22
TCB240F25	24	6	1.3°	6	33	46	23
TCB250F25	25	6	1.1°	6	34	48	24.5
TCB-260	26	6	1°	6	35	50	25
TCB-290	29	8	3°	8	37	56	28
TCB-320	32	8	2.5°	8	40	62	31
TCB-350	35	10	2.5°	10	45	68	34
TCB-390	39	10	2°	10	49	76	38
TCB-430	43	10	1.5°	10	53	84	42

The insert can be used for a maximum 2 indexings.
(full 4 indexing for a plunging application.)



Cautions in shouldering operation

The cutter is design so that the insert provides 1° taper relief on the periphery. The wall, therefore, will be 89° when milled.

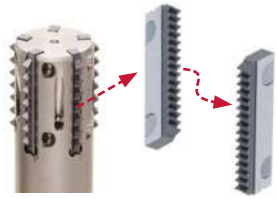


THREADMILLING



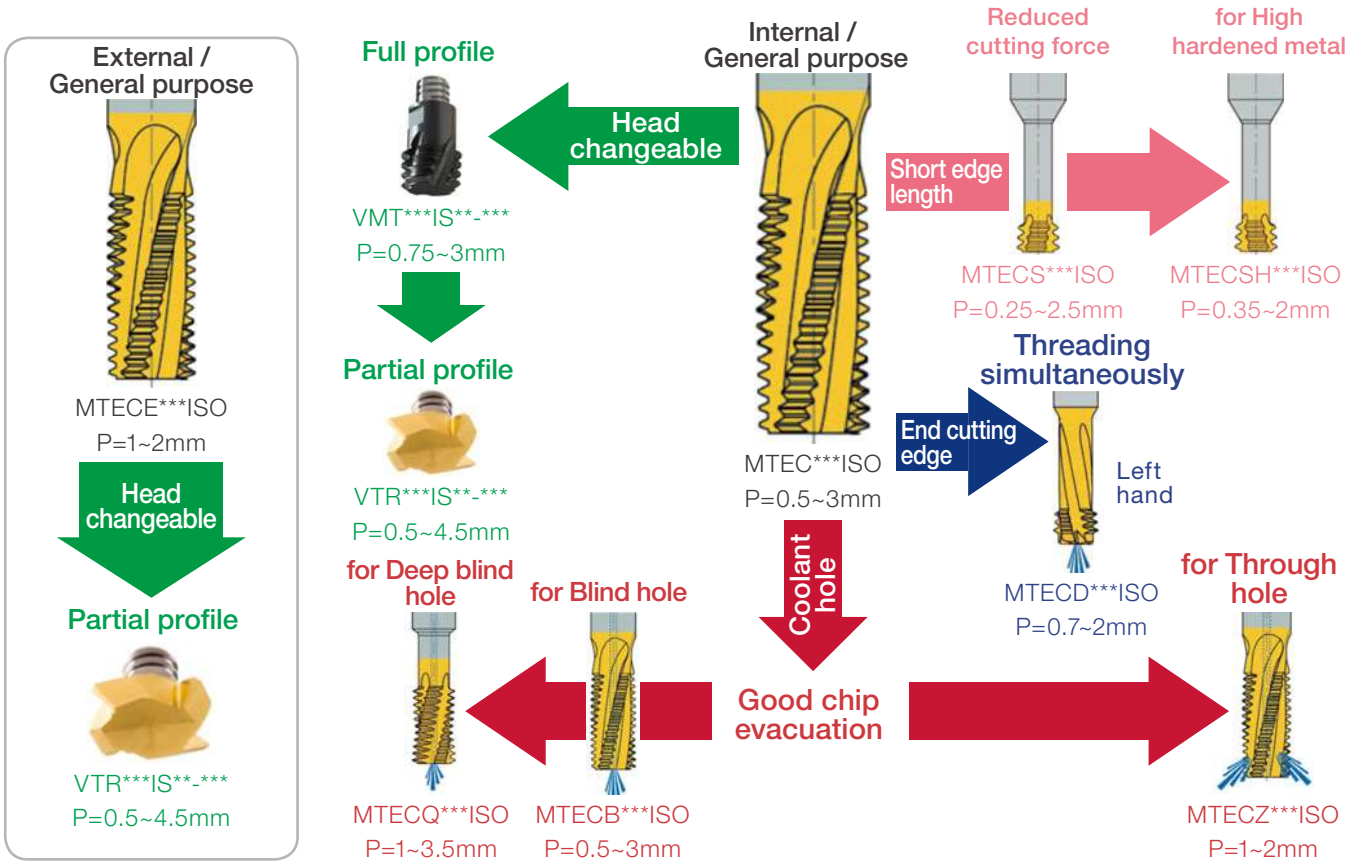
Highly economical tool design

Cost reduction



2-corner double sided inserts

SOLIDTHREAD Selection Guide (for ISO metric)



Reference pages: I103 - I117, L062

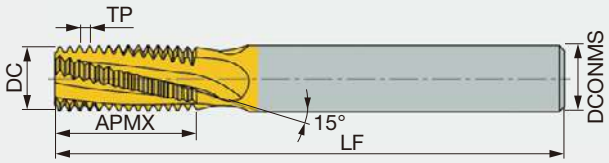
Designation System for Solid Carbide Endmills

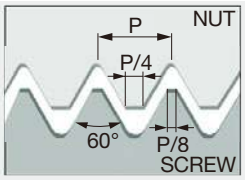
MTEC□		06	04	C	ISO
ThreadMilling Endmill Carbide	I - Single Point S - Short SH - Short for Hardened steel B - with Coolant Bore Q - with Coolant Bore with long neck Z - with Coolant hole with through hole D - with Drilling (end mill) cutting edge E - for External thread	Shank Dia.	Tool Dia.	No. of Flutes C = 3 flutes D = 4 flutes E = 5 flutes F = 6 flutes	Thread Standard

ISO metric

MTEC-ISO

Solid carbide internal threading endmill, for ISO metric profile





Designation	TP	Application range Fine	Application range Coarse	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTEC06038C100.5ISO	0.5	-	≥M5	6	3.8	3	10.3	58	Without	AH725
MTEC06022C50.5ISO	0.5	M3	≥M4	6	2.2	3	5.3	58	Without	AH725
MTEC06031C70.7ISO	0.7	M4	≥M5	6	3.1	3	7.4	58	Without	AH725
MTEC06045C100.75ISO	0.75	-	≥M6	6	4.5	3	10	58	Without	AH725
MTEC06036C90.8ISO	0.8	M5	≥M6	6	3.6	3	9.2	58	Without	AH725
MTEC0606C121.0ISO	1	-	≥M9	6	6	3	12.5	58	Without	AH725
MTEC0808D161.0ISO	1	-	≥M10	8	8	4	16.5	64	Without	AH725
MTEC0604C101.0ISO	1	M6	≥M7	6	4	3	10.5	58	Without	AH725
MTEC0604C141.0ISO	1	M6	≥M7	6	4	3	14.5	58	Without	AH725
MTEC0605C141.25ISO	1.25	M8	≥M10	6	5	3	14.4	58	Without	AH725
MTEC0605C191.25ISO	1.25	M8	≥M10	6	5	3	19.4	58	Without	AH725
MTEC1010D211.5ISO	1.5	-	≥M14	10	10	4	21.8	73	Without	AH725
MTEC1616F331.5ISO	1.5	-	≥M20	16	16	6	33.8	105	Without	AH725
MTEC0807C171.5ISO	1.5	M10	≥M12	8	7	3	17.3	64	Without	AH725
MTEC0807C241.5ISO	1.5	M10	≥M12	8	7	3	24.8	76	Without	AH725
MTEC0808C201.75ISO	1.75	M12	≥M14	8	8	3	20.1	64	Without	AH725
MTEC0808C281.75ISO	1.75	M12	≥M14	8	8	3	28.9	76	Without	AH725
MTEC1212D272.0ISO	2	-	≥M18	12	12	4	27	84	Without	AH725
MTEC2020F412.0ISO	2	-	≥M26	20	20	6	41	105	Without	AH725
MTEC1010C272.0ISO	2	M16	≥M17	10	10	3	27	73	Without	AH725
MTEC1010C392.0ISO	2	M16	≥M17	10	10	3	39	105	Without	AH725
MTEC1414D332.5ISO	2.5	M20	≥M22	14	14	4	33.8	84	Without	AH725
MTEC1414D482.5ISO	2.5	M20	≥M22	14	14	4	48.8	105	Without	AH725
MTEC1616C403.0ISO	3	M24	≥M25	16	16	3	40.5	105	Without	AH725
MTEC1616C583.0ISO	3	M24	≥M25	16	16	3	58.5	120	Without	AH725

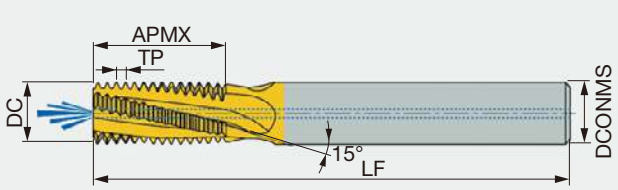
Reference pages: Standard cutting conditions → I120 - I122

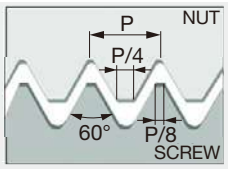
SOLIDTHREAD

ISO metric

MTECB-ISO

Solid carbide internal threading endmill, with coolant hole, for ISO metric profile



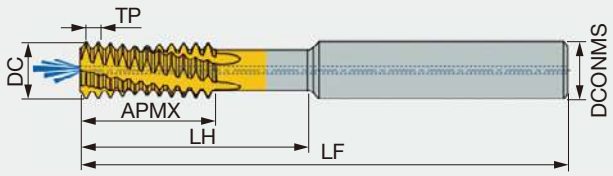


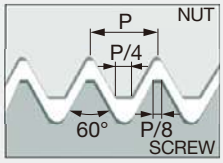
Designation	TP	Application range Fine	Application range Coarse	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECB06038C100.5ISO	0.5	-	≥M5	6	3.8	3	10.3	58	With	AH725
MTECB06031C70.7ISO	0.7	M4	≥M5	6	3.1	3	7.4	58	With	AH725
MTECB06045C100.75ISO	0.75	-	≥M6	6	4.5	3	10.1	58	With	AH725
MTECB1010D240.75ISO	0.75	-	≥M12	10	10	4	24.4	73	With	AH725
MTECB06038C90.8ISO	0.8	M5	≥M6	6	3.8	3	9.2	58	With	AH725
MTECB0606C121.0ISO	1	-	≥M9	6	6	3	12.5	58	With	AH725
MTECB0808D161.0ISO	1	-	≥M10	8	8	4	16.5	64	With	AH725
MTECB1010D241.0ISO	1	-	≥M12	10	10	4	24.5	73	With	AH725
MTECB06046C101.0ISO	1	M6	≥M7	6	4.6	3	10.5	58	With	AH725
MTECB06046C141.0ISO	1	M6	≥M6	6	4.6	3	14.5	58	With	AH725
MTECB0606C141.25ISO	1.25	M8	≥M10	6	6	3	14.4	58	With	AH725
MTECB0606C191.25ISO	1.25	M8	≥M10	6	6	3	19.4	58	With	AH725
MTECB1010D211.5ISO	1.5	-	≥M14	10	10	4	21.8	73	With	AH725
MTECB1616F331.5ISO	1.5	-	≥M20	16	16	6	33.8	105	With	AH725
MTECB1212D261.5ISO	1.5		≥M16	12	12	4	26.3	84	With	AH725
MTECB08078C171.5ISO	1.5	M10	≥M12	8	7.8	3	17	64	With	AH725
MTECB08078C241.5ISO	1.5	M10	≥M12	8	7.8	3	24.8	76	With	AH725
MTECB1009C201.75ISO	1.75	M12	≥M12	10	9	3	20.1	73	With	AH725
MTECB1009C281.75ISO	1.75	M12	≥M12	10	9	3	28.9	73	With	AH725
MTECB1010C272.0ISO	2	M14	≥M15	10	10	3	27	73	With	AH725
MTECB12118D272.0ISO	2	M16	≥M17	12	11.8	4	27	84	With	AH725
MTECB12118D392.0ISO	2	M16	≥M17	12	11.8	4	39	105	With	AH725
MTECB1615E332.5ISO	2.5	M20	≥M22	16	15	5	33.8	105	With	AH725
MTECB1615E482.5ISO	2.5	M20	≥M22	16	15	5	48.8	105	With	AH725
MTECB2018D583.0ISO	3	M24	≥M25	20	18	4	58.5	120	With	AH725

Reference pages: Standard cutting conditions → I120 - I122

MTECQ-ISO

Solid carbide deep internal threading endmill, with internal coolant hole, for ISO metric profile

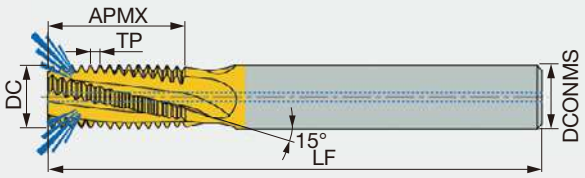


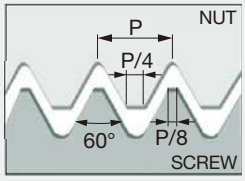


Designation	TP	Application range	DCONMS	DC	NOF	APMX	LH	LF	Coolant hole	Grade
MTECQ1212D381.0ISO	1	≥M14	12	12	4	21	38	84	With	AH725
MTECQ1010D301.5ISO	1.5	≥M13	10	10	4	18	30	73	With	AH725
MTECQ2020F562.0ISO	2	≥M24	20	20	6	34	56	105	With	AH725
MTECQ2020D453.5ISO	3.5	≥M26	20	20	4	28	45.5	105	With	AH725

MTECZ-ISO

Solid carbide internal threading endmill, with coolant hole in the flute, for ISO metric profile





Designation	TP	Application range		DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
		Fine	Coarse							
MTECZ0808D161.0ISO	1	-	≥M10	8	8	4	16.5	64	With	AH725
MTECZ06048C101.0ISO	1	M6	≥M7	6	4.8	3	10.5	58	With	AH725
MTECZ0606C141.25ISO	1.25	M8	≥M10	6	6	3	14.4	58	With	AH725
MTECZ0606C191.25ISO	1.25	M8	≥M10	6	6	3	19.4	58	With	AH725
MTECZ1010D211.5ISO	1.5	-	≥M14	10	10	4	21.8	73	With	AH725
MTECZ1212D261.5ISO	1.5	-	≥M16	12	12	4	26.3	84	With	AH725
MTECZ1616E331.5ISO	1.5	-	≥M20	16	16	5	33.8	101	With	AH725
MTECZ08078C171.5ISO	1.5	M10	≥M12	8	7.8	3	17	64	With	AH725
MTECZ1009C281.75ISO	1.75	M12	≥M12	10	9	3	28.9	73	With	AH725
MTECZ1010C272.0ISO	2	M14	≥M15	10	10	3	27	73	With	AH725
MTECZ12118D272.0ISO	2	M16	≥M17	12	11.8	4	27	84	With	AH725

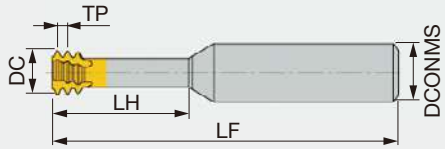
Reference pages: Standard cutting conditions → I120 - I122

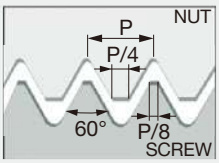
SOLIDTHREAD

ISO metric

MTECS-ISO

Small diameter solid carbide internal threading endmill, short edge type, for ISO metric profile



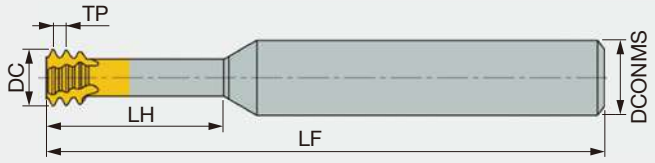


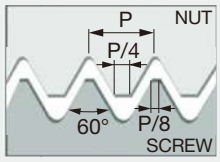
Designation	TP	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS03007C20.25ISO	0.25	≥M1	3	0.72	3	2.5	39	Without	AH725
MTECS03009C30.25ISO	0.25	≥M1.2	3	0.9	3	3	39	Without	AH725
MTECS03011C40.3ISO	0.3	≥M1.4	3	1.05	3	4	39	Without	AH725
MTECS03012C50.35ISO	0.35	≥M1.6	3	1.2	3	4.8	39	Without	AH725
MTECS03016C60.4ISO	0.4	≥M2	3	1.53	3	6	39	Without	AH725
MTECS06016C40.4ISO	0.4	≥M2	6	1.53	3	4.5	58	Without	AH725
MTECS03017C70.45ISO	0.45	≥M2.2	3	1.65	3	7	39	Without	AH725
MTECS06017C50.45ISO	0.45	≥M2.2	6	1.65	3	5	58	Without	AH725
MTECS0602C50.45ISO	0.45	≥M2.5	6	1.95	3	5.5	58	Without	AH725
MTECS0602C70.45ISO	0.45	≥M2.5	6	1.95	3	7.5	58	Without	AH725
MTECS06024C60.5ISO	0.5	≥M3	6	2.37	3	6.5	58	Without	AH725
MTECS06024C90.5ISO	0.5	≥M3	6	2.37	3	9.5	58	Without	AH725
MTECS06024C90.5ISOL	0.5	≥M3	6	2.37	3	9.5	105	Without	AH725
MTECS03024C120.5ISO	0.5	≥M3	3	2.4	3	12.5	39	Without	AH725
MTECS03024C150.5ISO	0.5	≥M3	3	2.4	3	15.5	39	Without	AH725
MTECS06054D200.5ISO	0.5	≥M6	6	5.35	4	20	58	Without	AH725
MTECS06028C100.6ISO	0.6	≥M3.5	6	2.75	3	10.5	58	Without	AH725
MTECS06028C70.6ISO	0.6	≥M3.5	6	2.75	3	7.5	58	Without	AH725
MTECS06031C120.7ISO	0.7	≥M4	6	3.1	3	12.5	58	Without	AH725
MTECS06031C120.7ISOL	0.7	≥M4	6	3.1	3	12.5	105	Without	AH725
MTECS06031C160.7ISO	0.7	≥M4	6	3.1	3	16.7	58	Without	AH725
MTECS06031C90.7ISO	0.7	≥M4	6	3.1	3	9	58	Without	AH725
MTECS0808D250.75ISO	0.75	≥M10	8	8	4	25	64	Without	AH725
MTECS06038C120.8ISO	0.8	≥M5	6	3.8	3	12.5	58	Without	AH725
MTECS06038C160.8ISO	0.8	≥M5	6	3.8	3	16	58	Without	AH725
MTECS06038C160.8ISOL	0.8	≥M5	6	3.8	3	16	105	Without	AH725
MTECS06047C141.0ISO	1	≥M6	6	4.65	3	14	58	Without	AH725
MTECS06047C201.0ISO	1	≥M6	6	4.65	3	20	58	Without	AH725
MTECS06047C201.0ISOL	1	≥M6	6	4.65	3	20	105	Without	AH725
MTECS0606C181.25ISO	1.25	≥M8	6	6	3	18	58	Without	AH725
MTECS0606C241.25ISO	1.25	≥M8	6	6	3	24	58	Without	AH725
MTECS08078C231.5ISO	1.5	≥M10	8	7.8	3	23	64	Without	AH725
MTECS08078C311.5ISO	1.5	≥M10	8	7.8	3	31.5	64	Without	AH725
MTECS1009C261.75ISO	1.75	≥M12	10	9	3	26	73	Without	AH725
MTECS12118D352.0ISO	2	≥M16	12	11.8	4	35	84	Without	AH725
MTECS12118D502.0ISO	2	≥M16	12	11.8	4	50	105	Without	AH725
MTECS1615E432.5ISO	2.5	≥M20	16	15	5	43	100	Without	AH725

Reference pages: Standard cutting conditions → I120 - I122

MTECSH-ISO

Small diameter solid carbide internal threading endmill, short edge type, left hand cutting, for ISO metric profile





Designation	TP	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECSH03012C50.35ISO	0.35	≥M1.6	3	1.2	3	4.8	39	Without	AH750
MTECSH03016C60.4ISO	0.4	≥M2	3	1.55	3	6	39	Without	AH750
MTECSH06016C40.4ISO	0.4	≥M2	6	1.55	3	4.5	58	Without	AH750
MTECSH06017C50.45ISO	0.45	≥M2.2	6	1.65	3	5	58	Without	AH750
MTECSH0602C50.45ISO	0.45	≥M2.5	6	1.95	3	5.5	58	Without	AH750
MTECSH0602C70.45ISO	0.45	≥M2.5	6	1.95	3	7.5	58	Without	AH750
MTECSH06024C60.5ISO	0.5	≥M3	6	2.35	3	6.5	58	Without	AH750
MTECSH06024C90.5ISO	0.5	≥M3	6	2.35	3	9.5	58	Without	AH750
MTECSH06028C70.6ISO	0.6	≥M3.5	6	2.75	3	7.5	58	Without	AH750
MTECSH06031C120.7ISO	0.7	≥M4	6	3.1	3	12.5	58	Without	AH750
MTECSH06038C120.8ISO	0.8	≥M5	6	3.8	3	12.5	58	Without	AH750
MTECSH06047C141.0ISO	1	≥M6	6	4.65	3	14	58	Without	AH750
MTECSH06047C201.0ISO	1	≥M6	6	4.65	3	20	58	Without	AH750
MTECSH0606C181.25ISO	1.25	≥M8	6	5.95	3	18	58	Without	AH750
MTECSH0606C241.25ISO	1.25	≥M8	6	5.95	3	24	58	Without	AH750
MTECSH08078C231.5ISO	1.5	≥M10	8	7.8	3	23	64	Without	AH750
MTECSH1009C261.75ISO	1.75	≥M12	10	9	3	26	73	Without	AH750
MTECSH12118D352.0ISO	2	≥M16	12	11.8	4	35	84	Without	AH750

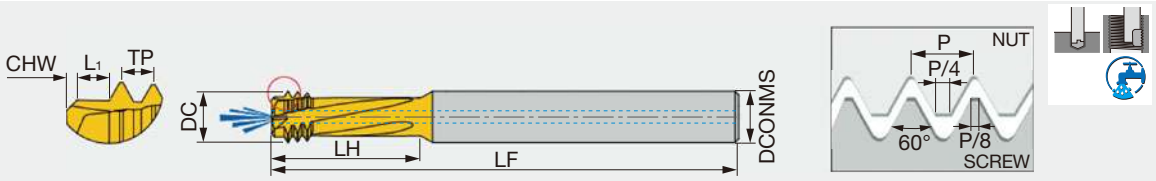
Reference pages: Standard cutting conditions → I120 - I122

SOLIDTHREAD

ISO metric

MTECD-ISO

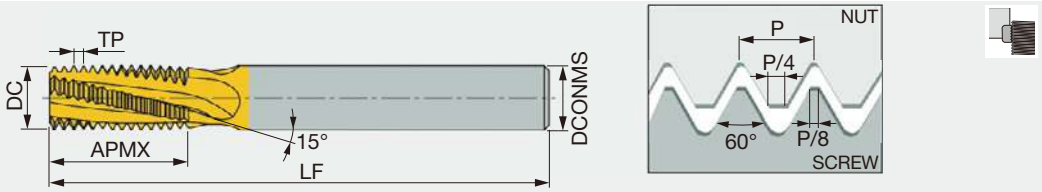
Small diameter solid carbide endmill for internal threading, drilling, and chamfering, short edge type, left hand cutting, for ISO metric profile



Designation	TP	Application range	DCONMS	DC	NOF	LH	LF	CHW	L1	Coolant hole	Grade
MTECD06032C110.7ISO	0.7	M4	6	3.15	3	11.6	58	0.2	0.7	Without	AH725
MTECD0604C140.8ISO	0.8	M5	6	4	3	14.4	58	0.3	0.8	Without	AH725
MTECD08047C141.0ISO	1	M6-M9	8	4.7	3	14	64	0.4	1	With	AH725
MTECD08061D181.25ISO	1.25	M8-M12	8	6.1	4	18	64	0.5	1.3	With	AH725
MTECD08078D231.5ISO	1.5	M10-M15	8	7.8	4	23	64	0.6	1.5	With	AH725
MTECD1009D261.75ISO	1.75	M12	10	9	4	26	73	0.6	1.8	With	AH725
MTECD12118D352.0ISO	2	M16-M23	12	11.8	4	35	84	0.6	2	With	AH725

MTEC E-ISO

Solid carbide external threading endmill, for ISO metric profile



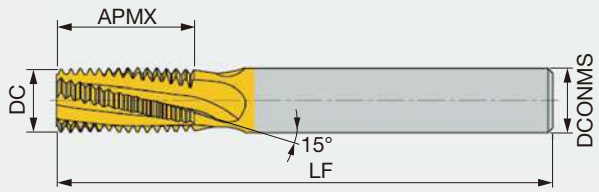
Designation	TP	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECE1010D161.0ISO	1	10	10	4	16.5	73	Without	AH725
MTECE1010D161.25ISO	1.25	10	10	4	16.9	73	Without	AH725
MTECE1010D151.5ISO	1.5	10	10	4	15.8	73	Without	AH725
MTECE1212D201.5ISO	1.5	12	12	4	20.3	84	Without	AH725
MTECE1212D201.75ISO	1.75	12	12	4	20.1	84	Without	AH725
MTECE1212D212.0ISO	2	12	12	4	21	84	Without	AH725

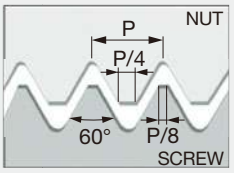
Reference pages: Standard cutting conditions → I120 - I122

Unified

MTEC-UN

Solid carbide internal threading endmill, for UN profile





Designation	TPI	Application range			DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
		UNC	UNF	UNEF							
MTEC06032C632UN	32	#8	#10	#12	6	3.2	3	6.8	58	Without	AH725
MTEC0604C1128UN	28	-	7/16-1/2	-	6	4	3	11.3	58	Without	AH725
MTEC0606C1428UN	28	-	-	7/16-1/2	6	6	3	14.5	58	Without	AH725
MTEC0605C1424UN	24	-	5/16	-	6	5	3	14.3	58	Without	AH725
MTEC0807C2124UN	24	-	3/8	9/16-5/8	8	7	3	20	64	Without	AH725
MTEC06045C1220UN	20	1/4	-	-	6	4.5	3	12.1	58	Without	AH725
MTEC0807C2120UN	20	-	7/16-1/2	-	8	7	3	20	64	Without	AH725
MTEC1212E2720UN	20	-	-	3/4-1	12	12	5	27.3	84	Without	AH725
MTEC0605C1418UN	18	5/16	-	-	6	5	3	14.8	58	Without	AH725
MTEC1010D2618UN	18	-	9/16-5/8	1 1/8-1 5/8	10	10	4	26.1	73	Without	AH725
MTEC0606C1616UN	16	3/8	-	-	6	6	3	16.7	58	Without	AH725
MTEC1212D3116UN	16	-	3/4	-	12	12	4	30	84	Without	AH725
MTEC1615E3714UN	14	-	7/8	-	16	15	5	37.2	105	Without	AH725
MTEC0808C2213UN	13	1/2	-	-	8	8	3	22.5	64	Without	AH725
MTEC1010C2612UN	12	9/16	-	-	10	10	3	26.5	73	Without	AH725
MTEC1616E4112UN	12	-	1-1 1/2	-	16	16	5	41.3	105	Without	AH725
MTEC1010C2811UN	11	5/8	-	-	10	10	3	28.9	73	Without	AH725
MTEC1212C3410UN	10	3/4	-	-	12	12	3	34.3	84	Without	AH725
MTEC1615C389UN	9	7/8	-	-	16	15	3	38.1	105	Without	AH725
MTEC1616C428UN	8	1	-	-	16	16	3	42.9	105	Without	AH725

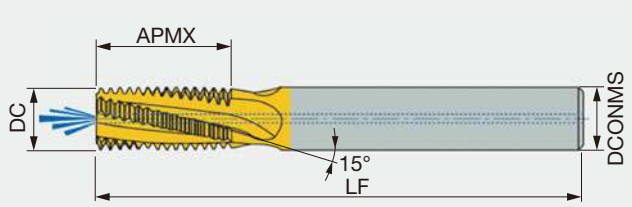
Reference pages: Standard cutting conditions → I120 - I122

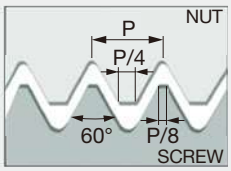
SOLIDTHREAD

Unified

MTECB-UN

Solid carbide internal threading endmill, with coolant hole, for UN profile

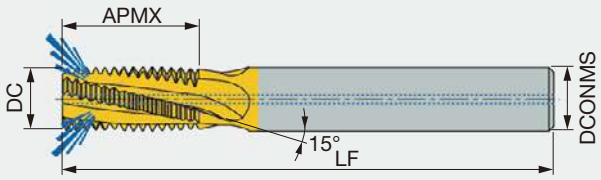


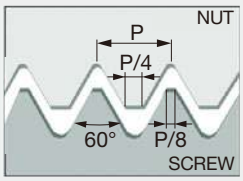


Designation	TPI	Application range UNC	UNF	UNEF	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECB06032C632UN	32	#8	#10	#12	6	3.2	3	6.8	58	With	AH725
MTECB0606C1432UN	32	-	-	7/16-1/2	6	6	3	16	58	With	AH725
MTECB0605C1128UN	28	-	1/4	-	6	5	3	11.3	58	With	AH725
MTECB08066C1424UN	24	-	5/16	-	8	6.6	3	14.3	64	With	AH725
MTECB0808D2124UN	24	-	-	9/16-5/8	8	8	4	20.6	64	With	AH725
MTECB0808C2120UN	20	-	7/16	-	8	8	3	21	64	With	AH725
MTECB1010D2220UN	20	-	1/2	-	10	10	4	22.3	73	With	AH725
MTECB06056C1418UN	18	5/16	-	-	6	5.6	3	14.8	58	With	AH725
MTECB12113D2618UN	18	-	9/16-5/8	1 1/8-1 5/8	12	11.3	4	26.1	84	With	AH725
MTECB08067C1616UN	16	3/8	-	-	8	6.7	3	16.7	64	With	AH725
MTECB1212D3116UN	16	-	3/4	-	12	12	4	31	84	With	AH725
MTECB1616E3714UN	14	-	7/8	-	16	16	5	37.2	105	With	AH725
MTECB10092C2213UN	13	1/2	-	-	10	9.2	3	22.5	73	With	AH725
MTECB12114C2811UN	11	5/8	-	-	12	11.4	3	28.9	84	With	AH725
MTECB16144D3410UN	10	3/4	-	-	16	14.4	4	34.3	105	With	AH725
MTECB20195D428UN	8	1	-	-	20	19.5	4	42.9	105	With	AH725

MTECZ-UN

Solid carbide internal threading endmill, with coolant hole in the flute, for UN profile



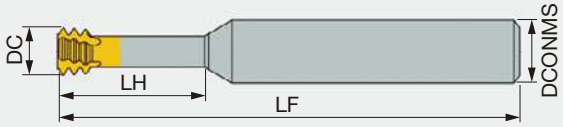


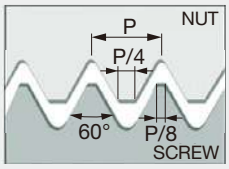
Designation	TPI	Application range UNC	UNF	UNEF	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECZ1010D2220UN	20	-	1/2	-	10	10	4	22.3	73	With	AH725
MTECZ12113D2618UN	18	-	9/16-5/8	1 1/8-1 5/8	12	11.3	4	26.1	84	With	AH725
MTECZ08067C1616UN	16	3/8	-	-	8	6.7	3	16.7	64	With	AH725
MTECZ16144D3410UN	10	3/4	-	-	16	14.4	4	34.3	101	With	AH725

Reference pages: Standard cutting conditions → I120 - I122

MTECS-UN

Small diameter solid carbide internal threading endmill, short edge type, for UN profile





Designation	TPI	Application range UNC	Application range UNF	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS03012C880UN	80	-	#0	3	1.15	3	8	39	Without	AH725
MTECS03015C672UN	72	-	#1	3	1.45	3	6	39	Without	AH725
MTECS06016C656UN	56	#2	#3	6	1.65	3	6.6	58	Without	AH725
MTECS06016C456UN	56	#2	#3	6	1.65	3	4.4	58	Without	AH725
MTECS06019C548UN	48	#3	#4	6	1.9	3	5.2	58	Without	AH725
MTECS03021C1240UN	40	#4	-	3	2.1	3	12	39	Without	AH725
MTECS06021C840UN	40	#4	-	6	2.1	3	8	58	Without	AH725
MTECS06024C940UN	40	#5	#6	6	2.45	3	9.6	58	Without	AH725
MTECS06021C640UN	40	#4	-	6	2.1	3	6.3	58	Without	AH725
MTECS06033C936UN	36	-	#8	6	3.3	3	9	58	Without	AH725
MTECS06025C732UN	32	#6	-	6	2.55	3	7.1	58	Without	AH725
MTECS06025C1032UN	32	#6	-	6	2.55	3	10.5	58	Without	AH725
MTECS06032C932UN	32	#8	#10	6	3.2	3	9.5	58	Without	AH725
MTECS06032C1232UN	32	#8	#10	6	3.2	3	12.5	58	Without	AH725
MTECS06037C1032UN	32	-	#10	6	3.7	3	10.5	58	Without	AH725
MTECS06037C1532UN	32	-	#10	6	3.7	3	15	58	Without	AH725
MTECS0605C1428UN	28	-	1/4	6	5	3	14.5	58	Without	AH725
MTECS0605C1928UN	28	-	1/4	6	5	3	19	58	Without	AH725
MTECS08066C1724UN	24	-	5/16	8	6.6	3	17	64	Without	AH725
MTECS08066C2424UN	24	-	5/16	8	6.6	3	24	64	Without	AH725
MTECS06047C1420UN	20	1/4	-	6	4.75	3	14	58	Without	AH725
MTECS06047C1920UN	20	1/4	-	6	4.75	3	19	58	Without	AH725
MTECS06047C1920UN-L	20	1/4	-	6	4.75	3	19	105	Without	AH725
MTECS0808C2520UN	20	-	7/16	8	8	3	25	64	Without	AH725
MTECS0606C1718UN	18	5/16	-	6	6	3	17	58	Without	AH725
MTECS0606C2318UN	18	5/16	-	6	6	3	23	58	Without	AH725
MTECS1212D3518UN	18	-	5/8	12	12	4	35	84	Without	AH725
MTECS08067C2216UN	16	3/8	-	8	6.7	3	22	64	Without	AH725
MTECS08067C3016UN	16	3/8	-	8	6.7	3	30.2	64	Without	AH725
MTECS08077C2514UN	14	7/16	-	8	7.7	3	25	64	Without	AH725
MTECS10092C2713UN	13	1/2	-	10	9.2	3	27.5	73	Without	AH725
MTECS12114C3411UN	11	5/8	-	12	11.4	3	34.5	84	Without	AH725
MTECS12114C5011UN	11	5/8	-	12	11.4	3	50	105	Without	AH725

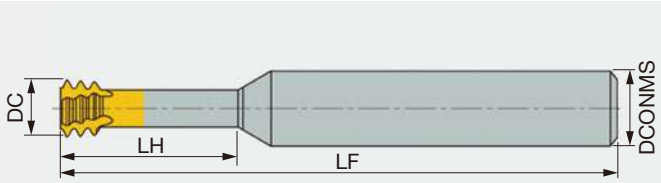
Reference pages: Standard cutting conditions → I120 - I122

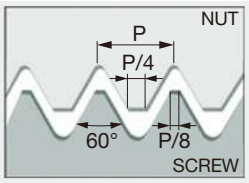
SOLIDTHREAD

Unified

MTECSH-UN

Small diameter solid carbide internal threading endmill, short edge type, left hand cutting, for UN profile



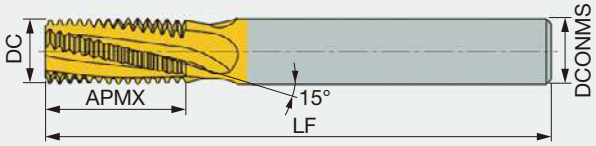


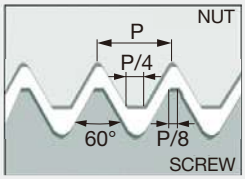
Designation	TPI	Application range UNC	Application range UNF	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECSH06012C480UN	80	-	#0	6	1.15	3	4	58	Without	AH725
MTECSH06016C656UN	56	#2	#3	6	1.65	3	6.6	58	Without	AH725
MTECSH06019C548UN	48	#3	#4	6	1.9	3	5.2	58	Without	AH725
MTECSH06021C640UN	40	#4	-	6	2.1	3	6.3	58	Without	AH725
MTECSH06024C740UN	40	#5	#6	6	2.45	3	7	58	Without	AH725
MTECSH06021C840UN	40	#4	-	6	2.1	3	8	58	Without	AH725
MTECSH06024C940UN	40	#5	#6	6	2.45	3	9.6	58	Without	AH725
MTECSH06025C1032UN	32	#6	-	6	2.55	3	10.5	58	Without	AH725
MTECSH06032C932UN	32	#8	-	6	3.2	3	9.5	58	Without	AH725
MTECSH06037C1032UN	32	-	#10	6	3.7	3	10.5	58	Without	AH725
MTECSH06037C1532UN	32	-	#10	6	3.7	3	15	58	Without	AH725
MTECSH06042C1128UN	28	-	#12	6	4.2	3	11	58	Without	AH725
MTECSH0605C1428UN	28	-	1/4	6	5	3	14.5	58	Without	AH725
MTECSH06035C1024UN	24	#10-#12	-	6	3.5	3	10.6	58	Without	AH725
MTECSH08066C1724UN	24	-	5/16	8	6.6	3	17	64	Without	AH725
MTECSH08066C2424UN	24	-	5/16	8	6.6	3	24	64	Without	AH725
MTECSH06047C1920UN	20	1/4	-	6	4.75	3	19	58	Without	AH725
MTECSH0808C2520UN	20	-	7/16	8	8	3	25	64	Without	AH725
MTECSH0606C1718UN	18	5/16	-	6	6	3	17	58	Without	AH725
MTECSH0606C2318UN	18	5/16	-	6	6	3	23	58	Without	AH725
MTECSH08067C2216UN	16	3/8	-	8	6.7	3	22	64	Without	AH725
MTECSH08077C2514UN	14	7/16	-	8	7.7	3	25	64	Without	AH725
MTECSH10092C2713UN	13	1/2	-	10	9.2	3	27.5	73	Without	AH725
MTECSH12114C3411UN	11	5/8	-	12	11.4	3	34.5	84	Without	AH725

Reference pages: Standard cutting conditions → I120 - I122

MTEC E-UN

Solid carbide external threading endmill, for UN profile





Designation	TPI	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECE1010D1624UN	24	10	10	4	16.4	73	Without	AH725
MTECE1212E2120UN	20	12	12	5	21	84	Without	AH725

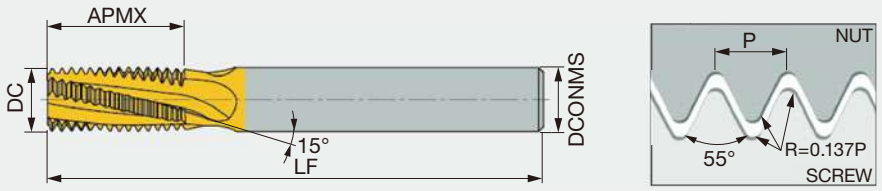
Reference pages: Standard cutting conditions → I120 - I122

SOLIDTHREAD

Whitworth

MTEC-W

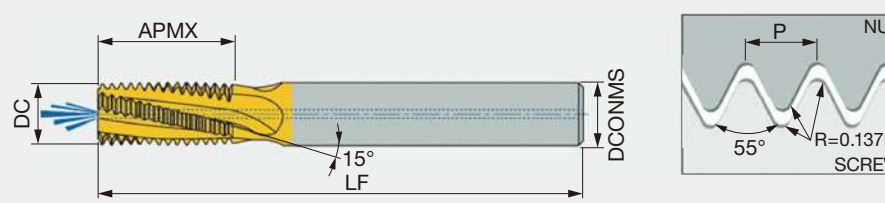
Solid carbide internal and external threading endmill, for BSP profile



Designation	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTEC0606C928W	28	1/8	6	6	3	9.5	58	Without	AH725
MTEC0808C1419W	19	1/4-3/8	8	8	3	14	64	Without	AH725
MTEC1212D1914W	14	1/2-7/8	12	12	4	19.3	84	Without	AH725
MTEC1212D2614W	14	1/2-7/8	12	12	4	26.3	84	Without	AH725
MTEC1212C2411W	11	1-1 1/2	12	12	3	24.2	84	Without	AH725
MTEC1616D3811W	11	1-3	16	16	4	38.1	105	Without	AH725

MTECB-W

Solid carbide internal and external threading endmill, with coolant hole, for BSP profile

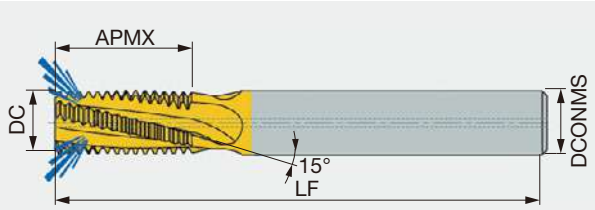


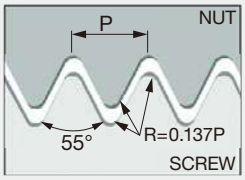
Designation	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECB08078C1428W	28	1/8	8	7.8	3	14.1	64	あり	AH725
MTECB1010D1619W	19	1/4-3/8	10	10	4	16.7	73	あり	AH725
MTECB1616E2614W	14	1/2-7/8	16	16	5	26.3	105	あり	AH725
MTECB1616D3811W	11	≥1	16	16	4	38.1	105	あり	AH725
MTECB2020E4711W	11	≥1	20	20	5	47.3	105	あり	AH725

Reference pages: Standard cutting conditions → I120 - I122

MTECZ-W

Solid carbide internal and external threading endmill, with coolant hole, for BSP profile

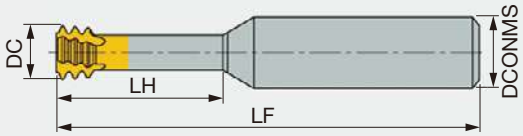


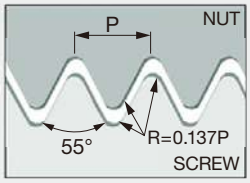


Designation	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECZ08078C1428W	28	1/8	8	7.8	3	14.1	64	With	AH725
MTECZ1010D1619W	19	1/4-3/8	10	10	4	16.7	73	With	AH725
MTECZ1616E2614W	14	1/2-7/8	16	16	5	26.3	101	With	AH725

MTECS-W

Solid carbide internal and external threading endmill, short edge type, for BSP/BSF profile



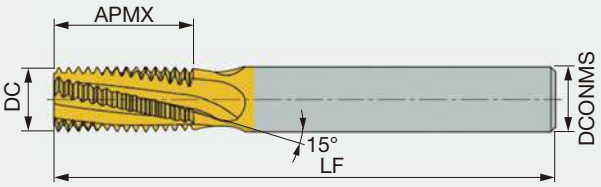


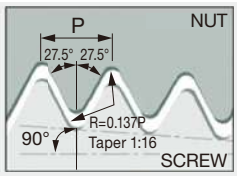
Designation	TPI	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS08078C1928W	28	1/8	8	7.8	3	19.5	64	Without	AH725
MTECS1010D3019W	19	1/4-3/8	10	10	4	30	73	Without	AH725
MTECS1212D3714W	14	1/2-7/8	12	12	4	37	84	Without	AH725

BSPT

MTEC-BSPT

Solid carbide internal and external threading endmill. for BSPT profile





Designation	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTEC0606C928BSPT	28	1/8	6	6	3	9.5	58	Without	AH725
MTEC0808C1419BSPT	19	1/4-3/8	8	8	3	14	64	Without	AH725
MTEC1212D1914BSPT	14	1/2-7/8	12	12	4	19.1	84	Without	AH725
MTEC1616D2811BSPT	11	1-2	16	16	4	28.9	105	Without	AH725

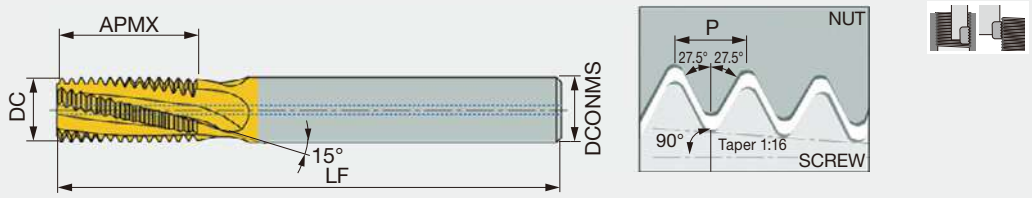
Reference pages: Standard cutting conditions → I120 - I122

SOLIDTHREAD

NPT

MTEC-NPT

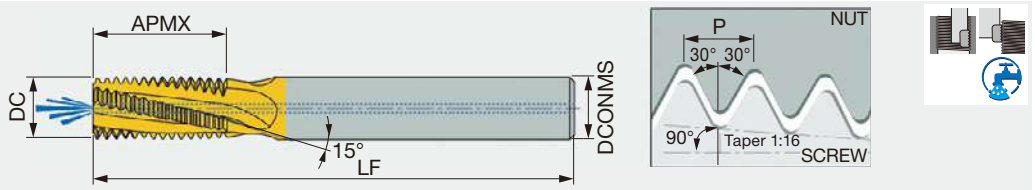
Solid carbide internal and external threading endmill. for NPT profile



Designation	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTEC0606C927NPT	27	1/16-1/8	6	6	3	9.9	58	Without	AH725
MTEC0808C1418NPT	18	1/4-3/8	8	8	3	14.8	64	Without	AH725
MTEC1212D2014NPT	14	1/2-3/4	12	12	4	20.9	84	Without	AH725
MTEC1616D2711.5NPT	11.5	1-2	16	16	4	27.6	105	Without	AH725
MTEC2020D398NPT	8	≥2 1/2	20	20	4	39.7	105	Without	AH725

MTECB-NPT

Solid carbide internal and external threading endmill, with coolant hole, for NPT profile

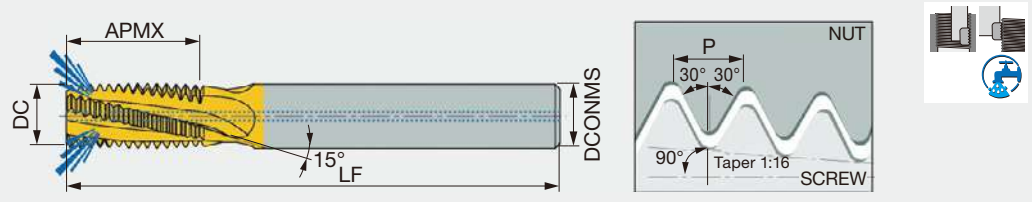


Designation	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECB08076C1027NPT	27	1/8	8	7.6	3	10.8	64	With	AH725
MTECB1010D1618NPT	18	1/4-3/8	10	10	4	16.2	73	With	AH725
MTECB16155D2214NPT	14	1/2-3/4	16	15.5	4	22.7	105	With	AH725

NPTF

MTECZ-NPTF

Solid carbide internal and external threading endmill, with coolant hole in the flute, for NPTF profile



Designation	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECZ08076C1027NPTF	27	1/8	8	7.6	3	10.8	64	With	AH725
MTECZ1010D1618NPTF	18	1/4-3/8	10	10	4	16.2	73	With	AH725

Reference pages: Standard cutting conditions → I120 - I122

MJ

MTECS-MJ

Small diameter solid carbide internal threading endmill, short edge type, with coolant hole, for MJ profile



Designation	TP	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS06039C120.8MJ	0.8	5	6	3.9	3	12.5	58	With	AH725
MTECS08061C201.25MJ	1.25	8	8	6.1	3	20	64	With	AH725
MTECS10092C301.75MJ	1.75	12	10	9.2	3	30	73	With	AH725

UNJ

MTECS-UNJ

Small diameter solid carbide internal threading endmill, short edge type, with coolant hole, for UNJ profile



Designation	TPI	Application range UNJC	Application range UNJF	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS08051C1628UNJ	28	-	1/4	8	5.1	3	16	64	With	AH725
MTECS08067C2024UNJ	24	-	5/16-3/8	8	6.7	3	20	64	With	AH725
MTECS06049C1620UNJ	20	1/4	-	6	4.9	3	16	58	Without	AH725
MTECS0808C2820UNJ	20	-	7/16	8	8	3	28	64	With	AH725
MTECS08061C2018UNJ	18	5/16	-	8	6.15	3	20	64	With	AH725

Reference pages: Standard cutting conditions → I120 - I122

TUNGMEISTER

Designation System for TungMeister

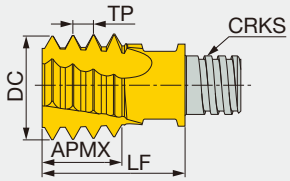
VMT	100	L06	IS	15	-	4	S05
TungMeister ThreadMilling VMT : Full profile VTR : Partial profile	Tool Dia. x10	Cutting Length	Thread Profile ISO UN W	Pitch x10 TPI		No. of Flutes	Connection Size

ISO metric

VMT***IS

Internal threading head, for ISO metric profile (TungMeister)





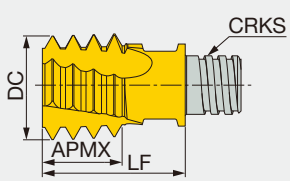
Designation	TP	Application range Fine	Application range Coarse	DC	NOF	APMX	LF	CRKS	Grade	Wrench
VMT100L06IS07-4S05	0.75	-	≥M12	10	4	6	12.8	S05	AH725	KEYV-S05
VMT100L06IS10-4S05	1	-	≥M12	10	4	6	12.8	S05	AH725	KEYV-S05
VMT100L06IS15-4S05	1.5	-	≥M14	10	4	6	12.8	S05	AH725	KEYV-S05
VMT120L09IS15-4S06	1.5	-	≥M16	12	4	9	14.3	S06	AH725	KEYV-T25
VMT120L10IS20-4S06	2	M16	≥M17	12	4	10	14.3	S06	AH725	KEYV-T25
VMT160L12IS15-6S08	1.5	-	≥M20	16	6	12	19	S08	AH725	KEYV-T30L
VMT160L12IS20-5S08	2	-	≥M19	16	5	12	19	S08	AH725	KEYV-T30L
VMT150L13IS25-5S08	2.5	M20	≥M22	15.4	5	12.5	19	S08	AH725	KEYV-T30L
VMT160L12IS30-3S08	3	M24	≥M25	16	3	12	19	S08	AH725	KEYV-T30L

Unified

VMT***UN

Internal threading head, for UN profile (TungMeister)





Designation	TPI	Application range UNC	Application range UNF	Application range UNEF	DC	NOF	APMX	LF	CRKS	Grade	Wrench
VMT100L06UN24-4S05	24	-	-	9/16-5/8	10	4	5.3	12.8	S05	AH725	KEYV-S05
VMT100L06UN20-4S05	20	-	1/2	-	10	4	5.1	12.8	S05	AH725	KEYV-S05
VMT100L06UN18-4S05	18	-	9/16-5/8	1 1/8-1 5/8	10	4	5.6	12.8	S05	AH725	KEYV-S05
VMT120L10UN16-4S06	16	-	3/4	-	12	4	9	14.3	S06	AH725	KEYV-T25
VMT120L10UN14-4S06	14	-	7/8	-	12	4	9	14.3	S06	AH725	KEYV-T25
VMT160L13UN12-5S08	12	-	1-1 1/2	-	16	5	12.7	19	S08	AH725	KEYV-T30L
VMT150L13UN10-4S08	10	3/4	-	-	15.4	4	12.7	19	S08	AH725	KEYV-T30L
VMT160L11UN09-3S08	9	7/8	-	-	16	3	11.3	19	S08	AH725	KEYV-T30L
VMT160L12UN08-3S08	8	1	-	-	16	3	12.7	19	S08	AH725	KEYV-T30L

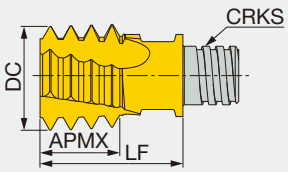
Reference pages: ThreadMill → I103 - I117

Whitworth

VMT***W

Internal and external threading head, for 55° BSP profile (TungMeister)





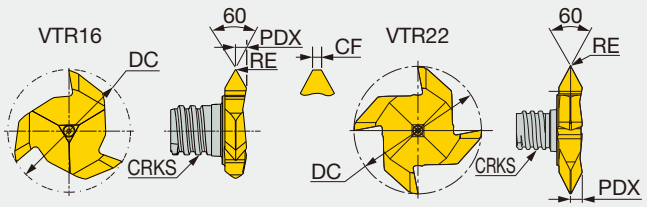
Designation	TPI	Application range	DC	NOF	APMX	LF	CRKS	Grade	Wrench
VMT100L06W19-4S05	19	1/4-3/8	10	4	5.3	12.8	S05	AH725	KEYV-S05
VMT160L12W14-4S08	14	1/2-7/8	16	4	12.7	19	S08	AH725	KEYV-T30L
VMT160L11W11-4S08	11	≥1	16	4	11.6	19	S08	AH725	KEYV-T30L

60° partial profile

VTR***IS

Internal and external threading head, for 60° partial profile (TungMeister)





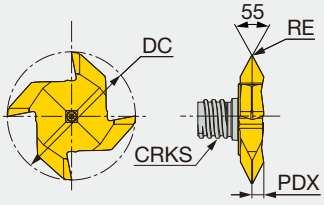
Designation	TP TPN	TP TPX	Smallest Possible thread	DC	NOF	RE	CF	PDX	CRKS	Grade	Wrench
VTR160L12IS05-3S06	0.5	2	M20	15.7	3	-	0.05	1.4	S06	GH130	KEYV-177
VTR160L12IS15-3S06	1.5	2	M22	15.7	3	0.05	-	1.4	S06	GH130	KEYV-177
VTR220L28IS30-4S08	3	4.5	M36	21.7	4	0.2	-	2.8	S08	GH130	KEYV-217

55° partial profile

VTR***W

Internal and external threading head, for 55° partial profile





Designation	TPI TPIN	TPI TPIX	Smallest Possible thread	DC	NOF	RE	PDX	CRKS	Grade	Wrench
VTR220L24W14-4S08	14	11	3/4	21.7	4	0.2	2.4	S08	GH130	KEYV-217

Reference pages: ThreadMill → I103 - I117

THREADMILLING

STANDARD CUTTING CONDITIONS

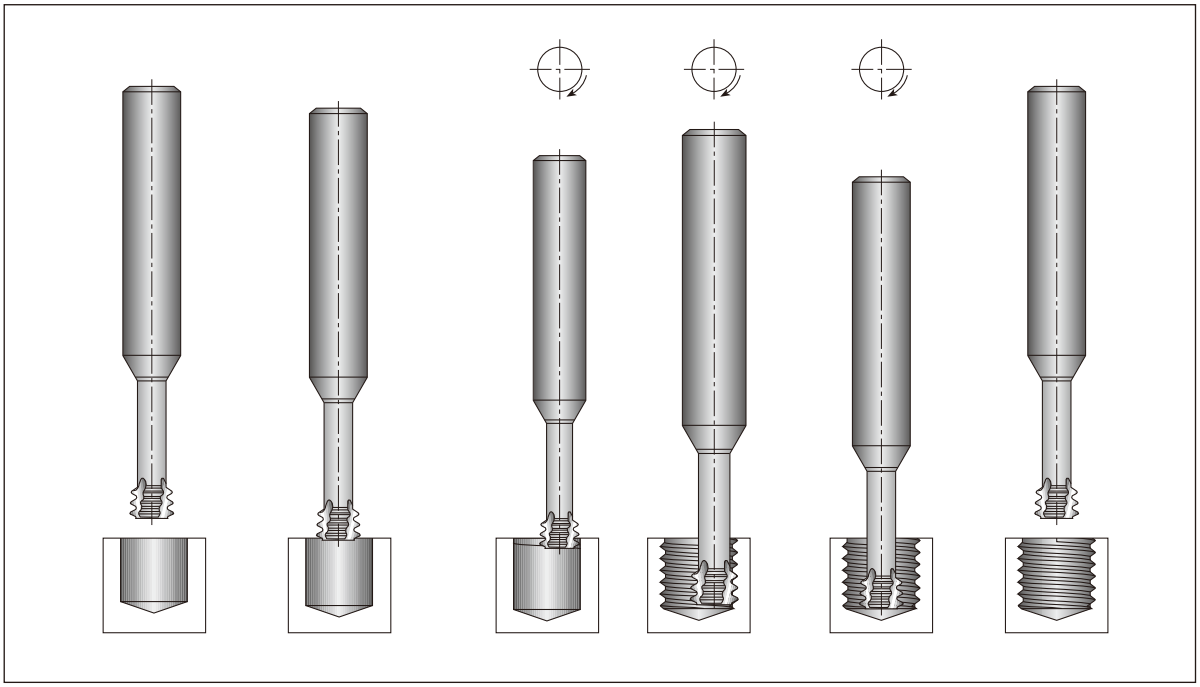
ISO	Material		Condition	Tensile strength [N/mm2]	Hardness HB	Cutting speed (m/min) AH725
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	100-250
		≥ 0.25 %C	Annealed	650	190	80-210
		< 0.55 %C	Quenched and tempered	850	250	65-170
		≥ 0.55 %C	Annealed	750	220	110-180
			Quenched and tempered	1000	300	95-160
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	90-160
			Quenched and tempered	930	275	65-200
				1000	300	70-210
				1200	350	95-160
	High alloyed steel, cast steel, and tool steel		Annealed	680	200	130-170
			Quenched and tempered	1100	325	75-100
	Stainless steel and cast steel		Ferritic/martensitic	680	200	110-170
			Martensitic	820	240	70-155
M	Stainless steel		Annealed	600	180	85-100
K	Cast iron nodular (GGG)		Ferritic/martensitic		180	120-160
			Pearlitic		260	75-160
	Grey cast iron (GG)		Ferritic		160	70-150
			Pearlitic		250	110-140
	Malleable cast iron		Ferritic		130	120-160
			Pearlitic		230	110-140
N	Aluminum- wrought alloy		Not cureable		60	160-300
			Cured		100	
	Aluminum-cast, alloyed	=<12% Si	Not cureable		75	150-350
			Cured		90	
		>12% Si	High temperature		130	100-250
	Copper alloys	>1% Pb	Free cutting		110	
			Brass		90	
			Electrolitic copper		100	
	Non-metallic		Duroplastics, fiber plastics			100-400
			Hard rubber			
S	High temp. alloys	Fe based	Annealed		200	
			Cured		280	
		Ni or Co based	Annealed		250	20-80
			Cured		350	
			Cast		320	
	Titanium Ti alloys			RM 400		
			Alpha+beta alloys cured	RM 1050		20-80
H	Hardened steel		Hardened		55 HRC	55-65
			Hardened		60 HRC	45-55
	Chilled cast iron		Cast		400	90-105
	Cast iron		Hardened		55 HRC	55-65

Feed (mm/t)											
Ø2	Ø3	Ø4	Ø6	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø30
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.02	0.03	0.03	0.05	0.06	0.07	0.08	0.09	0.1	0.12	0.15	0.18
0.02	0.03	0.03	0.05	0.06	0.07	0.08	0.09	0.1	0.12	0.15	0.18
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.21	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10	0.12
0.05	0.06	0.07	0.09	0.1	0.11	0.12	0.13	0.15	0.18	0.22	0.25
0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05
0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05

With long edge, reduce feed rate to 40%.

MTECS
Small Diameter, Short type

Thread Milling - Recommended Procedure



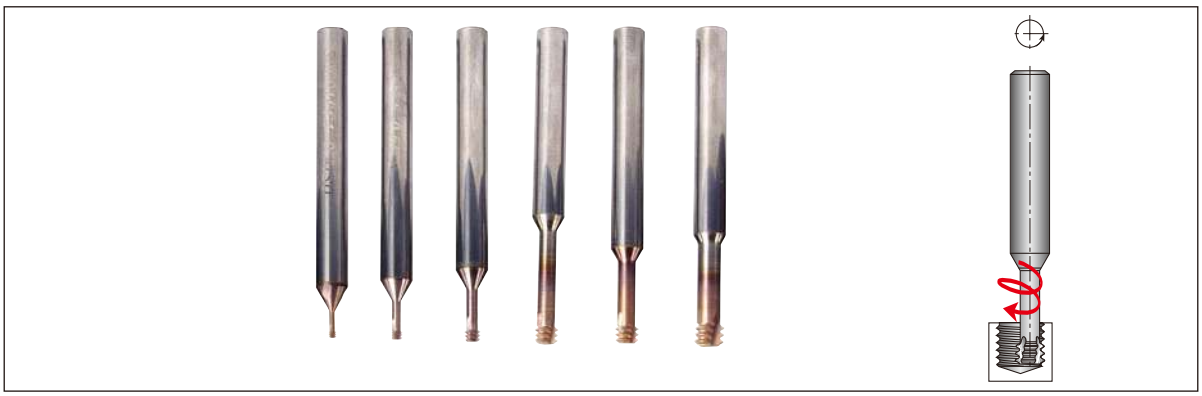
STANDARD CUTTING CONDITIONS

ISO	Material	Cutting speed m/min	Feed (mm/t)												
			Ø1.5	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø12	Ø14	Ø15
P	Low & medium carbon steels	60-120	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
	High carbon steels	60-90	0.04	0.05	0.06	0.08	0.09	0.1	0.12	0.13	0.14	0.14	0.16	0.17	0.18
	Alloy steels, treated steels	50-80	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.1	0.12	0.13	0.14
	Cast steels	70-90	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.1	0.12	0.13	0.14
M	Stainless steels	60-90	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.1	0.11	0.12	0.13
S	Nickel alloys, titanium alloys	20-40	0.03	0.03	0.04	0.04	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08
K	Cast iron	40-80	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
N	Aluminum	80-150	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
	Synthetics, duroplastics, thermoplastics	50-200	0.1	0.11	0.12	0.14	0.16	0.18	0.19	0.19	0.19	0.19	0.19	0.2	0.2

MTECS
Small Diameter, Short type

SolidThread MTECS is used for the production of small internal threads. These thread mills feature a short 3-tooth cutting zone with 3 flutes and a released neck between the cutting zone and the shank.

This unique tool design offers very precise profiles and a high performance AH725 submicron carbide grade with PVD titanium aluminum nitride coating.
The very short profile exerts a low force which minimizes tool bending. This facilitates parallel and high thread precision for the entire length.



Compared to taps, the **SOLIDTHREAD** is more accurate, thread machining is substantially faster and there is no danger of a broken tap being stuck in the hole.

SolidThread vs. Tap

Criteria	Thread mill	Taps
Thread surface quality	High	Medium
Thread geometry	Very accurate	Medium
Thread tolerance	4H, 5H, 6H with std. cutter	6H with standard tap, 4H with special tap
Machining time	Shorter or same as tap	Short
Machining load	Very low	High
Range of thread diameters	Wide range of diameters	Specific tap for each thread size
Right-/Left-hand threading	Same cutter	Specific tap for right- and left-hand
Geometric shape	Full profile	Partial profile

Features

- Minimum thread size of MTECS: **M1x0.25** (0.75 mm pre hole diameter) up to M20x2.50
- 2xD and 3xD threading lengths
- High cutting speeds
- Short cycle time
- Low cutting forces due to the short contact profile resulting in accurate and parallel thread
- Prevents oval threads near thin walls
- No more dealing with broken taps
- Reliable threading in blind holes
- Excellent performance on hardened steel, high temperature alloys and titanium

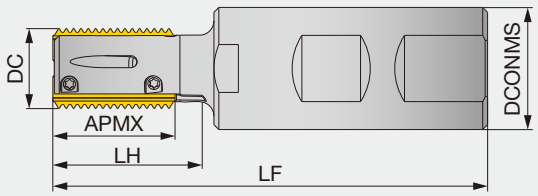


THREADMILLING

Thread milling cutter

Indexable thread milling cutter, long edge type





Designation	DC	APMX	CICT	DCONMS	LH	LF	Coolant hole	Insert
ETLN25M017W25.0F026R02 1)	17	25	2	25	26	85	With	LN25....
ETLN25M017W25.0F036R02 1)	17	25	2	25	36	95	With	LN25....
ETLN25M019W25.0F032R02	19	25	2	25	32	92	With	LN25....
ETLN25M019W25.0F044R02	19	25	2	25	44	104	With	LN25....
ETLN25M021W25.0F037R03	20.5	25	3	25	37	96	With	LN25....
ETLN25M021W25.0F044R03	20.5	25	3	25	44	103	With	LN25....
ETLN25M022W25.0F043R03	22	25	3	25	43	102	With	LN25....
ETLN25M022W25.0F055R03	22	25	3	25	55	114	With	LN25....
ETLN25M030W25.0F055R05	30	25	5	25	55	115	With	LN25....

Inserts with a thread pitch of ≥ 3 mm or ≥ 8TPI do not fit.

SPARE PARTS

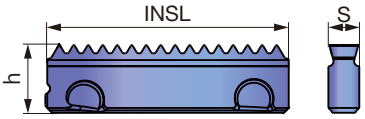



Designation	Clamping screw	Wrench
ETLN25...	SSTM3-3	T-6F

* Recommended clamping torque: SSTM3-3=1

INSERT

LN25...



P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Thread type	Application	Designation	Pitch	Threads per inch	Coated AH725	INSL	h	S
ISO Metric	Internal	LN25DIR1.5ISO	1.5	-	●	25	7	3.1
		LN25DIR2.0ISO	2	-	●	25	7	3.1
		LN25DIR3.0ISO 2)	3	-	●	25	7	3.1
Unified	Internal	LN25DIR20UN	-	20	●	25	7	3.1
		LN25DIR12UN	-	12	●	25	7	3.1
		LN25DIR8UN 2)	-	8	●	25	7	3.1
Whitworth	Internal and external	LN25DEIR14W	-	14	●	25	7	3.1
		LN25DEIR11W	-	11	●	25	7	3.1

(2) Does not fit the øDc17 holder

●: Line up

Reference pages: Standard cutting conditions → I125

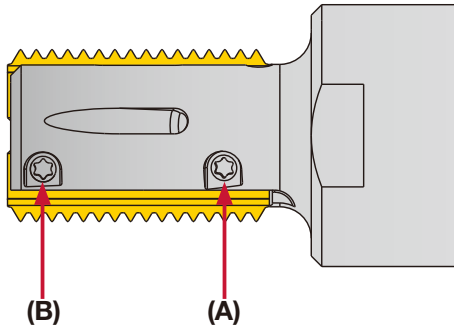
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grades	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steel	AH725	100 - 200	0.1 - 0.3
	High carbon steel	AH725	70 - 150	0.1 - 0.3
	High carbon steels	AH725	70 - 170	0.1 - 0.3
	Cast steel	AH725	70 - 170	0.1 - 0.3
M	Stainless steel	AH725	90 - 140	0.1 - 0.3
K	Cast iron	AH725	60 - 130	0.05 - 0.3
N	Aluminium alloys	AH725	80 - 400	0.1 - 0.4
S	Heat-resistant alloys	AH725	10 - 30	0.02 - 0.1
	Titanium alloy	AH725	20 - 90	0.02 - 0.1

• Climb milling is recommended.

Insert installation

1. Use airgun or rag to thoroughly clean all the insert pockets free from dust or chips.
2. Lightly tighten Screw "A" first, then Screw "B" until the insert becomes stationary.
3. Lightly tighten the screws for other insert(s) in the same matter as mentioned in #2 above.
4. Firmly tighten Screw "A", then Screw "B".
   Use the recommended torque strengths when tightening the screws.
5. Firmly tighten the screws for other insert(s) in the same manner as mentioned in #4 above.
6. Inspect to make sure there is no gap between the insert and the insert seat. Measure the radial runout before use.

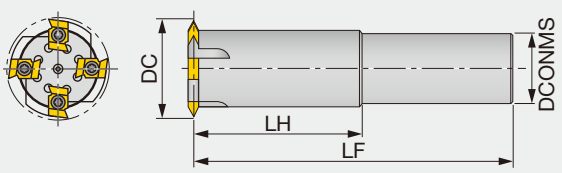


THREADMILLING

Thread milling cutter

Indexable thread milling cutter, single tooth





Right hand, 4 inserts

Designation	DC	CICT	DCONMS	LH	LF	Range of internal thread	Insert
D23-D25-45R	23	1	25	45	115	M28 - M30	T1-R...
D25-D25-45R	25	1	25	45	115	M32 - M42	T1-R...
D38-D32-85R	38	2	32	85	165	M45 - M56	T1-R...
D50-D42-100R	50	4	42	100	190	M58 - M68	T1-R...
D55-D42-100R	55	4	42	100	190	M64 - M85	T2-R...
D60-D42-100R	60	4	42	100	190	M70 - M85	T2-R...
D80-D42-100R	80	6	42	100	190	M90 -	T2-R...

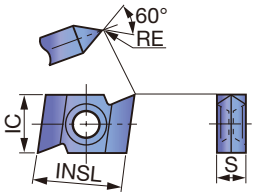
SPARE PARTS

Designation	Clamping screw	Wrench
D23-D25... - D50-D42...	CSTB-4	T-15F
D55-D42... - D80-D42...	CSTB-5	T-20F

* Recommended clamping torque(N·m) CSTB-4=3.5, CSTB-5=5

INSERT

T*-R...



P	Steel	★	
M	Stainless	★	
K	Cast iron		
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	RE	Coated										INSL	IC	S
		GH330												
T1-R14	0.14	●										14.4	9.525	4.76
T1-R28	0.28	●										14.4	9.525	4.76
T2-R14	0.14	●										17.8	12.7	6.35
T2-R28	0.28	●										17.8	12.7	6.35

●: Line up

Reference pages: Standard cutting conditions → I127

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grades	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Mild steels / Unhardened steels < 200HB	GH330	150 - 200	0.3 - 0.4
P	Carbon steels / Alloy steels < 300HB	GH330	150 - 200	0.17 - 0.26
P	Die steels < 50HRC	GH330	30 - 50	0.14 - 0.2
M	Stainless steels < 300HB	GH330	150 - 200	0.05 - 0.12

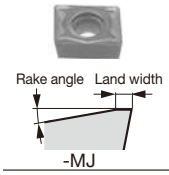
- Climb milling is recommended.
- When threading a blind hole, use the right hand cutter in right-hand rotation. Cut up from the bottom to prevent chip recutting.

THREADING MILLS AND APPLICABLE THREADS

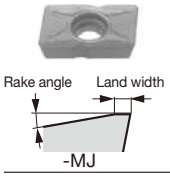
Cutter dia.	Applicable Thread							Minor diameter of max.pitch thread	
	Thread type	Coarse screw thread	Fine screw thread					Coarse screw thread	Fine screw thread
D23 X 1 tooth T1-type of inserts	M28					2	1.5		25.835
	M30	3.5			3	2	1.5	26.211	
D25 X 1 tooth T1-type of inserts	M32					2	1.5		29.835
	M33	3.5			3	2	1.5	29.211	
	M35						1.5		33.376
	M36	4			3	2	1.5	31.670	
	M38						1.5		36.376
	M39	4			3	2	1.5	34.670	
	M40				3	2	1.5		36.752
	M42	4.5		4	3	2	1.5	37.129	
D38 X 2 teeth T1-type of inserts	M45				3	2	1.5		40.152
	M48			4	3	2	1.5		43.670
	M50				3	2	1.5		46.752
	M52			4	3	2	1.5		47.670
	M55			4	3	2	1.5		50.670
	M56			4	3	2	1.5		51.670
D50 X 4 teeth T1-type of inserts	M58			4	3	2	1.5		53.670
	M60			4	3	2	1.5		55.670
	M62			4	3	2	1.5		57.670
	M64			4	3	2	1.5		59.670
	M65			4	3	2	1.5		60.670
	M68			4	3	2	1.5		63.670
D55 X 4 teeth T2-type of inserts	M64			4	3	2	1.5		59.670
	M65			4	3	2	1.5		60.670
	M68	6		4	3	2	1.5	61.505	
D60 X 4 teeth T2-type of inserts	M70			4	3	2	1.5		63.505
	M72		6	4	3	2	1.5		65.505
	M75			4	3	2	1.5		70.670
	M76		6	4	3	2	1.5		69.505
	M78					2			75.835
	M80		6	4	3	2	1.5		73.505
	M82					2			79.835
	M85		6	4	3	2			78.505
D80 X 6 teeth T2-type of inserts	M90		6	4	3	2			83.505
	M95		6	4	3	2			88.505

Milling Insert

● ACMT**PR-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH140	GH330	T3130	
	ACMT060308PR-MJ	●	●	●	●	ELP07/09/12...
	ACMT07T308PR-MJ	●	●	●	●	
	ACMT100408PR-MJ	●	●	●	●	

● ADMT**PR-MJ

Shape	Designation	Coated			Applicable mill
		AH120	AH140	T3130	
	ADMT130308PR-MJ	●	●	●	ELP13/17/21... (old item)
	ADMT17T308PR-MJ	●	●	●	
	ADMT210408PR-MJ	●	●	●	

● AECW**PEFR, AECW**PESR, AEMW**PEFR, AEMW**PETR

Shape	Designation	Coated		Cermet	Uncoated		Applicable mill
		AH120	GH330	NS740	UX30	TH10	
	AECW1403PEFR					●	EPE4000/5000/ 6000... (old item)
	AECW1403PESR	●	●	●	●		
	AECW16T3PEFR					●	
	AECW16T3PESR	●	●	●	●		
	AECW1804PEFR					●	
	AECW1804PESR	●	●	●	●		
	AEMW1403PEFR					●	
	AEMW1403PETR		●	●	●		
	AEMW16T3PEFR					●	
	AEMW16T3PETR		●	●	●		
	AEMW1804PEFR					●	
	AEMW1804PETR		●	●	●		

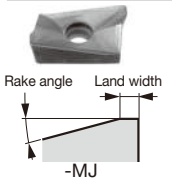
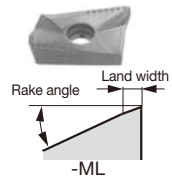
● ANEA542TN, ANEA642TN

Shape	Designation	Uncoated	Applicable mill
		UX30	
	ANEA542TN	●	VSN... (old item)
	ANEA642TN	●	

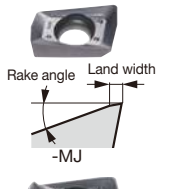
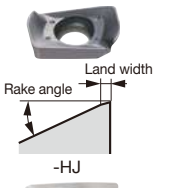
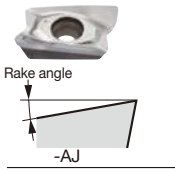
●: Line up

Milling Insert

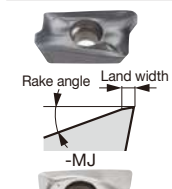
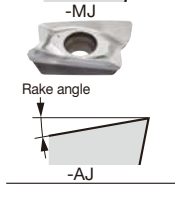
● ANMT**PPPR-MJ, ANMT**PPPR-ML

Shape	Designation	Coated			Applicable mill
		AH120	GH330	T3130	
	ANMT09T3PPPR-MJ	●	●	●	EPN09 (old item) EPN14... TPN14... (old item)
	ANMT09T3PPPR-ML	●			
	ANMT1404PPPR-MJ	●	●	●	
	ANMT1404PPPR-ML	●			
					

● AOMT**PDPR-MJ, AOGT**PDFR-AJ, AOMT070208PDPR-HJ

Shape	Designation	Coated		Uncoated	Applicable mill
		AH140	AH725	KS15F	
	AOMT070202PDPR-MJ	●	●		TUNGREC TPO07... Page H141 EPO07... Page H141 HPO07... Page H142
	AOMT070204PDPR-MJ	●	●		
	AOMT070208PDPR-MJ	●	●		
	AOMT070216PDPR-MJ	●	●		
	AOMT070208PDPR-HJ	●	●		
	AOGT070204PDFR-AJ			●	
					
					

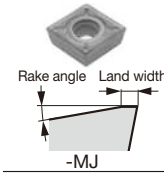
● AOMT**PDPR-MJ, AOGT**PDFR-AJ

Shape	Designation	Coated		Uncoated	Applicable mill
		AH140	AH725	KS15F	
	AOMT180508PDPR-MJ	●	●		TUNGREC TPO18... Page H150 EPO18... Page H151
	AOMT180516PDPR-MJ	●	●		
	AOMT180524PDPR-MJ	●	●		
	AOMT180532PDPR-MJ	●	●		
	AOGT180504PDFR-AJ			●	
	AOGT180508PDFR-AJ			●	
					

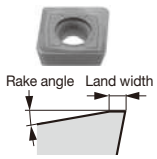
●: Line up

Milling Insert

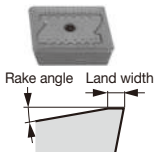
● APMT**PN-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH140	GH330	T3130	
	APMT070308PN-MJ	●	●	●	●	ELP07/09/12... (old item)
	APMT09T308PN-MJ	●	●	●	●	
	APMT120408PN-MJ	●	●	●	●	

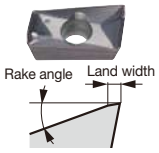
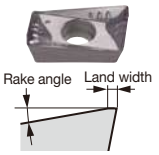
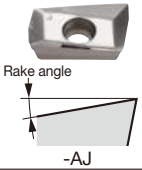
● APMT120416PR-MJ

Shape	Designation	Coated		Applicable mill
		AH120	T3130	
	APMT120416PR-MJ	●	●	TZP12... Page H225 HZP12... (old item)

● APMR190616PR-MJ

Shape	Designation	Coated		Applicable mill
		AH120	T3130	
	APMR190616PR-MJ	●	●	TZP19... Page H228

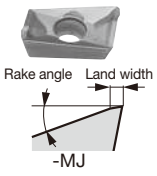
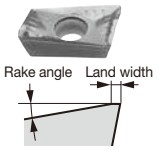
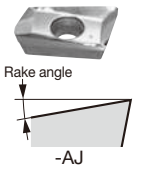
● ASMT**PDPR-MJ, ASGT11**PDFR-AJ, ASMT304PDPR-MS

Shape	Designation	Coated							Cermet	Uncoated	Applicable mill
		AH120	AH130	AH140	AH725	T1115	T1215	T3130	DS1100	NS740	KS05F	
	ASMT11T304PDPR-MJ	●	●		●	●		●		●		TUNGREC TPO11... Page H144 TLS11... Page H144 EPO11... Page H145 HPO11... Page H146 ELS11... Page H146
	ASMT11T308PDPR-MJ	●	●		●	●	●	●		●		
	ASMT11T312PDPR-MJ	●			●			●				
	ASMT11T316PDPR-MJ	●			●			●		●		
	ASMT11T320PDPR-MJ	●										
	ASMT11T330PDPR-MJ	●	●									
	ASMT11T304PDPR-MS		●	●								
	ASGT11T304PDFR-AJ								●		●	
	ASGT11T308PDFR-AJ								●		●	
												

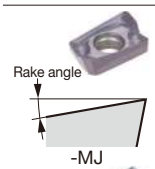
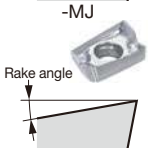
●: Line up

Milling Insert

● ASMT17**PDPR-MJ, ASGT17**PDFR-AJ, ASMT170508PDPR-MS

Shape	Designation	Coated						Cermet		Uncoated				Applicable mill
		AH120	AH130	AH140	T1115	T3130	DS1100	NS740		KS05F				
 -MJ	ASMT170504PDPR-MJ	●			●	●		●						TPS17... (old item)
	ASMT170508PDPR-MJ	●			●	●		●						EPS17... (old item)
	ASMT170512PDPR-MJ	●				●								
	ASMT170516PDPR-MJ	●				●		●						
	ASMT170520PDPR-MJ	●												
	ASMT170530PDPR-MJ	●												
	ASMT170532PDPR-MJ	●				●		●						
 -MS	ASMT170508PDPR-MS		●	●										
	ASGT170504PDFR-AJ						●			●				
	ASGT170508PDFR-AJ						●			●				
 -AJ														

● AVGT**PBER-MJ, AVGT**PBFR-AJ

Shape	Designation	Coated			Uncoated									Applicable mill
		AH120	AH130	AH3135	KS05F									
 -MJ	AVGT060300PBER-MJ			●										TUNGFREC EPAV... Page H136
	AVGT060302PBER-MJ	●	●	●										HPAV06... Page H137
	AVGT060304PBER-MJ	●	●	●										TPAV06... Page H137
	AVGT060308PBER-MJ	●	●	●										
	AVGT060300PBFR-AJ				●									
 -AJ	AVGT060302PBFR-AJ				●									
	AVGT060304PBFR-AJ				●									
	AVGT060308PBFR-AJ				●									

● CPMW**-EN, CPMT**-EN

Shape	Designation	Coated			Uncoated									Applicable mill
		GH330			UX30									
	CPMW050208EN	●			●									EVP1000 (old item)
	CPMW06T208EN	●			●									
	CPMT080308EN	●			●									

●: Line up

Milling Insert

● DCMW**TN

Shape	Designation	Coated										Applicable mill
		AH120	AH330									
	DCMW070204TN	●	●									EBP... Page H221 HBP... (old item)
	DCMW11T304TN	●	●									

● DPCW11T3ZFR

Shape	Designation	Coated			Cermet							Applicable mill
		AH740			NS740							
	DPCW11T3ZFR	●			●							TZF11... Page H230 HZF11... (old item)

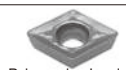
● EDKW53ZTR

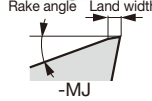
Shape	Designation	Coated			Uncoated							Applicable mill
		GH330			UX30							
	EDKW53ZTR	●			●							ESD5000 (old item)

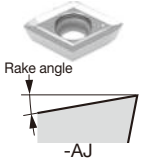
● ENEQ**TN-T

Shape	Designation	Coated										Applicable mill
		AH120										
	ENEQ090508TN-T	●										VSNE09...(old item)
	ENEQ100508TN-T	●										VSNE10...(old item)
	ENEQ130608TN-T	●										VSNE13...(old item)
	ENEQ160608TN-T	●										VSNE16...(old item)

● GDMT**PDPR-MJ, GDGT**PDFR-AJ

Shape	Designation	Coated					Uncoated					Applicable mill
		AH120	AH140	AH330	T3130	DS1100	UX30	TH10				
	GDMT10H3PDPR-MJ	●	●	●	●		●					TSD10/17...(old item)
	GDMT17X6PDPR-MJ	●	●	●	●		●					ESD10/17...(old item)
	GDGT10H3PDFR-AJ					●		●				HSD10/17...(old item)
	GDGT17X6PDFR-AJ					●		●				





●: Line up

Milling Insert

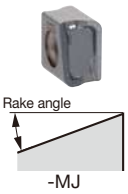
● HEHN532FN

Shape	Designation	Uncoated	Applicable mill
		TH10	
	HEHN532FN	●	QYE5300 (old item)

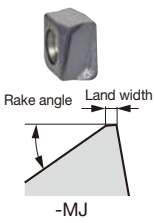
● HPKN532FN

Shape	Designation	Uncoated	Applicable mill
		TH10	
	HPKN532FN	●	QYP5300 (old item)

● LMEU**ZNEN-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH140	AH725	AH3135	
	LMEU100808ZNEN-MJ	●	●	●	●	TECTSLOT ASN 10/12/15... Page H196 TSN 10/12/15... Page H196
	LMEU100816ZNEN-MJ	●	●	●	●	
	LMEU100824ZNEN-MJ	●	●	●	●	
	LMEU100832ZNEN-MJ	●	●	●	●	
	LMEU120808ZNEN-MJ	●	●	●	●	
	LMEU120816ZNEN-MJ	●	●	●	●	
	LMEU120824ZNEN-MJ	●	●	●	●	
	LMEU120832ZNEN-MJ	●	●	●	●	
	LMEU150908ZNEN-MJ	●	●	●	●	
	LMEU150916ZNEN-MJ	●	●	●	●	
	LMEU150924ZNEN-MJ	●	●	●	●	
	LMEU150932ZNEN-MJ	●	●	●	●	

● LMMU**PNER-MJ

Shape	Designation	Coated						Applicable mill
		AH3135	AH120	AH140	AH725	T1215	T3225	
	LMMU110708PNER-MJ	●	●	●	●	●	●	TECMILL TPM11/16... Page H169 TLM11... Page H169 EPM11... Page H170
	LMMU110716PNER-MJ	●	●	●	●	●	●	
	LMMU110724PNER-MJ		●	●	●			
	LMMU110732PNER-MJ		●	●	●			
	LMMU160908PNER-MJ	●	●	●	●	●	●	
	LMMU160916PNER-MJ	●	●	●	●			
	LMMU160924PNER-MJ		●	●	●			
	LMMU160932PNER-MJ		●	●	●			

●: Line up

Milling Insert

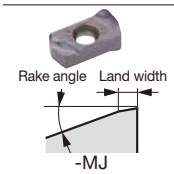
● LNCA64ZTR

Shape	Designation	Coated		Uncoated			Applicable mill
		T3130		UX30			
	LNCA64ZTR	●		●			VSN6000I (old item)

● LNCQ0906N-**L, LNCQ0906R-50S

Shape	Designation	Coated		Cermet			Applicable mill
		AH120	GH110	NS740			
 Rake angle 	LNCQ0906N-100L	●	●	●			NMS09... Page H112 EMS09... Page H112
	LNCQ0906N-50L	●	●	●			
	LNCQ0906R-50S	●	●	●			

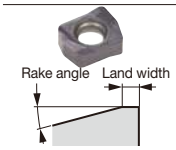
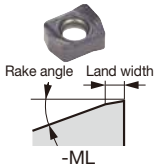
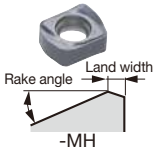
● LNMU0303ZER-MJ, LNMU0303ZER-ML, LNMU0303ZER-MS, LNGU0303ZER-MH

Shape	Designation	Coated					Applicable mill
		AH130	AH725	AH3035	AH8015	AH8005	
 Rake angle Land width -MJ	LNMU0303ZER-MJ	●	●	●	●		DOFEED TXN03... Page H024 EXN03... Page H024, H025 HXN03... Page H026
Rake angle Land width -ML	LNMU0303ZER-ML	●	●	●	●		
Rake angle Land width -MS	LNMU0303ZER-MS	●					
Rake angle Land width -MH	LNGU0303ZER-MH				●	●	

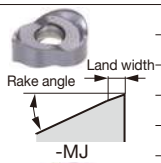
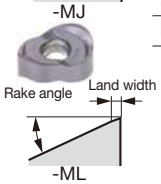
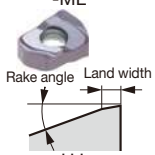
●: Line up

Milling Insert

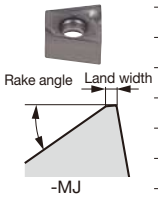
● LNMU06X5ZER-MJ, LNMU06X5ZER-ML, LNGU06X5ZER-MH, LNGU06X5ZER-W

Shape	Designation	Coated						Applicable mill
		AH120	AH130	AH725	AH3035	AH8015	AH8005	
 -MJ	LNMU06X5ZER-MJ	●	●	●	●	●		DOFEED TXN06... Page H030 EXN06... Page H031
 -ML	LNMU06X5ZER-ML	●	●	●	●	●		
 -MH	LNGU06X5ZER-MH					●	●	
 -W	LNGU06X5ZER-W			●				

● LNMX040*R*-MJ, LNMX0405R4-ML, LNMX0405R4-HJ, LNMX0607ZER-HJ

Shape	Designation	Coated		Applicable mill
		AH120	AH3135	
 -MJ	LNMX0405R4-MJ	●	●	DOTWIST BALL TXLN... Page H034 EXLN... Page H035 HXLN... Page H036
	LNMX0405R4-ML	●	●	
	LNMX0405ZER-HJ	●	●	
	LNMX0506R5-MJ	●	●	
	LNMX0607R6-MJ	●	●	
	LNMX0607ZER-HJ	●	●	
 -ML				
 -HJ				

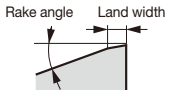
● LQMU**PNER-MJ, LQMU110708PXER-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH140	AH725	AH3135	
 -MJ	LQMU110704PNER-MJ	●	●	●		DOREC TPQ11/18... Page H165 EPQ11/18... Page H166
	LQMU110708PNER-MJ	●	●	●		
	LQMU110708PXER-MJ	●			●	
	LQMU110716PNER-MJ	●	●	●		
	LQMU110720PNER-MJ	●				
	LQMU180804PNER-MJ	●	●	●		
	LQMU180808PNER-MJ	●	●	●		
	LQMU180816PNER-MJ	●	●	●		
	LQMU180824PNER-MJ	●	●	●		

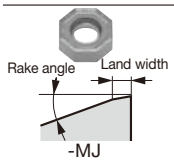
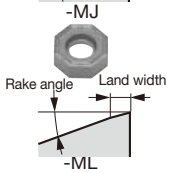
●: Line up

Milling Insert

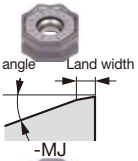
● LSMT0202ZER-HM, LSMT0202R2-MM

Shape	Designation	Coated AH3225	Coated AH8015	Applicable mill
 -HM	LSMT0202ZER-HM	●	●	TUNGFEED EXLS... HXLS... Page H020
 -MM	LSMT0202R2-MM	●	●	
 Rake angle Land width				

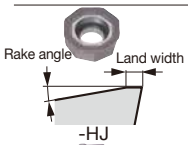
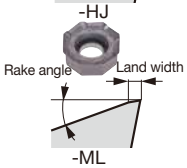
● ONMU0705ANPN-MJ, ONHU0705ANPN-MJ, ONMU0705ANPN-ML, ONHU0705ANTN-ML, ONHU0705ANPR-W

Shape	Designation	Coated AH120	AH140	AH725	AH3135	T1115	T1215	T3225	Applicable mill
 Rake angle Land width -MJ	ONMU0705ANPN-MJ		●	●	●	●	●	●	DOOCTO TAN07... Page H059, H060
	ONHU0705ANPN-MJ		●	●					
 Rake angle Land width -ML	ONMU0705ANPN-ML	●			●				
	ONHU0705ANTN-ML	●	●	●					
 -W	ONHU0705ANPR-W	●							

● ONGU0507ANEN-MJ, ONGU0507ANEN-W, ONMU0507ANEN-MJ

Shape	Designation	Coated AH120	AH3135	T3225	T1215	Applicable mill
 Rake angle Land width -MJ	ONGU0507ANEN-MJ	●	●	●	●	DOTMILL TASN13... Page H056
	ONGU0507ANEN-W	●	●			
 -W	ONMU0507ANEN-MJ	●	●	●	●	

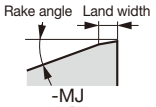
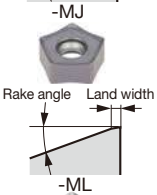
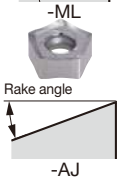
● OWMT0807ZNER-HJ, OWMT0807AAER-ML

Shape	Designation	Coated AH130	AH3135	Applicable mill
 Rake angle Land width -HJ	OWMT0807ZNER-HJ		●	DOOCTO TAN07... Page H059, H060
 Rake angle Land width -ML	OWMT0807AAER-ML	●	●	

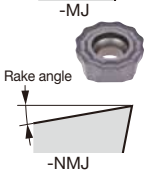
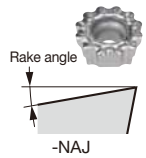
●: Line up

Milling Insert

● PNMU0905GNEN-MJ, PNCU0905GNEN-MJ, PNCU0905GNER-MJ, PNCU0905GNEN-ML, PNCU0905GNFR-AJ, PNCU0905GNER-W

Shape	Designation	Coated							Cermet	Uncoated		Applicable mill
		AH120	AH140	AH725	AH3135	T1115	T1215	T3130	T3225	NS740	TH10	
 Neutral	PNMU0905GNEN-MJ	●			●		●		●			DOPENT TEN09R/L... Page H066 EEN09... Page H067
 Right hand	PNCU0905GNEN-MJ	●			●		●		●			
 Rake angle Land width -MJ	PNCU0905GNER-MJ	●	●	●		●		●		●		
 Rake angle Land width -ML	PNCU0905GNEN-ML				●							
 Rake angle -AJ	PNCU0905GNFR-AJ										●	
 -W	PNCU0905GNER-W			●								

● RCMT**EN-MJ, RCMT**EN-NMJ, RCMT**FN-NAJ

Shape	Designation	Coated			Uncoated								Applicable mill
		AH120	AH140	AH725	KS15F								
 Rake angle Land width -MJ	RCMT1204EN-MJ	●	●	●									ROUNDSPLIT TRC12/16... Page H213 ERC12/16... Page H214
 Rake angle -NMJ	RCMT1204EN-NMJ	●	●	●									
 Rake angle -NAJ	RCMT1204FN-NAJ				●								
	RCMT1606EN-MJ	●	●	●									
	RCMT1606EN-NMJ	●	●	●									
	RCMT1606FN-NAJ				●								

●: Line up

Milling Insert

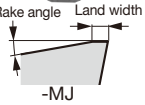
● RDCA2004TN, RDCN2004TN, RDKN2004...

Shape	Designation	Coated			Uncoated							Applicable mill
		AH120			UX30	TH10						
	RDCA2004TN				●							TRD6000 (old item)
	RDCN2004TN				●							
	RDKN2004FN					●						ERD6000 (old item)
	RDKN2004TN	●			●							

● RDCM1203TN, RDMA1203TN

Shape	Designation	Uncoated										Applicable mill
		UX30										
	RDCM1203TN	●										ERD4000 (old item)
	RDMA1203TN	●										

● RDMT**ZDPN-MJ, RDMW**ZDSN

Shape	Designation	Coated					Uncoated					Applicable mill
		AH120	AH130	AH140	AH330	T3130	UX30					
  	RDMT1204ZDPN-MJ	●		●	●	●	●					TRD12/16... (old item)
	RDMW1204ZDSN	●		●		●						
	RDMT1606ZDPN-MJ	●	●	●	●	●	●					ERD12/16... (old item)
	RDMW1606ZDSN	●		●		●						

● RDMW**M0

Shape	Designation	Coated										Applicable mill
		AH120										
	RDMW0501M0	●										EWD05/07/09/10... Page H217
	RDMW0702M0	●										
	RDMW1003M0	●										HWD07... Page H217

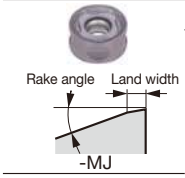
● RFEN2004ZFTN, RFEN2004M0TN

Shape	Designation	Coated			Uncoated							Applicable mill
		AH120	GH330		UX30	KS20						
	RFEN2004ZFTN	●	●		●	●						TRF6000 (old item)
	RFEN2004M0TN		●		●	●						
												ERF6000 (old item)

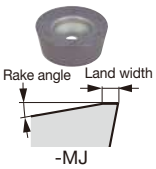
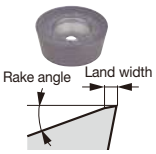
●: Line up

Milling Insert

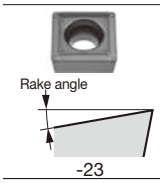
● RNGU1307ZNER-MJ, RNMU1307ZNER-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH3135	T1215	T3225	
	RNMU1307ZNER-MJ	●	●	●	●	DOTMILL TASN13... Page H056

● RPMT**EN-MJ, RPMT**EN-ML

Shape	Designation	Coated			Applicable mill
		AH130	AH725	AH4035	
	RPMT10T3EN-MJ	●	●	●	FIXRMILL TRP10/12/16... Page H208 ERP10/12/16... Page H208 HRP10/12/16... Page H209
	RPMT10T3EN-ML	●	●	●	
	RPMT1204EN-MJ	●	●	●	
	RPMT1204EN-ML	●	●	●	
	RPMT1606EN-MJ	●	●	●	
	RPMT1606EN-ML	●	●	●	

● SCMT**-23

Shape	Designation	Coated	Applicable mill
		AH120	
	SCMT09T308-23	●	EBD... Page H223 HBD... (old item)
	SCMT120408-23	●	

● SDCN1504ZDSR, SDEN1504ZDSR, SDNN1504ZDSR

Shape	Designation	Coated				Applicable mill
		AH120	AH140	T1115	T3130	
	SDCN1504ZDSR	●	●		●	MILLFEED TXD15... (old item)
	SDEN1504ZDSR	●	●	●	●	
	SDNN1504ZDSR	●	●	●	●	

●: Line up

Milling Insert

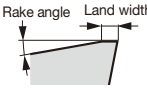
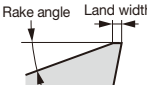
● SDCN42HTR, SDKN42HTR

Shape	Designation	Coated												Applicable mill
		GH330												
	SDCN42HTR	●												EUD4600 (old item)
	SDKN42HTR	●												

● SDKN42EF..., SDEN42EFTR24

Shape	Designation	Coated			Cermet			Uncoated						Applicable mill
		T3130			NS740			TH10	UX30					
	SDKN42EFTR	●			●									TMD4100I (old item)
	SDKN42EFFR							●						
	SDEN42EFTR24				●				●					

● SDCN42Z..., SDEN42Z..., SDKN42Z..., SDCN42ZFN-DIA, SDKR42ZSR-MJ, SDMR1203AETN-MJ, SDKR1203AETN-MJ, SDKR42ZPN-MS

Shape	Designation	Coated									Cermet		Uncoated		PCD	Applicable mill
		AH3135	AH120	AH130	AH140	AH330	GH330	T1115	T1215	T3130	T3225	NS740	N308	UX30	TH10	DX140	
	SDCN42ZFN														●		TMD4400R/LI Page H092
	SDCN42ZTN											●	●	●			
	SDCN42ZTN20											●					EMD4400RI Page H093
	SDEN42ZFN														●		
	SDEN42ZTN	●	●		●		●	●	●			●	●	●			TGD4400-A Page H098
	SDEN42ZTNCR	●	●		●	●						●					
Rake angle Land width  -MJ	SDEN42ZTN20									●	●						EGD4400 Page H099
	SDKN42ZFN														●		
	SDKN42ZTN	●	●	●	●	●	●	●	●			●	●	●			TFD4400-A (old item)
	SDKN42ZTNCR											●					
	SDKN42ZTN16									●	●						
Rake angle Land width  -MS	SDCN42ZFN-DIA															●	
	SDKR42ZSR-MJ	●	●			●	●			●	●						
	SDMR1203AETN-MJ											●					
	SDKR1203AETN-MJ											●					
	SDKR42ZPN-MS	●		●	●												

DX140: Packing quantity = 1pc.

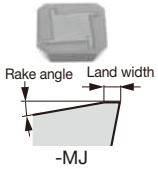
●SDCN53HTR, SDKN53HTR

Shape	Designation	Coated												Applicable mill
		GH330												
	SDCN53HTR	●												TUD5600 (old item)
	SDKN53HTR	●												

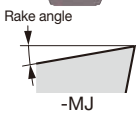
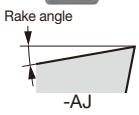
●: Line up

Milling Insert

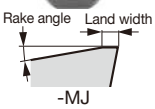
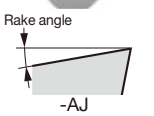
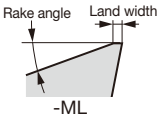
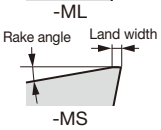
● SDCN53ZTN, SDEN53Z..., SDKN53Z..., SDKR53ZSR-MJ

Shape	Designation	Coated					Cermet		Uncoated					Applicable mill
		AH120	AH130	AH140	GH330	T3130	NS740	N308	UX30	TH10				
	SDCN53ZTN						●	●						TMD5400RI Page H096
	SDEN53ZFN									●				
	SDEN53ZTN				●		●		●					
	SDEN53ZTNCR						●							
	SDEN53ZTN20					●								
	SDKN53ZFN									●				
	SDKN53ZTN	●	●	●	●		●	●	●					
	SDKN53ZTNCR						●							
	SDKN53ZTN16					●								
	SDKR53ZSR-MJ				●	●								

● SDMT050204PN-MJ, SDHT050204FN-AJ

Shape	Designation	Coated			Uncoated								Applicable mill
		AH140	AH725		TH10								
	SDMT050204PN-MJ	●	●										TUNGQUAD TPD05... Page H155 EPD05... Page H155 ELD05... Page H156 EASD05... Page H156
	SDHT050204FN-AJ				●								
													
													
													

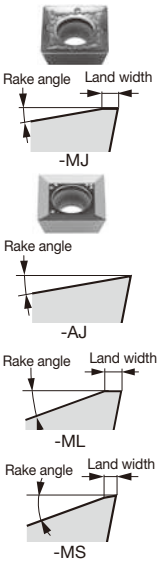
● SDMT1204AFPN-MJ, SDMT1204AFTN-MJ, SDMT1204AFPN-ML, SDMT1204AFPN-MS, SDGT1204AFTN-MJ, SDGT1204AFFN-AJ

Shape	Designation	Coated					Cermet	Uncoated					Applicable mill
		AH120	AH140	AH330	GH330	T3130	NS740	TH10					
	SDMT1204AFPN-MJ	●	●	●	●	●							TAD12... EAD12... (old item)
	SDMT1204AFTN-MJ						●						
	SDMT1204AFPN-ML	●		●									
	SDMT1204AFPN-MS		●										
	SDGT1204AFTN-MJ	●		●			●						
	SDGT1204AFFN-AJ							●					
													
													
													
													

●: Line up

Milling Insert

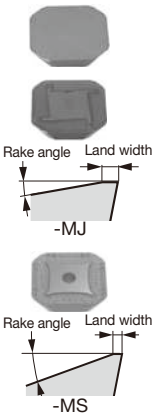
● SDMT1204PDSR-MJ, SDMT1204PDTR-MJ, SDMT1204PDPR-ML, SDMT1204PDPR-MS SDGT1204PDTR-MJ, SDGT1204PDFR-AJ

Shape	Designation	Coated					Cermet		Uncoated		Applicable mill
		AH120	AH140	AH330	GH330	T3130	NS740		TH10		
	SDMT1204PDSR-MJ	●	●	●	●	●					TPD12... EPD12... (old item)
	SDMT1204PDTR-MJ						●				
	SDMT1204PDPR-ML	●		●							
	SDMT1204PDPR-MS		●								
	SDGT1204PDTR-MJ	●		●			●				
	SDGT1204PDFR-AJ								●		

● SDMW090308TN, SDMW120408TN

Shape	Designation	Uncoated			Applicable mill
		UX30			
	SDMW090308TN	●			ELD3000 ELD4000 (old item)
	SDMW120408TN	●			

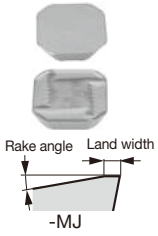
● SECN1203AGFN, SEEN1203AG..., SEKN1203AG..., SEKR1203AGSR-MJ, SEKR1203AGPN-MS

Shape	Designation	Coated							Cermet		Uncoated		Applicable mill
		AH120	AH130	AH140	AH330	GH330	T1115	T3130	NS740		UX30	TH10	
	SECN1203AGFN											●	TME4400R/LI Page H085
	SEEN1203AGFN											●	
	SEEN1203AGTN	●	●	●		●	●		●		●		TME4400RB Page H086
	SEEN1203AGTN-T							●	●		●		
	SEEN1203AGTNCR	●	●	●	●			●					EME4400 Page H087
	SEEN1203AGTNCR-14								●				
	SEKN1203AGFN-T											●	
	SEKN1203AGTN	●	●	●	●	●		●	●		●		
	SEKN1203AGTN-T					●	●	●	●		●		
	SEKN1203AGTNCR								●				
	SEKR1203AGSR-MJ	●			●	●		●					
	SEKR1203AGPN-MS		●	●									

●: Line up

Milling Insert

● SE*N1504AG..., SEKR1504AGSR-MJ

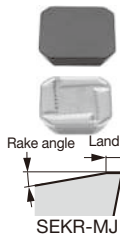
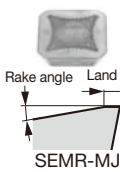
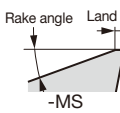
Shape	Designation	Coated					Cermet			Uncoated				Applicable mill
		AH120	AH140	GH330	T3130		NS740			TH10	UX30			
	SEEN1504AGTN						●				●			TME5400RI Page H090
	SEKN1504AGFN									●				
	SEKN1504AGTN	●	●	●	●		●				●			
	SEKN1504AGTN-T				●		●							
	SEKR1504AGSR-MJ			●	●									

● SECN422TN, SECN422FN, SEEN422TN, SEEN422FN, SECN422FN-DIA

Shape	Designation	ISO Designation (Metric)	Cermet				Uncoated			PCD				Applicable mill
			NS740	N308			UX30	TH10		DX140				
	SECN422TN	SECN120308TN	●	●			●							EGE4000 (old item)
	SECN422FN	SECN120308FN						●						
	SEEN422TN	SEEN120308TN	●	●			●							QHE4000
	SEEN422FN	SEEN120308FN						●						
	SECN422FN-DIA	SECN120308FN-D								●				

DX140: Packing quantity = 1pc.

● SEEN1203AFTNCR-14, SEKN42AFTN, SEKN42AFFN, SEKN42AFTN16, SEKR42AFSR-MJ, SEKR1203AFPN-MS, SEKR1203AFTN-MJ, SEMR1203AFTN-MJ

Shape	Designation	ISO Designation (Metric)	Coated					Cermet	Uncoated		Applicable mill
			AH120	AH130	AH140	GH330	T3130	NS740	TH10	UX30	
	SEEN1203AFTNCR-14							●			TGE4400I EGE4400 (old item)
	SEKN42AFTN	SEKN1203AFTN	●	●	●	●				●	
	SEKN42AFFN	SEKN1203AFFN							●		
	SEKN42AFTN16	SEKN1203AFTN-16					●	●			
	SEKR42AFSR-MJ	SEKR1203AFSR-MJ				●	●				
	SEKR1203AFPN-MS				●						
	SEKR1203AFTN-MJ							●			
	SEMR1203AFTN-MJ							●			
											
											

●: Line up

Milling Insert

● SECN42EFTRCR, SEEN42EFTRCR, SEKN42EFTR, SEKN42EFFR

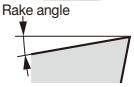
Shape	Designation	ISO Designation (Metric)	Coated		Cermet	Uncoated		Applicable mill
			GH330	T3130	NS740	UX30	TH10	
	SECN42EFTRCR	SECN1203EFTR			●			EGE4100 (old item)
	SEEN42EFTRCR	SEEN1203EFTR			●			
	SEKN42EFTR	SEKN1203EFTR	●	●	●			
	SEKN42EFFR	SEKN1203EFFR					●	

● SE*N42ZFR, SECN42ZFR-DIA

Shape	Designation	Uncoated	PCD	Applicable mill
		TH10	DX140	
	SECN42ZFR-DIA		●	THE4000RIA Page H174
	SECN42ZFR	●		
	SEEN42ZFR	●		
 -DIA				

DX140: Packing quantity = 1pc.

● SEGW12X4ZE*R, SEGT12X4ZEFR-AJ, SEGW12X4ZEFR-*, 2QP-SECW12X412ZETR, 1QP-SECW12X4ZETR-*

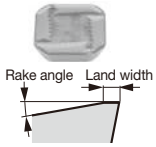
Shape	Designation	Coated			Cermet	Uncoated	PCD	CBN	Applicable mill
		AH120	AH140	DS1100	NS740	KS05F	DX140	BX480	
	SEGW12X4ZEFR					●			TFE12R...-...A Page H079
	SEGW12X4ZEPR	●	●		●				
	SEGT12X4ZEFR-AJ			●		●			TFE12R... Page H078
	SEGW12X4ZEFR-D						●		
	SEGW12X4ZEFR-WD						●		EFE12R... Page H078
Rake angle  -AJ	SEGW12X4ZEFR-BD						●		
	2QP-SECW12X412ZETR							●	
	1QP-SECW12X4ZETR-W							●	
	1QP-SECW12X4ZETR-B							●	
 -D Regular edge									
 -WD Wiper edge									
 -BD Wiper for burr removal									

DX140: Packing quantity = 1pc.

●: Line up

Milling Insert

●SEKR1504AFSR-MJ

Shape	Designation	Coated		Applicable mill
		T3130		
 Rake angle Land width -MJ	SEKR1504AFSR-MJ	●		(old item)

● SF*N42ZFN, SFCN42ZFN-DIA

Shape	Designation	Uncoated	PCD	Applicable mill
		TH10	DX140	
 -DIA	SFCN42ZFN	●		THF4400RIA (old item)
	SFEN42ZFN	●		
	SFCN42ZFN-DIA		●	

DX140: Packing quantity = 1pc.

● SF*N53ZFN, SFCN53ZFN-DIA

Shape	Designation	Uncoated	PCD	Applicable mill
		TH10	DX140	
 -DIA	SFCN53ZFN	●		THF5400RIA (old item)
	SFEN53ZFN	●		
	SFCN53ZFN-DIA		●	

DX140: Packing quantity = 1pc.

● SN**56FTR

Shape	Designation	Cermet	Applicable mill
		X407	
	SNAA56FTR	●	MS... Page H114
	SNAG56FTR		
	SNCC56FTR		
	SNCJ56FTR		

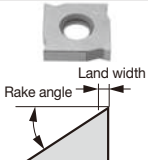
● SNCN43Z..., SNKF43Z..., SNKN43ZTN

Shape	Designation	Coated		Cermet		Ceramic	Uncoated		Applicable mill
		T1115	T3130	NS740	N308	FX105	UX30	TH10	
	SNCN43ZFN							●	TGN4200R-A (old item)
	SNCN43ZTN			●	●		●		
	SNKF43ZFN							●	
	SNKF43ZTN	●					●		
	SNKN43ZTN	●	●	●		●	●		

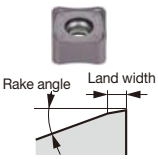
●: Line up

Milling Insert

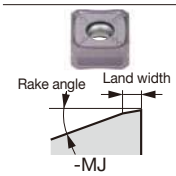
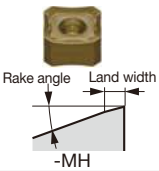
● SNEN12**Z...

Shape	Designation	Uncoated										Applicable mill
		UX30	TH10									
	SNEN12T2ZFN		●									SVN4000 (old item)
	SNEN12T2ZTN	●										
	SNEN1233ZFN		●									
	SNEN1233ZTN	●										

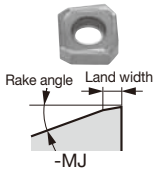
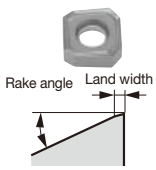
● SNMU120608HNEN-MM, SNMU1206**EN-MM

Shape	Designation	Coated										Applicable mill
		AH120	AH3135	T1215	T3225							
	SNMU120608HNEN-MM	●	●	●	●							DOQMILL THSN12... Page H063
	SNMU120612EN-MM		●	●								
	SNMU120620EN-MM		●	●								

● SNGU1307ANEN-MJ, SNGU1307ANEN-W, SNGU1307ANEN-MH, SNMU1307ANEN-MJ

Shape	Designation	Coated										Applicable mill
		AH120	AH3135	T3225	T1215							
 -MJ  -W  -MH	SNGU1307ANEN-MJ	●	●	●	●							DOTMILL TASN13... Page H056
	SNGU1307ANEN-W	●	●									
	SNGU1307ANEN-MH			●								
	SNMU1307ANEN-MJ	●	●	●	●							

● SNMU1706ANPR-MJ, SNHU1706ANPR-MJ, SNMU1706ANTR-ML, SNHU1706ANTR-ML, SNHU1706ANFN-W

Shape	Designation	Coated										Applicable mill
		AH120	AH140	AH725	AH3135	T1215	T3225					
 -MJ  -ML	SNMU1706ANPR-MJ		●	●	●	●	●					DOOCTO TAN07... Page H059, H060
	SNMU1706ANTR-ML	●			●							
	SNHU1706ANPR-MJ		●	●								
	SNHU1706ANTR-ML	●										
	SNHU1706ANFN-W	●										

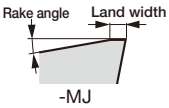
●: Line up

Milling Insert

● SNMN1204**TN

Shape	Designation	Coated			Cermic			Uncoated						Applicable mill
		AH120	T1115	T3130	FX105			UX30						
	SNMN120408TN				●									TGN4200R-A (old item)
	SNMN120412TN	●	●	●	●			●						
	SNMN120416TN				●									
	SNMN120420TN				●									
	SNMN120424TN				●									

● SPCN42..., SPEN42..., SPKN42..., SPKR42SSR-MJ, SPGN120312TN

Shape	Designation	Coated					Cermet		Ceramic	Uncoated				Applicable mill
		AH120	AH140	GH330	T1115	T3130	NS740	N308	FX105	UX30	TH10			
	SPCN42STR						●	●		●				TGP4100RIA/BA Page H102
	SPCN42SFR										●			
	SPEN42STR						●							
	SPKN42STR	●	●	●	●	●	●	●	●	●				
	SPKN42STL						●			●				
	SPKN42SFR										●			
	SPKN42SFL										●			
	SPKR42SSR-MJ			●	●	●								
	SPGN120312TN								●					
	SPEN423TN					●	●			●				
	SPEN423FN										●			

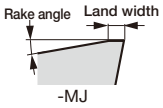
● SP*N42...

Shape	Designation	Coated			Cermet			Uncoated						Applicable mill
		T1115	T3130		NS740	X407	N308	UX30	TH10					
	SPAN42ZFR								●					TGP4200R-A Page H104
	SPCN42ZFL								●					
	SPCN42ZFR								●					
	SPCN42ZTR				●	●	●							
	SPEN423TN		●		●			●						
	SPEN423FN								●					
	SPEN42ZTR				●									
	SPKN42ZFL								●					
	SPKN42ZFR								●					
	SPKN42ZTR	●	●		●	●	●	●						

●: Line up

Milling Insert

● SP*N53S..., SPKR53SSR-MJ

Shape	Designation	Coated			Cermet		Uncoated					Applicable mill
		GH330	T1115	T3130	NS740	N308	UX30	TH10				
	SPCN53SFR							●				TGP5100RIA Page H106
	SPCN53STR					●	●					
	SPKN53SFR							●				
	SPKN53STL						●					
	SPKN53STR	●	●		●		●					
	SPKN53STR20			●								
	SPKR53SSR-MJ	●		●								

● SPGN120412TN

Shape	Designation	Coated	Ceramic								Applicable mill
		T1115	FX105								
	SPGN120412TN	●	●								QFP4000 (old item)

● SPHA**FNW

Shape	Designation	Cermet	Uncoated								Applicable mill
		N308	TH10								
	SPHA431FNW	●	●								TSP4000IA Page H182 TFP4000IA Page H183 TFD4400-A (old item) SFP4000R Page H116 EFP4000R Page H116
	SPHA435FNW	●	●								

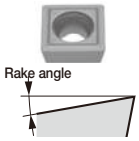
● SPMA422...

Shape	Designation	Cermet		Uncoated							Applicable mill
		NS740	N308	UX30	TH10						
	SPMA422TN	●	●	●							ECP4400R Page I096
	SPMA422FN				●						

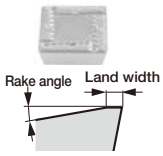
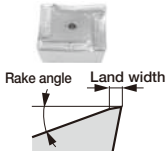
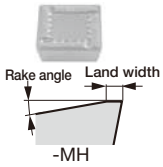
●: Line up

Milling Insert

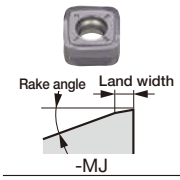
● SPMP..., SPMM**ERD

Shape	Designation	Coated										Applicable mill
		T313W	AH6030									
 Rake angle	SPMP771-CG		●									TCB... Page I097
	SPMP831-CG		●									
	SPMP042ER-CG		●									
	SPMP322ER-CG		●									
	SPMP432ER-CG		●									
	SPMP831DS	●										
	SPMP042ERD	●										
	SPMM322ERD	●										
	SPMM432ERD	●										

● SPMR1605PPTR-MJ, SPMR1605PPPR-ML, SPMR1605PPTR-MH

Shape	Designation	Coated			Uncoated							Applicable mill
		GH330	T1115	T3130	UX30							
 Rake angle Land width -MJ	SPMR1605PPTR-MJ	●	●	●	●							TPP16... (old item)
	SPMR1605PPPR-ML	●										
	SPMR1605PPTR-MH	●		●	●							
 Rake angle Land width -ML												
 Rake angle Land width -MH												

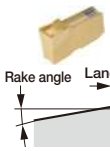
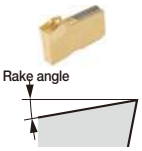
● SQMU1206ZSR-MJ

Shape	Designation	Coated										Applicable mill
		AH120	AH130	AH725	T3130							
 Rake angle Land width -MJ	SQMU1206ZSR-MJ	●	●	●	●							DOFEEDQUAD TXQ... Page H041

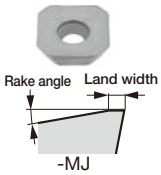
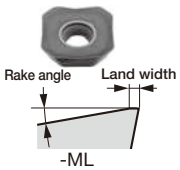
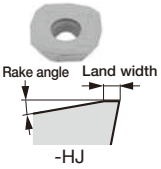
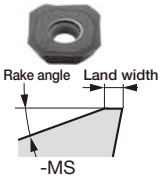
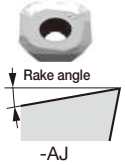
●: Line up

Milling Insert

● SSM..., SSS...

Shape	Designation	Coated										Applicable mill
		GH130										
 Rake angle Land width SSM	SSM22N	●										TUNGMILL S/ASG... Page H188
	SSM31N	●										
	SSM41N	●										
	SSS16N	●										
	SSS22N	●										
	SSS31N	●										
 Rake angle SSS	SSS41N	●										

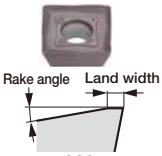
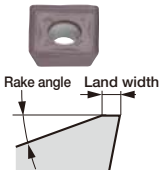
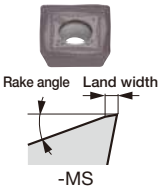
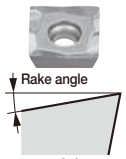
● SWMT13T3AFPR-MJ, SWMT13T3AFER-ML, SWMW13T3AFTR, SWMT13T3AFPR-HJ, SWMT13T3AFPR-MS, SWGT13T3AFPR-MJ, SWGT13T3AFFR-AJ

Shape	Designation	Coated								Cermet	Uncoated	Applicable mill
		AH120	AH130	AH140	AH3135	T1115	T1215	T3130	T3225	DS1100	NS740	KS05F	
 Rake angle Land width -MJ	SWMT13T3AFPR-MJ	●	●	●	●	●	●	●	●		●		TUNGMILL TAW13... Page H070 EAW13... Page H070
	SWMT13T3AFER-ML	●			●								
	SWMW13T3AFTR	●			●	●	●	●	●		●		
	SWMT13T3AFPR-HJ	●	●	●	●	●	●	●	●				
	SWMT13T3AFPR-MS		●	●	●								
	SWGT13T3AFPR-MJ	●			●						●		
	SWGT13T3AFFR-AJ									●		●	
 Rake angle Land width -ML													
 -FL													
 Rake angle Land width -HJ													
 Rake angle Land width -MS													
 Rake angle -AJ													

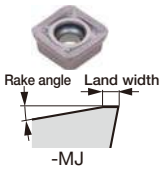
●: Line up

Milling Insert

● SWMT1304PDPR-MJ, SWMT1304PDER-ML, SWMT1304PDPR-MS, SWGT1304PDPR-MJ, SWGT1304PDFR-AJ

Shape	Designation	Coated								Cermet		Uncoated		Applicable mill
		AH120	AH130	AH140	AH3135	T1115	T1215	T3130	T3225	DS1100	NS740		KS05F	
 -MJ	SWMT1304PDPR-MJ	●	●	●	●	●	●	●	●		●			TUNGMILL TPW13... Page H160
	SWMT1304PDER-ML	●			●									
	SWMT1304PDPR-MS		●	●										EPW13... Page H161
	SWGT1304PDPR-MJ	●									●			
	SWGT1304PDFR-AJ									●			●	
 -ML														
 -MS														
 -AJ														

● SWMT1506ZER-MJ

Shape	Designation	Coated		Applicable mill
		AH120	AH3135	
 -MJ	SWMT1506ZER-MJ	●	●	MILLQFEED TXSW... Page H044

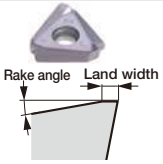
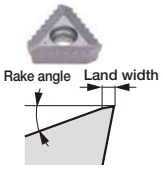
● T*-R...

Shape	Designation	Coated	Applicable mill
		GH330	
	T1-R14	●	Thread milling cutter Page I126
	T1-R28	●	
	T2-R14	●	
	T2-R28	●	

●: Line up

Milling Insert

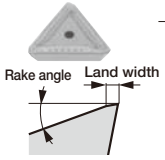
● TCGT160608PDER-MJ, TCMT160620PDER-NMJ

Shape	Designation	Coated				Applicable mill
		AH120	AH3135	T1215	T3225	
 -MJ	TCGT160608PDER-MJ	●	●			TUNG-TRISHRED LPTC16... Page H133 TPTC16... Page H133 EPTC16... Page H134
	TCMT160620PDER-NMJ	●	●	●	●	
 -NMJ						

●TDMN**N

Shape	Designation	Cermet		Uncoated		Applicable mill
		NS740		TH10	UX30	
	TDMN110304TN	●			●	ESD2000 (old item)
	TDMN110304FN			●		
	TDMN110308TN	●			●	

● TECN32...,TEEN32..., TECN32ZFR-DIA, TEKR1603PEPR-MS

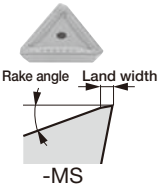
Shape	Designation	Coated										Cermet		Uncoated		PCD	Applicable mill
		AH120	AH130	AH140	AH330	AH3135	GH330	T1115	T3130	T1215	T3225	NS740	N308	UX30	TH10	DX140	
	TECN32ZFR														●		TSE3000R Page H176 ESE3000R Page H176
 -DIA	TECN32ZTR											●	●	●			
	TEEN32ZFR														●		
	TEEN32ZTR	●	●	●	●	●	●	●	●	●	●	●	●	●			
	TECN32ZFR-DIA															●	
	TEKR1603PEPR-MS			●													
 -MS																	

DX140: Packing quantity = 1pc.

●: Line up

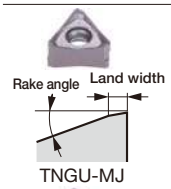
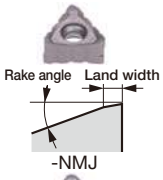
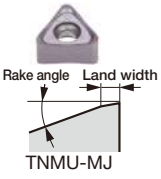
Milling Insert

● TECN43..., TEEN43..., TECN43ZFR-DIA, TEKR2204PEPR-MS

Shape	Designation	Coated										Cermet		Uncoated		PCD	Applicable mill
		AH120	AH130	AH140	AH330	AH3135	GH330	T1115	T3130	T1215	T3225	NS740	N308	UX30	TH10	DX140	
 -DIA	TECN43ZFR														●		TSE4000RIA Page H179
	TECN43ZTR											●	●	●			
	TEEN43ZFR														●		ESE4000R Page H180
	TEEN43ZTR	●	●	●	●	●	●	●	●	●	●	●	●	●			
	TECN43ZFR-DIA															●	
	TEKR2204PEPR-MS			●													
 -MS																	

DX140: Packing quantity = 1pc.

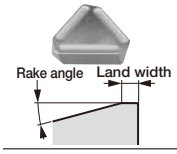
● TNGU120708PER-MJ, TNMU1207R16PER-MJ, TNMU120708PER-MJ, TNMU120708PER-NMJ

Shape	Designation	Coated															Applicable mill
		AH120	AH3135	T1215	T3225												
 TNGU-MJ	TNGU120708PER-MJ	●	●	●													DOFTRI TPTN12... Page H120
	TNMU1207R16PER-MJ	●	●														EPTN12... Page H120
	TNMU120708PER-MJ	●	●	●	●												
 -NMJ	TNMU120708PER-NMJ	●	●														
 TNMU-MJ																	

●: Line up

Milling Insert

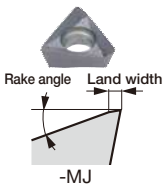
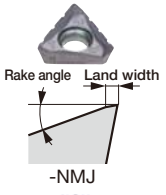
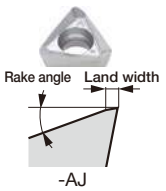
●TNKF64ZTR

Shape	Designation	Uncoated	Applicable mill
		UX30	
	TNKF64ZTR	●	TPN6400I (old item)

●TNMN43ZENS

Shape	Designation	Uncoated	Applicable mill
		UX30	
	TNMN43ZENS	●	TSN4000 ESN4000 (old item)

● TOMT**PDER-MJ, TOMT150608PDER-NMJ, TOGT**PDFR-AJ

Shape	Designation	Coated				Uncoated	Applicable mill
		AH120	AH3135	T1215	T3225	KS05F	
 -MJ	TOMT060302PDER-MJ	●	●				TUNG-TRI TPA06... Page H123 EPA06... Page H123 HPA06... Page H124 TPA10... Page H124 TLA10... Page H125 EPA10... Page H125 HPA10... Page H126 TPA15... Page H126 TLA15... Page H127 Page H128 EPA15... Page H128
	TOMT060304PDER-MJ	●	●		●		
	TOMT060308PDER-MJ	●	●	●	●		
	TOMT100404PDER-MJ	●	●		●		
	TOMT100408PDER-MJ	●	●	●	●		
	TOMT100416PDER-MJ	●	●				
	TOMT150604PDER-MJ	●	●		●		
	TOMT150608PDER-MJ	●	●	●	●		
	TOMT150616PDER-MJ	●	●				
	TOMT150620PDER-MJ	●	●				
	TOMT150608PDER-NMJ	●	●		●		
 -NMJ	TOGT100404PDFR-AJ					●	
	TOGT100408PDFR-AJ					●	
 -AJ							

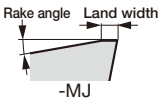
●: Line up

Milling Insert

● TPCA43ZTRW1, TPMA432TNW1

Shape	Designation	Cermet			Uncoated									Applicable mill
		NS740			UX30	TH10								
	TPCA43ZTRW1					●								PES1500... (old item)
	TPMA432TNW1	●			●	●								

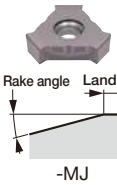
● TP*N43Z..., TPKR43ZSR-MJ, TPMR2204PDSR-MJ

Shape	Designation	Coated						Cermet		Uncoated				Applicable mill
		AH120	AH130	AH140	GH330	T1115	T3130	NS740	N308	UX30	TH10			
	TPCN43ZFR										●			TSP4000IA Page H182
	TPCN43ZTR							●	●	●				
	TPEN43ZTR							●						TFP4000IA Page H183
	TPEN43ZTRCR						●							
	TPKN43ZFR										●			
	TPKN43ZTR	●	●	●	●	●	●	●	●	●				
	TPKR43ZSR-MJ				●		●							
	TPMR2204PDSR-MJ				●		●							
	TPKN43ZFL										●			

●TPMN**TN

Shape	Designation	Cermet												Applicable mill
		NS740												
	TPMN110304TN	●												(old item)
	TPMN110308TN	●												
	TPMN160308TN	●												
	TPMN160312TN	●												
	TPMN220408TN	●												
	TPMN220412TN	●												

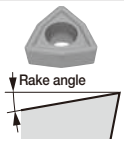
● TVKX**TN-MJ

Shape	Designation	Coated												Applicable mill
		AH120	AH130	AH725										
	TVKX020202TN-MJ	●		●										TUNGTSLIT ASV 02/03/04/05... Page H192
	TVKX020204TN-MJ	●		●										
	TVKX03X302TN-MJ	●		●										
	TVKX03X304TN-MJ	●		●										
	TVKX04H304TN-MJ	●	●	●										
	TVKX04H308TN-MJ	●	●	●										
	TVKX050404TN-MJ	●	●	●										
	TVKX050408TN-MJ	●	●	●										

●: Line up

Milling Insert

● WCMT**-D4

Shape	Designation	Coated		Applicable mill
		AH120	AH140	
 Rake angle	WCMT050308-D4	●	●	EVX... (old item)
	WCMT06T308-D4	●	●	HVX... (old item)

● WDCN42ZFR-DIA

Shape	Designation	PCD	Applicable mill
		DX140	
 Wiper edge -DIA	WDCN42ZFR-DIA	●	TMD4400R/LI Page H092 EMD4400RI Page H093 TGD4400-A Page H098 EGD4400 Page H099

DX140: Packing quantity = 1pc.

● WECN42ZFR-DIA

Shape	Designation	PCD	Applicable mill
		DX140	
 Wiper edge -DIA	WECN42ZFR-DIA	●	THE4000RIA Page H174

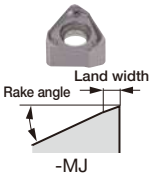
DX140: Packing quantity = 1pc.

● WFCN**ZFR-DIA

Shape	Designation	PCD	Applicable mill
		DX140	
 Wiper edge -DIA	WFCN42ZFR-DIA	●	THF4400RIA (old item)
	WFCN53ZFR-DIA	●	THF5400RIA (old item)

DX140: Packing quantity = 1pc.

● WNGU**TN-MJ

Shape	Designation	Coated			Applicable mill
		AH120	AH130	AH725	
 Land width Rake angle -MJ	WNGU060308TN-MJ	●	●	●	TUNGUSLOT ASW 06/07/09... Page H194 TSW 06/07/09... Page H194
	WNGU060316TN-MJ	●	●	●	
	WNGU07T308TN-MJ	●	●	●	
	WNGU07T316TN-MJ	●	●	●	
	WNGU090408TN-MJ	●	●	●	
	WNGU090416TN-MJ	●	●	●	

●: Line up

Milling Insert

● WPAN42SFR

Shape	Designation	Cermet	Uncoated	Applicable mill
		N308	TH10	
 Wiper edge (2-corner type)	WPAN42SFR	●	●	TGP4100RIA/BA Page H102

● WPAN42SFRS

Shape	Designation	Uncoated	Applicable mill
		TH10	
 Wiper edge (1-corner type)	WPAN42SFRS	●	TGP4100RIA/BA Page H102

● WPAN42ZFR

Shape	Designation	Uncoated	Applicable mill
		TH10	
 Wiper edge (2-corner type)	WPAN42ZFR	●	TGP4200R-A Page H104

● WPMT**ZPR..., WPMT**ZPR-ML, WPMT**-MH, WPMT**-DML, WPMW**ZSR

Shape	Designation	Coated						Applicable mill
		AH120	AH130	AH140	AH730	T3130	AH3135	
	WPMW05H315ZPR	●		●		●	●	MILLFEED TXP05/06/08/09... Page H046 EXP05/06/08/09... Page H048 HXP... (old item)
	WPMT05H315ZPR-ML	●		●		●	●	
	WPMT05H315ZPR-MH	●		●			●	
 -ML	WPMT05H315ZPR-DML				●			
	WPMW06X415ZPR	●		●		●	●	
	WPMT06X415ZPR-ML	●	●	●		●	●	
	WPMT06X415ZPR-MH	●		●			●	
	WPMT06X415ZPR-DML				●			
 -MH	WPMT080615ZSR	●	●	●		●	●	
	WPMT080615ZPR-ML	●	●	●		●	●	
	WPMT080615ZSR-MH	●		●			●	
	WPMT080615ZPR-DML				●			
 -DML	WPMT090725ZSR	●		●		●	●	
	WPMT090725ZPR-ML	●	●	●		●	●	
	WPMT090725ZSR-MH	●	●	●			●	
	WPMT090725ZPR-DML				●			

●: Line up

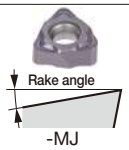
Milling Insert

● WWCW13T3AFER-WS, WWCW13T3AFFR-WS, WWCW13T3AFFR-WD

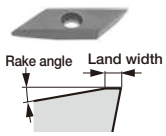
Shape	Designation	Coated		Cermet	Uncoated	PCD		Applicable mill
		GH110	DS1100	NS740	KS05F	DX140		
 -WD	WWCW13T3AFER-WS	●		●				TUNGMILL TAW13... Page H070 EAW13... Page H070
	WWCW13T3AFFR-WS		●		●			
	WWCW13T3AFFR-WD					●		

DX140: Packing quantity = 1pc.

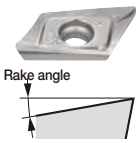
● WXHU**R-MJ

Shape	Designation	Coated	Applicable mill
		AH110	
 -MJ	WXHU040305R-MJ	●	DOMMILL HFWX04... Page H207
	WXHU040310R-MJ	●	

● XCET310404ER

Shape	Designation	Coated			Cermet	Uncoated	Applicable mill
		AH330	AH120	AH3135	NS740	UX30	
	XCET310404ER	●	●	●	●	●	ECC31... Page I094

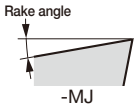
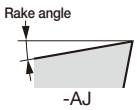
● XVCT16**R-AJ

Shape	Designation	Uncoated	Applicable mill
		TH10	
 -AJ	XVCT160504R-AJ	●	TUNG-ALUMILL TPV16... Page H172 EPV16... Page H172
	XVCT160508R-AJ	●	
	XVCT160512R-AJ	●	
	XVCT160516R-AJ	●	
	XVCT160520R-AJ	●	
	XVCT160530R-AJ	●	
	XVCT160532R-AJ	●	
	XVCT160540R-AJ	●	
	XVCT160550R-AJ	●	

●: Line up

Milling Insert

● XVGT**EC-MJ, XVGT**EP-MJ, XVGT**FC-AJ, XVGT**FP-AJ

Shape	Designation	Coated		Applicable mill
		AH730	DS1200	
 Center edge insert	XVGT06H205EC-MJ	●		HYBRIDTACMILL EVH... (old item)
	XVGT07X305EC-MJ	●		
	XVGT09X405EC-MJ	●		
 Peripheral edge insert	XVGT06H205EP-MJ	●		
	XVGT07X305EP-MJ	●		
	XVGT09X405EP-MJ	●		
 Rake angle -MJ	XVGT06H205FC-AJ		●	
	XVGT07X305FC-AJ		●	
	XVGT09X405FC-AJ		●	
	XVGT06H205FP-AJ		●	
 Rake angle -AJ	XVGT07X305FP-AJ		●	
	XVGT09X405FP-AJ		●	

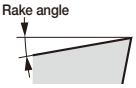
● XHGR**ER-MJ, XHGR**FR-AJ

Shape	Designation	Coated		Applicable mill
		AH730	DS1200	
	XHGR110202ER-MJ	●		HYBRIDTACMILL EPH11/13/18... (old item)
	XHGR110204ER-MJ	●		
	XHGR110205ER-MJ	●		
	XHGR110208ER-MJ	●		
	XHGR110210ER-MJ	●		
	XHGR110212ER-MJ	●		
	XHGR110215ER-MJ	●		
	XHGR110216ER-MJ	●		
	XHGR110220ER-MJ	●		
	XHGR130202ER-MJ	●		
	XHGR130204ER-MJ	●		
	XHGR130205ER-MJ	●		
	XHGR130208ER-MJ	●		
	XHGR130210ER-MJ	●		
	XHGR130212ER-MJ	●		
	XHGR130215ER-MJ	●		
	XHGR130216ER-MJ	●		
	XHGR130220ER-MJ	●		
	XHGR18T202ER-MJ	●		
	XHGR18T204ER-MJ	●		
	XHGR18T205ER-MJ	●		
	XHGR18T208ER-MJ	●		
	XHGR18T210ER-MJ	●		
	XHGR18T212ER-MJ	●		
	XHGR18T215ER-MJ	●		
	XHGR18T216ER-MJ	●		
	XHGR18T220ER-MJ	●		
Rake angle -MJ	XHGR110200FR-AJ		●	
	XHGR110202FR-AJ		●	
	XHGR110204FR-AJ		●	
	XHGR110205FR-AJ		●	
	XHGR110208FR-AJ		●	
Rake angle -AJ	XHGR110210FR-AJ		●	

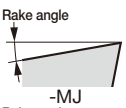
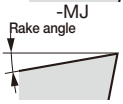
●: Line up

Milling Insert

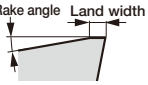
● XHGR**ER-MJ, XHGR**FR-AJ

Shape	Designation	Coated AH730	Coated DS1200	Applicable mill
	XHGR130212FR-AJ		●	HYBRIDTACMILL EPH11/13/18... (old item)
	XHGR130215FR-AJ		●	
	XHGR130216FR-AJ		●	
	XHGR130220FR-AJ		●	
Rake angle  -AJ	XHGR18T200FR-AJ		●	
	XHGR18T202FR-AJ		●	
	XHGR18T204FR-AJ		●	
	XHGR18T205FR-AJ		●	
	XHGR18T208FR-AJ		●	
	XHGR18T210FR-AJ		●	
	XHGR18T212FR-AJ		●	
	XHGR18T215FR-AJ		●	
	XHGR18T216FR-AJ		●	
	XHGR18T220FR-AJ		●	

● XXGT**EC-MJ, XXGT**FC-AJ, XXGT**EP-MJ, XXGT**FP-AJ

Shape	Designation	Coated AH730	Coated DS1200	Applicable mill
 Center edge insert	XXGT06H205EC-MJ	●		HYBRIDTACMILL EXH... (old item)
	XXGT07X305EC-MJ	●		
	XXGT09X408EC-MJ	●		
 Peripheral edge insert	XXGT06H205FC-AJ		●	
	XXGT07X305FC-AJ		●	
	XXGT09X408FC-AJ		●	
Rake angle  -MJ	XXGT06H205EP-MJ	●		
	XXGT07X305EP-MJ	●		
	XXGT09X408EP-MJ	●		
Rake angle  -AJ	XXGT06H205FP-AJ		●	
	XXGT07X305FP-AJ		●	
	XXGT09X408FP-AJ		●	

● XXMU**PR-MJ

Shape	Designation	Coated AH120	Coated AH140	Coated AH3135	Applicable mill
	XXMU08T204PR-MJ	●	●	●	EVX... Page I092 HVX... (old item)
	XXMU10H308PR-MJ	●	●	●	
Rake angle Land width  -MJ	XXMU12X408PR-MJ	●	●	●	
	XXMU16X508PR-MJ	●	●	●	

●: Line up

Milling Insert

● YDEN0905PDFR-D, YDEN0905PDFR-WD, YDEN0905PDFR-BD

Shape	Designation	PCD DX140	Applicable mill
 Regular edge	YDEN0905PDFR-D	●	DPD09... Page H082
	YDEN0905PDFR-WD	●	EDPD09... Page H082
 Wiper edge	YDEN0905PDFR-BD	●	
 Wiper for burr removal			

DX140: Packing quantity = 1pc.

● YDEN1505ADFR-D, YDEN1505ADFR-WD

Shape	Designation	PCD DX140	Applicable mill
 Regular edge	YDEN1505ADFR-D	●	DAD15... (old item)
	YDEN1505ADFR-WD	●	
 Wiper edge			

DX140: Packing quantity = 1pc.

● YDEN1505PDFR-D, YDEN1505PDFR-WD

Shape	Designation	PCD DX140	Applicable mill
 Regular edge	YDEN1505PDFR-D	●	DPD15... EDPD15... (old item)
	YDEN1505PDFR-WD	●	
 Wiper edge			

DX140: Packing quantity = 1pc.

● YDEN0603PDF/SR-D, YDEN0603PDFR-WD, YDEN0603PDFR-BD

Shape	Designation	PCD DX110	Applicable mill
 _D	YDEN0603PDFR-D	●	TUNGSMILL TPYD... Page H076
	YDEN0603PDSR-D	●	
 _WD	YDEN0603PDFR-WD	●	EPYD... Page H076
	YDEN0603PDFR-BD	●	
 _BD			

●: Line up

Milling Insert

● YDEN2405PDFR-D, YDEN2405PDFR-WD, YDEN2405PDFR-BD

Shape	Designation	PCD DX140	Applicable mill
 Regular edge	YDEN2405PDFR-D	●	DPD24... (old item)
	YDEN2405PDFR-WD	●	
	YDEN2405PDFR-BD	●	
 Wiper edge			
 Wiper for burr removal			

DX140: Packing quantity = 1pc.

● YPEB12X3-1A**-D, YPEB12X3-1P**-D, YPEB12X3-2A**-D, YPEB12X3-FP**-D, YPEB12X3-2P07R-D

Shape	Designation	PCD DX160	Applicable mill
 -1A/P	YPEB12X3-1A01R-D	●	TUNGSMILL TPYP12... Page H074 EPYP12... Page H074
	YPEB12X3-1A02R-D	●	
	YPEB12X3-1A07R-D	●	
	YPEB12X3-1P02R-D	●	
 -FP	YPEB12X3-1P07R-D	●	
	YPEB12X3-FP02R-D	●	
	YPEB12X3-FP07R-D	●	
 -2A/P	YPEB12X3-2A01R-D	●	
	YPEB12X3-2A02R-D	●	
	YPEB12X3-2A07R-D	●	
	YPEB12X3-2P07R-D	●	

DX160: Packing quantity = 2pcs.

●: Line up

●YPEN1505PPTR-Q

Shape	Designation	T-CBN BX950	Applicable mill
	YPEN1505PPTR-Q	●	QPP15... (old item)

BX950: Packing quantity = 1pc.

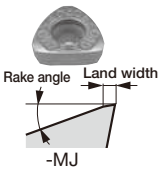
● ZDCA**TN

Shape	Designation	Uncoated UX30	Applicable mill
	ZDCA0804TN	●	TBF1000 (old item)
	ZDCA1105TN	●	

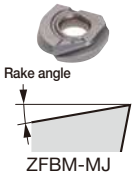
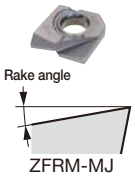
●: Line up

Milling Insert

● ZDMT**-MJ

Shape	Designation	Coated	Applicable mill
		AH120	
	ZDMT4005-MJ	●	EBD... Page H223 HBD... (old item)
	ZDMT5006-MJ	●	

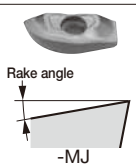
● ZFBM**-MJ, ZFRM**-MJ

Shape	Designation	Coated		Applicable mill
		AH710	AH725	
	ZFBM080R00-MJ	●	●	BALL FINISH NOSE EBFM... Page H202 HBFM... Page H203
	ZFBM100R00-MJ	●	●	
	ZFBM120R00-MJ	●	●	
	ZFBM160R00-MJ	●	●	
	ZFBM200R00-MJ	●	●	
	ZFBM250R00-MJ	●	●	
	ZFBM300R00-MJ	●	●	
	ZFBM320R00-MJ	●	●	
	ZFRM120R05-MJ	●	●	
	ZFRM120R10-MJ	●	●	
	ZFRM160R05-MJ	●	●	
	ZFRM160R10-MJ	●	●	
	ZFRM160R15-MJ	●	●	
	ZFRM200R10-MJ	●	●	
	ZFRM200R15-MJ	●	●	

● ZNCA**FN, ZNMM**EN

Shape	Designation	Uncoated		Applicable mill
		UX30	TH10	
	ZNCA1002FN2	●	●	TBN1000 Page H219
	ZNCA1203FN	●	●	
	ZNCA1603FN	●	●	
	ZNCA2004FN	●	●	
	ZNCA2505FN	●	●	
	ZNCA3005FN	●	●	
	ZNMM2004EN	●		
	ZNMM2505EN	●		
	ZNMM3005EN	●		

● ZPET**-MJ

Shape	Designation	Coated		Applicable mill
		AH120	AH330	
	ZPET2004-MJ	●	●	EBP... Page H221 HBP... (old item)
	ZPET2505-MJ	●	●	
	ZPET3006-MJ	●	●	
	ZPET3206-MJ	●	●	

Milling Insert

● ZPCW**-QBN

Shape	Designation	T-CBN	Applicable mill
		BX950	
	ZPCW2003-QBN	●	EBB... Page H222
	ZPCW25H3-QBN	●	
	ZPCW30T3-QBN	●	
	ZPCW4004-QBN	●	
	ZPCW5004-QBN	●	

BX950: Packing quantity = 1pc.

● ZRBM**-MM

Shape	Designation	Coated	Applicable mill
		APH730	
	ZRBM160-MM	●	BALL R NOSE EBRM... Page H200 HBRM... Page H200
	ZRBM200-MM	●	
	ZRBM250-MM	●	

●: Line up

Milling Insert CBN

● **2QP-SNGN..**

Shape	Designation	CBN	Applicable mill
		BX910	
	**2QP-SNGN090308**	●	
	2QP-SNGN090312	●	

● **2QP-SPGW..., 2QP-SPGN...**

Shape	Designation	CBN	Applicable mill
		BX910	
 2QP-SPGW	**2QP-SPGW09T308**	●	
	2QP-SPGW09T312	●	
	2QP-SPGW120408	●	
	2QP-SPGW120412	●	
 2QP-SPGN	**2QP-SPGW120416**	●	
	2QP-SPGN090308	●	
	2QP-SPGN090312	●	

● **3QP-TPGW..., 3QP-TPGN...**

Shape	Designation	CBN	Applicable mill
		BX910	
 3QP-TPGW	**3QP-TPGW110308**	●	
	3QP-TPGN110308	●	
	3QP-TPGN110312	●	
 3QP-TPGN			

●: Line up

Milling Insert CBN

● **S-CNGN..., S-RNGN..., S-SNGN..., S-TNGN...**

Shape	Designation	CBN										Applicable mill
		BXC90										
 S-CNGN	**S-CNGN090308**	●										
	S-CNGN090312	●										
	S-CNGN120408	●										
	S-CNGN120412	●										
 S-RNGN	**S-RNGN090300**	●										
	S-RNGN120400	●										
	S-SNGN090308	●										
	S-SNGN090312	●										
 S-SNGN	**S-SNGN120308**	●										
	S-SNGN120312	●										
	S-SNGN120408	●										
	S-SNGN120412	●										
 S-TNGN	**S-TNGN110308**	●										
	S-TNGN110312	●										
	S-TNGN160408	●										
	S-TNGN160412	●										

●: Line up

Drill



Drill - Content structure

- Products are listed in the order of 2 effective drill, indexable drill, then deep hole drill.
- The lists for each item start from the smallest tool diameter.

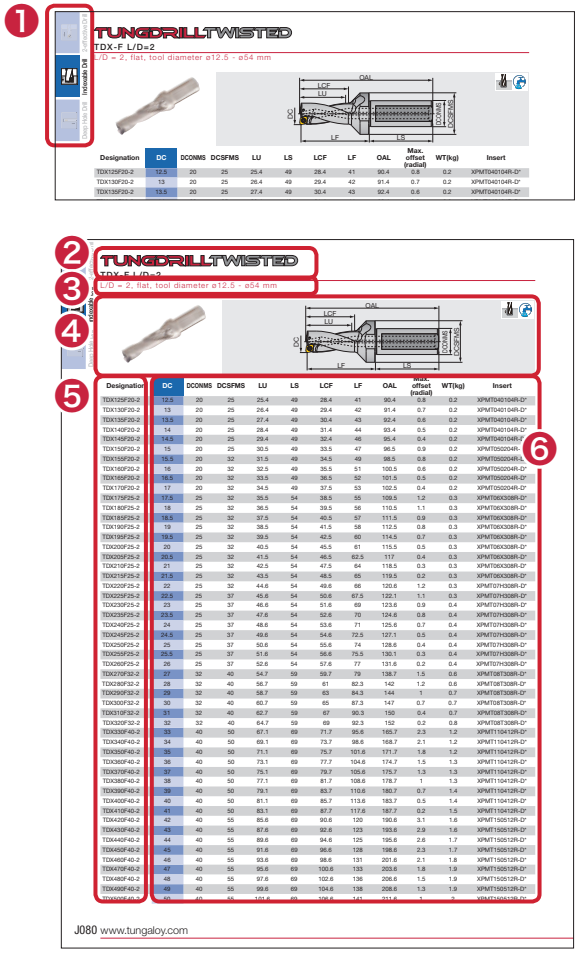
How to use the page

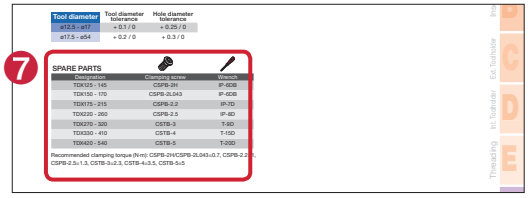
Method ① Select the drill shape described at the left end of each page, jump to the page on the left index, and choose a designation you need (❹) in the dimension table (❸). Applicable inserts are shown in (❻) and (❽).

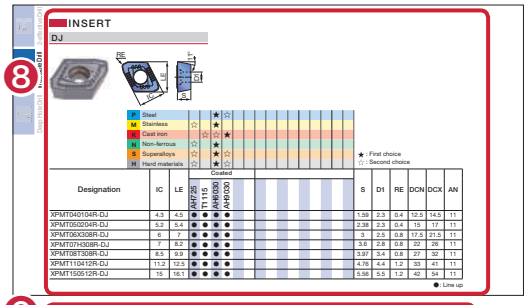
Method ② Select the drill shape on J003 and check the details on the produt page.

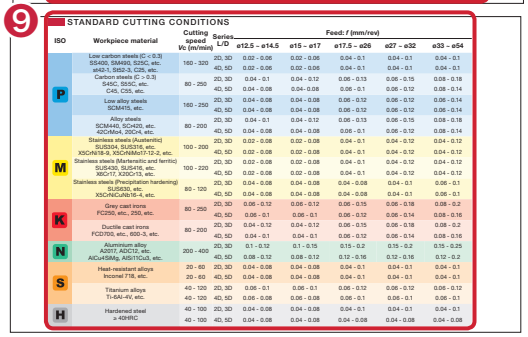
Method ③ Select the drill series name on J004 - J005 and check the details on each page.

Method ④ Select an item from Quick Guide on J006 - J007.









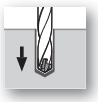


❶ : Drill Shape
❷ : Name of the series
❸ : Feature
❹ : Appearance and dimensions
❺ : Designation
❻ : Dimension

❼ : Spare parts
❽ : Applicable drill diameter
❾ : Standard cutting conditions
❿ : Reference page

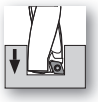
When ordering
- Please specify the designation and quantity for TAC drills.
  e.g. **TDX160W20-2 ...** 1 (one TAC drill per package)
- Please specify the designation, grade, and quantity for inserts.
  e.g. **XPMT050204R-DJ AH725 ...** 10 (10 inserts per package)
  *You will find a note if the number per package is not 10.
- Please specify the designation and quantity for solid/brazed drills.
  e.g. **DSW030-014-06DE3 ...** 1 (one solid/brazed drill per package)

Drill



2 Effective Drill

J006, J009, J031
J010 - J071



Indexable Drill

J006
J073 - J103



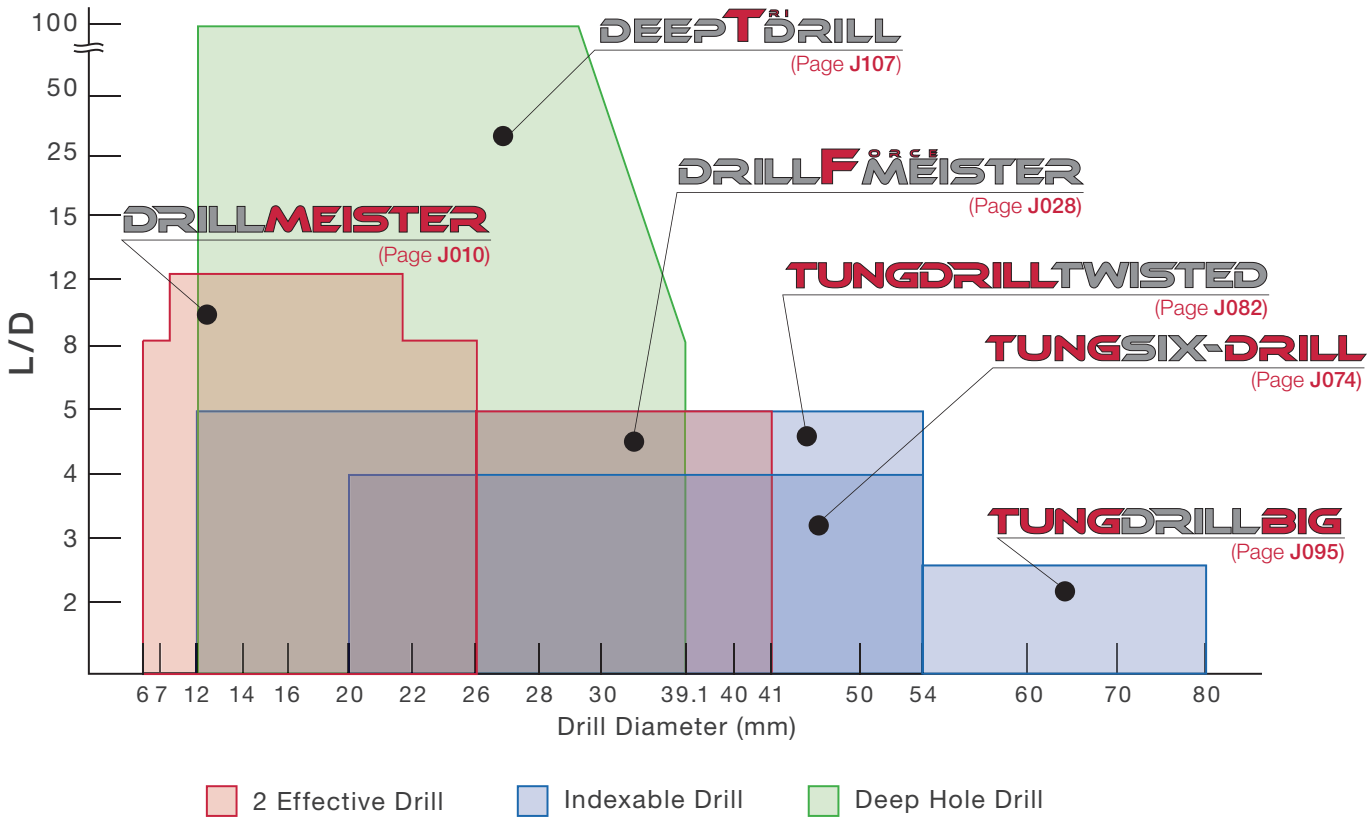
Deep Hole Drill

J007, J105
J106, J132
J105 - J166

Basic Selection of Drilling Tools

Application ranges of drilling tools

Indexable & Head-Changeable Drills



Hole diameter tolerance*

TUNGSIX-DRILL

L/D	Tool diameter	Hole diameter tolerance*
2	ø20 - ø27	+ 0.25 / 0
	ø28 - ø54	+ 0.3 / 0
3	ø20 - ø27	+ 0.25 / 0
	ø28 - ø54	+ 0.3 / 0
4	ø20 - ø27	+ 0.3 / 0
	ø28 - ø54	+ 0.35 / 0

TUNGDRILLTWISTED

L/D	Tool diameter	Hole diameter tolerance*
2	ø12.5 - ø17	+ 0.25 / 0
	ø17.5 - ø54	+ 0.3 / 0
3	ø12.5 - ø17	+ 0.25 / 0
	ø17.5 - ø54	+ 0.3 / 0
4	ø12.5 - ø17	+ 0.4 / 0
	ø17.5 - ø54	+ 0.45 / 0
5	ø12.5 - ø17	+ 0.4 / 0
	ø17.5 - ø54	+ 0.45 / 0

DRILLMEISTER

L/D	Tool diameter	Hole diameter tolerance*
TID 1.5	ø6 - ø25.9	+ 0.05 / 0
TID 3	ø6 - ø25.9	+ 0.05 / 0
TID 5	ø6 - ø17.9	+ 0.06 / 0
	ø18 - ø25.9	+ 0.065 / 0
TID 8	ø7 - ø17.9	+ 0.07 / 0
	ø18 - ø25.9	+ 0.085 / 0
TID 12	ø12 - ø17.9	+ 0.08 / 0
	ø18 - ø25.9	+ 0.095 / 0
TIDC 3	ø10 - ø19.9	+ 0.05 / 0
TIDC 5	ø10 - ø19.9	+ 0.05 / 0

DRILL FORCE MEISTER

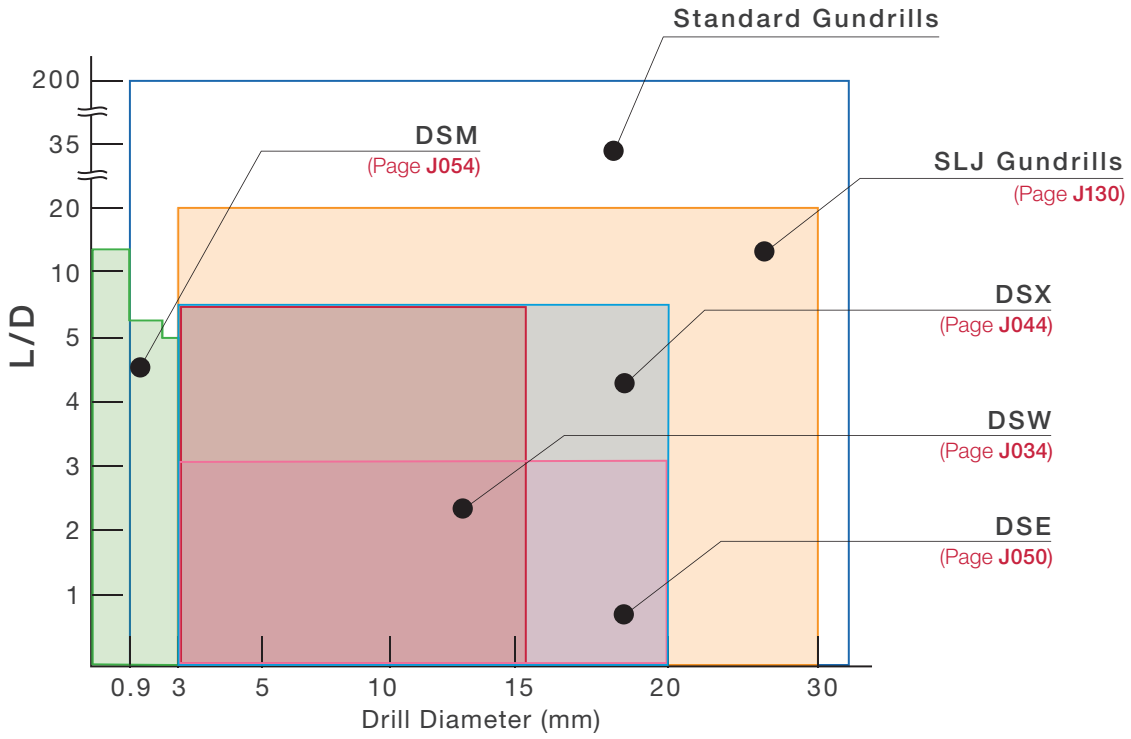
L/D	Tool diameter	Hole diameter tolerance*
3	ø26 - ø29.9	+ 0.05 / 0
	ø30 - ø41	+ 0.06 / 0
5	ø26 - ø29.9	+ 0.08 / 0
	ø30 - ø41	+ 0.09 / 0

DEEP TRI DRILL

L/D	Tool diameter	Hole diameter tolerance*
8	ø33.1 - ø39.1	+ 0.05 / - 0.1
10	ø16 - ø38.1	+ 0.05 / - 0.1
15	ø12 - ø38.1	+ 0.05 / - 0.1
20	ø12 - ø15	+ 0.05 / - 0.1
25	ø12 - ø38.1	+ 0.05 / - 0.1

*Just for reference

Solid Drills, Brazed Carbide Drills



General drilling - Quick Guide

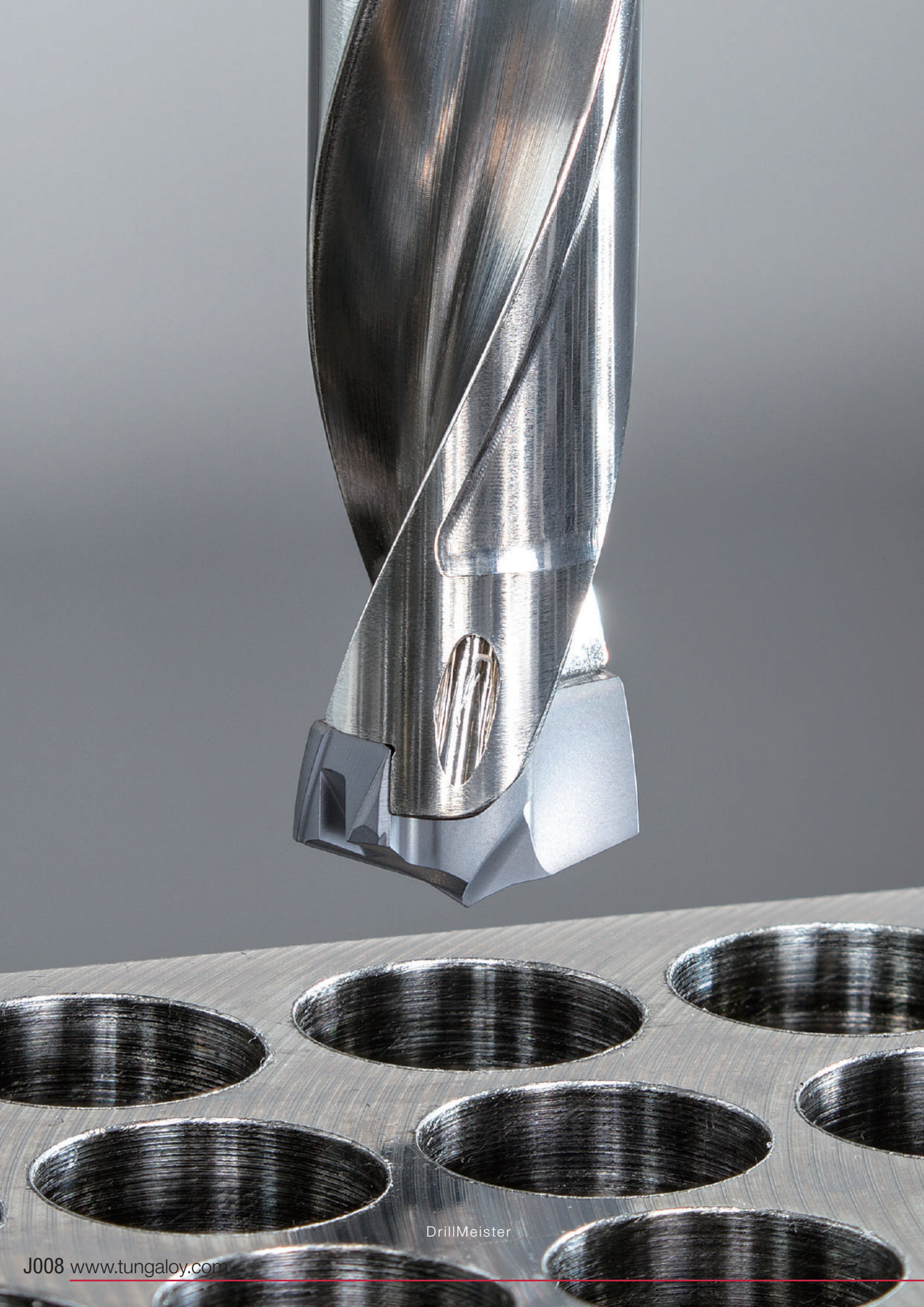
★ : First choice
☆ : Second choice

Application	Tool diameter	L/D	Tool series	Appearance	IT class	Effective Cutting edge	Coolant supply	Workpiece material P	M	K	N	S	H	Page
General drilling	ø6 - ø25.9	1.5 3 5 8 12	DRILLMEISTER Head changeable drill TID/TIDC/TIDCF		9 - 10	2	Int.	★	★	★	☆	★	★	J010
	ø26 - ø41	3 5	DRILLFMEISTER Head changeable drill TIS		9 - 10	2	Int.	★	★	★	☆	★	★	J028
	ø3 - ø16	3 5 8	SOLIDDRILL DSW		9 - 10	2	Int. / Ext.	★	★	★	☆	★	☆	J034
	ø0.1 - ø3	5 10 15	SOLIDDRILL GIGAMINIDRILL DSM/DSM-CP		9 -10	2	Ext.	★	★	★	☆	☆	☆	J054
	ø3 - ø20	3 5 8	SOLIDDRILL GIGAJETDRILL DSX		9 - 10	2	Int.	★	★	★	☆	☆	☆	J044
	ø3 - ø16	2 3	SOLIDDRILL GIGAPOWERDRILL DSE		9 - 10	2	Ext.	★	☆	☆	☆	★	☆	J050
	ø3 - ø20	2 3	SOLIDDRILL DMX		9 - 10	2	Ext.	★	☆	☆	☆	★	☆	J058
	ø3 - ø20	3 5	SOLIDDRILL DMX-F		9 - 10	2	Ext.			★	★			J064
	ø5 - ø16	5 8	SOLIDDRILL FDC		9 - 10	2	Int.			★	★			J068
	ø0.4 - ø13	5 - 12	SOLIDDRILL CDS		9 - 10	2	Ext.			★	★			J070
	ø20 - ø54	2 3 4	TUNGSIX-DRILL Indexable Drill TDS		11 -	1	Int.	★	★	★	☆	★	★	J075
	ø12.5 - ø54	2 3 4 5	TUNGDRILLTWISTED Indexable Drill TDX		11 -	1	Int.	★	★	★	☆	★	★	J082
	ø55 - ø80	2 5	TUNGDRILLBIG Indexable Drill TDS/TDX		11 -	1	Int.	★	★	★	☆	★	★	J095

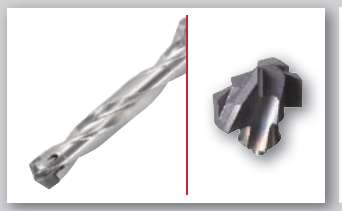
Deep drilling - Quick Guide

★ : First choice
☆ : Second choice

Application	Tool diameter	L/D	Tool series	Appearance	IT class	Effective Cutting edge	Coolant supply	Workpiece material P	M	K	N	S	H	Page
Deep drilling	ø12 - ø39.1	8 10 15 20 25 (for machining centers) Length ≤ 1650 mm (for gundrill machines)	DEEP T DRILL Head changeable deep drill MCTR/MCTRCH TRLG/TRLGCH		10	1	Int.	★	★	★	☆	★	★	J107
	ø3 - ø12.2	Length ≤ 1650 mm (for gundrill machines)	GUNDRILL Brazed gundrill SLJ		7 - 8	1	Int.	★	★	★	☆	☆	☆	J130
	ø16 - ø28	-	TRI-FINE Indexable BTA drill FNTR		10	1	Int.	★	★	★	☆	★	☆	J136
	ø25 - ø65	-	FINE-BEAM Indexable BTA drill FNBM		10	1	Int.	★	★	★	☆	★	★	J140
	ø38 - ø106.99	-	UNIDEX Indexable BTA drill KUSTS/KUDTS		10	1	Int.	★	★	★	☆	★	☆	J146
	ø8 - ø65	-	Brazed BTA drill MBU/UTE/BTU		9	1	Int.	★	★	★	☆	★	☆	J152
	ø30 - ø69	6 - 14	**HF** drill Head changeable deep drill HF		10	1	Int.	★	★	★	☆	★	★	J165



Head changeable drill



DRILLMEISTER

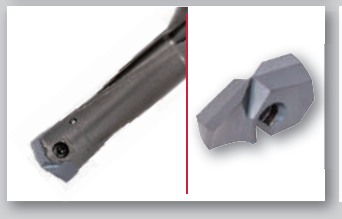
Drill Meisiter

Head changeable drill series

ø6 mm - ø25.9 mm / L/D = 1.5, 3, 5, 8, 12

※ L/D = 12 : ø8 ~ ø22.9

J010 - J027



DRILL FORCE MEISTER

Drill Force Meister

Two cutting edges functioned for productivity in large diameter drilling

ø26 mm - ø41 mm / L/D = 3, 5

J028 - J032

Solid Drill



SOLIDDRILL

Solid Drill

High performance solid carbide drill

J033 - J071



DSW

ø3 mm - ø16 mm / L/D = 3, 5, 8

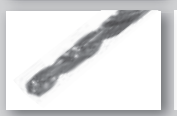
J034 - J043



DSX

ø3 mm - ø20 mm / L/D = 3, 5, 8

J044 - J049



DSE

ø3 mm - ø16 mm / L/D = 2, 3

J050 - J053



DSM / DSM-CP

ø0.1 mm - ø3 mm / L/D = 5, 10, 15

J054 - J057



DMX

ø3 mm - ø16 mm / L/D = 2, 3

J058 - J061



DMX-FS / DMX-FM / DMX-FL

ø3 mm - ø20 mm / L/D = 3, 5

J064 - J067



FDC

ø5 mm - ø16 mm / L/D = 5, 8

J068 - J069



CDS

ø0.4 mm - ø13 mm / L/D = 5 - 12

J070 - J071

DRILLMEISTER



Exchangeable head system for easy operation

High accuracy, rigidity, and productivity

- Unique clamping structure provides high repeatability and reliability
- One-action head changing reduces tool set up time
- No re-grinding cost and reduced tool inventory requirements

Drill head



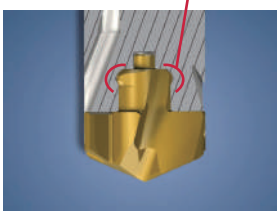
Drill body



Contact area that supports the drill head against cutting force

Contact area that maintains the accurate drill position

Groove to prevent the head from falling off



Increased body durability

- The new clamping mechanism greatly reduces the damage on cutting edges due to less holding power as seen with the competitors, which leads to long tool life.
- The unique clamping design prevents the head from falling off.



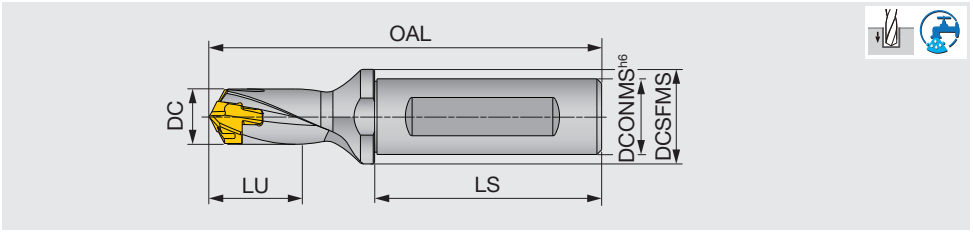
Reference pages: J011 - J027, Technical reference → L079

DRILLMEISTER

TID L/D=1.5

Head changeable drill





Designation	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TID060F12-1.5	6 - 6.4	12	16	10.1	45	68	-	6	DMP060 - DMP064
TID065F12-1.5	6.5 - 6.9	12	16	11.2	45	69.1	-	6	DMP065 - DMP069
TID070F12-1.5	7 - 7.4	12	16	12.3	45	70.1	-	7	DMP070 - DMP074
TID075F12-1.5	7.5 - 7.9	12	16	12.7	45	70.9	-	7	DMP075 - DMP079
TID080F12-1.5	8 - 8.9	12	16	13.5	45	72.4	-	8	DMP080 - DMP089
TID090F12-1.5	9 - 9.9	12	16	15.6	45	74.3	-	9	DMP090 - DMP099
TID100F16-1.5	10 - 10.9	16	20	16.8	48	79.2	79.8	10	DM*100 - DM*109
TID110F16-1.5	11 - 11.9	16	20	19	48	81.1	81.7	11	DM*110 - DM*119
TID120F16-1.5	12 - 12.9	16	20	20.2	48	83	83.6	12	DM*120 - DM*129
TID130F16-1.5	13 - 13.9	16	20	22.4	48	85.1	85.9	13	DM*130 - DM*139
TID140F16-1.5	14 - 14.9	16	20	23.5	48	89.1	89.9	14	DM*140 - DM*149
TID150F20-1.5	15 - 15.9	20	25	25.7	50	96.2	97.1	15	DM*150 - DM*159
TID160F20-1.5	16 - 16.9	20	25	26.9	50	99.3	100.3	16	DM*160 - DM*169
TID170F20-1.5	17 - 17.9	20	25	29.1	50	102.4	103.4	17	DM*170 - DM*179
TID180F25-1.5	18 - 18.9	25	32	30.3	56	111.5	112.6	18	DM*180 - DM*189
TID190F25-1.5	19 - 19.9	25	32	32.5	56	114.5	115.6	19	DM*190 - DM*199
TID200F25-1.5	20 - 20.9	25	32	33.6	56	117.6	-	20	DMP200 - DMP209
TID210F25-1.5	21 - 21.9	25	32	35.8	56	120.7	-	21	DMP210 - DMP219
TID220F25-1.5	22 - 22.9	25	32	37	56	123.8	-	22	DMP220 - DMP229
TID230F32-1.5	23 - 23.9	32	42	39.2	60	130.8	-	23	DMP230 - DMP239
TID240F32-1.5	24 - 24.9	32	42	40.4	60	133.9	-	24	DMP240 - DMP249
TID250F32-1.5	25 - 25.9	32	42	42.5	60	137	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø6 - ø25.9	+0.05 / 0

*Just for reference

SPARE PARTS

Designation	Clamping key
TID060-090	K-TID6-9.99
TID100-190	K-TID10-19.99
TID200-250	K-TID20-26.99

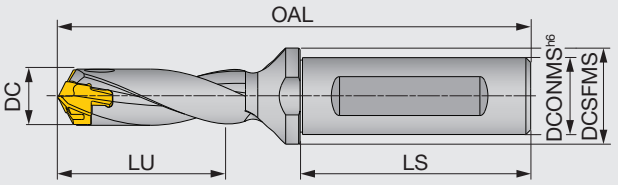
Reference pages: Head → J020 - J025
Standard cutting conditions → J026

DRILLMEISTER

TID L/D=3

Head changeable drill





Designation	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TID060F12-3	6 - 6.4	12	16	19.1	45	77	-	6	DMP060 - DMP064
TID065F12-3	6.5 - 6.9	12	16	21.2	45	78.8	-	6	DMP065 - DMP069
TID070F12-3	7 - 7.4	12	16	22.3	45	80.6	-	7	DMP070 - DMP074
TID075F12-3	7.5 - 7.9	12	16	24.4	45	82.1	-	7	DMP075 - DMP079
TID080F12-3	8 - 8.4	12	16	25.5	45	84.4	-	8	DMP080 - DMP084
TID085F12-3	8.5 - 8.9	12	16	27.5	45	85.9	-	8	DMP085 - DMP089
TID090F12-3	9 - 9.4	12	16	28.6	45	87.8	-	9	DMP090 - DMP094
TID095F12-3	9.5 - 9.9	12	16	30.7	45	89.3	-	9	DMP095 - DMP099
TID100F16-3	10 - 10.4	16	20	31.8	48	94.2	94.8	10	DM*100 - DM*104
TID105F16-3	10.5 - 10.9	16	20	33.9	48	95.7	96.3	10	DM*105 - DM*109
TID110F16-3	11 - 11.4	16	20	35	48	97.6	98.2	11	DM*110 - DM*114
TID115F16-3	11.5 - 11.9	16	20	37.1	48	99.1	99.7	11	DM*115 - DM*119
TID120F16-3	12 - 12.4	16	20	38.2	48	101	101.6	12	DM*120 - DM*124
TID125F16-3	12.5 - 12.9	16	20	39.3	48	102.5	103.1	12	DM*125 - DM*129
TID130F16-3	13 - 13.4	16	20	41.4	48	104.6	105.4	13	DM*130 - DM*134
TID135F16-3	13.5 - 13.9	16	20	43.5	48	106.1	106.9	13	DM*135 - DM*139
TID140F16-3	14 - 14.4	16	20	44.5	48	110.1	110.9	14	DM*140 - DM*144
TID145F16-3	14.5 - 14.9	16	20	46.6	48	111.6	112.4	14	DM*145 - DM*149
TID150F20-3	15 - 15.9	20	25	47.7	50	118.7	119.6	15	DM*150 - DM*159
TID160F20-3	16 - 16.9	20	25	50.9	50	123.3	124.3	16	DM*160 - DM*169
TID170F20-3	17 - 17.9	20	25	54.1	50	127.9	128.9	17	DM*170 - DM*179
TID180F25-3	18 - 18.9	25	32	57.3	56	138.5	139.6	18	DM*180 - DM*189
TID190F25-3	19 - 19.9	25	32	60.5	56	143	144.1	19	DM*190 - DM*199
TID200F25-3	20 - 20.9	25	32	63.6	56	147.6	-	20	DMP200 - DMP209
TID210F25-3	21 - 21.9	25	32	66.8	56	152.2	-	21	DMP210 - DMP219
TID220F25-3	22 - 22.9	25	32	70	56	156.8	-	22	DMP220 - DMP229
TID230F32-3	23 - 23.9	32	42	73.2	60	165.3	-	23	DMP230 - DMP239
TID240F32-3	24 - 24.9	32	42	76.4	60	169.9	-	24	DMP240 - DMP249
TID250F32-3	25 - 25.9	32	42	79.5	60	174.5	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø6 - ø25.9	+0.05 / 0

*Just for reference

SPARE PARTS



Designation	Clamping key
TID060-095	K-TID6-9.99
TID100-190	K-TID10-19.99
TID200-250	K-TID20-26.99

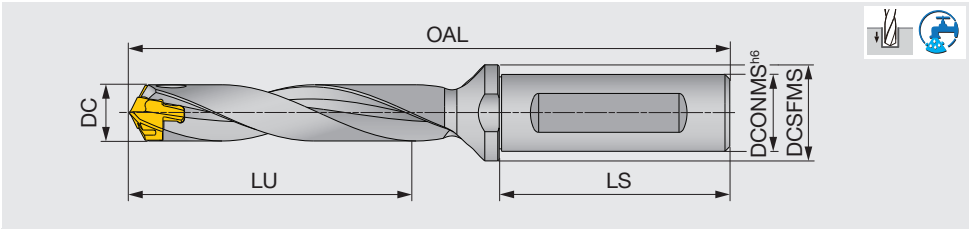
Reference pages: Head → J020 - J025
Standard cutting conditions → J026

DRILLMEISTER

TID L/D=5

Head changeable drill





Designation	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TID060F12-5	6 - 6.4	12	16	31.1	45	89	-	6	DMP060 - DMP064
TID065F12-5	6.5 - 6.9	12	16	34.2	45	91.8	-	6	DMP065 - DMP069
TID070F12-5	7 - 7.4	12	16	36.3	45	94.6	-	7	DMP070 - DMP074
TID075F12-5	7.5 - 7.9	12	16	39.4	45	97.1	-	7	DMP075 - DMP079
TID080F12-5	8 - 8.4	12	16	41.5	45	100.4	-	8	DMP080 - DMP084
TID085F12-5	8.5 - 8.9	12	16	44.5	45	102.9	-	8	DMP085 - DMP089
TID090F12-5	9 - 9.4	12	16	46.6	45	105.8	-	9	DMP090 - DMP094
TID095F12-5	9.5 - 9.9	12	16	49.7	45	108.3	-	9	DMP095 - DMP099
TID100F16-5	10 - 10.4	16	20	51.8	48	114.2	114.8	10	DM*100 - DM*104
TID105F16-5	10.5 - 10.9	16	20	54.9	48	116.7	117.3	10	DM*105 - DM*109
TID110F16-5	11 - 11.4	16	20	57	48	119.6	120.2	11	DM*110 - DM*114
TID115F16-5	11.5 - 11.9	16	20	60.1	48	122.1	122.7	11	DM*115 - DM*119
TID120F16-5	12 - 12.4	16	20	62.2	48	125	125.6	12	DM*120 - DM*124
TID125F16-5	12.5 - 12.9	16	20	64.3	48	127.5	128.1	12	DM*125 - DM*129
TID130F16-5	13 - 13.4	16	20	67.4	48	130.6	131.4	13	DM*130 - DM*134
TID135F16-5	13.5 - 13.9	16	20	70.5	48	133.1	133.9	13	DM*135 - DM*139
TID140F16-5	14 - 14.4	16	20	72.5	48	138.2	139	14	DM*140 - DM*144
TID145F16-5	14.5 - 14.9	16	20	75.6	48	140.7	141.5	14	DM*145 - DM*149
TID150F20-5	15 - 15.9	20	25	77.7	50	148.7	149.6	15	DM*150 - DM*159
TID160F20-5	16 - 16.9	20	25	82.9	50	155.3	156.3	16	DM*160 - DM*169
TID170F20-5	17 - 17.9	20	25	88.1	50	161.9	162.9	17	DM*170 - DM*179
TID180F25-5	18 - 18.9	25	32	93.3	56	174.5	175.6	18	DM*180 - DM*189
TID190F25-5	19 - 19.9	25	32	98.5	56	181	182.1	19	DM*190 - DM*199
TID200F25-5	20 - 20.9	25	32	103.6	56	187.6	-	20	DMP200 - DMP209
TID210F25-5	21 - 21.9	25	32	108.8	56	194.2	-	21	DMP210 - DMP219
TID220F25-5	22 - 22.9	25	32	114	56	200.8	-	22	DMP220 - DMP229
TID230F32-5	23 - 23.9	32	42	119.2	60	211.3	-	23	DMP230 - DMP239
TID240F32-5	24 - 24.9	32	42	124.4	60	217.9	-	24	DMP240 - DMP249
TID250F32-5	25 - 25.9	32	42	129.5	60	224.5	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø6 - ø17.9	+0.06 / 0
ø18 - ø25.9	+0.065 / 0

*Just for reference

SPARE PARTS



Designation	Clamping key
TID060-095	K-TID6-9.99
TID100-190	K-TID10-19.99
TID200-250	K-TID20-26.99

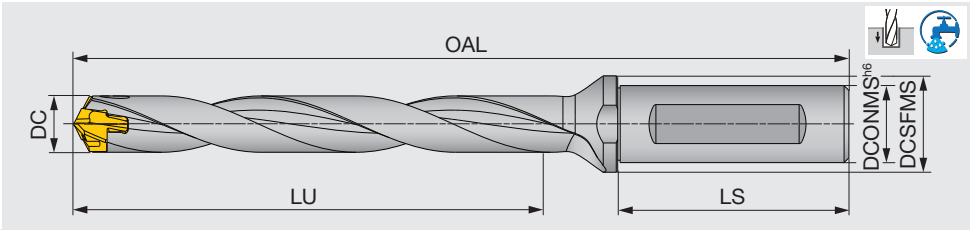
Reference pages: Head → J020 - J025
Standard cutting conditions → J026

DRILLMEISTER

TID L/D=8

Head changeable drill





Designation	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TID070F12-8	7 - 7.4	12	16	57.3	45	115.6	-	7	DMP070 - DMP074
TID075F12-8	7.5 - 7.9	12	16	61.4	45	119.6	-	7	DMP075 - DMP079
TID080F12-8	8 - 8.4	12	16	65.5	45	124.4	-	8	DMP080 - DMP084
TID085F12-8	8.5 - 8.9	12	16	69.5	45	128.4	-	8	DMP085 - DMP089
TID090F12-8	9 - 9.4	12	16	73.6	45	132.8	-	9	DMP090 - DMP094
TID095F12-8	9.5 - 9.9	12	16	77.7	45	136.8	-	9	DMP095 - DMP099
TID100F16-8	10 - 10.4	16	20	81.8	48	144.2	144.8	10	DM*100 - DM*104
TID105F16-8	10.5 - 10.9	16	20	85.9	48	148.2	148.8	10	DM*105 - DM*109
TID110F16-8	11 - 11.4	16	20	90	48	152.6	153.2	11	DM*110 - DM*114
TID115F16-8	11.5 - 11.9	16	20	94.1	48	156.6	157.2	11	DM*115 - DM*119
TID120F16-8	12 - 12.4	16	20	98.2	48	161	161.6	12	DM*120 - DM*124
TID125F16-8	12.5 - 12.9	16	20	102.3	48	165	165.6	12	DM*125 - DM*129
TID130F16-8	13 - 13.4	16	20	106.4	48	169.6	170.4	13	DM*130 - DM*134
TID135F16-8	13.5 - 13.9	16	20	110.5	48	173.6	174.4	13	DM*135 - DM*139
TID140F16-8	14 - 14.4	16	20	114.5	48	180.1	180.9	14	DM*140 - DM*144
TID145F16-8	14.5 - 14.9	16	20	118.6	48	184.2	185	14	DM*145 - DM*149
TID150F20-8	15 - 15.9	20	25	122.7	50	193.7	194.6	15	DM*150 - DM*159
TID160F20-8	16 - 16.9	20	25	130.9	50	203.3	204.3	16	DM*160 - DM*169
TID170F20-8	17 - 17.9	20	25	139.1	50	212.9	213.9	17	DM*170 - DM*179
TID180F25-8	18 - 18.9	25	32	147.3	56	228.5	229.6	18	DM*180 - DM*189
TID190F25-8	19 - 19.9	25	32	155.5	56	238	239.1	19	DM*190 - DM*199
TID200F25-8	20 - 20.9	25	32	163.6	56	247.6	-	20	DMP200 - DMP209
TID210F25-8	21 - 21.9	25	32	171.8	56	257.2	-	21	DMP210 - DMP219
TID220F25-8	22 - 22.9	25	32	180	56	266.8	-	22	DMP220 - DMP229
TID230F32-8	23 - 23.9	32	42	188.2	60	280.3	-	23	DMP230 - DMP239
TID240F32-8	24 - 24.9	32	42	196.4	60	289.9	-	24	DMP240 - DMP249
TID250F32-8	25 - 25.9	32	42	204.5	60	299.5	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø7 - ø17.9	+0.07 / 0
ø18 - ø25.9	+0.085 / 0

*Just for reference

SPARE PARTS



Designation	Clamping key
TID060-095	K-TID6-9.99
TID100-190	K-TID10-19.99
TID200-250	K-TID20-26.99

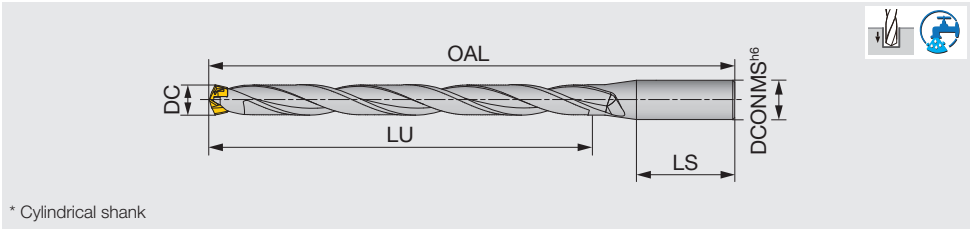
Reference pages: Head → J020 - J025
Standard cutting conditions → J026

DRILLMEISTER

TID L/D=12

Head changeable drill





* Cylindrical shank

Designation	DC	DCONMS	LU	LS	OAL		Pocket size	Head
					DMP	DMC		
TID080R12-12	8 - 8.4	12	97.5	45	156.4	-	8	DM*080-DM*084
TID085R12-12	8.5 - 8.9	12	103.5	45	162.4	-	8	DM*085-DM*089
TID090R12-12	9 - 9.4	12	109.6	45	168.8	-	9	DM*090-DM*094
TID095R12-12	9.5 - 9.9	12	115.7	45	174.8	-	9	DM*095-DM*099
TID100R16-12	10 - 10.4	16	121.8	48	184.2	184.8	10	DM*100-DM*104
TID105R16-12	10.4 - 10.9	16	127.9	48	190.2	190.8	10	DM*105-DM*109
TID110R16-12	11 - 11.4	16	134.0	48	196.6	197.2	11	DM*110-DM*114
TID115R16-12	11.5 - 11.9	16	140.1	48	202.6	203.2	11	DM*115-DM*119
TID120R16-12	12 - 12.4	16	146.2	48	209	209.6	12	DM*120 - DM*124
TID125R16-12	12.5 - 12.9	16	152.3	48	215	215.6	12	DM*125 - DM*129
TID130R16-12	13 - 13.4	16	158.4	48	221.6	222.4	13	DM*130 - DM*134
TID135R16-12	13.5 - 13.9	16	164.5	48	227.6	228.4	13	DM*135 - DM*139
TID140R16-12	14 - 14.4	16	170.5	48	236.2	237	14	DM*140 - DM*144
TID145R16-12	14.5 - 14.9	16	176.6	48	242.2	243	14	DM*145 - DM*149
TID150R20-12	15 - 15.9	20	182.7	50	253.7	254.6	15	DM*150 - DM*159
TID160R20-12	16 - 16.9	20	194.9	50	267.3	268.3	16	DM*160 - DM*169
TID170R20-12	17 - 17.9	20	207.1	50	280.9	281.9	17	DM*170 - DM*179
TID180R25-12	18 - 18.9	25	219.3	56	300.5	301.6	18	DM*180 - DM*189
TID190R25-12	19 - 19.9	25	231.5	56	314	315.1	19	DM*190 - DM*199
TID200R25-12	20 - 20.9	25	243.6	56	327.6	-	20	DM*200 - DM*209
TID210R25-12	21 - 21.9	25	255.8	56	341.2	-	21	DM*210 - DM*219
TID220R25-12	22 - 22.9	25	268	56	354.8	-	22	DM*220 - DM*229

Note : An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

Tool diameter	Hole diameter tolerance*
ø8 - ø17.9	+0.08 / 0
ø18 - ø22.9	+0.095 / 0

*Just for reference

SPARE PARTS



Designation	Clamping key
TID100-190	K-TID10-19.99
TID200-220	K-TID20-26.99

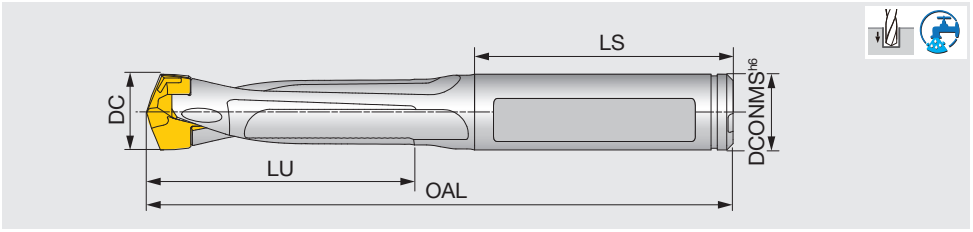
Reference pages: Head → J020 - J025
Standard cutting conditions → J026

DRILLMEISTER

TIDC L/D=3

Head changeable drill





Designation	DC	DCONMS	LU	LS	OAL		Pocket size	Head
					DMP	DMC		
TIDC100C10-3	10 - 10.4	10	31.8	41	86.1	86.7	10	DM*100 - DM*104
TIDC105C11-3	10.5 - 10.9	11	33.4	41	87.6	88.2	10	DM*105 - DM*109
TIDC110C11-3	11 - 11.4	11	35	41	89.5	90.1	11	DM*110 - DM*114
TIDC115C12-3	11.5 - 11.9	12	36.6	41	91	91.6	11	DM*115 - DM*119
TIDC120C12-3	12 - 12.4	12	38.2	41	92.8	93.4	12	DM*120 - DM*124
TIDC125C13-3	12.5 - 12.9	13	39.8	46	98.3	98.9	12	DM*125 - DM*129
TIDC130C13-3	13 - 13.4	13	41.4	47	102.4	103.2	13	DM*130 - DM*134
TIDC135C14-3	13.5 - 13.9	14	43	43	99.9	100.7	13	DM*135 - DM*139
TIDC140C14-3	14 - 14.4	14	44.5	44	103	103.8	14	DM*140 - DM*144
TIDC145C15-3	14.5 - 14.9	15	46.1	45	105.5	106.3	14	DM*145 - DM*149
TIDC150C15-3	15 - 15.9	15	47.7	45	107.5	108.4	15	DM*150 - DM*159
TIDC160C16-3	16 - 16.9	16	50.9	48	117.5	118.5	16	DM*160 - DM*169
TIDC170C17-3	17 - 17.9	17	54.1	48	119.7	120.7	17	DM*170 - DM*179
TIDC180C18-3	18 - 18.9	18	57.3	48	123.3	124.4	18	DM*180 - DM*189
TIDC190C19-3	19 - 19.9	19	60.5	54	132.4	133.5	19	DM*190 - DM*199

Tool diameter	Hole diameter tolerance*
ø10 - ø19.9	+0.05 / 0

*Just for reference

SPARE PARTS



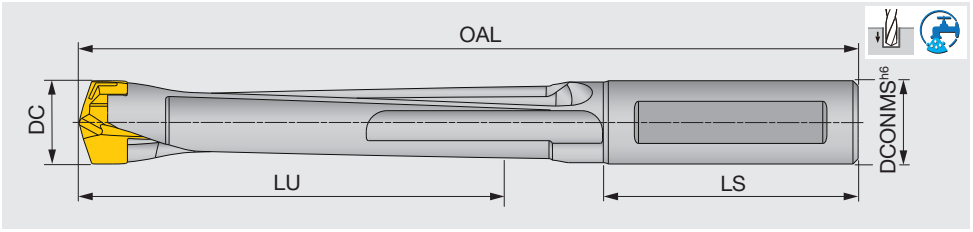
Designation	Clamping key
TIDC100-190	K-TID10-19.99

Reference pages: Head → J020 - J025
Standard cutting conditions → J026

TIDC L/D=5

Head changeable drill





Designation	DC	DCONMS	LU	LS	OAL		Pocket size	Head
					DMP	DMC		
TIDC100C10-5	10 - 10.4	10	51.8	41	106.1	106.7	10	DM*100 - DM*104
TIDC105C11-5	10.5 - 10.9	11	54.4	41	108.6	109.2	10	DM*105 - DM*109
TIDC110C11-5	11 - 11.4	11	57	41	111.5	112.1	11	DM*110 - DM*114
TIDC115C12-5	11.5 - 11.9	12	59.6	41	114	114.6	11	DM*115 - DM*119
TIDC120C12-5	12 - 12.4	12	62.2	41	116.8	117.4	12	DM*120 - DM*124
TIDC125C13-5	12.5 - 12.9	13	64.8	46	124.3	124.9	12	DM*125 - DM*129
TIDC130C13-5	13 - 13.4	13	67.4	47	128.4	129.2	13	DM*130 - DM*134
TIDC135C14-5	13.5 - 13.9	14	70	43	126.9	127.7	13	DM*135 - DM*139
TIDC140C14-5	14 - 14.4	14	72.5	44	131	131.8	14	DM*140 - DM*144
TIDC145C15-5	14.5 - 14.9	15	75.1	45	134.5	135.3	14	DM*145 - DM*149
TIDC150C15-5	15 - 15.9	15	77.7	45	137.5	138.4	15	DM*150 - DM*159
TIDC160C16-5	16 - 16.9	16	82.9	48	149.5	150.5	16	DM*160 - DM*169
TIDC170C17-5	17 - 17.9	17	88.1	48	153.7	154.7	17	DM*170 - DM*179
TIDC180C18-5	18 - 18.9	18	93.3	48	159.3	160.4	18	DM*180 - DM*189
TIDC190C19-5	19 - 19.9	19	98.5	54	170.4	171.5	19	DM*190 - DM*199

Tool diameter	Hole diameter tolerance*
ø10 - ø19.9	+0.05 / 0

*Just for reference

SPARE PARTS



Designation	Clamping key
TIDC100-190	K-TID10-19.99

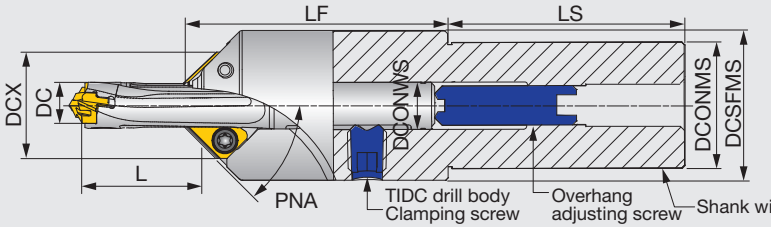
Reference pages: Head → J020 - J025
Standard cutting conditions → J026

DRILLMEISTER

TIDCF

Chamfering adapter





Designation	DC	DCONMS	DCSFMS	DCX	LF	LS	L* L/D = 3	L* L/D = 5	Drill body	DCONWS
TIDCF100-W32	10 - 10.4	32	38	24.9	67.3	60	14.5 - 31.8	31.7 - 51.8	TIDC100C10-...	10
TIDCF110-W32	10.5 - 10.9	32	38	25.9	67.3	60	15.7 - 33.3	31.2 - 54.2	TIDC105C11-...	11
TIDCF110-W32	11 - 11.4	32	38	25.9	67.3	60	16.2 - 35.3	34.1 - 57.3	TIDC110C11-...	11
TIDCF120-W32	11.5 - 11.9	32	38	26.9	67.3	60	15.1 - 36.7	33.8 - 59.4	TIDC115C12-...	12
TIDCF120-W32	12 - 12.4	32	38	26.9	67.3	60	16.5 - 37.7	36.6 - 61.6	TIDC120C12-...	12
TIDCF130-W32	12.5 - 12.9	32	38	27.9	67.3	60	16.1 - 39.6	39.7 - 64.8	TIDC125C13-...	13
TIDCF130-W32	13 - 13.4	32	38	27.9	67.3	60	17.5 - 41.5	42.7 - 68	TIDC130C13-...	13
TIDCF140-W32	13.5 - 13.9	32	38	28.4	67.3	60	17.7 - 42.9	41.4 - 70.3	TIDC135C14-...	14
TIDCF140-W32	14 - 14.4	32	38	28.4	67.3	60	18.1 - 45	44.8 - 73.1	TIDC140C14-...	14
TIDCF150-W32	14.5 - 14.9	32	38	29.4	67.3	60	19.2 - 44.6	44 - 73.9	TIDC145C15-...	15
TIDCF150-W32	15 - 15.9	32	38	29.4	67.3	60	19.7 - 47.4	47.6 - 80.7	TIDC150C15-...	15
TIDCF160-W32	16 - 16.9	32	38	30.4	67.3	60	19.5 - 55.3	57 - 87.5	TIDC160C16-...	16
TIDCF170-W32	17 - 17.9	32	38	31.4	67.3	60	21.4 - 54.9	55.9 - 88.5	TIDC170C17-...	17
TIDCF180-W32	18 - 18.9	32	38	32.4	67.3	60	24.2 - 65.2	60 - 93	TIDC180C18-...	18
TIDCF190-W32	19 - 19.9	32	38	33.4	75	60	28.5 - 62.3	67 - 100	TIDC190C19-...	19

L* is the dimension when using 45° chamfering insert.

SPARE PARTS







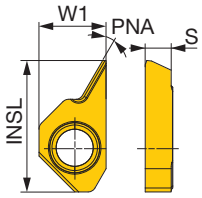

Designation	Clamping screw	Grip	Overhang adjusting screw	Clamping screw of TIDC drill body	Torx bit	Wrench
TIDCF	SR14-544/S	SW6-SD	SRM10X10DIN916	SRM10X1.5S	BT15S	HW5.0

Recommended clamping torque (N·m)：SR14-544/S=4.8

CHAMFERING INSERT

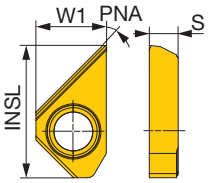
XHGT-30A





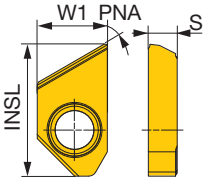
XHGR-45A





XHGR-60A





P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard materials

★ : First choice
☆ : Second choice

Designation	W1	S	Coated GH730	Chamfering angle PNA	Maximum width of chamfer **
XHGT090300-30A	8.5	3.3	●	2.5°	0.5
XHGR090300-45A	8.5	3.3	●	3°	0.6
XHGR090300-60A	8.5	3.3	●	3.4°	0.8

**Please reduce the feed rate to half when chamfering over 60% of maximum width of chamfer.

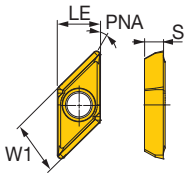
● : Line up
2 pieces per package

INSERT FOR SPECIAL CHAMFERING ADAPTERS

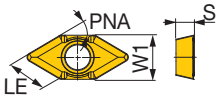
AOMT...



AOMT**-C45



AOMT**-N-**DT



P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard materials

★ : First choice
☆ : Second choice

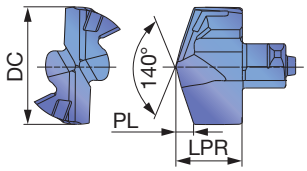
Designation	W1	S	Coated GH730	LE	Chamfering angle PNA
AOMT060204-C45	5.66	1.96	●	4.5	45°
AOMT030204-N-30DT	4	1.59	●	4	30°
AOMT030204-N-45DT	2.8	1.59	●	4	45°

● : Line up

DRILL HEAD

DMP General purpose





Tool diameter	Head diameter tolerance
ø6 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated	PL	SSC	Pocket Size	Body
			AH725				
DMP060	6	4	●	1.09	6	6	TID*060...
DMP061	6.1	4	●	1.11	6	6	TID*060...
DMP062	6.2	4	●	1.13	6	6	TID*060...
DMP063	6.3	4	●	1.15	6	6	TID*060...
DMP064	6.4	4	●	1.16	6	6	TID*060...
DMP065	6.5	4.3	●	1.18	6	6	TID*065...
DMP066	6.6	4.3	●	1.20	6	6	TID*065...
DMP067	6.7	4.3	●	1.22	6	6	TID*065...
DMP068	6.8	4.3	●	1.24	6	6	TID*065...
DMP069	6.9	4.3	●	1.26	6	6	TID*065...
DMP070	7	4.6	●	1.27	7	7	TID*070...
DMP071	7.1	4.6	●	1.29	7	7	TID*070...
DMP072	7.2	4.6	●	1.31	7	7	TID*070...
DMP073	7.3	4.6	●	1.33	7	7	TID*070...
DMP074	7.4	4.6	●	1.35	7	7	TID*070...
DMP075	7.5	4.6	●	1.36	7	7	TID*075...
DMP076	7.6	4.6	●	1.38	7	7	TID*075...
DMP077	7.7	4.6	●	1.40	7	7	TID*075...
DMP078	7.8	4.6	●	1.42	7	7	TID*075...
DMP079	7.9	4.6	●	1.44	7	7	TID*075...
DMP080	8	5.4	●	1.46	8	8	TID*080...
DMP081	8.1	5.4	●	1.47	8	8	TID*080...
DMP082	8.2	5.4	●	1.49	8	8	TID*080...
DMP083	8.3	5.4	●	1.51	8	8	TID*080...
DMP084	8.4	5.4	●	1.53	8	8	TID*080...
DMP085	8.5	5.4	●	1.55	8	8	TID*085...
DMP086	8.6	5.4	●	1.57	8	8	TID*085...
DMP087	8.7	5.4	●	1.58	8	8	TID*085...
DMP088	8.80	5.4	●	1.6	8	8	TID*085...
DMP089	8.9	5.4	●	1.62	8	8	TID*085...
DMP090	9	5.8	●	1.64	9	9	TID*090...
DMP091	9.1	5.8	●	1.66	9	9	TID*090...
DMP092	9.2	5.8	●	1.67	9	9	TID*090...
DMP093	9.3	5.8	●	1.69	9	9	TID*090...
DMP094	9.4	5.8	●	1.71	9	9	TID*090...
DMP095	9.5	5.8	●	1.73	9	9	TID*095...
DMP096	9.6	5.8	●	1.75	9	9	TID*095...
DMP097	9.7	5.8	●	1.77	9	9	TID*095...
DMP098	9.8	5.8	●	1.78	9	9	TID*095...
DMP099	9.9	5.8	●	1.8	9	9	TID*095...
DMP100	10	6.05	●	6.05	10	10	TID*100...
DMP101	10.1	6.05	●	6.05	10	10	TID*100...
DMP102	10.2	6.05	●	6.05	10	10	TID*100...
DMP103	10.3	6.05	●	6.05	10	10	TID*100...
DMP104	10.4	6.05	●	6.05	10	10	TID*100...

●: Line up

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

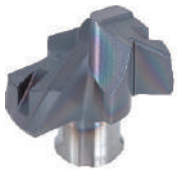
★ : First choice
☆ : Second choice

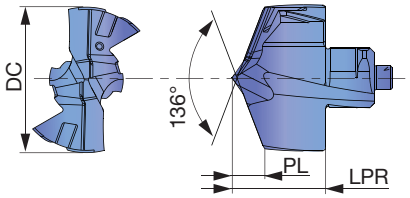
Designation	DC	LPR	Coated		PL	SSC	Pocket Size	Body
			AH725					
DMP105	10.5	6.05	●		6.05	10	10	TID*105...
DMP106	10.6	6.05	●		6.05	10	10	TID*105...
DMP107	10.7	6.05	●		6.05	10	10	TID*105...
DMP108	10.8	6.05	●		6.05	10	10	TID*105...
DMP109	10.9	6.05	●		6.05	10	10	TID*105...
DMP110	11	6.45	●		6.45	11	11	TID*110...
DMP111	11.1	6.45	●		6.45	11	11	TID*110...
DMP112	11.2	6.45	●		6.45	11	11	TID*110...
DMP113	11.3	6.45	●		6.45	11	11	TID*110...
DMP114	11.4	6.45	●		6.45	11	11	TID*110...
DMP115	11.5	6.45	●		6.45	11	11	TID*115...
DMP116	11.6	6.45	●		6.45	11	11	TID*115...
DMP117	11.7	6.45	●		6.45	11	11	TID*115...
DMP118	11.8	6.45	●		6.45	11	11	TID*115...
DMP119	11.9	6.45	●		6.45	11	11	TID*115...
DMP120	12	6.8	●		6.8	12	12	TID*120...
DMP121	12.1	6.8	●		6.8	12	12	TID*120...
DMP122	12.2	6.8	●		6.8	12	12	TID*120...
DMP123	12.3	6.8	●		6.8	12	12	TID*120...
DMP124	12.4	6.8	●		6.8	12	12	TID*120...
DMP125	12.5	6.8	●		6.8	12	12	TID*125..
DMP126	12.6	6.8	●		6.8	12	12	TID*125..
DMP127	12.7	6.8	●		6.8	12	12	TID*125..
DMP128	12.8	6.8	●		6.8	12	12	TID*125..
DMP129	12.9	6.8	●		6.8	12	12	TID*125..
DMP130	13	7.4	●		7.4	13	13	TID*130...
DMP131	13.1	7.4	●		7.4	13	13	TID*130...
DMP132	13.2	7.4	●		7.4	13	13	TID*130...
DMP133	13.3	7.4	●		7.4	13	13	TID*130...
DMP134	13.4	7.4	●		7.4	13	13	TID*130...
DMP135	13.5	7.4	●		7.4	13	13	TID*135...
DMP136	13.6	7.4	●		7.4	13	13	TID*135...
DMP137	13.7	7.4	●		7.4	13	13	TID*135...
DMP138	13.8	7.4	●		7.4	13	13	TID*135...
DMP139	13.90	7.4	●		7.4	13	13	TID*135...
DMP140	14	7.95	●		2.55	14	14	TID*140...
DMP141	14.1	7.95	●		2.57	14	14	TID*140...
DMP142	14.2	7.95	●		2.58	14	14	TID*140...
DMP143	14.3	7.95	●		2.6	14	14	TID*140...
DMP144	14.4	7.95	●		2.62	14	14	TID*140...
DMP145	14.5	7.95	●		2.64	14	14	TID*145...
DMP146	14.6	7.95	●		2.66	14	14	TID*145...
DMP147	14.7	7.95	●		2.68	14	14	TID*145...
DMP148	14.8	7.95	●		2.69	14	14	TID*145...
DMP149	14.9	7.95	●		2.71	14	14	TID*145...
DMP150	15	8.53	●		2.73	15	15	TID*150...
DMP151	15.1	8.53	●		2.75	15	15	TID*150...
DMP152	15.2	8.53	●		2.77	15	15	TID*150...
DMP153	15.3	8.53	●		2.78	15	15	TID*150...
DMP154	15.4	8.53	●		2.8	15	15	TID*150...
DMP155	15.5	8.53	●		2.82	15	15	TID*150...
DMP156	15.6	8.53	●		2.84	15	15	TID*150...
DMP157	15.7	8.53	●		2.86	15	15	TID*150...
DMP158	15.8	8.53	●		2.88	15	15	TID*150...
DMP159	15.9	8.53	●		2.89	15	15	TID*150...
DMP160	16	9.1	●		2.91	16	16	TID*160...
DMP161	16.1	9.1	●		2.93	16	16	TID*160...

ø6 - ø19.9 = 2 pieces per package
ø20 - ø25.9 = 1 piece per package

●: Line up

DMC High precision machining





Tool diameter	Head diameter tolerance
ø10 - ø17.9	+0.018 / 0
ø18 - ø19.9	+0.021 / 0

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated													PL	SSC	Pocket Size	Body
			AH725																
DMP162	16.2	9.1	●													2.95	16	16	TID*160...
DMP163	16.3	9.1	●													2.97	16	16	TID*160...
DMP164	16.4	9.1	●													2.98	16	16	TID*160...
DMP165	16.5	9.1	●													3	16	16	TID*160...
DMP166	16.6	9.1	●													3.02	16	16	TID*160...
DMP167	16.7	9.1	●													3.04	16	16	TID*160...
DMP168	16.8	9.1	●													3.06	16	16	TID*160...
DMP169	16.9	9.1	●													3.08	16	16	TID*160...
DMP170	17	9.7	●													3.09	17	17	TID*170...
DMP171	17.1	9.7	●													3.11	17	17	TID*170...
DMP172	17.2	9.7	●													3.13	17	17	TID*170...
DMP173	17.3	9.7	●													3.15	17	17	TID*170...
DMP174	17.4	9.7	●													3.17	17	17	TID*170...
DMP175	17.5	9.7	●													3.18	17	17	TID*170...
DMP176	17.6	9.7	●													3.20	17	17	TID*170...
DMP177	17.7	9.7	●													3.22	17	17	TID*170...
DMP178	17.8	9.7	●													3.24	17	17	TID*170...
DMP179	17.9	9.7	●													3.26	17	17	TID*170...
DMP180	18	10.3	●													3.28	18	18	TID*180...
DMP181	18.1	10.3	●													3.29	18	18	TID*180...
DMP182	18.2	10.3	●													3.31	18	18	TID*180...
DMP183	18.3	10.3	●													3.33	18	18	TID*180...
DMP184	18.4	10.3	●													3.35	18	18	TID*180...
DMP185	18.5	10.3	●													3.37	18	18	TID*180...
DMP186	18.6	10.3	●													3.38	18	18	TID*180...
DMP187	18.7	10.3	●													3.4	18	18	TID*180...
DMP188	18.8	10.3	●													3.42	18	18	TID*180...
DMP189	18.9	10.3	●													3.44	18	18	TID*180...
DMP190	19	10.8	●													3.46	19	19	TID*190...
DMP191	19.1	10.8	●													3.48	19	19	TID*190...
DMP192	19.2	10.8	●													3.49	19	19	TID*190...
DMP193	19.3	10.8	●													3.51	19	19	TID*190...
DMP194	19.4	10.8	●													3.53	19	19	TID*190...
DMP195	19.5	10.8	●													3.55	19	19	TID*190...
DMP196	19.6	10.8	●													3.57	19	19	TID*190...
DMP197	19.7	10.8	●													3.59	19	19	TID*190...
DMP198	19.8	10.8	●													3.6	19	19	TID*190...
DMP199	19.9	10.8	●													3.62	19	19	TID*190...
DMP200	20	11.4	●													3.64	20	20	TID*200...
DMP201	20.1	11.4	●													3.66	20	20	TID*200...
DMP202	20.2	11.4	●													3.68	20	20	TID*200...
DMP203	20.3	11.4	●													3.69	20	20	TID*200...
DMP204	20.4	11.4	●													3.71	20	20	TID*200...
DMP205	20.5	11.4	●													3.73	20	20	TID*200...

●: Line up

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

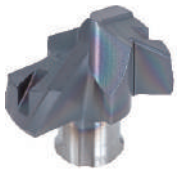
★ : First choice
☆ : Second choice

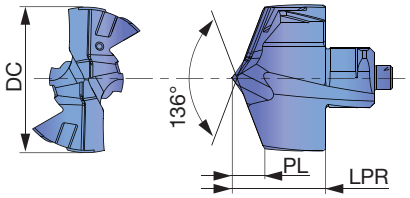
Designation	DC	LPR	Coated													PL	SSC	Pocket Size	Body
			AH725																
DMP206	20.6	11.4	●													3.75	20	20	TID*200...
DMP207	20.7	11.4	●													3.77	20	20	TID*200...
DMP208	20.8	11.4	●													3.79	20	20	TID*200...
DMP209	20.9	11.4	●													3.8	20	20	TID*200...
DMP210	21	11.98	●													3.82	21	21	TID*210...
DMP211	21.1	11.98	●													3.84	21	21	TID*210...
DMP212	21.2	11.98	●													3.86	21	21	TID*210...
DMP213	21.3	11.98	●													3.88	21	21	TID*210...
DMP214	21.4	11.98	●													3.89	21	21	TID*210...
DMP215	21.5	11.98	●													3.91	21	21	TID*210...
DMP216	21.6	11.98	●													3.93	21	21	TID*210...
DMP217	21.7	11.98	●													3.95	21	21	TID*210...
DMP218	21.8	11.98	●													3.97	21	21	TID*210...
DMP219	21.9	11.98	●													3.99	21	21	TID*210...
DMP220	22	12.56	●													4	22	22	TID*220...
DMP221	22.1	12.56	●													4.02	22	22	TID*220...
DMP222	22.2	12.56	●													4.04	22	22	TID*220...
DMP223	22.3	12.56	●													4.06	22	22	TID*220...
DMP224	22.4	12.56	●													4.08	22	22	TID*220...
DMP225	22.5	12.56	●													4.09	22	22	TID*220...
DMP226	22.6	12.56	●													4.11	22	22	TID*220...
DMP227	22.7	12.56	●													4.13	22	22	TID*220...
DMP228	22.8	12.56	●													4.15	22	22	TID*220...
DMP229	22.9	12.56	●													4.17	22	22	TID*220...
DMP230	23	13.13	●													4.19	23	23	TID*230...
DMP231	23.1	13.13	●													4.2	23	23	TID*230...
DMP232	23.2	13.13	●													4.22	23	23	TID*230...
DMP233	23.3	13.13	●													4.24	23	23	TID*230...
DMP234	23.4	13.13	●													4.26	23	23	TID*230...
DMP235	23.5	13.13	●													4.28	23	23	TID*230...
DMP236	23.6	13.13	●													4.29	23	23	TID*230...
DMP237	23.7	13.13	●													4.31	23	23	TID*230...
DMP238	23.8	13.13	●													4.33	23	23	TID*230...
DMP239	23.9	13.13	●													4.35	23	23	TID*230...
DMP240	24	13.7	●													4.37	24	24	TID*240...
DMP241	24.1	13.7	●													4.39	24	24	TID*240...
DMP242	24.2	13.7	●													4.4	24	24	TID*240...
DMP243	24.3	13.7	●													4.42	24	24	TID*240...
DMP244	24.4	13.7	●													4.44	24	24	TID*240...
DMP245	24.5	13.7	●													4.46	24	24	TID*240...
DMP246	24.6	13.7	●													4.48	24	24	TID*240...
DMP247	24.7	13.7	●													4.5	24	24	TID*240...
DMP248	24.8	13.7	●													4.51	24	24	TID*240...
DMP249	24.9	13.7	●													4.53	24	24	TID*240...
DMP250	25	14.3	●													4.55	25	25	TID*250...
DMP251	25.1	14.3	●													4.57	25	25	TID*250...
DMP252	25.2	14.3	●													4.59	25	25	TID*250...
DMP253	25.3	14.3	●													4.6	25	25	TID*250...
DMP254	25.4	14.3	●													4.62	25	25	TID*250...
DMP255	25.5	14.3	●													4.64	25	25	TID*250...
DMP256	25.6	14.3	●													4.66	25	25	TID*250...
DMP257	25.7	14.3	●													4.68	25	25	TID*250...
DMP258	25.8	14.3	●													4.7	25	25	TID*250...
DMP259	25.9	14.3	●													4.71	25	25	TID*250...

ø10 - ø19.9 = 2 pieces per package

●: Line up

DMC High precision machining





Tool diameter	Head diameter tolerance
ø10 - ø17.9	+0.018 / 0
ø18 - ø19.9	+0.021 / 0

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated	PL	SSC	Pocket Size	Body
			AH9130				
DMC100	10	6.67	●	2.09	10	10	TID*100...
DMC101	10.1	6.67	●	2.11	10	10	TID*100...
DMC102	10.2	6.67	●	2.13	10	10	TID*100...
DMC103	10.3	6.67	●	2.15	10	10	TID*100...
DMC104	10.4	6.67	●	2.17	10	10	TID*100...
DMC105	10.5	6.67	●	2.19	10	10	TID*105...
DMC106	10.6	6.67	●	2.21	10	10	TID*105...
DMC107	10.7	6.67	●	2.23	10	10	TID*105...
DMC108	10.8	6.67	●	2.25	10	10	TID*105...
DMC109	10.9	6.67	●	2.27	10	10	TID*105...
DMC110	11	7.1	●	2.32	11	11	TID*110...
DMC111	11.1	7.1	●	2.34	11	11	TID*110...
DMC112	11.2	7.1	●	2.36	11	11	TID*110...
DMC113	11.3	7.1	●	2.38	11	11	TID*110...
DMC114	11.4	7.1	●	2.4	11	11	TID*110...
DMC115	11.5	7.1	●	2.42	11	11	TID*115...
DMC116	11.6	7.1	●	2.44	11	11	TID*115...
DMC117	11.7	7.1	●	2.46	11	11	TID*115...
DMC118	11.8	7.1	●	2.48	11	11	TID*115...
DMC119	11.9	7.1	●	2.5	11	11	TID*115...
DMC120	12	7.43	●	2.45	12	12	TID*120...
DMC121	12.1	7.43	●	2.47	12	12	TID*120...
DMC122	12.2	7.43	●	2.49	12	12	TID*120...
DMC123	12.3	7.43	●	2.51	12	12	TID*120...
DMC124	12.4	7.43	●	2.53	12	12	TID*120...
DMC125	12.5	7.43	●	2.55	12	12	TID*125...
DMC126	12.6	7.43	●	2.57	12	12	TID*125...
DMC127	12.7	7.43	●	2.59	12	12	TID*125...
DMC128	12.8	7.43	●	2.61	12	12	TID*125...
DMC129	12.9	7.43	●	2.63	12	12	TID*125...
DMC130	13	8.15	●	2.71	13	13	TID*130...
DMC131	13.1	8.15	●	2.73	13	13	TID*130...
DMC132	13.2	8.15	●	2.75	13	13	TID*130...
DMC133	13.3	8.15	●	2.77	13	13	TID*130...
DMC134	13.4	8.15	●	2.79	13	13	TID*130...
DMC135	13.5	8.15	●	2.81	13	13	TID*135...
DMC136	13.6	8.15	●	2.83	13	13	TID*135...
DMC137	13.7	8.15	●	2.85	13	13	TID*135...
DMC138	13.8	8.15	●	2.87	13	13	TID*135...
DMC139	13.9	8.15	●	2.89	13	13	TID*135...
DMC140	14	8.76	●	2.93	14	14	TID*140...
DMC141	14.1	8.76	●	2.95	14	14	TID*140...
DMC142	14.2	8.76	●	2.97	14	14	TID*140...
DMC143	14.3	8.76	●	2.99	14	14	TID*140...
DMC144	14.4	8.76	●	3.01	14	14	TID*140...

●: Line up

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated														PL	SSC	Pocket Size	Body
			AH9130																	
DMC145	14.5	8.76	●														3.03	14	14	TID*145...
DMC146	14.6	8.76	●														3.05	14	14	TID*145...
DMC147	14.7	8.76	●														3.07	14	14	TID*145...
DMC148	14.8	8.76	●														3.09	14	14	TID*145...
DMC149	14.9	8.76	●														3.11	14	14	TID*145...
DMC150	15	9.44	●														3.18	15	15	TID*150...
DMC151	15.1	9.44	●														3.2	15	15	TID*150...
DMC152	15.2	9.44	●														3.22	15	15	TID*150...
DMC153	15.3	9.44	●														3.24	15	15	TID*150...
DMC154	15.4	9.44	●														3.26	15	15	TID*150...
DMC155	15.5	9.44	●														3.28	15	15	TID*150...
DMC156	15.6	9.44	●														3.3	15	15	TID*150...
DMC157	15.7	9.44	●														3.32	15	15	TID*150...
DMC158	15.8	9.44	●														3.34	15	15	TID*150...
DMC159	15.9	9.44	●														3.36	15	15	TID*150...
DMC160	16	10.07	●														3.39	16	16	TID*160...
DMC161	16.1	10.07	●														3.41	16	16	TID*160...
DMC162	16.2	10.07	●														3.43	16	16	TID*160...
DMC163	16.3	10.07	●														3.45	16	16	TID*160...
DMC164	16.4	10.07	●														3.47	16	16	TID*160...
DMC165	16.5	10.07	●														3.49	16	16	TID*160...
DMC166	16.6	10.07	●														3.51	16	16	TID*160...
DMC167	16.7	10.07	●														3.53	16	16	TID*160...
DMC168	16.8	10.07	●														3.55	16	16	TID*160...
DMC169	16.9	10.07	●														3.57	16	16	TID*160...
DMC170	17	10.68	●														3.57	17	17	TID*170...
DMC171	17.1	10.68	●														3.59	17	17	TID*170...
DMC172	17.2	10.68	●														3.61	17	17	TID*170...
DMC173	17.3	10.68	●														3.63	17	17	TID*170...
DMC174	17.4	10.68	●														3.65	17	17	TID*170...
DMC175	17.5	10.68	●														3.67	17	17	TID*170...
DMC176	17.6	10.68	●														3.69	17	17	TID*170...
DMC177	17.7	10.68	●														3.71	17	17	TID*170...
DMC178	17.8	10.68	●														3.73	17	17	TID*170...
DMC179	17.9	10.68	●														3.75	17	17	TID*170...
DMC180	18	11.35	●														3.78	18	18	TID*180...
DMC181	18.1	11.35	●														3.8	18	18	TID*180...
DMC182	18.2	11.35	●														3.82	18	18	TID*180...
DMC183	18.3	11.35	●														3.84	18	18	TID*180...
DMC184	18.4	11.35	●														3.86	18	18	TID*180...
DMC185	18.5	11.35	●														3.88	18	18	TID*180...
DMC186	18.6	11.35	●														3.9	18	18	TID*180...
DMC187	18.7	11.35	●														3.92	18	18	TID*180...
DMC188	18.8	11.35	●														3.94	18	18	TID*180...
DMC189	18.9	11.35	●														3.96	18	18	TID*180...
DMC190	19	11.91	●														3.99	19	19	TID*190...
DMC191	19.1	11.91	●														4.01	19	19	TID*190...
DMC192	19.2	11.91	●														4.03	19	19	TID*190...
DMC193	19.3	11.91	●														4.05	19	19	TID*190...
DMC194	19.4	11.91	●														4.07	19	19	TID*190...
DMC195	19.5	11.91	●														4.09	19	19	TID*190...
DMC196	19.6	11.91	●														4.11	19	19	TID*190...
DMC197	19.7	11.91	●														4.13	19	19	TID*190...
DMC198	19.8	11.91	●														4.15	19	19	TID*190...
DMC199	19.9	11.91	●														4.17	19	19	TID*190...

●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed	Feed: *f* (mm/rev) DC (mm)						
		Vc (m/min)	ø6 - 7.9	ø8 - 9.9	ø10 - ø11.9	ø12 - ø13.9	ø14 - ø15.9	ø16 - ø19.9	ø20 - ø25.9
P	Low carbon steels (C < 0.3) SS400, SM490, S25C, etc. C15E4, E275A, E355D, etc.	80 - 140	0.09 - 0.13	0.12 - 0.25	0.15 - 0.28	0.18 - 0.3	0.20 - 0.35	0.25 - 0.45	0.25 - 0.45
P	High carbon steels (C > 0.3) S45C, S55C, etc. C45, C55, etc.	70 - 120	0.09 - 0.13	0.12 - 0.25	0.15 - 0.28	0.18 - 0.3	0.2 - 0.35	0.25 - 0.45	0.25 - 0.45
P	Low alloy steels SCM415, etc. 18CrMo4, etc.	70 - 120	0.08 - 0.13	0.11 - 0.25	0.14 - 0.28	0.16 - 0.32	0.18 - 0.35	0.23 - 0.4	0.25 - 0.45
P	Alloy steels SCM440, SCr420, etc. 42CrMo4, 20Cr4, etc.	40 - 90	0.08 - 0.13	0.11 - 0.25	0.14 - 0.28	0.16 - 0.32	0.18 - 0.35	0.23 - 0.4	0.25 - 0.45
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	30 - 70	0.08 - 0.1	0.1 - 0.15	0.12 - 0.18	0.14 - 0.2	0.16 - 0.24	0.16 - 0.26	0.18 - 0.3
K	Grey cast irons FC250, etc. GG25, etc.	80 - 180	0.12 - 0.18	0.15 - 0.3	0.20 - 0.35	0.25 - 0.4	0.3 - 0.45	0.35 - 0.55	0.35 - 0.6
K	Ductile cast irons FCD700, etc. GGG70, etc.	80 - 140	0.12 - 0.18	0.15 - 0.3	0.20 - 0.35	0.25 - 0.4	0.3 - 0.45	0.35 - 0.55	0.35 - 0.6
N	Aluminium alloys ADC12, etc. AlSi11Cu3, etc.	80 - 220	0.1 - 0.2	0.2 - 0.35	0.25 - 0.4	0.3 - 0.45	0.35 - 0.5	0.4 - 0.6	0.5 - 0.75
S	Titanium alloys Ti-6Al-4V, etc.	20 - 50	0.05 - 0.07	0.06 - 0.12	0.08 - 0.15	0.1 - 0.28	0.12 - 0.2	0.14 - 0.22	0.18 - 0.27
S	Nickel-based alloys	20 - 50	0.05 - 0.07	0.06 - 0.11	0.08 - 0.13	0.1 - 0.15	0.12 - 0.18	0.12 - 0.22	0.14 - 0.22
H	Hardened steel	20 - 50	0.05 - 0.07	0.06 - 0.12	0.08 - 0.15	0.1 - 0.18	0.12 - 0.2	0.14 - 0.22	0.16 - 0.25

- Cutting conditions in the above table show standard cutting conditions.
- Cutting conditions may change due to the rigidity and power of the machine and the workpiece material.
- Machined hole diameter may change depending upon the rigidity of the machine tool or cutting conditions.
- In case of L/D = 8,12 drill, the recommended range of cutting speeds and feeds is between the minimum and median values listed above.

CLAMPING KEY FOR MEASURING UN-CLAMPING TORQUE

To check drill body duration, measure un-clamping torque by using a torque-driver
Recommended value of un-clamping torque that means usable limit of a drill body shown in below table.

Clamping key for measuring un-clamping torque:
KHS-TID10-19.99



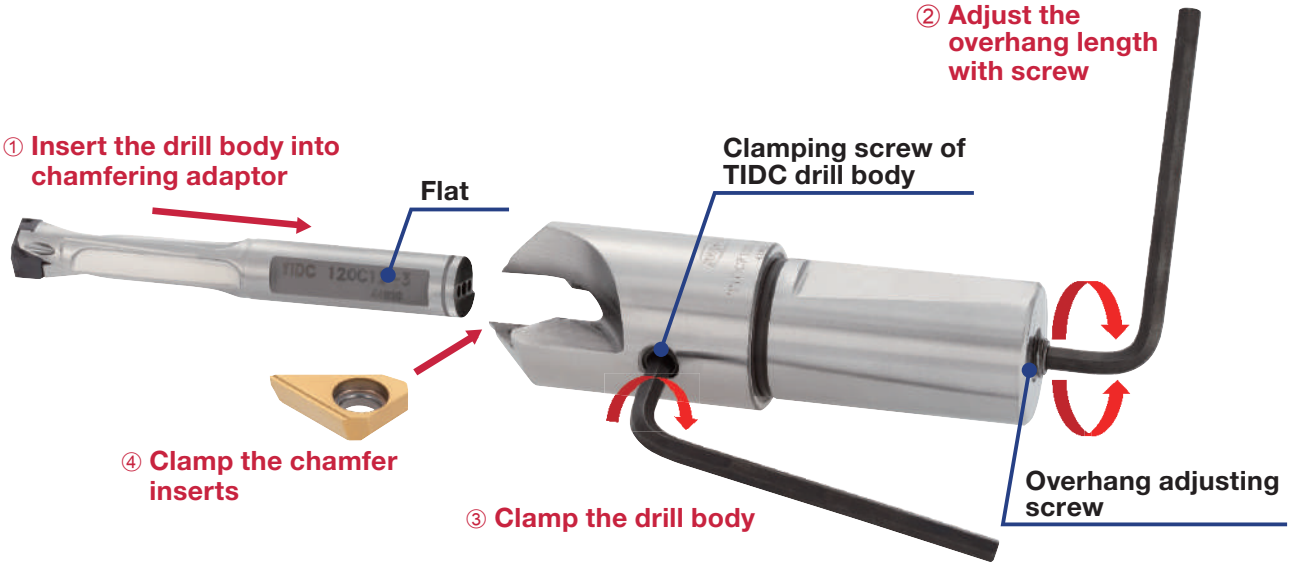
* The clamping key can be connect with general torque drivers.



Head Designation	Recommended value of un-clamping torque that means usable limit of a drill body (N·m)	(cN·m)
DMP100-109	0.2	20
DMP110-119	0.2	20
DMP120-129	0.25	25
DMP130-139	0.25	25
DMP140-149	0.3	30
DMP150-159	0.3	30
DMP160-169	0.35	35
DMP170-179	0.35	35
DMP180-189	0.4	40
DMP190-199	0.4	40

HOW TO MOUNT THE TIDC DRILL BODY INTO THE CHAMFER ADAPTOR

The overhang length of the drill can be changed by the adjusting screw at the bottom of the adaptor.
The rear end of the drill body must be in contact with the adjusting screw as the screw supports the drill against thrust force when drilling.



Procedure

① Place the TIDC drill body into the chamfer adaptor without chamfer inserts.
② Adjust the overhang length of the drill body with the adjusting screw at the bottom of the adaptor.
③ Adjust the position of the drill body so that the drill body is fixed at the flat and tighten the clamping screw of the drill body. This aligns the flutes of the TIDC drill body with the chamfer inserts.
④ To clamp the chamfer inserts, tighten the clamping screw of the insert while pushing the insert into the insert pocket.

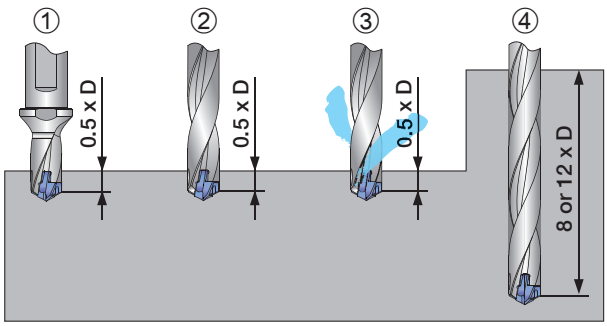
Notice
Before removing the drill body from the adaptor, chamfer inserts must be unclamped. The overhang adjusting screw can be handled from the top of the adaptor with flat blade screwdriver. In this way, the overhang length of the drill body can be adjusted after the adaptor is positioned on the drill shank.

PARTS

Clamping screw of TIDC drill body	Overhang adjusting screw	Wrench	Chamfering Insert screw	Wrench	
				Torx bit	Grip
SRM10x10DIN916	SRM10x1.5S	HW5.0	SR14-544/S ***	BT15S	SW6-SD

*** **SR14-544/S :** 5 pieces per package

CAUTION FOR USING DRILLS WITH L/D = 8 & 12



① Drill a pilot hole in the depth of 0.5 x D.
The same head diameter should be used for a pilot hole and a deep hole.
② Rotate the drill at a low speed, such as 100 min^{-1}, and feed it slowly into the pilot hole until the drill reaches several millimeters from the bottom.
③ Supply the coolant and rotate the drill at the recommended speed.
④ Drill the required depth under the recommended cutting conditions.

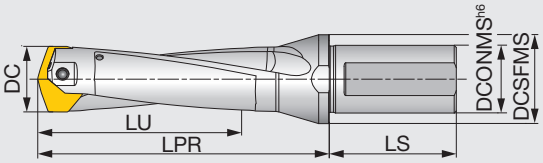
Note: In case of making L/D= 8 & 12 depth hole without a pilot hole, DMC type head should be used.

DRILL FORCE MEISTER

TIS L/D=3

Head indexable drill





Designation	DC	DCONMS	DCSFMS	LU	LPR	LS	Pocket size	Head
TIS260F32-3	26 - 26.9	32	40	82.7	117	60	26	SMP26*
TIS270F32-3	27 - 27.9	32	40	85.9	120	60	27	SMP27*
TIS280F32-3	28 - 28.9	32	40	89.1	128.4	60	28	SMP28*
TIS290F32-3	29 - 29.9	32	40	92.3	131.4	60	29	SMP29*
TIS300F32-3	30 - 30.9	32	42	95.5	134.7	60	30	SMP30*
TIS310F32-3	31 - 31.9	32	42	98.6	137.7	60	31	SMP31*
TIS320F40-3	32 - 32.9	40	48	101.8	143	68	32	SMP32*
TIS330F40-3	33 - 33.9	40	48	105	146	68	33	SMP33*
TIS340F40-3	34 - 34.9	40	48	108.2	149	68	34	SMP34*
TIS350F40-3	35 - 35.9	40	48	111.4	152.4	68	35	SMP35*
TIS360F40-3	36 - 36.9	40	48	114.6	155.4	68	36	SMP36*
TIS370F40-3	37 - 37.9	40	48	117.7	158.4	68	37	SMP37*
TIS380F40-3	38 - 38.9	40	50	120.9	166.9	68	38	SMP38*
TIS390F40-3	39 - 39.9	40	50	124.1	169.9	68	39	SMP39*
TIS400F40-3	40 - 41	40	50	127.3	172.9	68	40	SMP40*

Tool diameter	Hole diameter tolerance*
ø26 - ø29.9	+0.05 / 0
ø30 - ø41	+0.06 / 0

*Just for reference

SPARE PARTS





Designation	Clamping screw	Wrench	
		Torx bit	Grip
TIS260F32-*	TS50230D3	BLDT20/S7	H-TB2W
TIS270F32-*	TS50230D3	BLDT20/S7	H-TB2W
TIS280F32-*	TS50250D35	BLDT25/S7	H-TB2W
TIS290F32-*	TS50250D35	BLDT25/S7	H-TB2W
TIS300F32-*	TS60265D4	BLDT25/S7	H-TB2W
TIS310F32-*	TS60265D4	BLDT25/S7	H-TB2W
TIS320F40-*	TS60285D42	BLDT25/S7	H-TB2W
TIS330F40-*	TS60285D42	BLDT25/S7	H-TB2W
TIS340F40-*	TS60285D42	BLDT25/S7	H-TB2W
TIS350F40-*	TS60320D5	BLDT25/S7	H-TB2W
TIS360F40-*	TS60320D5	BLDT25/S7	H-TB2W
TIS370F40-*	TS60320D5	BLDT25/S7	H-TB2W
TIS380F40-*	TS80340D6	BLDT25/S7	H-TB2W
TIS390F40-*	TS80340D6	BLDT25/S7	H-TB2W
TIS400F40-*	TS80340D6	BLDT25/S7	H-TB2W

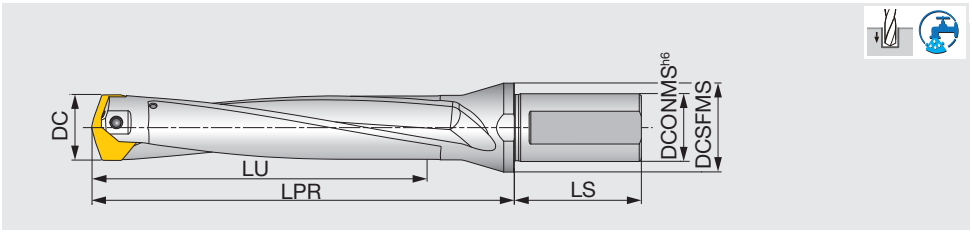
Recommended clamping torque (N·m): TS50230D3=5, TS50250D35=5.5, TS60265D4=6, TS60285D42=6, TS60320D5=6, TS80340D6=7

Reference pages: Head → J030 - J031
Standard cutting conditions → J031

TIS L/D=5

Head indexable drill





Designation	DC	DCONMS	DCSFMS	LU	LPR	LS	Pocket size	Head
TIS260F32-5	26 - 26.9	32	40	134.7	169	60	26	SMP26*
TIS270F32-5	27 - 27.9	32	40	139.9	174	60	27	SMP27*
TIS280F32-5	28 - 28.9	32	40	145.1	184.4	60	28	SMP28*
TIS290F32-5	29 - 29.9	32	40	150.3	189.4	60	29	SMP29*
TIS300F32-5	30 - 30.9	32	42	155.5	194.7	60	30	SMP30*
TIS310F32-5	31 - 31.9	32	42	160.6	199.7	60	31	SMP31*
TIS320F40-5	32 - 32.9	40	48	165.8	207	68	32	SMP32*
TIS330F40-5	33 - 33.9	40	48	171	212	68	33	SMP33*
TIS340F40-5	34 - 34.9	40	48	176.2	217	68	34	SMP34*
TIS350F40-5	35 - 35.9	40	48	181.4	222.4	68	35	SMP35*
TIS360F40-5	36 - 36.9	40	48	186.6	227.4	68	36	SMP36*
TIS370F40-5	37 - 37.9	40	48	191.7	232.4	68	37	SMP37*
TIS380F40-5	38 - 38.9	40	50	196.9	242.9	68	38	SMP38*
TIS390F40-5	39 - 39.9	40	50	202.1	247.9	68	39	SMP39*
TIS400F40-5	40 - 41	40	50	207.3	252.9	68	40	SMP40*

Tool diameter	Hole diameter tolerance*
ø26 - ø29.9	+0.08 / 0
ø30 - ø41	+0.09 / 0

*Just for reference

SPARE PARTS





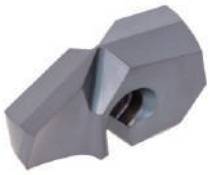
Designation	Clamping screw	Wrench	
		Torx bit	Grip
TIS260F32-*	TS50230D3	BLDT20/S7	H-TB2W
TIS270F32-*	TS50230D3	BLDT20/S7	H-TB2W
TIS280F32-*	TS50250D35	BLDT25/S7	H-TB2W
TIS290F32-*	TS50250D35	BLDT25/S7	H-TB2W
TIS300F32-*	TS60265D4	BLDT25/S7	H-TB2W
TIS310F32-*	TS60265D4	BLDT25/S7	H-TB2W
TIS320F40-*	TS60285D42	BLDT25/S7	H-TB2W
TIS330F40-*	TS60285D42	BLDT25/S7	H-TB2W
TIS340F40-*	TS60285D42	BLDT25/S7	H-TB2W
TIS350F40-*	TS60320D5	BLDT25/S7	H-TB2W
TIS360F40-*	TS60320D5	BLDT25/S7	H-TB2W
TIS370F40-*	TS60320D5	BLDT25/S7	H-TB2W
TIS380F40-*	TS80340D6	BLDT25/S7	H-TB2W
TIS390F40-*	TS80340D6	BLDT25/S7	H-TB2W
TIS400F40-*	TS80340D6	BLDT25/S7	H-TB2W

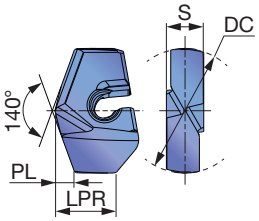
Recommended clamping torque (N·m): TS50230D3=5, TS50250D35=5.5, TS60265D4=6, TS60285D42=6, TS60320D5=6, TS80340D6=7

Reference pages: Head → J030 - J031
Standard cutting conditions → J031

DRILL HEAD

SMP





Tool diameter	Head diameter tolerance
ø26 - ø29.9	-0.006 / -0.026
ø30 - ø41	-0.006 / -0.031

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	DC	S	Coated	LPR	PL	Pocket Size	Body
			AH725				
SMP260	26.00	7.50	●	11.60	4.73	26.00	TIS260F32-*
SMP261	26.10	7.50	●	11.60	4.75	26.00	TIS260F32-*
SMP265	26.50	7.50	●	11.60	4.82	26.00	TIS260F32-*
SMP267	26.70	7.50	●	11.60	4.86	26.00	TIS260F32-*
SMP270	27.00	7.50	●	11.10	4.91	27.00	TIS270F32-*
SMP271	27.10	7.50	●	11.10	4.93	27.00	TIS270F32-*
SMP272	27.20	7.50	●	11.10	4.95	27.00	TIS270F32-*
SMP275	27.50	7.50	●	11.10	5.00	27.00	TIS270F32-*
SMP280	28.00	8.00	●	11.70	5.10	28.00	TIS280F32-*
SMP281	28.10	8.00	●	11.70	5.11	28.00	TIS280F32-*
SMP285	28.50	8.00	●	11.70	5.19	28.00	TIS280F32-*
SMP286	28.60	8.00	●	11.70	5.20	28.00	TIS280F32-*
SMP290	29.00	8.00	●	11.30	5.28	29.00	TIS290F32-*
SMP291	29.10	8.00	●	11.30	5.30	29.00	TIS290F32-*
SMP295	29.50	8.00	●	11.30	5.37	29.00	TIS290F32-*
SMP296	29.60	8.00	●	11.30	5.39	29.00	TIS290F32-*
SMP300	30.00	8.50	●	14.10	5.46	30.00	TIS300F32-*
SMP301	30.10	8.50	●	14.10	5.48	30.00	TIS300F32-*
SMP302	30.20	8.50	●	14.10	5.50	30.00	TIS300F32-*
SMP303	30.30	8.50	●	14.10	5.51	30.00	TIS300F32-*
SMP305	30.50	8.50	●	14.10	5.55	30.00	TIS300F32-*
SMP308	30.80	8.50	●	14.10	5.61	30.00	TIS300F32-*
SMP310	31.00	8.50	●	13.70	5.64	31.00	TIS310F32-*
SMP311	31.10	8.50	●	13.70	5.66	31.00	TIS310F32-*
SMP315	31.50	8.50	●	13.70	5.73	31.00	TIS310F32-*
SMP318	31.80	8.50	●	13.70	5.79	31.00	TIS310F32-*
SMP320	32.00	9.00	●	14.50	5.82	32.00	TIS320F40-*
SMP321	32.10	9.00	●	14.50	5.84	32.00	TIS320F40-*
SMP325	32.50	9.00	●	14.50	5.91	32.00	TIS320F40-*
SMP328	32.80	9.00	●	14.50	5.97	32.00	TIS320F40-*
SMP330	33.00	9.00	●	14.10	6.01	33.00	TIS330F40-*
SMP331	33.10	9.00	●	14.10	6.02	33.00	TIS330F40-*
SMP333	33.30	9.00	●	14.10	6.06	33.00	TIS330F40-*
SMP335	33.50	9.00	●	14.10	6.10	33.00	TIS330F40-*
SMP340	34.00	9.00	●	13.70	6.19	34.00	TIS340F40-*
SMP341	34.10	9.00	●	13.70	6.21	34.00	TIS340F40-*
SMP345	34.50	9.00	●	13.70	6.28	34.00	TIS340F40-*
SMP349	34.90	9.00	●	13.70	6.35	34.00	TIS340F40-*
SMP350	35.00	10.00	●	16.60	6.37	35.00	TIS350F40-*
SMP351	35.10	10.00	●	16.60	6.39	35.00	TIS350F40-*
SMP355	35.50	10.00	●	16.60	6.46	35.00	TIS350F40-*
SMP360	36.00	10.00	●	16.10	6.55	36.00	TIS360F40-*
SMP361	36.10	10.00	●	16.10	6.57	36.00	TIS360F40-*
SMP365	36.50	10.00	●	16.10	6.64	36.00	TIS360F40-*
SMP366	36.60	10.00	●	16.10	6.66	36.00	TIS360F40-*
SMP370	37.00	10.00	●	15.70	6.73	37.00	TIS370F40-*
SMP371	37.10	10.00	●	15.70	6.75	37.00	TIS370F40-*
SMP375	37.50	10.00	●	15.70	6.82	37.00	TIS370F40-*
SMP380	38.00	10.50	●	17.00	6.92	38.00	TIS380F40-*
SMP381	38.10	10.50	●	17.00	6.93	38.00	TIS380F40-*
SMP385	38.50	10.50	●	17.00	7.01	38.00	TIS380F40-*
SMP388	38.80	10.50	●	17.00	7.06	38.00	TIS380F40-*
SMP390	39.00	10.50	●	16.60	7.10	39.00	TIS390F40-*

●: Line up

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

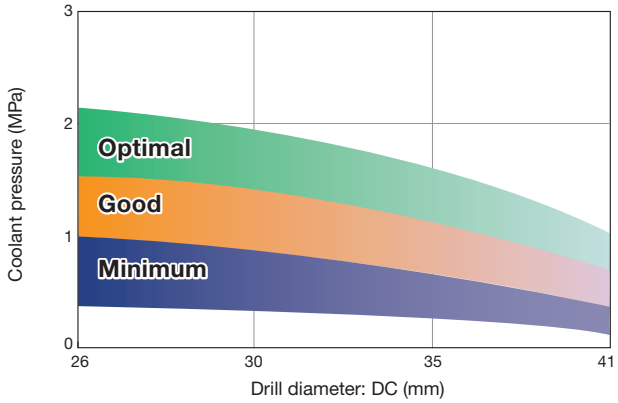
Designation	DC	S	Coated	LPR	PL	Pocket Size	Body
			AH725				
SMP391	39.10	10.50	●	16.60	7.12	39.00	TIS390F40-*
SMP395	39.50	10.50	●	16.60	7.19	39.00	TIS390F40-*
SMP397	39.70	10.50	●	16.60	7.22	39.00	TIS390F40-*
SMP398	39.80	10.50	●	16.60	7.24	39.00	TIS390F40-*
SMP400	40.00	10.50	●	16.20	7.28	40.00	TIS400F40-*
SMP401	40.10	10.50	●	16.20	7.30	40.00	TIS400F40-*
SMP405	40.50	10.50	●	16.20	7.37	40.00	TIS400F40-*
SMP410	41.00	10.50	●	16.20	7.46	40.00	TIS380F40-*

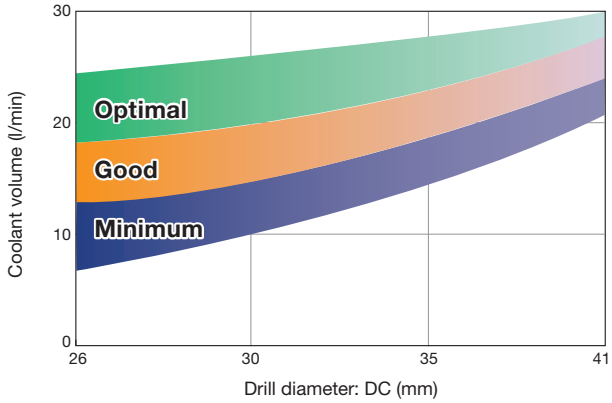
●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed *Vc* (m/min)	Feed: *f* (mm/rev) DC (mm) ø26 - ø29.9	ø30 - ø35.9	ø36 - ø41
P	Low carbon steels S15C, S20C, etc. C15, C20, etc.	80 - 140	0.2 - 0.5	0.2 - 0.5	0.2 - 0.55
	Carbon steels, Alloy steels S55C, SCM440, etc. C55, 42CrMoS4, etc.	80 - 130	0.2 - 0.5	0.2 - 0.5	0.2 - 0.55
	Prehardened steels NAK80, PX5, etc.	50 - 100	0.2 - 0.5	0.2 - 0.5	0.2 - 0.55
M	Stainless steels SUS304, SUS316X5, etc. CrNi18-9, X5CrNiMo17-12-2, etc.	40 - 80	0.15 - 0.3	0.15 - 0.3	0.2 - 0.35
K	Grey cast irons 250, 300, etc.	80 - 180	0.25 - 0.55	0.25 - 0.55	0.3 - 0.6
	Ductile cast irons FCD400, FCD600, etc. 400-15, 600-3, etc.	80 - 140	0.25 - 0.55	0.25 - 0.55	0.3 - 0.6
N	Non ferrous materials	100 - 200	0.4 - 0.6	0.4 - 0.6	0.5 - 0.7
S	Heat-resistant alloy Inconel718, etc.	20 - 50	0.1 - 0.2	0.1 - 0.2	0.1 - 0.25
	Titanium alloys Ti-6Al-4V, etc.	30 - 60	0.1 - 0.3	0.1 - 0.3	0.1 - 0.35
H	Hardened materials	20 - 60	0.1 - 0.2	0.1 - 0.2	0.1 - 0.25

RECOMMENDED COOLANT PRESSURE AND VOLUME

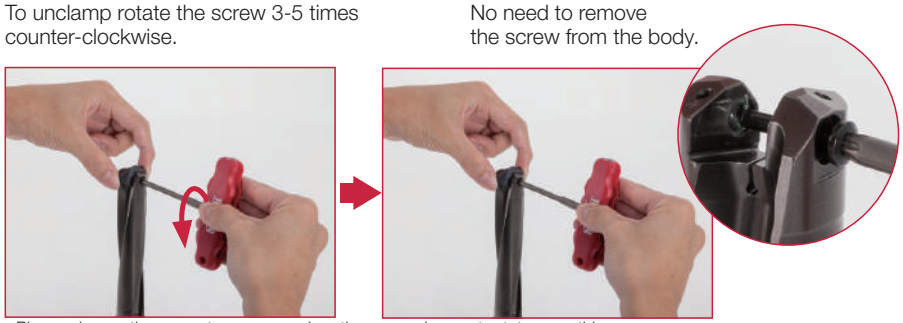




HOW TO CHANGE DRILL HEAD

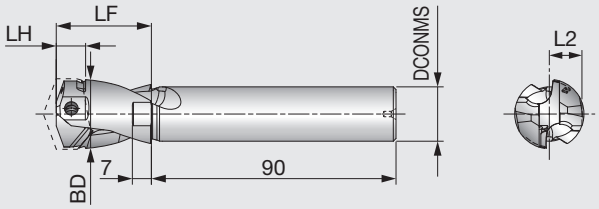
To unclamp rotate the screw 3-5 times counter-clockwise.

No need to remove the screw from the body.



- Please change the screw to new one when the screw does not rotate smoothly

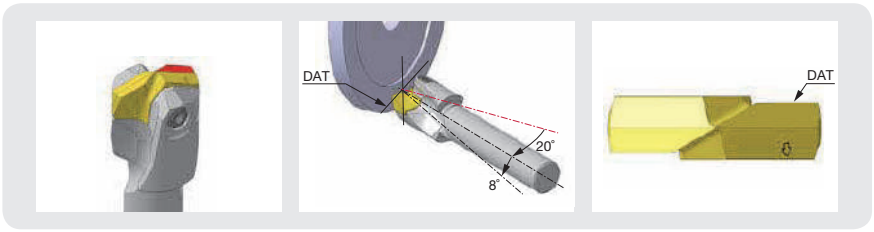
DRILL FORCE MEISTER
Regrinding holder



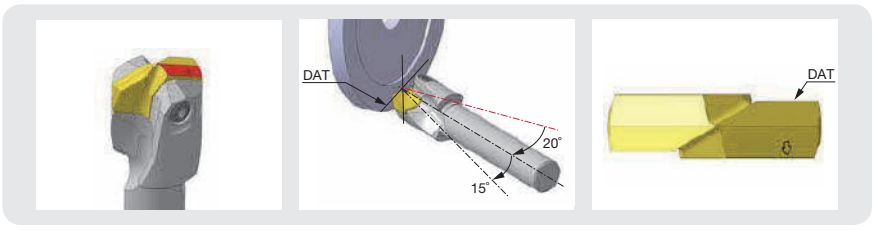
Designation	DCONMS	BD	LF	LH	L2	Head
SMP260-279-GH	20	25.5	35	10.8	12	SMP260-SMP279
SMP280-299-GH	20	27.5	35	10.8	13	SMP280-SMP299
SMP300-319-GH	20	29.5	35	13	14	SMP300-SMP319
SMP320-349-GH	20	31.5	35	13	15	SMP320-SMP349
SMP350-379-GH	20	34.5	40	14.7	16.5	SMP350-SMP379
SMP380-410-GH	20	37.5	40	15.1	18	SMP380-SMP410

① Clamping
- Assemble the drill head on the regrinding holder or shortest standard holder (3xD)
- Set-up the drill head in the machine : Total run-out must be less than 0.02 mm

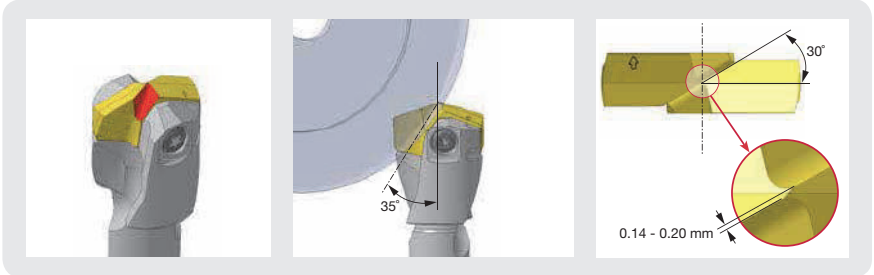
② Grinding the 1st clearance angle
- Set the drill for point angle (140°) and 1st clearance angle (8°)



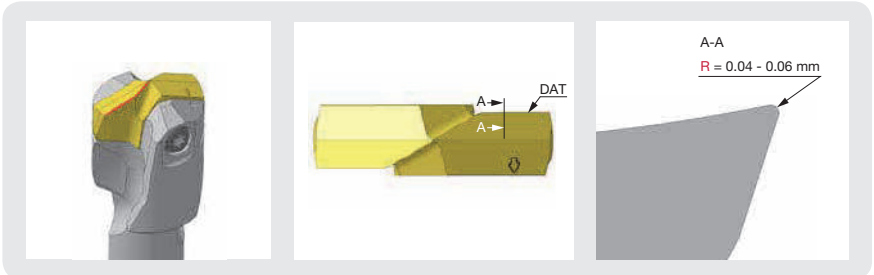
③ Grinding the 2nd clearance angle
- Set the drill for 2nd clearance angle (15°)



④ Grinding the chisel (Thinning)
- Set the drill for thinning angle (35°) with reference to drill axis and angle (30°) with reference to radial axis
- Keep the chisel thickness (0.14 - 0.20) and the thinning point must be over the center line



⑤ Edge preparation (Honing)
- Cutting edges should have honing by sand or brush (0.04 - 0.06 mm)
- You can also use a diamond hand lapper for edge preparation



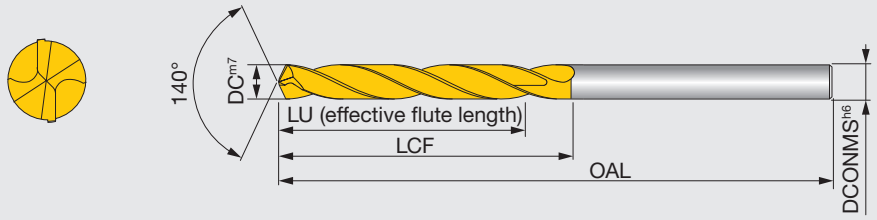
SOLIDDRILL Quick Guide

Series	DC (mm)	L/D	Point angle	Oil hole	Coated	Coated without	Description	P Steel	M Stainless	K Cast iron	N Non-ferrous	S Superalloys	H Hard materials	See page
DSW	ø3 - ø16	3, 5, 8	140	With Without	●		Shank size: DIN Standard	●	●	●	●	●	●	J034 - J043
DSX	ø3 - ø20	3, 5, 8	130	With	●		Shank size: 1.0 mm increments	●	●	●	●	●	●	J044 - J049
DSE	ø3 - ø16	2, 3	140	Without	●		For drilling thin plates with low cutting force Shank size: Same as the drill diameter	●	●	●	●	●	●	J050 - J053
DSM DSM-CP	ø0.1 - ø3	5, 10, 15	140 90 & 140	Without	●		Micro solid drill with ø3 mm shanks DSM-CP: Centering drill for DSM	●	●	●	●	●	●	J054 - J057
DMX	ø3 - ø16	2, 3	130	Without	●		Shank size: Same as the drill diameter	●	●	●	●	●	●	J058 - J061
DMX-F	ø3 - ø20	3, 5	130	Without		●	Shank size: Same as the drill diameter			●	●			J064 - J067
FDC	ø5 - ø16	5, 8	135	With		●	Drills for reaming at high feed with straight flute			●	●			J068 - J069
CDS	ø0.4 - ø13	5 - 12	120	Without		●	Shank size: Same as the drill diameter Hole depth: Up to L/D 12			●	●			J070 - J071

SOLIDDRILL

DSW-DE3

Solid drill, 140° point angle, without coolant hole, DIN shank, L/D = 3, ø3 - ø16 mm



Designation	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-014-06DE3	3	●	6	14	20	62
DSW031-014-06DE3	3.1	●	6	14	20	62
DSW032-014-06DE3	3.2	●	6	14	20	62
DSW033-014-06DE3	3.3	●	6	14	20	62
DSW034-014-06DE3	3.4	●	6	14	20	62
DSW035-014-06DE3	3.5	●	6	14	20	62
DSW036-014-06DE3	3.6	●	6	14	20	62
DSW037-014-06DE3	3.7	●	6	14	20	62
DSW038-017-06DE3	3.8	●	6	17	24	66
DSW039-017-06DE3	3.9	●	6	17	24	66
DSW040-017-06DE3	4	●	6	17	24	66
DSW041-017-06DE3	4.1	●	6	17	24	66
DSW042-017-06DE3	4.2	●	6	17	24	66
DSW043-017-06DE3	4.3	●	6	17	24	66
DSW044-017-06DE3	4.4	●	6	17	24	66
DSW045-017-06DE3	4.5	●	6	17	24	66
DSW046-017-06DE3	4.6	●	6	17	24	66
DSW047-017-06DE3	4.7	●	6	17	24	66
DSW048-020-06DE3	4.8	●	6	20	28	66
DSW049-020-06DE3	4.9	●	6	20	28	66
DSW050-020-06DE3	5	●	6	20	28	66
DSW051-020-06DE3	5.1	●	6	20	28	66
DSW052-020-06DE3	5.2	●	6	20	28	66
DSW053-020-06DE3	5.3	●	6	20	28	66
DSW054-020-06DE3	5.4	●	6	20	28	66
DSW055-020-06DE3	5.5	●	6	20	28	66
DSW056-020-06DE3	5.6	●	6	20	28	66
DSW057-020-06DE3	5.7	●	6	20	28	66
DSW058-020-06DE3	5.8	●	6	20	28	66
DSW059-020-06DE3	5.9	●	6	20	28	66
DSW060-020-06DE3	6	●	6	20	28	66
DSW061-024-08DE3	6.1	●	8	24	34	79
DSW062-024-08DE3	6.2	●	8	24	34	79
DSW063-024-08DE3	6.3	●	8	24	34	79
DSW064-024-08DE3	6.4	●	8	24	34	79
DSW065-024-08DE3	6.5	●	8	24	34	79
DSW066-024-08DE3	6.6	●	8	24	34	79
DSW067-024-08DE3	6.7	●	8	24	34	79
DSW068-024-08DE3	6.8	●	8	24	34	79
DSW069-024-08DE3	6.9	●	8	24	34	79
DSW070-024-08DE3	7	●	8	24	34	79
DSW071-029-08DE3	7.1	●	8	29	41	79
DSW072-029-08DE3	7.2	●	8	29	41	79
DSW073-029-08DE3	7.3	●	8	29	41	79
DSW074-029-08DE3	7.4	●	8	29	41	79
DSW075-029-08DE3	7.5	●	8	29	41	79
DSW076-029-08DE3	7.6	●	8	29	41	79
DSW077-029-08DE3	7.7	●	8	29	41	79
DSW078-029-08DE3	7.8	●	8	29	41	79
DSW079-029-08DE3	7.9	●	8	29	41	79
DSW080-029-08DE3	8	●	8	29	41	79
DSW081-035-10DE3	8.1	●	10	35	47	89
DSW082-035-10DE3	8.2	●	10	35	47	89
DSW083-035-10DE3	8.3	●	10	35	47	89
DSW084-035-10DE3	8.4	●	10	35	47	89
DSW085-035-10DE3	8.5	●	10	35	47	89
DSW086-035-10DE3	8.6	●	10	35	47	89
DSW087-035-10DE3	8.7	●	10	35	47	89
DSW088-035-10DE3	8.8	●	10	35	47	89
DSW089-035-10DE3	8.9	●	10	35	47	89
DSW090-035-10DE3	9	●	10	35	47	89
DSW091-035-10DE3	9.1	●	10	35	47	89
DSW092-035-10DE3	9.2	●	10	35	47	89
DSW093-035-10DE3	9.3	●	10	35	47	89
DSW094-035-10DE3	9.4	●	10	35	47	89
DSW095-035-10DE3	9.5	●	10	35	47	89
DSW096-035-10DE3	9.6	●	10	35	47	89
DSW097-035-10DE3	9.7	●	10	35	47	89
DSW098-035-10DE3	9.8	●	10	35	47	89
DSW099-035-10DE3	9.9	●	10	35	47	89
DSW100-035-10DE3	10	●	10	35	47	89
DSW101-040-12DE3	10.1	●	12	40	55	102
DSW102-040-12DE3	10.2	●	12	40	55	102
DSW103-040-12DE3	10.3	●	12	40	55	102
DSW104-040-12DE3	10.4	●	12	40	55	102
DSW105-040-12DE3	10.5	●	12	40	55	102
DSW106-040-12DE3	10.6	●	12	40	55	102
DSW107-040-12DE3	10.7	●	12	40	55	102
DSW108-040-12DE3	10.8	●	12	40	55	102
DSW109-040-12DE3	10.9	●	12	40	55	102
DSW110-040-12DE3	11	●	12	40	55	102
DSW111-040-12DE3	11.1	●	12	40	55	102
DSW112-040-12DE3	11.2	●	12	40	55	102
DSW113-040-12DE3	11.3	●	12	40	55	102
DSW114-040-12DE3	11.4	●	12	40	55	102
DSW115-040-12DE3	11.5	●	12	40	55	102
DSW116-040-12DE3	11.6	●	12	40	55	102
DSW117-040-12DE3	11.7	●	12	40	55	102
DSW118-040-12DE3	11.8	●	12	40	55	102
DSW119-040-12DE3	11.9	●	12	40	55	102
DSW120-040-12DE3	12	●	12	40	55	102
DSW121-043-14DE3	12.1	▲	14	43	60	107
DSW122-043-14DE3	12.2	▲	14	43	60	107
DSW123-043-14DE3	12.3	▲	14	43	60	107
DSW124-043-14DE3	12.4	▲	14	43	60	107
DSW125-043-14DE3	12.5	▲	14	43	60	107
DSW126-043-14DE3	12.6	▲	14	43	60	107
DSW127-043-14DE3	12.7	▲	14	43	60	107
DSW128-043-14DE3	12.8	▲	14	43	60	107
DSW129-043-14DE3	12.9	▲	14	43	60	107
DSW130-043-14DE3	13	▲	14	43	60	107
DSW131-043-14DE3	13.1	▲	14	43	60	107
DSW132-043-14DE3	13.2	▲	14	43	60	107
DSW133-043-14DE3	13.3	▲	14	43	60	107

● : Line up
▲ : To be discontinued

Designation	DC	AH725	DCONMS	LU	LCF	OAL
DSW134-043-14DE3	13.4	▲	14	43	60	107
DSW135-043-14DE3	13.5	▲	14	43	60	107
DSW136-043-14DE3	13.6	▲	14	43	60	107
DSW137-043-14DE3	13.7	▲	14	43	60	107
DSW138-043-14DE3	13.8	▲	14	43	60	107
DSW139-043-14DE3	13.9	▲	14	43	60	107
DSW140-043-14DE3	14	▲	14	43	60	107
DSW141-045-16DE3	14.1	▲	16	45	65	115
DSW142-045-16DE3	14.2	▲	16	45	65	115
DSW143-045-16DE3	14.3	▲	16	45	65	115
DSW144-045-16DE3	14.4	▲	16	45	65	115
DSW145-045-16DE3	14.5	▲	16	45	65	115
DSW146-045-16DE3	14.6	▲	16	45	65	115
DSW147-045-16DE3	14.7	▲	16	45	65	115
DSW148-045-16DE3	14.8	▲	16	45	65	115
DSW149-045-16DE3	14.9	▲	16	45	65	115
DSW150-045-16DE3	15	▲	16	45	65	115
DSW151-045-16DE3	15.1	▲	16	45	65	115
DSW152-045-16DE3	15.2	▲	16	45	65	115
DSW153-045-16DE3	15.3	▲	16	45	65	115
DSW154-045-16DE3	15.4	▲	16	45	65	115
DSW155-045-16DE3	15.5	▲	16	45	65	115
DSW156-045-16DE3	15.6	▲	16	45	65	115
DSW157-045-16DE3	15.7	▲	16	45	65	115
DSW158-045-16DE3	15.8	▲	16	45	65	115
DSW159-045-16DE3	15.9	▲	16	45	65	115
DSW160-045-16DE3	16	▲	16	45	65	115

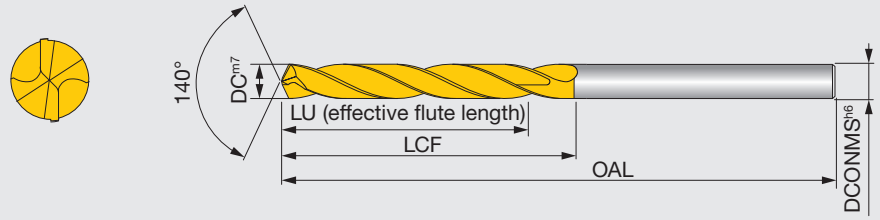
● : Line up
▲ : To be discontinued

Reference pages: Standard cutting conditions → J040

SOLIDDRILL

DSW-DE5

Solid drill, 140° point angle, without coolant hole, DIN shank, L/D = 5, ø3 - ø16 mm



Designation	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-023-06DE5	3	●	6	23	28	66
DSW031-023-06DE5	3.1	●	6	23	28	66
DSW032-023-06DE5	3.2	●	6	23	28	66
DSW033-023-06DE5	3.3	●	6	23	28	66
DSW034-023-06DE5	3.4	●	6	23	28	66
DSW035-023-06DE5	3.5	●	6	23	28	66
DSW036-023-06DE5	3.6	●	6	23	28	66
DSW037-023-06DE5	3.7	●	6	23	28	66
DSW038-029-06DE5	3.8	●	6	29	36	74
DSW039-029-06DE5	3.9	●	6	29	36	74
DSW040-029-06DE5	4	●	6	29	36	74
DSW041-029-06DE5	4.1	●	6	29	36	74
DSW042-029-06DE5	4.2	●	6	29	36	74
DSW043-029-06DE5	4.3	●	6	29	36	74
DSW044-029-06DE5	4.4	●	6	29	36	74
DSW045-029-06DE5	4.5	●	6	29	36	74
DSW046-029-06DE5	4.6	●	6	29	36	74
DSW047-029-06DE5	4.7	●	6	29	36	74
DSW048-035-06DE5	4.8	●	6	35	44	82
DSW049-035-06DE5	4.9	●	6	35	44	82
DSW050-035-06DE5	5	●	6	35	44	82
DSW051-035-06DE5	5.1	●	6	35	44	82
DSW052-035-06DE5	5.2	●	6	35	44	82
DSW053-035-06DE5	5.3	●	6	35	44	82
DSW054-035-06DE5	5.4	●	6	35	44	82
DSW055-035-06DE5	5.5	●	6	35	44	82
DSW056-035-06DE5	5.6	●	6	35	44	82
DSW057-035-06DE5	5.7	●	6	35	44	82
DSW058-035-06DE5	5.8	●	6	35	44	82
DSW059-035-06DE5	5.9	●	6	35	44	82
DSW060-035-06DE5	6	●	6	35	44	82
DSW061-043-08DE5	6.1	●	8	43	53	91
DSW062-043-08DE5	6.2	●	8	43	53	91
DSW063-043-08DE5	6.3	●	8	43	53	91
DSW064-043-08DE5	6.4	●	8	43	53	91
DSW065-043-08DE5	6.5	●	8	43	53	91
DSW066-043-08DE5	6.6	●	8	43	53	91
DSW067-043-08DE5	6.7	●	8	43	53	91
DSW068-043-08DE5	6.8	●	8	43	53	91
DSW069-043-08DE5	6.9	●	8	43	53	91
DSW070-043-08DE5	7	●	8	43	53	91
DSW071-043-08DE5	7.1	●	8	43	53	91
DSW072-043-08DE5	7.2	●	8	43	53	91
DSW073-043-08DE5	7.3	●	8	43	53	91
DSW074-043-08DE5	7.4	●	8	43	53	91
DSW075-043-08DE5	7.5	●	8	43	53	91
DSW076-043-08DE5	7.6	●	8	43	53	91
DSW077-043-08DE5	7.7	●	8	43	53	91
DSW078-043-08DE5	7.8	●	8	43	53	91
DSW079-043-08DE5	7.9	●	8	43	53	91
DSW080-043-08DE5	8	●	8	43	53	91
DSW081-049-10DE5	8.1	●	10	49	61	103
DSW082-049-10DE5	8.2	●	10	49	61	103
DSW083-049-10DE5	8.3	●	10	49	61	103
DSW084-049-10DE5	8.4	●	10	49	61	103
DSW085-049-10DE5	8.5	●	10	49	61	103
DSW086-049-10DE5	8.6	●	10	49	61	103
DSW087-049-10DE5	8.7	●	10	49	61	103
DSW088-049-10DE5	8.8	●	10	49	61	103
DSW089-049-10DE5	8.9	●	10	49	61	103
DSW090-049-10DE5	9	●	10	49	61	103
DSW091-049-10DE5	9.1	●	10	49	61	103
DSW092-049-10DE5	9.2	●	10	49	61	103
DSW093-049-10DE5	9.3	●	10	49	61	103
DSW094-049-10DE5	9.4	●	10	49	61	103
DSW095-049-10DE5	9.5	●	10	49	61	103
DSW096-049-10DE5	9.6	●	10	49	61	103
DSW097-049-10DE5	9.7	●	10	49	61	103
DSW098-049-10DE5	9.8	●	10	49	61	103
DSW099-049-10DE5	9.9	●	10	49	61	103
DSW100-049-10DE5	10	●	10	49	61	103
DSW101-056-12DE5	10.1	●	12	56	71	118
DSW102-056-12DE5	10.2	●	12	56	71	118
DSW103-056-12DE5	10.3	●	12	56	71	118
DSW104-056-12DE5	10.4	●	12	56	71	118
DSW105-056-12DE5	10.5	●	12	56	71	118
DSW106-056-12DE5	10.6	●	12	56	71	118
DSW107-056-12DE5	10.7	●	12	56	71	118
DSW108-056-12DE5	10.8	●	12	56	71	118
DSW109-056-12DE5	10.9	●	12	56	71	118
DSW110-056-12DE5	11	●	12	56	71	118
DSW111-056-12DE5	11.1	●	12	56	71	118
DSW112-056-12DE5	11.2	●	12	56	71	118
DSW113-056-12DE5	11.3	●	12	56	71	118
DSW114-056-12DE5	11.4	●	12	56	71	118
DSW115-056-12DE5	11.5	●	12	56	71	118
DSW116-056-12DE5	11.6	●	12	56	71	118
DSW117-056-12DE5	11.7	●	12	56	71	118
DSW118-056-12DE5	11.8	●	12	56	71	118
DSW119-056-12DE5	11.9	●	12	56	71	118
DSW120-056-12DE5	12	●	12	56	71	118
DSW121-060-14DE5	12.1	▲	14	60	77	124
DSW122-060-14DE5	12.2	▲	14	60	77	124
DSW123-060-14DE5	12.3	▲	14	60	77	124
DSW124-060-14DE5	12.4	▲	14	60	77	124
DSW125-060-14DE5	12.5	▲	14	60	77	124
DSW126-060-14DE5	12.6	▲	14	60	77	124
DSW127-060-14DE5	12.7	▲	14	60	77	124
DSW128-060-14DE5	12.8	▲	14	60	77	124
DSW129-060-14DE5	12.9	▲	14	60	77	124
DSW130-060-14DE5	13	▲	14	60	77	124
DSW131-060-14DE5	13.1	▲	14	60	77	124
DSW132-060-14DE5	13.2	▲	14	60	77	124
DSW133-060-14DE5	13.3	▲	14	60	77	124

● : Line up
▲ : To be discontinued

Designation	DC	AH725	DCONMS	LU	LCF	OAL
DSW134-060-14DE5	13.4	▲	14	60	77	124
DSW135-060-14DE5	13.5	▲	14	60	77	124
DSW136-060-14DE5	13.6	▲	14	60	77	124
DSW137-060-14DE5	13.7	▲	14	60	77	124
DSW138-060-14DE5	13.8	▲	14	60	77	124
DSW139-060-14DE5	13.9	▲	14	60	77	124
DSW140-060-14DE5	14	▲	14	60	77	124
DSW141-063-16DE5	14.1	▲	16	63	83	133
DSW142-063-16DE5	14.2	▲	16	63	83	133
DSW143-063-16DE5	14.3	▲	16	63	83	133
DSW144-063-16DE5	14.4	▲	16	63	83	133
DSW145-063-16DE5	14.5	▲	16	63	83	133
DSW146-063-16DE5	14.6	▲	16	63	83	133
DSW147-063-16DE5	14.7	▲	16	63	83	133
DSW148-063-16DE5	14.8	▲	16	63	83	133
DSW149-063-16DE5	14.9	▲	16	63	83	133
DSW150-063-16DE5	15	▲	16	63	83	133
DSW151-063-16DE5	15.1	▲	16	63	83	133
DSW152-063-16DE5	15.2	▲	16	63	83	133
DSW153-063-16DE5	15.3	▲	16	63	83	133
DSW154-063-16DE5	15.4	▲	16	63	83	133
DSW155-063-16DE5	15.5	▲	16	63	83	133
DSW156-063-16DE5	15.6	▲	16	63	83	133
DSW157-063-16DE5	15.7	▲	16	63	83	133
DSW158-063-16DE5	15.8	▲	16	63	83	133
DSW159-063-16DE5	15.9	▲	16	63	83	133
DSW160-063-16DE5	16	▲	16	63	83	133

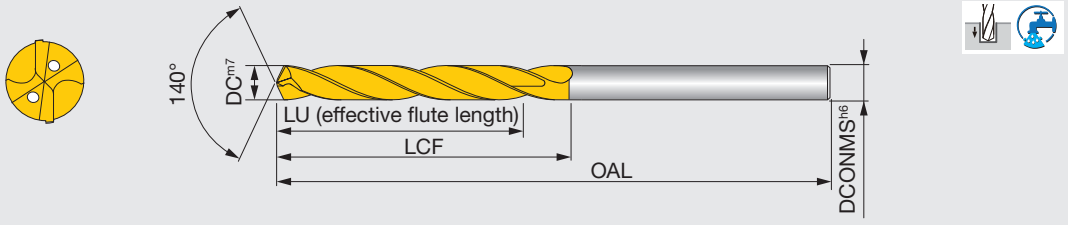
● : Line up
▲ : To be discontinued

Reference pages: Standard cutting conditions → J040

SOLIDDRILL

DSW-DI5

Solid drill, 140° point angle, with coolant hole, DIN shank, L/D = 5, ø3 - ø16 mm



Designation	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-023-06DI5	3	●	6	23	28	66
DSW031-023-06DI5	3.1	●	6	23	28	66
DSW032-023-06DI5	3.2	●	6	23	28	66
DSW033-023-06DI5	3.3	●	6	23	28	66
DSW034-023-06DI5	3.4	●	6	23	28	66
DSW035-023-06DI5	3.5	●	6	23	28	66
DSW036-023-06DI5	3.6	●	6	23	28	66
DSW037-023-06DI5	3.7	●	6	23	28	66
DSW038-029-06DI5	3.8	●	6	29	36	74
DSW039-029-06DI5	3.9	●	6	29	36	74
DSW040-029-06DI5	4	●	6	29	36	74
DSW041-029-06DI5	4.1	●	6	29	36	74
DSW042-029-06DI5	4.2	●	6	29	36	74
DSW043-029-06DI5	4.3	●	6	29	36	74
DSW044-029-06DI5	4.4	●	6	29	36	74
DSW045-029-06DI5	4.5	●	6	29	36	74
DSW046-029-06DI5	4.6	●	6	29	36	74
DSW047-029-06DI5	4.7	●	6	29	36	74
DSW048-035-06DI5	4.8	●	6	35	44	82
DSW049-035-06DI5	4.9	●	6	35	44	82
DSW050-035-06DI5	5	●	6	35	44	82
DSW051-035-06DI5	5.1	●	6	35	44	82
DSW052-035-06DI5	5.2	●	6	35	44	82
DSW053-035-06DI5	5.3	●	6	35	44	82
DSW054-035-06DI5	5.4	●	6	35	44	82
DSW055-035-06DI5	5.5	●	6	35	44	82
DSW056-035-06DI5	5.6	●	6	35	44	82
DSW057-035-06DI5	5.7	●	6	35	44	82
DSW058-035-06DI5	5.8	●	6	35	44	82
DSW059-035-06DI5	5.9	●	6	35	44	82
DSW060-035-06DI5	6	●	6	35	44	82
DSW061-043-08DI5	6.1	●	8	43	53	91
DSW062-043-08DI5	6.2	●	8	43	53	91
DSW063-043-08DI5	6.3	●	8	43	53	91
DSW064-043-08DI5	6.4	●	8	43	53	91
DSW065-043-08DI5	6.5	●	8	43	53	91
DSW066-043-08DI5	6.6	●	8	43	53	91
DSW067-043-08DI5	6.7	●	8	43	53	91
DSW068-043-08DI5	6.8	●	8	43	53	91
DSW069-043-08DI5	6.9	●	8	43	53	91
DSW070-043-08DI5	7	●	8	43	53	91
DSW071-043-08DI5	7.1	●	8	43	53	91
DSW072-043-08DI5	7.2	●	8	43	53	91
DSW073-043-08DI5	7.3	●	8	43	53	91
DSW074-043-08DI5	7.4	●	8	43	53	91
DSW075-043-08DI5	7.5	●	8	43	53	91
DSW076-043-08DI5	7.6	●	8	43	53	91
DSW077-043-08DI5	7.7	●	8	43	53	91
DSW078-043-08DI5	7.8	●	8	43	53	91
DSW079-043-08DI5	7.9	●	8	43	53	91
DSW080-043-08DI5	8	●	8	43	53	91
DSW081-049-10DI5	8.1	●	10	49	61	103

Designation	DC	AH725	DCONMS	LU	LCF	OAL
DSW082-049-10DI5	8.2	●	10	49	61	103
DSW083-049-10DI5	8.3	●	10	49	61	103
DSW084-049-10DI5	8.4	●	10	49	61	103
DSW085-049-10DI5	8.5	●	10	49	61	103
DSW086-049-10DI5	8.6	●	10	49	61	103
DSW087-049-10DI5	8.7	●	10	49	61	103
DSW088-049-10DI5	8.8	●	10	49	61	103
DSW089-049-10DI5	8.9	●	10	49	61	103
DSW090-049-10DI5	9	●	10	49	61	103
DSW091-049-10DI5	9.1	●	10	49	61	103
DSW092-049-10DI5	9.2	●	10	49	61	103
DSW093-049-10DI5	9.3	●	10	49	61	103
DSW094-049-10DI5	9.4	●	10	49	61	103
DSW095-049-10DI5	9.5	●	10	49	61	103
DSW096-049-10DI5	9.6	●	10	49	61	103
DSW097-049-10DI5	9.7	●	10	49	61	103
DSW098-049-10DI5	9.8	●	10	49	61	103
DSW099-049-10DI5	9.9	●	10	49	61	103
DSW100-049-10DI5	10	●	10	49	61	103
DSW101-056-12DI5	10.1	●	12	56	71	118
DSW102-056-12DI5	10.2	●	12	56	71	118
DSW103-056-12DI5	10.3	●	12	56	71	118
DSW104-056-12DI5	10.4	●	12	56	71	118
DSW105-056-12DI5	10.5	●	12	56	71	118
DSW106-056-12DI5	10.6	●	12	56	71	118
DSW107-056-12DI5	10.7	●	12	56	71	118
DSW108-056-12DI5	10.8	●	12	56	71	118
DSW109-056-12DI5	10.9	●	12	56	71	118
DSW110-056-12DI5	11	●	12	56	71	118
DSW111-056-12DI5	11.1	●	12	56	71	118
DSW112-056-12DI5	11.2	●	12	56	71	118
DSW113-056-12DI5	11.3	●	12	56	71	118
DSW114-056-12DI5	11.4	●	12	56	71	118
DSW115-056-12DI5	11.5	●	12	56	71	118
DSW116-056-12DI5	11.6	●	12	56	71	118
DSW117-056-12DI5	11.7	●	12	56	71	118
DSW118-056-12DI5	11.8	●	12	56	71	118
DSW119-056-12DI5	11.9	●	12	56	71	118
DSW120-056-12DI5	12	●	12	56	71	118
DSW121-060-14DI5	12.1	▲	14	60	77	124
DSW122-060-14DI5	12.2	▲	14	60	77	124
DSW123-060-14DI5	12.3	▲	14	60	77	124
DSW124-060-14DI5	12.4	▲	14	60	77	124
DSW125-060-14DI5	12.5	▲	14	60	77	124
DSW126-060-14DI5	12.6	▲	14	60	77	124
DSW127-060-14DI5	12.7	▲	14	60	77	124
DSW128-060-14DI5	12.8	▲	14	60	77	124
DSW129-060-14DI5	12.9	▲	14	60	77	124
DSW130-060-14DI5	13	▲	14	60	77	124
DSW131-060-14DI5	13.1	▲	14	60	77	124
DSW132-060-14DI5	13.2	▲	14	60	77	124
DSW133-060-14DI5	13.3	▲	14	60	77	124

● : Line up
▲ : To be discontinued

Designation	DC	AH725	DCONMS	LU	LCF	OAL
DSW134-060-14DI5	13.4	▲	14	60	77	124
DSW135-060-14DI5	13.5	▲	14	60	77	124
DSW136-060-14DI5	13.6	▲	14	60	77	124
DSW137-060-14DI5	13.7	▲	14	60	77	124
DSW138-060-14DI5	13.8	▲	14	60	77	124
DSW139-060-14DI5	13.9	▲	14	60	77	124
DSW140-060-14DI5	14	▲	14	60	77	124
DSW141-063-16DI5	14.1	▲	16	63	83	133
DSW142-063-16DI5	14.2	▲	16	63	83	133
DSW143-063-16DI5	14.3	▲	16	63	83	133
DSW144-063-16DI5	14.4	▲	16	63	83	133
DSW145-063-16DI5	14.5	▲	16	63	83	133
DSW146-063-16DI5	14.6	▲	16	63	83	133
DSW147-063-16DI5	14.7	▲	16	63	83	133
DSW148-063-16DI5	14.8	▲	16	63	83	133
DSW149-063-16DI5	14.9	▲	16	63	83	133
DSW150-063-16DI5	15	▲	16	63	83	133
DSW151-063-16DI5	15.1	▲	16	63	83	133
DSW152-063-16DI5	15.2	▲	16	63	83	133
DSW153-063-16DI5	15.3	▲	16	63	83	133
DSW154-063-16DI5	15.4	▲	16	63	83	133
DSW155-063-16DI5	15.5	▲	16	63	83	133
DSW156-063-16DI5	15.6	▲	16	63	83	133
DSW157-063-16DI5	15.7	▲	16	63	83	133
DSW158-063-16DI5	15.8	▲	16	63	83	133
DSW159-063-16DI5	15.9	▲	16	63	83	133
DSW160-063-16DI5	16	▲	16	63	83	133

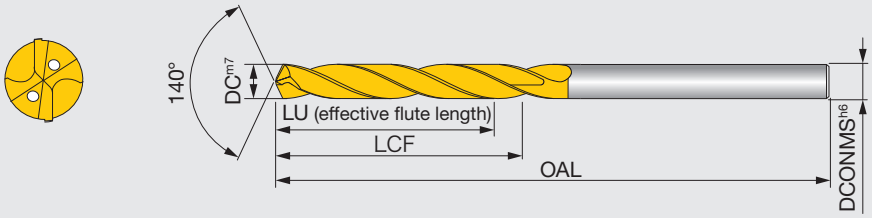
● : Line up
▲ : To be discontinued

Reference pages: Standard cutting conditions → J042 - J043

SOLIDDRILL

DSW-DI8

Solid drill, 140° point angle, with coolant hole, DIN shank, L/D = 8, ø3 - ø10 mm



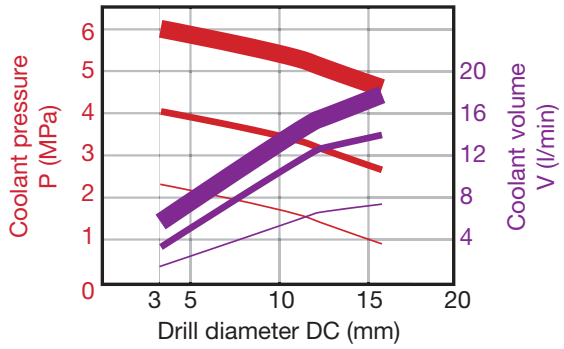
Designation	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-029-06DI8	3	●	6	29	34	72
DSW031-029-06DI8	3.1	●	6	29	34	72
DSW032-029-06DI8	3.2	●	6	29	34	72
DSW033-029-06DI8	3.3	●	6	29	34	72
DSW034-029-06DI8	3.4	●	6	29	34	72
DSW035-029-06DI8	3.5	●	6	29	34	72
DSW036-029-06DI8	3.6	●	6	29	34	72
DSW037-029-06DI8	3.7	●	6	29	34	72
DSW038-036-06DI8	3.8	●	6	36	43	81
DSW039-036-06DI8	3.9	●	6	36	43	81
DSW040-036-06DI8	4	●	6	36	43	81
DSW041-036-06DI8	4.1	●	6	36	43	81
DSW042-036-06DI8	4.2	●	6	36	43	81
DSW043-036-06DI8	4.3	●	6	36	43	81
DSW044-036-06DI8	4.4	●	6	36	43	81
DSW045-036-06DI8	4.5	●	6	36	43	81
DSW046-036-06DI8	4.6	●	6	36	43	81
DSW047-036-06DI8	4.7	●	6	36	43	81
DSW048-048-06DI8	4.8	●	6	48	57	95
DSW049-048-06DI8	4.9	●	6	48	57	95
DSW050-048-06DI8	5	●	6	48	57	95
DSW051-048-06DI8	5.1	●	6	48	57	95
DSW052-048-06DI8	5.2	●	6	48	57	95
DSW053-048-06DI8	5.3	●	6	48	57	95
DSW054-048-06DI8	5.4	●	6	48	57	95
DSW055-048-06DI8	5.5	●	6	48	57	95
DSW056-048-06DI8	5.6	●	6	48	57	95
DSW057-048-06DI8	5.7	●	6	48	57	95
DSW058-048-06DI8	5.8	●	6	48	57	95
DSW059-048-06DI8	5.9	●	6	48	57	95
DSW060-048-06DI8	6	●	6	48	57	95
DSW061-064-08DI8	6.1	●	8	64	76	114
DSW062-064-08DI8	6.2	●	8	64	76	114
DSW063-064-08DI8	6.3	●	8	64	76	114
DSW064-064-08DI8	6.4	●	8	64	76	114
DSW065-064-08DI8	6.5	●	8	64	76	114
DSW066-064-08DI8	6.6	●	8	64	76	114
DSW067-064-08DI8	6.7	●	8	64	76	114
DSW068-064-08DI8	6.8	●	8	64	76	114
DSW069-064-08DI8	6.9	●	8	64	76	114
DSW070-064-08DI8	7	●	8	64	76	114
DSW071-064-08DI8	7.1	●	8	64	76	114
DSW072-064-08DI8	7.2	●	8	64	76	114
DSW073-064-08DI8	7.3	●	8	64	76	114
DSW074-064-08DI8	7.4	●	8	64	76	114
DSW075-064-08DI8	7.5	●	8	64	76	114
DSW076-064-08DI8	7.6	●	8	64	76	114
DSW077-064-08DI8	7.7	●	8	64	76	114
DSW078-064-08DI8	7.8	●	8	64	76	114
DSW079-064-08DI8	7.9	●	8	64	76	114
DSW080-064-08DI8	8	●	8	64	76	114
DSW081-080-10DI8	8.1	●	10	80	95	142
DSW082-080-10DI8	8.2	●	10	80	95	142
DSW083-080-10DI8	8.3	●	10	80	95	142
DSW084-080-10DI8	8.4	●	10	80	95	142
DSW085-080-10DI8	8.5	●	10	80	95	142
DSW086-080-10DI8	8.6	●	10	80	95	142
DSW087-080-10DI8	8.7	●	10	80	95	142
DSW088-080-10DI8	8.8	●	10	80	95	142
DSW089-080-10DI8	8.9	●	10	80	95	142
DSW090-080-10DI8	9	●	10	80	95	142
DSW091-080-10DI8	9.1	●	10	80	95	142
DSW092-080-10DI8	9.2	●	10	80	95	142
DSW093-080-10DI8	9.3	●	10	80	95	142
DSW094-080-10DI8	9.4	●	10	80	95	142
DSW095-080-10DI8	9.5	●	10	80	95	142
DSW096-080-10DI8	9.6	●	10	80	95	142
DSW097-080-10DI8	9.7	●	10	80	95	142
DSW098-080-10DI8	9.8	●	10	80	95	142
DSW099-080-10DI8	9.9	●	10	80	95	142
DSW100-080-10DI8	10	●	10	80	95	142

● : Line up

Reference pages:
Standard cutting conditions → J042 - J043

Recommended coolant pressure and volume for internal coolant supply:

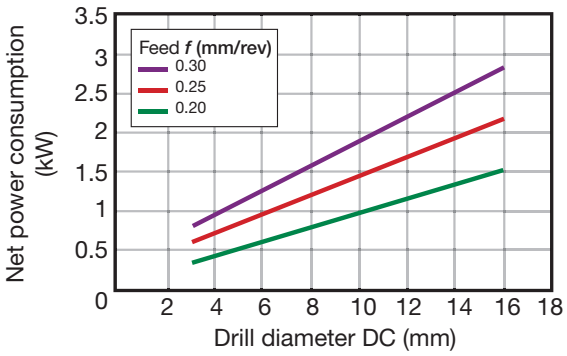
The following graph is a reference guide for pressure and volume. Values should be adjusted according to work material and actual chip evacuation.



: Ideal pressure
: Enough pressure
: Minimum pressure
: Ideal volume
: Enough volume
: Minimum volume

Reference for required spindle power:

The required spindle power may vary depending on the type of work material or hardness. A spindle with sufficient power should be used when referring to the below graph.



Work material : Alloy steel (SNCM439)
Cutting speed : *Vc* = 100 m/min

Designation system

DSW ① **088** ② - **035** ③ - **10** ④ - **D** ⑤ **E** ⑥ **3** ⑦

① Series	
DSW	Series name of solid drill

② Drill diameter DC (mm)	
088	ø8.8

③ Effective flute length LU (mm)	
035	35

④ Shank diameter DCONMS (mm)	
10	ø10

⑤ DIN 6535 - Form HA

⑥ Coolant Supply	
E	External (without coolant hole)
I	Internal (with coolant hole)

⑦ Drilling depth

Approximate value of L/D ratio.

Caution: Code may be different from the actual length. This is dependent upon the tool diameter.

Caution: "Effective flute length" shows the maximum flute length for eff ective chip evacuation. The actual drilling depth may be shorter than described depending on the work material or cutting conditions.

STANDARD CUTTING CONDITIONS

DSW-DE (External supply)

ISO	Workpiece material	Brinell hardness (HB)	Cutting speed: *Vc* (m/min)			Feed: *f* (mm/rev)		
			ø3 ~ ø6	ø6 ~ ø10	ø10 ~ ø16	ø3 ~ ø6	ø6 ~ ø10	ø10 ~ ø16
P	Low carbon steels (C < 0.3) SS400, SM490, S25C, etc. C15E4, E275A, E355D, etc.	~ 180	40 - 100	60 - 120	60 - 130	0.15 - 0.3	0.15 - 0.35	0.2 - 0.5
	Carbon steels (C > 0.3) S45C, S55C, , etc. C45, C55, etc.	180 ~ 300	40 - 90	50 - 120	60 - 130	0.15 - 0.3	0.15 - 0.35	0.2 - 0.4
	High alloy steels SCM440, etc. 42CrMo4, etc.	250 ~ 350	40 - 80	50 - 100	50 - 100	0.1 - 0.2	0.15 - 0.3	0.15 - 0.35
M	Stainless steels SUS304, etc. X5CrNi18-9, etc.	~ 200	20 - 40	30 - 50	30 - 60	0.05 - 0.2	0.1 - 0.25	0.1 - 0.3
K	Grey cast irons FC300, etc. 250, etc.	~ 200	40 - 90	50 - 95	50 - 100	0.15 - 0.3	0.2 - 0.4	0.2 - 0.5
	Ductile cast irons FCD450, etc. 450-10S, etc.	~ 300	30 - 80	40 - 90	45 - 90	0.1 - 0.3	0.2 - 0.4	0.2 - 0.4
N	Aluminium alloys ADC12, etc. AlSi11Cu3, etc.	-	40 - 90	50 - 100	50 - 100	0.15 - 0.3	0.2 - 0.4	0.2 - 0.5
S	Titanium alloys Ti-6Al-4V, etc	-	20 - 40	20 - 40	20 - 40	0.1 - 0.2	0.15 - 0.25	0.15 - 0.4
	Heat-resistant alloys, Inconel Inconel 718, etc.	250 ~	10 - 30	10 - 30	10 - 30	0.03 - 0.07	0.05 - 0.1	0.07 - 0.12
H	High hardened steels SKD11, etc. X153CrMoV12, etc.	~ 40HRC	20 - 40	20 - 40	20 - 40	0.05 - 0.15	0.05 - 0.15	0.05 - 0.2

- The cutting parameters shown in the table are merely a starting guideline for general machining. Values should be varied depending on the power or rigidity of the machine to be used. Optimum conditions should be selected depending on the actual chip control or damage on edges.
- When using the smaller diameter tools in each range, set the feed "*f*" to the lower recommended values.
- The coolant supply is critical for the provision of stable machining conditions and enhanced tool life. A large coolant volume should be supplied, especially when drilling difficult-to-cut materials.
- When drilling stainless steel with low machinability such as austenitic stainless steel with a depth deeper than L/D = 3, a pecking cycle or internal coolant supply is recommended.

DSW-DI (Internal supply)

ISO	Workpiece material	Brinell hardness (HB)	Cutting speed: *Vc* (m/min)			Feed: *f* (mm/rev)		
			ø3 ~ ø6	ø6 ~ ø10	ø10 ~ ø16	ø3 ~ ø6	ø6 ~ ø10	ø10 ~ ø16
P	Low carbon steels (C < 0.3) SS400, SM490, S25C, etc. C15E4, E275A, E355D, etc.	~ 180	70 - 140	80 - 160	90 - 190	0.15 - 0.3	0.15 - 0.35	0.2 - 0.5
	Carbon steels (C > 0.3) S45C, S55C, , etc. C45, C55, etc.	180 ~ 300	50 - 130	70 - 160	80 - 170	0.15 - 0.3	0.15 - 0.35	0.2 - 0.4
	High alloy steels SCM440, etc. 42CrMo4, etc.	250 ~ 350	40 - 100	60 - 140	60 - 160	0.1 - 0.2	0.15 - 0.3	0.15 - 0.35
M	Stainless steels SUS304, etc. X5CrNi18-9, etc.	~ 200	25 - 75	50 - 100	50 - 120	0.05 - 0.2	0.1 - 0.25	0.1 - 0.3
K	Grey cast irons FC300, etc. 250, etc.	~ 200	80 - 140	100 - 160	100 - 180	0.15 - 0.3	0.2 - 0.4	0.2 - 0.5
	Ductile cast irons FCD450, etc. 450-10S, etc.	~ 300	70 - 140	80 - 150	80 - 170	0.1 - 0.3	0.2 - 0.4	0.2 - 0.45
N	Aluminium alloys ADC12, etc. AlSi11Cu3, etc.	-	60 - 200	60 - 200	60 - 200	0.15 - 0.3	0.2 - 0.4	0.2 - 0.5
S	Titanium alloys Ti-6Al-4V, etc	-	20 - 60	30 - 80	30 - 80	0.1 - 0.2	0.1 - 0.25	0.15 - 0.4
	Heat-resistant alloys, Inconel Inconel 718, etc.	250 ~	10 - 30	10 - 40	10 - 40	0.03 - 0.07	0.05 - 0.1	0.07 - 0.15
H	High hardened steels SKD11, etc. X153CrMoV12, etc.	~ 40HRC	20 - 50	30 - 60	30 - 60	0.05 - 0.15	0.05 - 0.15	0.05 - 0.2

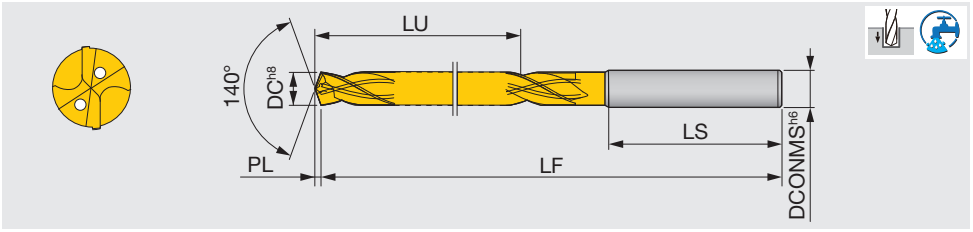
- The cutting parameters shown in the table are merely a starting guideline for general machining. Values should be varied depending on the power or rigidity of the machine to be used. Optimum conditions should be selected depending on the actual chip control or damage on edges.
- When using the smaller diameter tools in each range, set the feed "*f*" to the lower recommended values.
- Oil holes that become blocked may cause drill breakages. A filter to prevent the circulation of chips must be used on the coolant supply system.

GIGA JETDRILL

DSX-F03

Solid drill, 140° point angle, with coolant hole, L/D = 3, ø3 - ø20 mm





Designation	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0300F03	3	●	3	15.6	48	68	0.55
DSX0310F03	3.1	●	4	18.6	48	71	0.56
DSX0320F03	3.2	●	4	18.6	48	71	0.58
DSX0330F03	3.3	●	4	18.6	48	71	0.60
DSX0340F03	3.4	●	4	18.6	48	71	0.62
DSX0350F03	3.5	●	4	18.6	48	71	0.64
DSX0360F03	3.6	●	4	20.7	48	73	0.66
DSX0370F03	3.7	●	4	20.7	48	73	0.67
DSX0380F03	3.8	●	4	20.7	48	73	0.69
DSX0390F03	3.9	●	4	20.7	48	73	0.71
DSX0400F03	4	●	4	20.7	48	73	0.73
DSX0410F03	4.1	●	5	23.8	50	78	0.75
DSX0420F03	4.2	●	5	23.8	50	78	0.76
DSX0430F03	4.3	●	5	23.8	50	78	0.78
DSX0440F03	4.4	●	5	23.8	50	78	0.80
DSX0450F03	4.5	●	5	23.8	50	78	0.82
DSX0460F03	4.6	●	5	25.8	50	80	0.84
DSX0470F03	4.7	●	5	25.9	50	80	0.86
DSX0480F03	4.8	●	5	25.9	50	80	0.87
DSX0490F03	4.9	●	5	25.9	50	80	0.89
DSX0500F03	5	●	5	25.9	50	80	0.91
DSX0510F03	5.1	●	6	28.9	52	82	0.93
DSX0520F03	5.2	●	6	29	52	82	0.95
DSX0530F03	5.3	●	6	29	52	82	0.96
DSX0540F03	5.4	●	6	29	52	82	0.98
DSX0550F03	5.5	●	6	29	52	82	1.00
DSX0560F03	5.6	●	6	31	52	82	1.02
DSX0570F03	5.7	●	6	31	52	82	1.04
DSX0580F03	5.8	●	6	31.1	52	82	1.06
DSX0590F03	5.9	●	6	31.1	52	82	1.07
DSX0600F03	6	●	6	31.1	52	82	1.09
DSX0610F03	6.1	●	7	34.1	53	86	1.11
DSX0620F03	6.2	●	7	34.1	53	86	1.13
DSX0630F03	6.3	●	7	34.2	53	86	1.15
DSX0640F03	6.4	●	7	34.2	53	86	1.16
DSX0650F03	6.5	●	7	34.2	53	86	1.18
DSX0660F03	6.6	●	7	36.2	53	88	1.20
DSX0670F03	6.7	●	7	36.2	53	88	1.22
DSX0680F03	6.8	●	7	36.2	53	88	1.24
DSX0690F03	6.9	●	7	36.3	53	88	1.26
DSX0700F03	7	●	7	36.3	53	88	1.27
DSX0710F03	7.1	●	8	39.3	54	92	1.29
DSX0720F03	7.2	●	8	39.3	54	92	1.31
DSX0730F03	7.3	●	8	39.3	54	92	1.33
DSX0740F03	7.4	●	8	39.4	54	92	1.35
DSX0750F03	7.5	●	8	39.4	54	92	1.36
DSX0760F03	7.6	●	8	41.4	54	94	1.38
DSX0770F03	7.7	●	8	41.4	54	94	1.40
DSX0780F03	7.8	●	8	41.4	54	94	1.42
DSX0790F03	7.9	●	8	41.4	54	94	1.44
DSX0800F03	8	●	8	41.5	54	94	1.46
DSX0810F03	8.1	●	9	44.5	55	100	1.47

Designation	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0820F03	8.2	●	9	44.5	55	100	1.49
DSX0830F03	8.3	●	9	44.5	55	100	1.51
DSX0840F03	8.4	●	9	44.5	55	100	1.53
DSX0850F03	8.5	●	9	44.6	55	100	1.55
DSX0860F03	8.6	●	9	46.6	55	100	1.57
DSX0870F03	8.7	●	9	46.6	55	100	1.58
DSX0880F03	8.8	●	9	46.6	55	100	1.60
DSX0890F03	8.9	●	9	46.6	55	100	1.62
DSX0900F03	9	●	9	46.6	55	100	1.64
DSX0910F03	9.1	●	10	49.7	56	106	1.66
DSX0920F03	9.2	●	10	49.7	56	106	1.67
DSX0930F03	9.3	●	10	49.7	56	106	1.69
DSX0940F03	9.4	●	10	49.7	56	106	1.71
DSX0950F03	9.5	●	10	49.7	56	106	1.73
DSX0960F03	9.6	●	10	51.8	56	106	1.75
DSX0970F03	9.7	●	10	51.8	56	106	1.77
DSX0980F03	9.8	●	10	51.8	56	106	1.78
DSX0990F03	9.9	●	10	51.8	56	106	1.80
DSX1000F03	10	●	10	51.8	56	106	1.82
DSX1010F03	10.1	▲	11	54.8	61	116	1.84
DSX1020F03	10.2	▲	11	54.9	61	116	1.86
DSX1030F03	10.3	▲	11	54.9	61	116	1.87
DSX1040F03	10.4	▲	11	54.9	61	116	1.89
DSX1050F03	10.5	▲	11	54.9	61	116	1.91
DSX1060F03	10.6	▲	11	56.9	61	116	1.93
DSX1070F03	10.7	▲	11	57	61	116	1.95
DSX1080F03	10.8	▲	11	57	61	116	1.97
DSX1090F03	10.9	▲	11	57	61	116	1.98
DSX1100F03	11	▲	11	57	61	116	2.00
DSX1110F03	11.1	▲	12	60	62	122	2.02
DSX1120F03	11.2	▲	12	60	62	122	2.04
DSX1130F03	11.3	▲	12	60.1	62	122	2.06
DSX1140F03	11.4	▲	12	60.1	62	122	2.07
DSX1150F03	11.5	▲	12	60.1	62	122	2.09
DSX1160F03	11.6	▲	12	62.1	62	122	2.11
DSX1170F03	11.7	▲	12	62.1	62	122	2.13
DSX1180F03	11.8	▲	12	62.2	62	122	2.15
DSX1190F03	11.9	▲	12	62.2	62	122	2.17
DSX1200F03	12	▲	12	62.2	62	122	2.18
DSX1210F03	12.1	▲	13	67.2	63	128	2.20
DSX1220F03	12.2	▲	13	67.2	63	128	2.22
DSX1230F03	12.3	▲	13	67.2	63	128	2.24
DSX1240F03	12.4	▲	13	67.3	63	128	2.26
DSX1250F03	12.5	▲	13	67.3	63	128	2.27
DSX1260F03	12.6	▲	13	67.3	63	128	2.29
DSX1270F03	12.7	▲	13	67.3	63	128	2.31
DSX1280F03	12.8	▲	13	67.3	63	128	2.33
DSX1290F03	12.9	▲	13	67.4	63	128	2.35
DSX1300F03	13	▲	13	67.4	63	128	2.37
DSX1310F03	13.1	▲	14	72.4	64	134	2.38
DSX1320F03	13.2	▲	14	72.4	64	134	2.40
DSX1330F03	13.3	▲	14	72.4	64	134	2.42

● : Line up
▲ : To be discontinued

Designation	DC	AH180	DCONMS	LU	LS	LF	PL
DSX1340F03	13.4	▲	14	72.4	64	134	2.44
DSX1350F03	13.5	▲	14	72.5	64	134	2.46
DSX1360F03	13.6	▲	14	72.5	64	134	2.47
DSX1370F03	13.7	▲	14	72.5	64	134	2.49
DSX1380F03	13.8	▲	14	72.5	64	134	2.51
DSX1390F03	13.9	▲	14	72.5	64	134	2.53
DSX1400F03	14	▲	14	72.6	64	134	2.55
DSX1410F03	14.1	▲	15	77.6	65	140	2.57
DSX1420F03	14.2	▲	15	77.6	65	140	2.58
DSX1430F03	14.3	▲	15	77.6	65	140	2.60
DSX1440F03	14.4	▲	15	77.6	65	140	2.62
DSX1450F03	14.5	▲	15	77.6	65	140	2.64
DSX1460F03	14.6	▲	15	77.7	65	140	2.66
DSX1470F03	14.7	▲	15	77.7	65	140	2.68
DSX1480F03	14.8	▲	15	77.7	65	140	2.69
DSX1490F03	14.9	▲	15	77.7	65	140	2.71
DSX1500F03	15	▲	15	77.7	65	140	2.73
DSX1510F03	15.1	▲	16	82.8	66	146	2.75
DSX1520F03	15.2	▲	16	82.8	66	146	2.77
DSX1530F03	15.3	▲	16	82.8	66	146	2.78
DSX1540F03	15.4	▲	16	82.8	66	146	2.80
DSX1550F03	15.5	▲	16	82.8	66	146	2.82
DSX1560F03	15.6	▲	16	82.8	66	146	2.84
DSX1570F03	15.7	▲	16	82.9	66	146	2.86
DSX1580F03	15.8	▲	16	82.9	66	146	2.88
DSX1590F03	15.9	▲	16	82.9	66	146	2.89
DSX1600F03	16	▲	16	82.9	66	146	2.91
DSX1650F03	16.5	▲	17	88	67	152	3.00
DSX1700F03	17	▲	17	88.1	67	152	3.09
DSX1750F03	17.5	▲	18	93.2	68	158	3.18
DSX1800F03	18	▲	18	93.3	68	158	3.28
DSX1850F03	18.5	▲	19	98.4	69	164	3.37
DSX1900F03	19	▲	19	98.5	69	164	3.46
DSX1950F03	19.5	▲	20	103.6	70	170	3.55
DSX2000F03	20	▲	20	103.6	70	170	3.64

● : Line up
▲ : To be discontinued

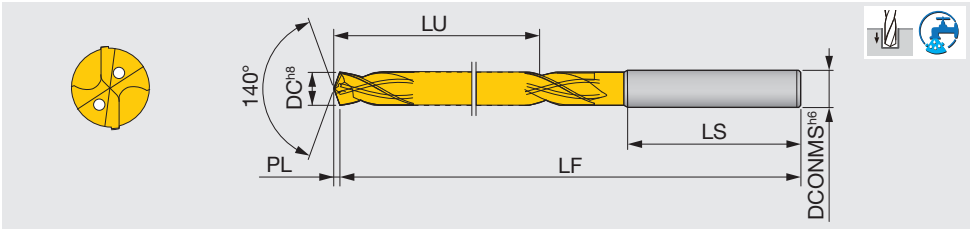
Reference pages: Standard cutting conditions → J049

GIGA JETDRILL

DSX-F05

Solid drill, 140° point angle, with coolant hole, L/D = 5, ø3 - ø20 mm





Designation	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0300F05	3	●	3	24.6	48	77	0.55
DSX0310F05	3.1	●	4	28.6	48	81	0.56
DSX0320F05	3.2	●	4	28.6	48	81	0.58
DSX0330F05	3.3	●	4	28.6	48	81	0.6
DSX0340F05	3.4	●	4	28.6	48	81	0.62
DSX0350F05	3.5	●	4	28.6	48	81	0.64
DSX0360F05	3.6	●	4	32.7	48	85	0.66
DSX0370F05	3.7	●	4	32.7	48	85	0.67
DSX0380F05	3.8	●	4	32.7	48	85	0.69
DSX0390F05	3.9	●	4	32.7	48	85	0.71
DSX0400F05	4	●	4	32.7	48	85	0.73
DSX0410F05	4.1	●	5	36.8	50	91	0.75
DSX0420F05	4.2	●	5	36.8	50	91	0.76
DSX0430F05	4.3	●	5	36.8	50	91	0.78
DSX0440F05	4.4	●	5	36.8	50	91	0.8
DSX0450F05	4.5	●	5	36.8	50	91	0.82
DSX0460F05	4.6	●	5	40.8	50	94	0.84
DSX0470F05	4.7	●	5	40.9	50	94	0.86
DSX0480F05	4.8	●	5	40.9	50	94	0.87
DSX0490F05	4.9	●	5	40.9	50	94	0.89
DSX0500F05	5	●	5	40.9	50	94	0.91
DSX0510F05	5.1	●	6	44.9	52	96	0.93
DSX0520F05	5.2	●	6	45	52	96	0.95
DSX0530F05	5.3	●	6	45	52	96	0.96
DSX0540F05	5.4	●	6	45	52	96	0.98
DSX0550F05	5.5	●	6	45	52	96	1
DSX0560F05	5.6	●	6	49	52	100	1.02
DSX0570F05	5.7	●	6	49	52	100	1.04
DSX0580F05	5.8	●	6	49.1	52	100	1.06
DSX0590F05	5.9	●	6	49.1	52	100	1.07
DSX0600F05	6	●	6	49.1	52	100	1.09
DSX0610F05	6.1	●	7	53.1	53	105	1.11
DSX0620F05	6.2	●	7	53.1	53	105	1.13
DSX0630F05	6.3	●	7	53.2	53	105	1.15
DSX0640F05	6.4	●	7	53.2	53	105	1.16
DSX0650F05	6.5	●	7	53.2	53	105	1.18
DSX0660F05	6.6	●	7	57.2	53	109	1.2
DSX0670F05	6.7	●	7	57.2	53	109	1.22
DSX0680F05	6.8	●	7	57.2	53	109	1.24
DSX0690F05	6.9	●	7	57.3	53	109	1.26
DSX0700F05	7	●	7	57.3	53	109	1.27
DSX0710F05	7.1	●	8	61.3	54	114	1.29
DSX0720F05	7.2	●	8	61.3	54	114	1.31
DSX0730F05	7.3	●	8	61.3	54	114	1.33
DSX0740F05	7.4	●	8	61.4	54	114	1.35
DSX0750F05	7.5	●	8	61.4	54	114	1.36
DSX0760F05	7.6	●	8	65.4	54	118	1.38
DSX0770F05	7.7	●	8	65.4	54	118	1.4
DSX0780F05	7.8	●	8	65.4	54	118	1.42
DSX0790F05	7.9	●	8	65.4	54	118	1.44
DSX0800F05	8	●	8	65.5	54	118	1.46
DSX0810F05	8.1	●	9	69.5	55	127	1.47

Designation	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0820F05	8.2	●	9	69.5	55	127	1.49
DSX0830F05	8.3	●	9	69.5	55	127	1.51
DSX0840F05	8.4	●	9	69.5	55	127	1.53
DSX0850F05	8.5	●	9	69.6	55	127	1.55
DSX0860F05	8.6	●	9	73.6	55	127	1.57
DSX0870F05	8.7	●	9	73.6	55	127	1.58
DSX0880F05	8.8	●	9	73.6	55	127	1.6
DSX0890F05	8.9	●	9	73.6	55	127	1.62
DSX0900F05	9	●	9	73.6	55	127	1.64
DSX0910F05	9.1	●	10	77.7	56	136	1.66
DSX0920F05	9.2	●	10	77.7	56	136	1.67
DSX0930F05	9.3	●	10	77.7	56	136	1.69
DSX0940F05	9.4	●	10	77.7	56	136	1.71
DSX0950F05	9.5	●	10	77.7	56	136	1.73
DSX0960F05	9.6	●	10	81.8	56	136	1.75
DSX0970F05	9.7	●	10	81.8	56	136	1.77
DSX0980F05	9.8	●	10	81.8	56	136	1.78
DSX0990F05	9.9	●	10	81.8	56	136	1.8
DSX1000F05	10	●	10	81.8	56	136	1.82
DSX1010F05	10.1	▲	11	85.8	61	149	1.84
DSX1020F05	10.2	▲	11	85.9	61	149	1.86
DSX1030F05	10.3	▲	11	85.9	61	149	1.87
DSX1040F05	10.4	▲	11	85.9	61	149	1.89
DSX1050F05	10.5	▲	11	85.9	61	149	1.91
DSX1060F05	10.6	▲	11	89.9	61	149	1.93
DSX1070F05	10.7	▲	11	90	61	149	1.95
DSX1080F05	10.8	▲	11	90	61	149	1.97
DSX1090F05	10.9	▲	11	90	61	149	1.98
DSX1100F05	11	▲	11	90	61	149	2
DSX1110F05	11.1	▲	12	94	62	158	2.02
DSX1120F05	11.2	▲	12	94	62	158	2.04
DSX1130F05	11.3	▲	12	94.1	62	158	2.06
DSX1140F05	11.4	▲	12	94.1	62	158	2.07
DSX1150F05	11.5	▲	12	94.1	62	158	2.09
DSX1160F05	11.6	▲	12	98.1	62	158	2.11
DSX1170F05	11.7	▲	12	98.1	62	158	2.13
DSX1180F05	11.8	▲	12	98.2	62	158	2.15
DSX1190F05	11.9	▲	12	98.2	62	158	2.17
DSX1200F05	12	▲	12	98.2	62	158	2.18
DSX1210F05	12.1	▲	13	106.2	63	167	2.2
DSX1220F05	12.2	▲	13	106.2	63	167	2.22
DSX1230F05	12.3	▲	13	106.2	63	167	2.24
DSX1240F05	12.4	▲	13	106.3	63	167	2.26
DSX1250F05	12.5	▲	13	106.3	63	167	2.27
DSX1260F05	12.6	▲	13	106.3	63	167	2.29
DSX1270F05	12.7	▲	13	106.3	63	167	2.31
DSX1280F05	12.8	▲	13	106.3	63	167	2.33
DSX1290F05	12.9	▲	13	106.4	63	167	2.35
DSX1300F05	13	▲	13	106.4	63	167	2.37
DSX1310F05	13.1	▲	14	114.4	64	176	2.38
DSX1320F05	13.2	▲	14	114.4	64	176	2.4
DSX1330F05	13.3	▲	14	114.4	64	176	2.42

● : Line up
▲ : To be discontinued

Designation	DC	AH180	DCONMS	LU	LS	LF	PL
DSX1340F05	13.4	▲	14	114.4	64	176	2.44
DSX1350F05	13.5	▲	14	114.5	64	176	2.46
DSX1360F05	13.6	▲	14	114.5	64	176	2.47
DSX1370F05	13.7	▲	14	114.5	64	176	2.49
DSX1380F05	13.8	▲	14	114.5	64	176	2.51
DSX1390F05	13.9	▲	14	114.5	64	176	2.53
DSX1400F05	14	▲	14	114.6	64	176	2.55
DSX1410F05	14.1	▲	15	122.6	65	185	2.57
DSX1420F05	14.2	▲	15	122.6	65	185	2.58
DSX1430F05	14.3	▲	15	122.6	65	185	2.6
DSX1440F05	14.4	▲	15	122.6	65	185	2.62
DSX1450F05	14.5	▲	15	122.6	65	185	2.64
DSX1460F05	14.6	▲	15	122.7	65	185	2.66
DSX1470F05	14.7	▲	15	122.7	65	185	2.68
DSX1480F05	14.8	▲	15	122.7	65	185	2.69
DSX1490F05	14.9	▲	15	122.7	65	185	2.71
DSX1500F05	15	▲	15	122.7	65	185	2.73
DSX1510F05	15.1	▲	16	130.8	66	194	2.75
DSX1520F05	15.2	▲	16	130.8	66	194	2.77
DSX1530F05	15.3	▲	16	130.8	66	194	2.78
DSX1540F05	15.4	▲	16	130.8	66	194	2.8
DSX1550F05	15.5	▲	16	130.8	66	194	2.82
DSX1560F05	15.6	▲	16	130.8	66	194	2.84
DSX1570F05	15.7	▲	16	130.9	66	194	2.86
DSX1580F05	15.8	▲	16	130.9	66	194	2.88
DSX1590F05	15.9	▲	16	130.9	66	194	2.89
DSX1600F05	16	▲	16	130.9	66	194	2.91
DSX1650F05	16.5	▲	17	139	67	203	3
DSX1700F05	17	▲	17	139.1	67	203	3.09
DSX1750F05	17.5	▲	18	147.2	68	212	3.18
DSX1800F05	18	▲	18	147.3	68	212	3.28
DSX1850F05	18.5	▲	19	155.4	69	221	3.37
DSX1900F05	19	▲	19	155.5	69	221	3.46
DSX1950F05	19.5	▲	20	163.6	70	230	3.55
DSX2000F05	20	▲	20	163.6	70	230	3.64

● : Line up
▲ : To be discontinued

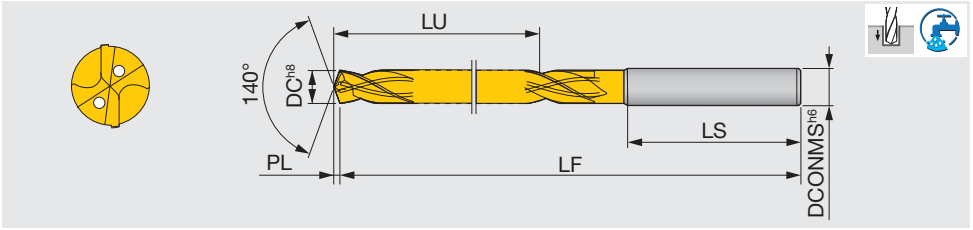
Reference pages: Standard cutting conditions → J049

GIGA JETDRILL

DSX-F08

Solid drill, 140° point angle, with coolant hole, L/D = 8, ø3 - ø16 mm





Designation	DC	AH180	DCONMS	LU	LS	LF	PL	Designation	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0300F08	3	●	3	33.6	48	86	0.55	DSX0820F08	8.2		9	95.5	55	154	1.49
DSX0310F08	3.1		4	39.6	48	92	0.56	DSX0830F08	8.3	●	9	95.5	55	154	1.51
DSX0320F08	3.2		4	39.6	48	92	0.58	DSX0840F08	8.4		9	95.5	55	154	1.53
DSX0330F08	3.3		4	39.6	48	92	0.6	DSX0850F08	8.5	●	9	95.6	55	154	1.55
DSX0340F08	3.4		4	39.6	48	92	0.62	DSX0860F08	8.6		9	100.6	55	154	1.57
DSX0350F08	3.5	●	4	39.6	48	92	0.64	DSX0870F08	8.7		9	100.6	55	154	1.58
DSX0360F08	3.6		4	44.7	48	97	0.66	DSX0880F08	8.8		9	100.6	55	154	1.6
DSX0370F08	3.7		4	44.7	48	97	0.67	DSX0890F08	8.9		9	100.6	55	154	1.62
DSX0380F08	3.8		4	44.7	48	97	0.69	DSX0900F08	9	●	9	100.6	55	154	1.64
DSX0390F08	3.9		4	44.7	48	97	0.71	DSX0910F08	9.1		10	106.7	56	166	1.66
DSX0400F08	4	●	4	44.7	48	97	0.73	DSX0920F08	9.2		10	106.7	56	166	1.67
DSX0410F08	4.1		5	50.8	50	105	0.75	DSX0930F08	9.3		10	106.7	56	166	1.69
DSX0420F08	4.2		5	50.8	50	105	0.76	DSX0940F08	9.4		10	106.7	56	166	1.71
DSX0430F08	4.3		5	50.8	50	105	0.78	DSX0950F08	9.5	●	10	106.7	56	166	1.73
DSX0440F08	4.4		5	50.8	50	105	0.8	DSX0960F08	9.6		10	111.8	56	166	1.75
DSX0450F08	4.5	●	5	50.8	50	105	0.82	DSX0970F08	9.7		10	111.8	56	166	1.77
DSX0460F08	4.6		5	55.8	50	110	0.84	DSX0980F08	9.8		10	111.8	56	166	1.78
DSX0470F08	4.7		5	55.9	50	110	0.86	DSX0990F08	9.9		10	111.8	56	166	1.8
DSX0480F08	4.8		5	55.9	50	110	0.87	DSX1000F08	10	●	10	111.8	56	166	1.82
DSX0490F08	4.9		5	55.9	50	110	0.89	DSX1010F08	10.1	▲	11	117.8	61	182	1.84
DSX0500F08	5	●	5	55.9	50	110	0.91	DSX1020F08	10.2	▲	11	117.9	61	182	1.86
DSX0510F08	5.1	●	6	61.9	52	113	0.93	DSX1030F08	10.3	▲	11	117.9	61	182	1.87
DSX0520F08	5.2		6	62	52	113	0.95	DSX1040F08	10.4	▲	11	117.9	61	182	1.89
DSX0530F08	5.3		6	62	52	113	0.96	DSX1050F08	10.5	▲	11	117.9	61	182	1.91
DSX0540F08	5.4		6	62	52	113	0.98	DSX1060F08	10.6	▲	11	122.9	61	182	1.93
DSX0550F08	5.5	●	6	62	52	113	1	DSX1070F08	10.7	▲	11	123	61	182	1.95
DSX0560F08	5.6		6	67	52	118	1.02	DSX1080F08	10.8	▲	11	123	61	182	1.97
DSX0570F08	5.7		6	67	52	118	1.04	DSX1090F08	10.9	▲	11	123	61	182	1.98
DSX0580F08	5.8		6	67.1	52	118	1.06	DSX1100F08	11	▲	11	123	61	182	2
DSX0590F08	5.9		6	67.1	52	118	1.07	DSX1110F08	11.1	▲	12	129	62	194	2.02
DSX0600F08	6	●	6	67.1	52	118	1.09	DSX1120F08	11.2	▲	12	129	62	194	2.04
DSX0610F08	6.1		7	73.1	53	125	1.11	DSX1130F08	11.3	▲	12	129.1	62	194	2.06
DSX0620F08	6.2		7	73.1	53	125	1.13	DSX1140F08	11.4	▲	12	129.1	62	194	2.07
DSX0630F08	6.3		7	73.2	53	125	1.15	DSX1150F08	11.5	▲	12	129.1	62	194	2.09
DSX0640F08	6.4		7	73.2	53	125	1.16	DSX1160F08	11.6	▲	12	134.1	62	194	2.11
DSX0650F08	6.5	●	7	73.2	53	125	1.18	DSX1170F08	11.7	▲	12	134.1	62	194	2.13
DSX0660F08	6.6		7	78.2	53	130	1.2	DSX1180F08	11.8	▲	12	134.2	62	194	2.15
DSX0670F08	6.7		7	78.2	53	130	1.22	DSX1190F08	11.9	▲	12	134.2	62	194	2.17
DSX0680F08	6.8		7	78.2	53	130	1.24	DSX1200F08	12	▲	12	134.2	62	194	2.18
DSX0690F08	6.9		7	78.3	53	130	1.26	DSX1210F08	12.1	▲	13	145.2	63	206	2.2
DSX0700F08	7	●	7	78.3	53	130	1.27	DSX1220F08	12.2	▲	13	145.2	63	206	2.22
DSX0710F08	7.1		8	84.3	54	137	1.29	DSX1230F08	12.3	▲	13	145.2	63	206	2.24
DSX0720F08	7.2		8	84.3	54	137	1.31	DSX1240F08	12.4	▲	13	145.3	63	206	2.26
DSX0730F08	7.3		8	84.3	54	137	1.33	DSX1250F08	12.5	▲	13	145.3	63	206	2.27
DSX0740F08	7.4		8	84.4	54	137	1.35	DSX1260F08	12.6	▲	13	145.3	63	206	2.29
DSX0750F08	7.5	●	8	84.4	54	137	1.36	DSX1270F08	12.7	▲	13	145.3	63	206	2.31
DSX0760F08	7.6		8	89.4	54	142	1.38	DSX1280F08	12.8	▲	13	145.3	63	206	2.33
DSX0770F08	7.7		8	89.4	54	142	1.4	DSX1290F08	12.9	▲	13	145.4	63	206	2.35
DSX0780F08	7.8		8	89.4	54	142	1.42	DSX1300F08	13	▲	13	145.4	63	206	2.37
DSX0790F08	7.9		8	89.4	54	142	1.44	DSX1310F08	13.1	▲	14	156.4	64	218	2.38
DSX0800F08	8	●	8	89.5	54	142	1.46	DSX1320F08	13.2	▲	14	156.4	64	218	2.4
DSX0810F08	8.1		9	95.5	55	154	1.47	DSX1330F08	13.3	▲	14	156.4	64	218	2.42

● : Line up
▲ : To be discontinued

Designation	DC	AH180	DCONMS	LU	LS	LF	PL
DSX1340F08	13.4	▲	14	156.4	64	218	2.44
DSX1350F08	13.5	▲	14	156.5	64	218	2.46
DSX1360F08	13.6	▲	14	156.5	64	218	2.47
DSX1370F08	13.7	▲	14	156.5	64	218	2.49
DSX1380F08	13.8	▲	14	156.5	64	218	2.51
DSX1390F08	13.9	▲	14	156.5	64	218	2.53
DSX1400F08	14	▲	14	156.6	64	218	2.55
DSX1410F08	14.1	▲	15	167.6	65	230	2.57
DSX1420F08	14.2	▲	15	167.6	65	230	2.58
DSX1430F08	14.3	▲	15	167.6	65	230	2.6
DSX1440F08	14.4	▲	15	167.6	65	230	2.62
DSX1450F08	14.5	▲	15	167.6	65	230	2.64
DSX1460F08	14.6	▲	15	167.7	65	230	2.66
DSX1470F08	14.7	▲	15	167.7	65	230	2.68
DSX1480F08	14.8	▲	15	167.7	65	230	2.69
DSX1490F08	14.9	▲	15	167.7	65	230	2.71
DSX1500F08	15	▲	15	167.7	65	230	2.73
DSX1510F08	15.1	▲	16	178.8	66	242	2.75
DSX1520F08	15.2	▲	16	178.8	66	242	2.77
DSX1530F08	15.3	▲	16	178.8	66	242	2.78
DSX1540F08	15.4	▲	16	178.8	66	242	2.8
DSX1550F08	15.5	▲	16	178.8	66	242	2.82
DSX1560F08	15.6	▲	16	178.8	66	242	2.84
DSX1570F08	15.7	▲	16	178.9	66	242	2.86
DSX1580F08	15.8	▲	16	178.9	66	242	2.88
DSX1590F08	15.9	▲	16	178.9	66	242	2.89
DSX1600F08	16	▲	16	178.9	66	242	2.91

● : Line up
▲ : To be discontinued

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Examples JIS (ISO)	Hardness	Cutting speed: *Vc* (m/min)			Feed: *f* (mm/rev)		
				ø3 ~ ø6	ø6 ~ ø10	ø10 ~ ø20	ø3 ~ ø6	ø6 ~ ø10	ø10 ~ ø20
P	Mild steels, Low carbon steels	SS400, S25C, etc. St42-1, C25, etc.	< 180HB	70 - 140	80 - 160	90 - 190	0.15 - 0.25	0.2 - 0.35	0.25 - 0.4
P	Carbon steels, Alloy steels	S45C, SCM440, etc. C45, 42CrMo4, etc.	180 ~ 300HB	50 - 130	70 - 160	80 - 170	0.15 - 0.25	0.2 - 0.35	0.25 - 0.4
P	High alloy steels, etc.	SCM440H, etc. 42CrMoS4, etc.	250 ~ 350HB	40 - 100	60 - 140	60 - 160	0.1 - 0.2	0.15 - 0.3	0.15 - 0.3
M	Stainless steels	SUS304, etc. X5CrNi18-9, etc.	< 200HB	30 - 70	50 - 100	50 - 120	0.1 - 0.2	0.1 - 0.25	0.15 - 0.35
K	Grey cast irons	FC250, etc. 250, etc.	< 200HB	80 - 140	100 - 160	100 - 180	0.15 - 0.35	0.2 - 0.4	0.25 - 0.5
K	Ductile cast irons	FCD450, etc. 450-10S, etc.	< 300HB	70 - 140	80 - 150	80 - 170	0.15 - 0.35	0.2 - 0.4	0.25 - 0.45
N	Aluminium alloys	ADC12, etc. AlSi11Cu3, etc.	-	80 - 160	100 - 180	100 - 190	0.15 - 0.35	0.2 - 0.45	0.25 - 0.6
S	Titanium alloys	Ti-6Al-4V, etc.	-	25 - 60	30 - 80	30 - 80	0.1 - 0.2	0.1 - 0.25	0.15 - 0.35
S	Heat-resistant alloys	Inconel, etc.	250HB <	10 - 30	10 - 40	10 - 40	0.02 - 0.1	0.05 - 0.15	0.1 - 0.25
H	High hardened steels	SKD11, etc. X153CrMoV12, etc.	< 40HRC	20 - 50	30 - 60	30 - 60	0.08 - 0.1	0.1 - 0.15	0.12 - 0.2

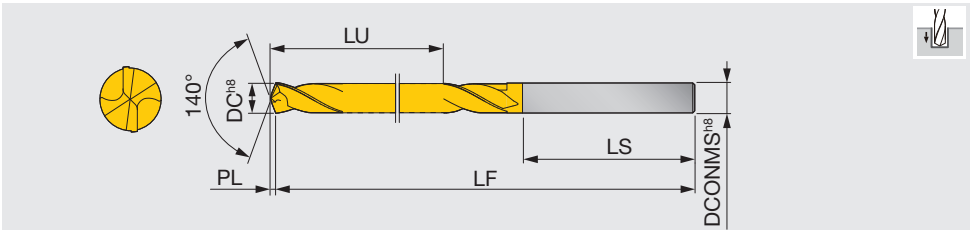
Note: Cutting conditions in the above table show standard cutting conditions. Cutting conditions may change due to the rigidity and power of the machine and the workpiece material.
Especially in case of making deep hole drilling (L/D is over 5), the lower cutting speed is better for longer tool life.
The coolant pressure must be 0.5 MPa - 1.0 MPa. Especially for small diameter drill, the higher pressure is recommended.
Oil holes that become blocked may cause drill breakages. A filter to prevent the circulation of chips must be used on the coolant supply system.

GIGAPOWERDRILL

DSE-F02

Solid drill, 140° point angle, without coolant hole, shank diameter = tool diameter, L/D = 2, ø3 - ø16 mm





Designation	DC	AH180	DCONMS	LU	LS	LF	PL	Designation	DC	AH180	DCONMS	LU	LS	LF	PL
DSE0300F02	3	●	3	16.6	30	46	0.55	DSE0820F02	8.2		8.2	38.5	42	79	1.49
DSE0310F02	3.1		3.1	18.6	31	49	0.56	DSE0830F02	8.3		8.3	38.5	42	79	1.51
DSE0320F02	3.2	●	3.2	18.6	31	49	0.58	DSE0840F02	8.4		8.4	38.5	42	79	1.53
DSE0330F02	3.3		3.3	18.6	31	49	0.6	DSE0850F02	8.5	●	8.5	38.6	42	79	1.55
DSE0340F02	3.4	●	3.4	20.6	32	52	0.62	DSE0860F02	8.6		8.6	41.6	44	84	1.57
DSE0350F02	3.5	●	3.5	20.6	32	52	0.64	DSE0870F02	8.7		8.7	41.6	44	84	1.58
DSE0360F02	3.6		3.6	20.7	32	52	0.66	DSE0880F02	8.8		8.8	41.6	44	84	1.6
DSE0370F02	3.7		3.7	20.7	32	52	0.67	DSE0890F02	8.9		8.9	41.6	44	84	1.62
DSE0380F02	3.8		3.8	22.7	33	55	0.69	DSE0900F02	9	●	9	41.6	44	84	1.64
DSE0390F02	3.9		3.9	22.7	33	55	0.71	DSE0910F02	9.1		9.1	41.7	44	84	1.66
DSE0400F02	4	●	4	22.7	33	55	0.73	DSE0920F02	9.2		9.2	41.7	44	84	1.67
DSE0410F02	4.1		4.1	22.8	33	55	0.75	DSE0930F02	9.3		9.3	41.7	44	84	1.69
DSE0420F02	4.2		4.2	22.8	33	55	0.76	DSE0940F02	9.4		9.4	41.7	44	84	1.71
DSE0430F02	4.3	●	4.3	24.8	34	58	0.78	DSE0950F02	9.5	●	9.5	41.7	44	84	1.73
DSE0440F02	4.4		4.4	24.8	34	58	0.8	DSE0960F02	9.6		9.6	44.8	46	89	1.75
DSE0450F02	4.5	●	4.5	24.8	34	58	0.82	DSE0970F02	9.7		9.7	44.8	46	89	1.77
DSE0460F02	4.6		4.6	24.8	34	58	0.84	DSE0980F02	9.8		9.8	44.8	46	89	1.78
DSE0470F02	4.7		4.7	24.9	34	58	0.86	DSE0990F02	9.9		9.9	44.8	46	89	1.8
DSE0480F02	4.8		4.8	26.9	36	62	0.87	DSE1000F02	10	●	10	44.8	46	89	1.82
DSE0490F02	4.9		4.9	26.9	36	62	0.89	DSE1010F02	10.1	▲	10.1	44.8	46	89	1.84
DSE0500F02	5	●	5	26.9	36	62	0.91	DSE1020F02	10.2	▲	10.2	44.9	46	89	1.86
DSE0510F02	5.1	●	5.1	26.9	36	62	0.93	DSE1030F02	10.3	▲	10.3	44.9	46	89	1.87
DSE0520F02	5.2		5.2	27	36	62	0.95	DSE1040F02	10.4	▲	10.4	44.9	46	89	1.89
DSE0530F02	5.3		5.3	27	36	62	0.96	DSE1050F02	10.5	▲	10.5	44.9	46	89	1.91
DSE0540F02	5.4		5.4	29	38	66	0.98	DSE1060F02	10.6	▲	10.6	44.9	46	89	1.93
DSE0550F02	5.5	●	5.5	29	38	66	1	DSE1070F02	10.7	▲	10.7	49	48	95	1.95
DSE0560F02	5.6	●	5.6	29	38	66	1.02	DSE1080F02	10.8	▲	10.8	49	48	95	1.97
DSE0570F02	5.7		5.7	29	38	66	1.04	DSE1090F02	10.9	▲	10.9	49	48	95	1.98
DSE0580F02	5.8		5.8	29.1	38	66	1.06	DSE1100F02	11	▲	11	49	48	95	2
DSE0590F02	5.9		5.9	29.1	38	66	1.07	DSE1110F02	11.1	▲	11.1	49	48	95	2.02
DSE0600F02	6	●	6	29.1	38	66	1.09	DSE1120F02	11.2	▲	11.2	49	48	95	2.04
DSE0610F02	6.1		6.1	32.1	39	70	1.11	DSE1130F02	11.3	▲	11.3	49.1	48	95	2.06
DSE0620F02	6.2		6.2	32.1	39	70	1.13	DSE1140F02	11.4	▲	11.4	49.1	48	95	2.07
DSE0630F02	6.3		6.3	32.2	39	70	1.15	DSE1150F02	11.5	▲	11.5	49.1	48	95	2.09
DSE0640F02	6.4	●	6.4	32.2	39	70	1.16	DSE1160F02	11.6	▲	11.6	49.1	48	95	2.11
DSE0650F02	6.5	●	6.5	32.2	39	70	1.18	DSE1170F02	11.7	▲	11.7	49.1	48	95	2.13
DSE0660F02	6.6		6.6	32.2	39	70	1.2	DSE1180F02	11.8	▲	11.8	49.2	48	95	2.15
DSE0670F02	6.7		6.7	32.2	39	70	1.22	DSE1190F02	11.9	▲	11.9	53.2	51	102	2.17
DSE0680F02	6.8	●	6.8	35.2	40	74	1.24	DSE1200F02	12	▲	12	53.2	51	102	2.18
DSE0690F02	6.9		6.9	35.3	40	74	1.26	DSE1210F02	12.1	▲	12.1	53.2	51	102	2.2
DSE0700F02	7	●	7	35.3	40	74	1.27	DSE1220F02	12.2	▲	12.2	53.2	51	102	2.22
DSE0710F02	7.1		7.1	35.3	40	74	1.29	DSE1230F02	12.3	▲	12.3	53.2	51	102	2.24
DSE0720F02	7.2		7.2	35.3	40	74	1.31	DSE1240F02	12.4	▲	12.4	53.3	51	102	2.26
DSE0730F02	7.3		7.3	35.3	40	74	1.33	DSE1250F02	12.5	▲	12.5	53.3	51	102	2.27
DSE0740F02	7.4		7.4	35.4	40	74	1.35	DSE1260F02	12.6	▲	12.6	53.3	51	102	2.29
DSE0750F02	7.5	●	7.5	35.4	40	74	1.36	DSE1270F02	12.7	▲	12.7	53.3	51	102	2.31
DSE0760F02	7.6		7.6	38.4	42	79	1.38	DSE1280F02	12.8	▲	12.8	53.3	51	102	2.33
DSE0770F02	7.7		7.7	38.4	42	79	1.4	DSE1290F02	12.9	▲	12.9	53.4	51	102	2.35
DSE0780F02	7.8		7.8	38.4	42	79	1.42	DSE1300F02	13	▲	13	53.4	51	102	2.37
DSE0790F02	7.9		7.9	38.4	42	79	1.44	DSE1310F02	13.1	▲	13.1	53.4	51	102	2.38
DSE0800F02	8	●	8	38.5	42	79	1.46	DSE1320F02	13.2	▲	13.2	53.4	51	102	2.4
DSE0810F02	8.1		8.1	38.5	42	79	1.47	DSE1330F02	13.3	▲	13.3	56.4	53	107	2.42

● : Line up
▲ : To be discontinued

Designation	DC	AH180	DCONMS	LU	LS	LF	PL
DSE1340F02	13.4	▲	13.4	56.4	53	107	2.44
DSE1350F02	13.5	▲	13.5	56.5	53	107	2.46
DSE1360F02	13.6	▲	13.6	56.5	53	107	2.47
DSE1370F02	13.7	▲	13.7	56.5	53	107	2.49
DSE1380F02	13.8	▲	13.8	56.5	53	107	2.51
DSE1390F02	13.9	▲	13.9	56.5	53	107	2.53
DSE1400F02	14	▲	14	56.6	53	107	2.55
DSE1410F02	14.1	▲	14.1	58.6	55	111	2.57
DSE1420F02	14.2	▲	14.2	58.6	55	111	2.58
DSE1430F02	14.3	▲	14.3	58.6	55	111	2.6
DSE1440F02	14.4	▲	14.4	58.6	55	111	2.62
DSE1450F02	14.5	▲	14.5	58.6	55	111	2.64
DSE1460F02	14.6	▲	14.6	58.7	55	111	2.66
DSE1470F02	14.7	▲	14.7	58.7	55	111	2.68
DSE1480F02	14.8	▲	14.8	58.7	55	111	2.69
DSE1490F02	14.9	▲	14.9	58.7	55	111	2.71
DSE1500F02	15	▲	15	58.7	55	111	2.73
DSE1510F02	15.1	▲	15.1	60.8	57	115	2.75
DSE1520F02	15.2	▲	15.2	60.8	57	115	2.77
DSE1530F02	15.3	▲	15.3	60.8	57	115	2.78
DSE1540F02	15.4	▲	15.4	60.8	57	115	2.8
DSE1550F02	15.5	▲	15.5	60.8	57	115	2.82
DSE1560F02	15.6	▲	15.6	60.8	57	115	2.84
DSE1570F02	15.7	▲	15.7	60.9	57	115	2.86
DSE1580F02	15.8	▲	15.8	60.9	57	115	2.88
DSE1590F02	15.9	▲	15.9	60.9	57	115	2.89
DSE1600F02	16	▲	16	60.9	57	115	2.91

● : Line up
▲ : To be discontinued

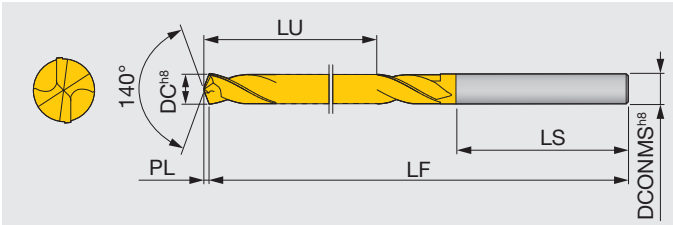
Reference pages: Standard cutting conditions → J053

GIGAPOWERDRILL

DSE-F03

Solid drill, 140° point angle, without coolant hole, shank diameter = tool diameter, L/D = 3, ø3 - ø16 mm





Designation	DC	AH180	DCONMS	LU	LS	LF	PL
DSE0300F03	3	●	3	21.6	39	60	0.55
DSE0310F03	3.1		3.1	24.6	36	60	0.56
DSE0320F03	3.2	●	3.2	24.6	36	60	0.58
DSE0330F03	3.3		3.3	24.6	36	60	0.6
DSE0340F03	3.4	●	3.4	24.6	36	60	0.62
DSE0350F03	3.5	●	3.5	24.6	36	60	0.64
DSE0360F03	3.6		3.6	27.7	33	60	0.66
DSE0370F03	3.7		3.7	27.7	33	60	0.67
DSE0380F03	3.8		3.8	27.7	33	60	0.69
DSE0390F03	3.9		3.9	27.7	33	60	0.71
DSE0400F03	4	●	4	27.7	33	60	0.73
DSE0410F03	4.1		4.1	29.8	34	63	0.75
DSE0420F03	4.2		4.2	29.8	34	63	0.76
DSE0430F03	4.3	●	4.3	29.8	34	63	0.78
DSE0440F03	4.4		4.4	29.8	34	63	0.8
DSE0450F03	4.5	●	4.5	29.8	34	63	0.82
DSE0460F03	4.6		4.6	32.8	36	68	0.84
DSE0470F03	4.7		4.7	32.9	36	68	0.86
DSE0480F03	4.8		4.8	32.9	36	68	0.87
DSE0490F03	4.9		4.9	32.9	36	68	0.89
DSE0500F03	5	●	5	32.9	36	68	0.91
DSE0510F03	5.1	●	5.1	34.9	38	72	0.93
DSE0520F03	5.2		5.2	35	38	72	0.95
DSE0530F03	5.3		5.3	35	38	72	0.96
DSE0540F03	5.4		5.4	35	38	72	0.98
DSE0550F03	5.5	●	5.5	35	38	72	1
DSE0560F03	5.6		5.6	37	38	74	1.02
DSE0570F03	5.7		5.7	37	38	74	1.04
DSE0580F03	5.8		5.8	37.1	38	74	1.06
DSE0590F03	5.9		5.9	37.1	38	74	1.07
DSE0600F03	6	●	6	42.1	40	81	1.09
DSE0610F03	6.1		6.1	42.1	40	81	1.11
DSE0620F03	6.2		6.2	42.1	40	81	1.13
DSE0630F03	6.3		6.3	42.2	40	81	1.15
DSE0640F03	6.4		6.4	42.2	40	81	1.16
DSE0650F03	6.5	●	6.5	42.2	40	81	1.18
DSE0660F03	6.6		6.6	44.2	40	83	1.2
DSE0670F03	6.7		6.7	44.2	40	83	1.22
DSE0680F03	6.8	●	6.8	44.2	40	83	1.24
DSE0690F03	6.9		6.9	44.3	40	83	1.26
DSE0700F03	7	●	7	44.3	40	83	1.27
DSE0710F03	7.1		7.1	46.3	42	87	1.29
DSE0720F03	7.2		7.2	46.3	42	87	1.31
DSE0730F03	7.3		7.3	46.3	42	87	1.33
DSE0740F03	7.4	●	7.4	46.4	42	87	1.35
DSE0750F03	7.5	●	7.5	46.4	42	87	1.36
DSE0760F03	7.6		7.6	49.4	42	90	1.38
DSE0770F03	7.7		7.7	49.4	42	90	1.4
DSE0780F03	7.8		7.8	49.4	42	90	1.42
DSE0790F03	7.9		7.9	49.4	42	90	1.44
DSE0800F03	8	●	8	49.5	42	90	1.46
DSE0810F03	8.1		8.1	54.5	43	96	1.47
DSE0820F03	8.2		8.2	54.5	43	96	1.49

Designation	DC	AH180	DCONMS	LU	LS	LF	PL
DSE0830F03	8.3		8.3	54.5	43	96	1.51
DSE0840F03	8.4		8.4	54.5	43	96	1.53
DSE0850F03	8.5	●	8.5	54.6	43	96	1.55
DSE0860F03	8.6	●	8.6	56.6	43	98	1.57
DSE0870F03	8.7		8.7	56.6	43	98	1.58
DSE0880F03	8.8		8.8	56.6	43	98	1.6
DSE0890F03	8.9		8.9	56.6	43	98	1.62
DSE0900F03	9	●	9	56.6	43	98	1.64
DSE0910F03	9.1		9.1	59.7	44	102	1.66
DSE0920F03	9.2		9.2	59.7	44	102	1.67
DSE0930F03	9.3		9.3	59.7	44	102	1.69
DSE0940F03	9.4		9.4	59.7	44	102	1.71
DSE0950F03	9.5	●	9.5	59.7	44	102	1.73
DSE0960F03	9.6		9.6	61.8	45	105	1.75
DSE0970F03	9.7		9.7	61.8	45	105	1.77
DSE0980F03	9.8		9.8	61.8	45	105	1.78
DSE0990F03	9.9		9.9	61.8	45	105	1.8
DSE1000F03	10	●	10	61.8	45	105	1.82
DSE1010F03	10.1	▲	10.1	67.8	46	112	1.84
DSE1020F03	10.2	▲	10.2	67.9	46	112	1.86
DSE1030F03	10.3	▲	10.3	67.9	46	112	1.87
DSE1040F03	10.4	▲	10.4	67.9	46	112	1.89
DSE1050F03	10.5	▲	10.5	67.9	46	112	1.91
DSE1060F03	10.6	▲	10.6	69.9	46	114	1.93
DSE1070F03	10.7	▲	10.7	70	46	114	1.95
DSE1080F03	10.8	▲	10.8	70	46	114	1.97
DSE1090F03	10.9	▲	10.9	70	46	114	1.98
DSE1100F03	11	▲	11	70	46	114	2
DSE1110F03	11.1	▲	11.1	73	47	118	2.02
DSE1120F03	11.2	▲	11.2	73	47	118	2.04
DSE1130F03	11.3	▲	11.3	73.1	47	118	2.06
DSE1140F03	11.4	▲	11.4	73.1	47	118	2.07
DSE1150F03	11.5	▲	11.5	73.1	47	118	2.09
DSE1160F03	11.6	▲	11.6	75.1	48	121	2.11
DSE1170F03	11.7	▲	11.7	75.1	48	121	2.13
DSE1180F03	11.8	▲	11.8	75.2	48	121	2.15
DSE1190F03	11.9	▲	11.9	75.2	48	121	2.17
DSE1200F03	12	▲	12	75.2	48	121	2.18
DSE1210F03	12.1	▲	12.1	78.2	59	135	2.2
DSE1220F03	12.2	▲	12.2	78.2	59	135	2.22
DSE1230F03	12.3	▲	12.3	78.2	59	135	2.24
DSE1240F03	12.4	▲	12.4	78.3	59	135	2.26
DSE1250F03	12.5	▲	12.5	78.3	59	135	2.27
DSE1260F03	12.6	▲	12.6	80.3	59	137	2.29
DSE1270F03	12.7	▲	12.7	80.3	59	137	2.31
DSE1280F03	12.8	▲	12.8	80.3	59	137	2.33
DSE1290F03	12.9	▲	12.9	80.4	59	137	2.35
DSE1300F03	13	▲	13	80.4	59	137	2.37
DSE1310F03	13.1	▲	13.1	86.4	60	144	2.38
DSE1320F03	13.2	▲	13.2	86.4	60	144	2.4
DSE1330F03	13.3	▲	13.3	86.4	60	144	2.42
DSE1340F03	13.4	▲	13.4	86.4	60	144	2.44
DSE1350F03	13.5	▲	13.5	86.5	60	144	2.46

● : Line up
▲ : To be discontinued

Designation	DC	AH180	DCONMS	LU	LS	LF	PL
DSE1360F03	13.6	▲	13.6	88.5	61	147	2.47
DSE1370F03	13.7	▲	13.7	88.5	61	147	2.49
DSE1380F03	13.8	▲	13.8	88.5	61	147	2.51
DSE1390F03	13.9	▲	13.9	88.5	61	147	2.53
DSE1400F03	14	▲	14	88.6	61	147	2.55
DSE1410F03	14.1	▲	14.1	91.6	62	151	2.57
DSE1420F03	14.2	▲	14.2	91.6	62	151	2.58
DSE1430F03	14.3	▲	14.3	91.6	62	151	2.6
DSE1440F03	14.4	▲	14.4	91.6	62	151	2.62
DSE1450F03	14.5	▲	14.5	91.6	62	151	2.64
DSE1460F03	14.6	▲	14.6	93.7	62	153	2.66
DSE1470F03	14.7	▲	14.7	93.7	62	153	2.68
DSE1480F03	14.8	▲	14.8	93.7	62	153	2.69
DSE1490F03	14.9	▲	14.9	93.7	62	153	2.71
DSE1500F03	15	▲	15	93.7	62	153	2.73
DSE1510F03	15.1	▲	15.1	96.8	63	157	2.75
DSE1520F03	15.2	▲	15.2	96.8	63	157	2.77
DSE1530F03	15.3	▲	15.3	96.8	63	157	2.78
DSE1540F03	15.4	▲	15.4	96.8	63	157	2.8
DSE1550F03	15.5	▲	15.5	96.8	63	157	2.82
DSE1560F03	15.6	▲	15.6	98.8	64	160	2.84
DSE1570F03	15.7	▲	15.7	98.9	64	160	2.86
DSE1580F03	15.8	▲	15.8	98.9	64	160	2.88
DSE1590F03	15.9	▲	15.9	98.9	64	160	2.89
DSE1600F03	16	▲	16	98.9	64	160	2.91

● : Line up
▲ : To be discontinued

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Examples	Hardness	Cutting speed: *Vc* (m/min)			Feed: *f* (mm/rev)		
				ø3 ~ ø6	ø6 ~ ø10	ø10 ~ ø16	ø3 ~ ø6	ø5 ~ ø10	ø10 ~ ø16
P	Mild steels, Low carbon steels	SS400, etc. E275A, etc.	< 180HB	40 - 100	60 - 120	60 - 130	0.15 - 0.3	0.15 - 0.35	0.2 - 0.5
P	Carbon steels, Alloy steels	S45C, etc. C45, etc.	180 ~ 300HB	40 - 90	50 - 120	60 - 130	0.15 - 0.3	0.15 - 0.35	0.15 - 0.4
P	High alloy steels, etc.	SCM440, etc. 42CrMo4, etc.	250 ~ 350HB	40 - 80	50 - 100	50 - 100	0.1 - 0.2	0.15 - 0.25	0.15 - 0.35
M	Stainless steels	SUS304, etc. X5CrNi18-9, etc.	< 200HB	10 - 20	10 - 20	10 - 20	0.05 - 0.15	0.05 - 0.15	0.05 - 0.15
K	Grey cast irons	FC300, etc. 300, etc.	< 200HB	40 - 90	50 - 95	50 - 100	0.15 - 0.3	0.2 - 0.4	0.2 - 0.4
K	Ductile cast irons	FCD700, etc. 600-3, etc.	< 300HB	35 - 80	40 - 85	45 - 90	0.15 - 0.3	0.2 - 0.4	0.2 - 0.4
S	Titanium alloys	Ti-6Al-4V, etc.		20 - 40	20 - 40	20 - 40	0.1 - 0.2	0.15 - 0.25	0.15 - 0.4
S	Heat-resistant alloys	Inconel718, etc.	250HB <	10 - 30	10 - 30	10 - 30	0.03 - 0.07	0.05 - 0.1	0.07 - 0.12
H	High hardened steels	SKD11, etc. X153CrMoV12, etc.	< 40HRC	20 - 40	20 - 40	20 - 40	0.05 - 0.15	0.05 - 0.15	0.07 - 0.2

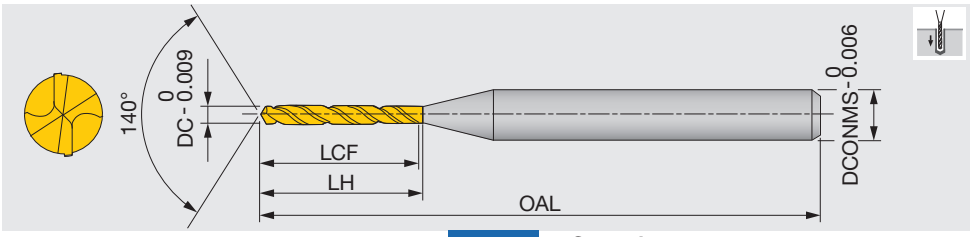
- Because the cutting conditions may be changed depending on the material type, hardness, machinability, machine tool, and coolant, the most appropriate conditions must be decided whilst referring the chip control condition and tool failure mode.
- When using the smaller diameter tools in each range, set the feed "*f*" to the lower recommended values.
- When drilling difficult-to-cut materials, coolant supplying conditions are critical for successful drilling. So, the use of constant and flood coolant is highly recommended.
- When the work material is kind of austenitic stainless steel (e.g. X5CrNi18-9) and the hole depth is over L/D = 2, using step drilling program or using DSX drill with oil hole is recommended.

GIGAMINIDRILL

DSM

Micro solid drill, 140° point angle, without coolant hole, shank diameter ø3 mm, L/D = 5 - 15, tool diameter ø0.1 - ø3.0 mm





Designation	DC	Coated YH170	Coated YH180	DCONMS	LCF	LH	OAL
DSM0010G10	0.1	●		3	1.15	1.4	38
DSM0011G10	0.11	●		3	1.25	1.5	38
DSM0012G10	0.12	●		3	1.35	1.6	38
DSM0013G10	0.13	●		3	1.55	1.8	38
DSM0014G10	0.14	●		3	1.65	1.9	38
DSM0015G10	0.15	●		3	1.75	2	38
DSM0016G10	0.16	●		3	1.85	2.1	38
DSM0017G10	0.17	●		3	1.95	2.2	38
DSM0018G10	0.18	●		3	2.15	2.4	38
DSM0019G10	0.19	●		3	2.25	2.5	38
DSM0020G10	0.2	●		3	2.35	2.6	38
DSM0021G10	0.21	●		3	2.45	2.7	38
DSM0022G10	0.22	●		3	2.55	2.8	38
DSM0023G10	0.23	●		3	2.75	3	38
DSM0024G10	0.24	●		3	2.85	3.1	38
DSM0025G10	0.25	●		3	3	3.3	38
DSM0026G10	0.26	●		3	3.1	3.4	38
DSM0027G10	0.27	●		3	3.2	3.5	38
DSM0028G10	0.28	●		3	3.4	3.7	38
DSM0029G10	0.29	●		3	3.5	3.8	38
DSM0030G10	0.3	●		3	3.9	4.2	38
DSM0031G15	0.31	●		3	5.6	5.9	38
DSM0032G15	0.32	●		3	5.6	5.9	38
DSM0033G15	0.33	●		3	5.6	5.9	38
DSM0034G15	0.34	●		3	5.6	5.9	38
DSM0035G15	0.35	●		3	5.6	5.9	38
DSM0036G15	0.36	●		3	6.5	6.8	38
DSM0037G15	0.37	●		3	6.5	6.8	38
DSM0038G15	0.38	●		3	6.5	6.8	38
DSM0039G15	0.39	●		3	6.5	6.8	38
DSM0040G15	0.4	●		3	6.5	6.8	38
DSM0041G15	0.41	●		3	7.4	7.7	38
DSM0042G15	0.42	●		3	7.4	7.7	38
DSM0043G15	0.43	●		3	7.4	7.7	38
DSM0044G15	0.44	●		3	7.4	7.7	38
DSM0045G15	0.45	●		3	7.4	7.7	38
DSM0046G15	0.46	●		3	8.1	8.7	38
DSM0047G15	0.47	●		3	8.1	8.7	38
DSM0048G15	0.48	●		3	8.1	8.7	38
DSM0049G15	0.49	●		3	8.1	8.7	38
DSM0050G15	0.5	●		3	8.1	8.7	38
DSM0051G10	0.51			3	6.6	7.2	38
DSM0052G10	0.52			3	6.6	7.2	38
DSM0053G10	0.53			3	6.6	7.2	38
DSM0054G10	0.54			3	6.6	7.2	38
DSM0055G10	0.55	●		3	6.6	7.2	38
DSM0056G10	0.56			3	7.3	7.9	38
DSM0057G10	0.57			3	7.3	7.9	38
DSM0058G10	0.58			3	7.3	7.9	38
DSM0059G10	0.59			3	7.3	7.9	38
DSM0060G10	0.6	●		3	7.3	7.9	38
DSM0061G10	0.61			3	7.9	8.5	38
DSM0062G10	0.62			3	7.9	8.5	38
DSM0063G10	0.63			3	7.9	8.5	38
DSM0064G10	0.64			3	7.9	8.5	38
DSM0065G10	0.65	●		3	7.9	8.5	38
DSM0066G10	0.66			3	8.6	9.2	38
DSM0067G10	0.67			3	8.6	9.2	38
DSM0068G10	0.68			3	8.6	9.2	38
DSM0069G10	0.69			3	8.6	9.2	38
DSM0070G10	0.7	●		3	8.6	9.2	38
DSM0071G10	0.71			3	9.2	9.8	38
DSM0072G10	0.72			3	9.2	9.8	38
DSM0073G10	0.73			3	9.2	9.8	38
DSM0074G10	0.74			3	9.2	9.8	38

Designation	DC	Coated YH170	Coated YH180	DCONMS	LCF	LH	OAL
DSM0075G10	0.75	●		3	9.2	9.8	38
DSM0076G10	0.76			3	9.9	10.5	38
DSM0077G10	0.77			3	9.9	10.5	38
DSM0078G10	0.78			3	9.9	10.5	38
DSM0079G10	0.79			3	9.9	10.5	38
DSM0080G10	0.8	●		3	9.9	10.5	38
DSM0081G10	0.81			3	10.5	11.1	38
DSM0082G10	0.82			3	10.5	11.1	38
DSM0083G10	0.83			3	10.5	11.1	38
DSM0084G10	0.84			3	10.5	11.1	38
DSM0085G10	0.85			3	10.5	11.1	38
DSM0086G10	0.86			3	9.9	10.5	38
DSM0087G10	0.87			3	9.9	10.5	38
DSM0088G10	0.88	●		3	9.9	10.5	38
DSM0089G10	0.89			3	9.9	10.5	38
DSM0090G10	0.9	●		3	9.9	10.5	38
DSM0091G10	0.91			3	10.5	11.1	38
DSM0092G10	0.92			3	10.5	11.1	38
DSM0093G10	0.93			3	10.5	11.1	38
DSM0094G10	0.94			3	10.5	11.1	38
DSM0095G10	0.95			3	10.5	11.1	38
DSM0096G10	0.96			3	11	11.6	38
DSM0097G10	0.97	●		3	11	11.6	38
DSM0098G10	0.98			3	11	11.6	38
DSM0099G10	0.99			3	11	11.6	38
DSM0100G10	1	●		3	11.5	12.1	38
DSM0101G05	1.01			3	8	8.6	38
DSM0102G05	1.02			3	8	8.6	38
DSM0103G05	1.03			3	8	8.6	38
DSM0104G05	1.04			3	8	8.6	38
DSM0105G05	1.05			3	8	8.6	38
DSM0106G05	1.06			3	8	8.6	38
DSM0107G05	1.07			3	8	8.6	38
DSM0108G05	1.08	●		3	8	8.6	38
DSM0109G05	1.09			3	8	8.6	38
DSM0110G05	1.1	●		3	8	8.6	38
DSM0111G05	1.11			3	8.9	9.5	38
DSM0112G05	1.12			3	8.9	9.5	38
DSM0113G05	1.13			3	8.9	9.5	38
DSM0114G05	1.14			3	8.9	9.5	38
DSM0115G05	1.15			3	8.9	9.5	38
DSM0116G05	1.16			3	8.9	9.5	38
DSM0117G05	1.17			3	8.9	9.5	38
DSM0118G05	1.18			3	8.9	9.5	38
DSM0119G05	1.19			3	8.9	9.5	38
DSM0120G05	1.2	●		3	8.9	9.5	38
DSM0121G05	1.21			3	9.7	10.3	38
DSM0122G05	1.22			3	9.7	10.3	38
DSM0123G05	1.23			3	9.7	10.3	38
DSM0124G05	1.24			3	9.7	10.3	38
DSM0125G05	1.25			3	9.7	10.3	38
DSM0126G05	1.26			3	9.7	10.3	38
DSM0127G05	1.27			3	9.7	10.3	38
DSM0128G05	1.28			3	9.7	10.3	38
DSM0129G05	1.29			3	9.7	10.3	38
DSM0130G05	1.3	●		3	9.7	10.3	38
DSM0131G05	1.31			3	10.5	11.1	38
DSM0132G05	1.32			3	10.5	11.1	38
DSM0133G05	1.33			3	10.5	11.1	38
DSM0134G05	1.34			3	10.5	11.1	38
DSM0135G05	1.35			3	10.5	11.1	38
DSM0136G05	1.36			3	10.5	11.1	38
DSM0137G05	1.37			3	10.5	11.1	38
DSM0138G05	1.38			3	10.5	11.1	38
DSM0139G05	1.39			3	10.5	11.1	38

● : Line up

Reference pages: Standard cutting conditions → J056

Designation	DC	Coated YH170	Coated YH180	DCONMS	LCF	LH	OAL
DSM0140G05	1.4	●		3	10.5	11.1	38
DSM0141G05	1.41			3	11.3	11.9	38
DSM0142G05	1.42			3	11.3	11.9	38
DSM0143G05	1.43			3	11.3	11.9	38
DSM0144G05	1.44			3	11.3	11.9	38
DSM0145G05	1.45	●		3	11.3	11.9	38
DSM0146G05	1.46			3	11.3	11.9	38
DSM0147G05	1.47			3	11.3	11.9	38
DSM0148G05	1.48			3	11.3	11.9	38
DSM0149G05	1.49			3	11.3	11.9	38
DSM0150G05	1.5	●		3	11.3	11.9	38
DSM0151G05	1.51			3	12.1	12.7	45
DSM0152G05	1.52			3	12.1	12.7	45
DSM0153G05	1.53	●		3	12.1	12.7	45
DSM0154G05	1.54			3	12.1	12.7	45
DSM0155G05	1.55	●		3	12.1	12.7	45
DSM0156G05	1.56			3	12.1	12.7	45
DSM0157G05	1.57			3	12.1	12.7	45
DSM0158G05	1.58			3	12.1	12.7	45
DSM0159G05	1.59			3	12.1	12.7	45
DSM0160G05	1.6	●		3	12.1	12.7	45
DSM0161G05	1.61			3	12.9	13.6	45
DSM0162G05	1.62			3	12.9	13.6	45
DSM0163G05	1.63			3	12.9	13.6	45
DSM0164G05	1.64			3	12.9	13.6	45
DSM0165G05	1.65	●		3	12.9	13.6	45
DSM0166G05	1.66			3	12.9	13.6	45
DSM0167G05	1.67			3	12.9	13.6	45
DSM0168G05	1.68			3	12.9	13.6	45
DSM0169G05	1.69			3	12.9	13.6	45
DSM0170G05	1.7	●		3	12.9	13.6	45
DSM0171G05	1.71			3	13.7	14.3	45
DSM0172G05	1.72			3	13.7	14.3	45
DSM0173G05	1.73			3	13.7	14.3	45
DSM0174G05	1.74			3	13.7	14.3	45
DSM0175G05	1.75			3	13.7	14.3	45
DSM0176G05	1.76			3	13.7	14.3	45
DSM0177G05	1.77			3	13.7	14.3	45
DSM0178G05	1.78			3	13.7	14.3	45
DSM0179G05	1.79			3	13.7	14.3	45
DSM0180G05	1.8	●		3	13.7	14.3	45
DSM0181G05	1.81			3	14.5	15.1	45
DSM0182G05	1.82	●		3	14.5	15.1	45
DSM0183G05	1.83			3	14.5	15.1	45
DSM0184G05	1.84			3	14.5	15.1	45
DSM0185G05	1.85	●		3	14.5	15.1	45
DSM0186G05	1.86			3	14.5	15.1	45
DSM0187G05	1.87			3	14.5	15.1	45
DSM0188G05	1.88			3	14.5	15.1	45
DSM0189G05	1.89			3	14.5	15.1	45
DSM0190G05	1.9	●		3	14.5	15.1	45
DSM0191G05	1.91			3	15.3	15.9	45
DSM0192G05	1.92			3	15.3	15.9	45
DSM0193G05	1.93			3	15.3	15.9	45
DSM0194G05	1.94			3	15.3	15.9	45
DSM0195G05	1.95	●		3	15.3	15.9	45
DSM0196G05	1.96			3	15.3	15.9	45
DSM0197G05	1.97			3	15.3	15.9	45
DSM0198G05	1.98			3	15.3	15.9	45
DSM0199G05	1.99			3	15.3	15.9	45
DSM0200G05	2		●	3	15.3	15.9	45
DSM0201G05	2.01			3	16.1	16.7	45
DSM0202G05	2.02			3	16.1	16.7	45
DSM0203G05	2.03		●	3	16.1	16.7	45
DSM0204G05	2.04			3	16.1	16.7	45
DSM0205G05	2.05			3	16.1	16.7	45
DSM0206G05	2.06			3	16.1	16.7	45
DSM0207G05	2.07			3	16.1	16.7	45
DSM0208G05	2.08			3	16.1	16.7	45
DSM0209G05	2.09			3	16.1	16.7	45
DSM0210G05	2.1		●	3	16.1	16.7	45
DSM0211G05	2.11			3	16.9	17.5	45
DSM0212G05	2.12			3	16.9	17.5	45
DSM0213G05	2.13			3	16.9	17.5	45
DSM0214G05	2.14			3	16.9	17.5	45
DSM0215G05	2.15			3	16.9	17.5	45
DSM0216G05	2.16			3	16.9	17.5	45
DSM0217G05	2.17			3	16.9	17.5	45
DSM0218G05	2.18			3	16.9	17.5	45

Designation	DC	Coated YH170	Coated YH180	DCONMS	LCF	LH	OAL
DSM0219G05	2.19			3	16.9	17.5	45
DSM0220G05	2.2		●	3	16.9	17.5	45
DSM0221G05	2.21			3	17.7	18.3	45
DSM0222G05	2.22			3	17.7	18.3	45
DSM0223G05	2.23			3	17.7	18.3	45
DSM0224G05	2.24			3	17.7	18.3	45
DSM0225G05	2.25			3	17.7	18.3	45
DSM0226G05	2.26			3	17.7	18.3	45
DSM0227G05	2.27			3	17.7	18.3	45
DSM0228G05	2.28			3	17.7	18.3	45
DSM0229G05	2.29			3	17.7	18.3	45
DSM0230G05	2.3		●	3	17.7	18.3	45
DSM0231G05	2.31			3	18.5	19.1	55
DSM0232G05	2.32			3	18.5	19.1	55
DSM0233G05	2.33			3	18.5	19.1	55
DSM0234G05	2.34			3	18.5	19.1	55
DSM0235G05	2.35			3	18.5	19.1	55
DSM0236G05	2.36			3	18.5	19.1	55
DSM0237G05	2.37			3	18.5	19.1	55
DSM0238G05	2.38			3	18.5	19.1	55
DSM0239G05	2.39			3	18.5	19.1	55
DSM0240G05	2.4		●	3	18.5	19.1	55
DSM0241G05	2.41			3	19.3	19.9	55
DSM0242G05	2.42			3	19.3	19.9	55
DSM0243G05	2.43			3	19.3	19.9	55
DSM0244G05	2.44			3	19.3	19.9	55
DSM0245G05	2.45			3	19.3	19.9	55
DSM0246G05	2.46			3	19.3	19.9	55
DSM0247G05	2.47			3	19.3	19.9	55
DSM0248G05	2.48			3	19.3	19.9	55
DSM0249G05	2.49			3	19.3	19.9	55
DSM0250G05	2.5		●	3	19.3	19.9	55
DSM0251G05	2.51			3	20.1	20.7	55
DSM0252G05	2.52			3	20.1	20.7	55
DSM0253G05	2.53			3	20.1	20.7	55
DSM0254G05	2.54			3	20.1	20.7	55
DSM0255G05	2.55			3	20.1	20.7	55
DSM0256G05	2.56		●	3	20.1	20.7	55
DSM0257G05	2.57			3	20.1	20.7	55
DSM0258G05	2.58			3	20.1	20.7	55
DSM0259G05	2.59			3	20.1	20.7	55
DSM0260G05	2.6		●	3	20.1	20.7	55
DSM0261G05	2.61			3	20.9	21.5	55
DSM0262G05	2.62			3	20.9	21.5	55
DSM0263G05	2.63			3	20.9	21.5	55
DSM0264G05	2.64			3	20.9	21.5	55
DSM0265G05	2.65			3	20.9	21.5	55
DSM0266G05	2.66			3	20.9	21.5	55
DSM0267G05	2.67			3	20.9	21.5	55
DSM0268G05	2.68			3	20.9	21.5	55
DSM0269G05	2.69			3	20.9	21.5	55
DSM0270G05	2.7		●	3	20.9	21.5	55
DSM0271G05	2.71			3	21.7	22.3	55
DSM0272G05	2.72			3	21.7	22.3	55
DSM0273G05	2.73			3	21.7	22.3	55
DSM0274G05	2.74			3	21.7	22.3	55
DSM0275G05	2.75			3	21.7	22.3	55
DSM0276G05	2.76			3	21.7	22.3	55
DSM0277G05	2.77			3	21.7	22.3	55
DSM0278G05	2.78			3	21.7	22.3	55
DSM0279G05	2.79			3	21.7	22.3	55
DSM0280G05	2.8		●	3	21.7	22.3	55
DSM0281G05	2.81			3	22.5	23.1	55
DSM0282G05	2.82			3	22.5	23.1	55
DSM0283G05	2.83			3	22.5	23.1	55
DSM0284G05	2.84			3	22.5	23.1	55
DSM0285G05	2.85			3	22.5	23.1	55
DSM0286G05	2.86			3	22.5	23.1	55
DSM0287G05	2.87			3	22.5	23.1	55
DSM0288G05	2.88			3	22.5	23.1	55
DSM0289G05	2.89			3	22.5	23.1	55
DSM0290G05	2.9		●	3	22.5	23.1	55
DSM0291G05	2.91			3	23.3	23.9	55
DSM0292G05	2.92			3	23.3	23.9	55
DSM0293G05	2.93			3	23.3	23.9	55
DSM0294G05	2.94			3	23.3	23.9	55
DSM0295G05	2.95			3	23.3	23.9	55
DSM0296G05	2.96			3	23.3	23.9	55
DSM0297G05	2.97			3	23.3	23.9	55
DSM0298G05	2.98			3	23.3	23.9	55
DSM0299G05	2.99			3	23.3	23.9	55
DSM0300G05	3		●	3	23.3	23.9	55

Reference pages: Standard cutting conditions → J056

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed: *Vc* (m/min)			Feed: *f* (mm/rev)				
		ø0.1 ~ ø0.3	ø0.3 ~ ø0.5	ø0.5 ~ ø3	ø0.1 ~ ø0.3	ø0.3 ~ ø0.5	ø0.5 ~ ø1	ø1 ~ ø2	ø2 ~ ø3
P	Carbon steels, Alloy steels	5 - 20	15 - 30	25 - 60	0.001 - 0.004	0.002 - 0.01	0.005 - 0.05	0.03 - 0.09	0.05 - 0.1
M	Stainless steels	2 - 12	6 - 18	10 - 20	0.0005 - 0.004	0.002 - 0.008	0.005 - 0.03	0.01 - 0.04	0.02 - 0.05
K	Grey cast irons	5 - 15	10 - 25	20 - 50	0.0005 - 0.004	0.002- 0.012	0.005 - 0.03	0.01 - 0.06	0.03 - 0.12
	Ductile cast irons	5 - 15	10 - 25	20 - 50	0.001 - 0.003	0.002 - 0.01	0.005 - 0.02	0.01 - 0.05	0.03 - 0.1
N	Aluminium alloys	10 - 20	10 - 30	20 - 50	0.001 - 0.01	0.005 - 0.03	0.01 - 0.05	0.04 - 0.15	0.06 - 0.2
	Copper / Brass	10 - 20	10 - 30	20 - 50	0.001 - 0.01	0.005 - 0.03	0.01 - 0.05	0.04 - 0.15	0.06 - 0.2
S	Heat-resistant alloys	2 - 6	5 - 10	8 - 20	0.0005 - 0.003	0.002 - 0.004	0.002 - 0.004	0.002 - 0.004	※
H	High hardened steels	4 - 8	6 - 10	6 - 16	0.0005 - 0.002	0.001 - 0.005	0.005 - 0.02	0.01 - 0.03	0.02 - 0.06

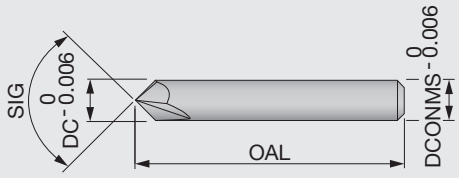
※ Not recommended

Notes: • When the drilling depth is deeper than L/D = 5, use drill pecking every 10 to 50% of the drill diameter.
• The above cutting conditions are applied to when a water soluble cutting fluid is used. For drilling a hole smaller than ø0.3 mm, use of a starting drill is recommended.
• When setting the drill, the drill run out should be within 0.002 mm on the taper. (Especially for the drill diameter smaller than ø0.5 mm)

GIGAMINIDRILL

DSM-CP

Centering drill for DSM drill



Designation	DC	YH170	DCONMS	OAL	SIG
DSM-CP90	3	●	3	38.1	90°
DSM-CP140	3	●	3	38.1	140°

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed: *Vc* (m/min)	Feed: *f* (mm/rev)	
			DSM-CP90	DSM-CP140
P	Carbon, Mild and Alloy steels	30 - 80	0.01 - 0.06	0.03 - 0.08
K	Grey and ductile cast irons	30 - 80	0.02 - 0.06	0.05 - 0.1
N	Aluminium alloys	60 - 120	0.02 - 0.1	0.05 - 0.15
M	Stainless steels	15 - 40	0.01 - 0.03	0.02 - 0.06
H	High hardened steels (~45HRC)	10 - 40	※	0.01 - 0.05

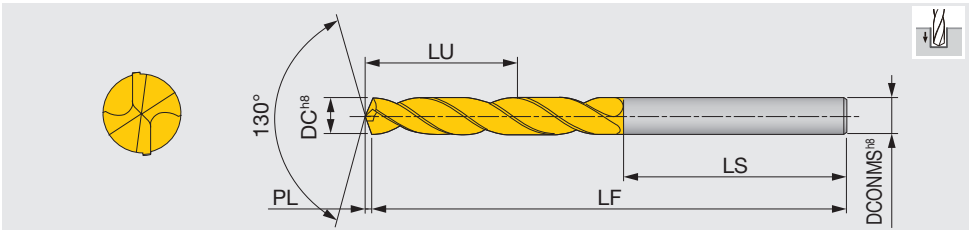
※ Not recommended

Notes: • For hard materials and stainless steels which have work-hardening nature, DSM-CP140 is recommended.
• Above cutting conditions are of using a water-soluble cutting fluid. When using a water-insoluble type, set the cutting speed to lower side.

DMX L/D=2 (S type)

Solid drill, 130° point angle, without coolant hole, shank diameter = tool diameter, L/D = 2, ø3 - ø20 mm





Designation	DC	AH170	DCONMS	LU	LS	LF	PL
DMX030S	3	▲	3	16.7	30	46	0.7
DMX031S	3.1	▲	3.1	18.7	31	49	0.72
DMX032S	3.2	▲	3.2	18.8	31	49	0.75
DMX033S	3.3	▲	3.3	18.8	31	49	0.77
DMX034S	3.4	▲	3.4	20.8	32	52	0.79
DMX035S	3.5	▲	3.5	20.8	32	52	0.82
DMX036S	3.6	▲	3.6	20.8	32	52	0.84
DMX037S	3.7	▲	3.7	20.9	32	52	0.86
DMX038S	3.8	▲	3.8	22.9	33	55	0.89
DMX039S	3.9	▲	3.9	22.9	33	55	0.91
DMX040S	4	▲	4	22.9	33	55	0.93
DMX041S	4.1	▲	4.1	23	33	55	0.96
DMX042S	4.2	▲	4.2	23	33	55	0.98
DMX043S	4.3	▲	4.3	25	34	58	1
DMX044S	4.4	▲	4.4	25	34	58	1.03
DMX045S	4.5	▲	4.5	25.1	34	58	1.05
DMX046S	4.6	▲	4.6	25.1	34	58	1.07
DMX047S	4.7	▲	4.7	25.1	34	58	1.1
DMX048S	4.8	▲	4.8	27.1	36	62	1.12
DMX049S	4.9	▲	4.9	27.1	36	62	1.14
DMX050S	5	▲	5	27.2	36	62	1.17
DMX051S	5.1	▲	5.1	27.2	36	62	1.19
DMX052S	5.2	▲	5.2	27.2	36	62	1.21
DMX053S	5.3	▲	5.3	27.2	36	62	1.24
DMX054S	5.4	▲	5.4	29.3	38	66	1.26
DMX055S	5.5	▲	5.5	29.3	38	66	1.28
DMX056S	5.6	▲	5.6	29.3	38	66	1.31
DMX057S	5.7	▲	5.7	29.3	38	66	1.33
DMX058S	5.8	▲	5.8	29.4	38	66	1.35
DMX059S	5.9	▲	5.9	29.4	38	66	1.38
DMX060S	6	▲	6	29.4	38	66	1.4
DMX061S	6.1	▲	6.1	32.4	39	70	1.42
DMX062S	6.2	▲	6.2	32.5	39	70	1.45
DMX063S	6.3	▲	6.3	32.5	39	70	1.47
DMX064S	6.4	▲	6.4	32.5	39	70	1.49
DMX065S	6.5	▲	6.5	32.5	39	70	1.52
DMX066S	6.6	▲	6.6	32.5	39	70	1.54
DMX067S	6.7	▲	6.7	32.6	39	70	1.56
DMX068S	6.8	▲	6.8	35.6	40	74	1.59
DMX069S	6.9	▲	6.9	35.6	40	74	1.61
DMX070S	7	▲	7	35.6	40	74	1.63
DMX071S	7.1	▲	7.1	35.7	40	74	1.66
DMX072S	7.2	▲	7.2	35.7	40	74	1.68
DMX073S	7.3	▲	7.3	35.7	40	74	1.7
DMX074S	7.4	▲	7.4	35.7	40	74	1.73
DMX075S	7.5	▲	7.5	35.8	40	74	1.75
DMX076S	7.6	▲	7.6	38.8	42	79	1.77
DMX077S	7.7	▲	7.7	38.8	42	79	1.8
DMX078S	7.8	▲	7.8	38.8	42	79	1.82
DMX079S	7.9	▲	7.9	38.8	42	79	1.84
DMX080S	8	▲	8	38.9	42	79	1.87
DMX081S	8.1	▲	8.1	38.9	42	79	1.89

Designation	DC	AH170	DCONMS	LU	LS	LF	PL
DMX082S	8.2	▲	8.2	38.9	42	79	1.91
DMX083S	8.3	▲	8.3	38.9	42	79	1.94
DMX084S	8.4	▲	8.4	39	42	79	1.96
DMX085S	8.5	▲	8.5	39	42	79	1.98
DMX086S	8.6	▲	8.6	42	44	84	2.01
DMX087S	8.7	▲	8.7	42	44	84	2.03
DMX088S	8.8	▲	8.8	42.1	44	84	2.05
DMX089S	8.9	▲	8.9	42.1	44	84	2.08
DMX090S	9	▲	9	42.1	44	84	2.1
DMX091S	9.1	▲	9.1	42.1	44	84	2.12
DMX092S	9.2	▲	9.2	42.2	44	84	2.15
DMX093S	9.3	▲	9.3	42.2	44	84	2.17
DMX094S	9.4	▲	9.4	42.2	44	84	2.19
DMX095S	9.5	▲	9.5	42.2	44	84	2.21
DMX096S	9.6	▲	9.6	45.2	46	89	2.24
DMX097S	9.7	▲	9.7	45.3	46	89	2.26
DMX098S	9.8	▲	9.8	45.3	46	89	2.28
DMX099S	9.9	▲	9.9	45.3	46	89	2.31
DMX100S	10	▲	10	45.3	46	89	2.33
DMX101S	10.1	▲	10.1	45.4	46	89	2.35
DMX102S	10.2	▲	10.2	45.4	46	89	2.38
DMX103S	10.3	▲	10.3	45.4	46	89	2.4
DMX104S	10.4	▲	10.4	45.4	46	89	2.42
DMX105S	10.5	▲	10.5	45.5	46	89	2.45
DMX106S	10.6	▲	10.6	45.5	46	89	2.47
DMX107S	10.7	▲	10.7	49.5	48	95	2.49
DMX108S	10.8	▲	10.8	49.5	48	95	2.52
DMX109S	10.9	▲	10.9	49.5	48	95	2.54
DMX110S	11	▲	11	49.6	48	95	2.56
DMX111S	11.1	▲	11.1	49.6	48	95	2.59
DMX112S	11.2	▲	11.2	49.6	48	95	2.61
DMX113S	11.3	▲	11.3	49.6	48	95	2.63
DMX114S	11.4	▲	11.4	49.7	48	95	2.66
DMX115S	11.5	▲	11.5	49.7	48	95	2.68
DMX116S	11.6	▲	11.6	49.7	48	95	2.7
DMX117S	11.7	▲	11.7	49.7	48	95	2.73
DMX118S	11.8	▲	11.8	49.8	48	95	2.75
DMX119S	11.9	▲	11.9	53.8	51	102	2.77
DMX120S	12	▲	12	53.8	51	102	2.8
DMX121S	12.1	▲	12.1	53.8	51	102	2.82
DMX122S	12.2	▲	12.2	53.8	51	102	2.84
DMX123S	12.3	▲	12.3	53.9	51	102	2.87
DMX124S	12.4	▲	12.4	53.9	51	102	2.89
DMX125S	12.5	▲	12.5	53.9	51	102	2.91
DMX126S	12.6	▲	12.6	53.9	51	102	2.94
DMX127S	12.7	▲	12.7	54	51	102	2.96
DMX128S	12.8	▲	12.8	54	51	102	2.98
DMX129S	12.9	▲	12.9	54	51	102	3.01
DMX130S	13	▲	13	54	51	102	3.03
DMX131S	13.1	▲	13.1	54.1	51	102	3.05
DMX132S	13.2	▲	13.2	54.1	51	102	3.08
DMX133S	13.3	▲	13.3	57.1	53	107	3.1

▲ : To be discontinued

Designation	DC	AH170	DCONMS	LU	LS	LF	PL
DMX134S	13.4	▲	13.4	57.1	53	107	3.12
DMX135S	13.5	▲	13.5	57.2	53	107	3.15
DMX136S	13.6	▲	13.6	57.2	53	107	3.17
DMX137S	13.7	▲	13.7	57.2	53	107	3.19
DMX138S	13.8	▲	13.8	57.2	53	107	3.22
DMX139S	13.9	▲	13.9	57.2	53	107	3.24
DMX140S	14	▲	14	57.3	53	107	3.26
DMX141S	14.1	▲	14.1	59.3	55	111	3.29
DMX142S	14.2	▲	14.2	59.3	55	111	3.31
DMX143S	14.3	▲	14.3	59.3	55	111	3.33
DMX144S	14.4	▲	14.4	59.4	55	111	3.36
DMX145S	14.5	▲	14.5	59.4	55	111	3.38
DMX146S	14.6	▲	14.6	59.4	55	111	3.4
DMX147S	14.7	▲	14.7	59.4	55	111	3.43
DMX148S	14.8	▲	14.8	59.5	55	111	3.45
DMX149S	14.9	▲	14.9	59.5	55	111	3.47
DMX150S	15	▲	15	59.5	55	111	3.5
DMX151S	15.1	▲	15.1	61.5	57	115	3.52
DMX152S	15.2	▲	15.2	61.5	57	115	3.54
DMX153S	15.3	▲	15.3	61.6	57	115	3.57
DMX154S	15.4	▲	15.4	61.6	57	115	3.59
DMX155S	15.5	▲	15.5	61.6	57	115	3.61
DMX156S	15.6	▲	15.6	61.6	57	115	3.64
DMX157S	15.7	▲	15.7	61.7	57	115	3.66
DMX158S	15.8	▲	15.8	61.7	57	115	3.68
DMX159S	15.9	▲	15.9	61.7	57	115	3.71
DMX160S	16	▲	16	61.7	57	115	3.73
DMX165S	16.5	▲	16.5	63.9	59	119	3.85
DMX170S	17	▲	17	64	59	119	3.96
DMX175S	17.5	▲	17.5	66.1	61	123	4.08
DMX180S	18	▲	18	66.2	61	123	4.2
DMX185S	18.5	▲	18.5	68.3	63	127	4.31
DMX190S	19	▲	19	68.4	63	127	4.43
DMX195S	19.5	▲	19.5	70.6	65	131	4.55
DMX200S	20	▲	20	70.7	65	131	4.66

- Coolant should be sufficiently supplied to the drill tip and the entrance of the hole.
- Use a water-soluble coolant.

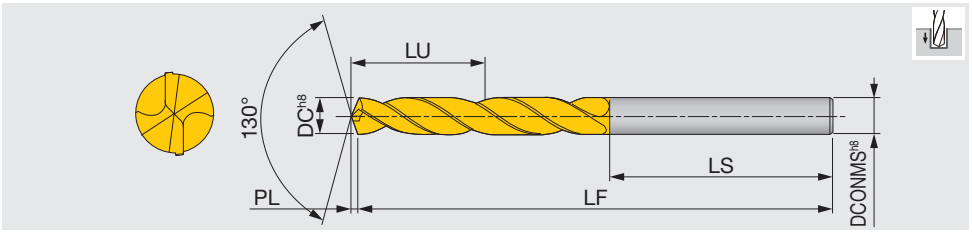
▲ : To be discontinued

Reference pages: Standard cutting conditions → J061

DMX L/D=3 (M type)

Solid drill, 130° point angle, without coolant hole, shank diameter = tool diameter, L/D = 3, ø3 - ø20 mm





Designation	DC	AH170	DCONMS	LU	LS	LF	PL
DMX030M	3	▲	3	21.7	39	60	0.7
DMX031M	3.1	▲	3.1	24.7	36	60	0.72
DMX032M	3.2	▲	3.2	24.8	36	60	0.75
DMX033M	3.3	▲	3.3	24.8	36	60	0.77
DMX034M	3.4	▲	3.4	24.8	36	60	0.79
DMX035M	3.5	▲	3.5	24.8	36	60	0.82
DMX036M	3.6	▲	3.6	27.8	33	60	0.84
DMX037M	3.7	▲	3.7	27.9	33	60	0.86
DMX038M	3.8	▲	3.8	27.9	33	60	0.89
DMX039M	3.9	▲	3.9	27.9	33	60	0.91
DMX040M	4	▲	4	27.9	33	60	0.93
DMX041M	4.1	▲	4.1	30	34	63	0.96
DMX042M	4.2	▲	4.2	30	34	63	0.98
DMX043M	4.3	▲	4.3	30	34	63	1
DMX044M	4.4	▲	4.4	30	34	63	1.03
DMX045M	4.5	▲	4.5	30.1	34	63	1.05
DMX046M	4.6	▲	4.6	33.1	36	68	1.07
DMX047M	4.7	▲	4.7	33.1	36	68	1.1
DMX048M	4.8	▲	4.8	33.1	36	68	1.12
DMX049M	4.9	▲	4.9	33.1	36	68	1.14
DMX050M	5	▲	5	33.2	36	68	1.17
DMX051M	5.1	▲	5.1	35.2	38	72	1.19
DMX052M	5.2	▲	5.2	35.2	38	72	1.21
DMX053M	5.3	▲	5.3	35.2	38	72	1.24
DMX054M	5.4	▲	5.4	35.3	38	72	1.26
DMX055M	5.5	▲	5.5	35.3	38	72	1.28
DMX056M	5.6	▲	5.6	37.3	38	74	1.31
DMX057M	5.7	▲	5.7	37.3	38	74	1.33
DMX058M	5.8	▲	5.8	37.4	38	74	1.35
DMX059M	5.9	▲	5.9	37.4	38	74	1.38
DMX060M	6	▲	6	42.4	40	81	1.4
DMX061M	6.1	▲	6.1	42.4	40	81	1.42
DMX062M	6.2	▲	6.2	42.5	40	81	1.45
DMX063M	6.3	▲	6.3	42.5	40	81	1.47
DMX064M	6.4	▲	6.4	42.5	40	81	1.49
DMX065M	6.5	▲	6.5	42.5	40	81	1.52
DMX066M	6.6	▲	6.6	44.5	40	83	1.54
DMX067M	6.7	▲	6.7	44.6	40	83	1.56
DMX068M	6.8	▲	6.8	44.6	40	83	1.59
DMX069M	6.9	▲	6.9	44.6	40	83	1.61
DMX070M	7	▲	7	44.6	40	83	1.63
DMX071M	7.1	▲	7.1	46.7	42	87	1.66
DMX072M	7.2	▲	7.2	46.7	42	87	1.68
DMX073M	7.3	▲	7.3	46.7	42	87	1.7
DMX074M	7.4	▲	7.4	46.7	42	87	1.73
DMX075M	7.5	▲	7.5	46.8	42	87	1.75
DMX076M	7.6	▲	7.6	49.8	42	90	1.77
DMX077M	7.7	▲	7.7	49.8	42	90	1.8
DMX078M	7.8	▲	7.8	49.8	42	90	1.82
DMX079M	7.9	▲	7.9	49.8	42	90	1.84
DMX080M	8	▲	8	49.9	42	90	1.87
DMX081M	8.1	▲	8.1	54.9	43	96	1.89

Designation	DC	AH170	DCONMS	LU	LS	LF	PL
DMX082M	8.2	▲	8.2	54.9	43	96	1.91
DMX083M	8.3	▲	8.3	54.9	43	96	1.94
DMX084M	8.4	▲	8.4	55	43	96	1.96
DMX085M	8.5	▲	8.5	55	43	96	1.98
DMX086M	8.6	▲	8.6	57	43	98	2.01
DMX087M	8.7	▲	8.7	57	43	98	2.03
DMX088M	8.8	▲	8.8	57.1	43	98	2.05
DMX089M	8.9	▲	8.9	57.1	43	98	2.08
DMX090M	9	▲	9	57.1	43	98	2.1
DMX091M	9.1	▲	9.1	60.1	44	102	2.12
DMX092M	9.2	▲	9.2	60.2	44	102	2.15
DMX093M	9.3	▲	9.3	60.2	44	102	2.17
DMX094M	9.4	▲	9.4	60.2	44	102	2.19
DMX095M	9.5	▲	9.5	60.2	44	102	2.21
DMX096M	9.6	▲	9.6	62.2	45	105	2.24
DMX097M	9.7	▲	9.7	62.3	45	105	2.26
DMX098M	9.8	▲	9.8	62.3	45	105	2.28
DMX099M	9.9	▲	9.9	62.3	45	105	2.31
DMX100M	10	▲	10	62.3	45	105	2.33
DMX101M	10.1	▲	10.1	68.4	46	112	2.35
DMX102M	10.2	▲	10.2	68.4	46	112	2.38
DMX103M	10.3	▲	10.3	68.4	46	112	2.4
DMX104M	10.4	▲	10.4	68.4	46	112	2.42
DMX105M	10.5	▲	10.5	68.5	46	112	2.45
DMX106M	10.6	▲	10.6	70.5	46	114	2.47
DMX107M	10.7	▲	10.7	70.5	46	114	2.49
DMX108M	10.8	▲	10.8	70.5	46	114	2.52
DMX109M	10.9	▲	10.9	70.5	46	114	2.54
DMX110M	11	▲	11	70.6	46	114	2.56
DMX111M	11.1	▲	11.1	73.6	47	118	2.59
DMX112M	11.2	▲	11.2	73.6	47	118	2.61
DMX113M	11.3	▲	11.3	73.6	47	118	2.63
DMX114M	11.4	▲	11.4	73.7	47	118	2.66
DMX115M	11.5	▲	11.5	73.7	47	118	2.68
DMX116M	11.6	▲	11.6	75.7	48	121	2.7
DMX117M	11.7	▲	11.7	75.7	48	121	2.73
DMX118M	11.8	▲	11.8	75.8	48	121	2.75
DMX119M	11.9	▲	11.9	75.8	48	121	2.77
DMX120M	12	▲	12	75.8	48	121	2.8
DMX121M	12.1	▲	12.1	78.8	59	135	2.82
DMX122M	12.2	▲	12.2	78.8	59	135	2.84
DMX123M	12.3	▲	12.3	78.9	59	135	2.87
DMX124M	12.4	▲	12.4	78.9	59	135	2.89
DMX125M	12.5	▲	12.5	78.9	59	135	2.91
DMX126M	12.6	▲	12.6	80.9	59	137	2.94
DMX127M	12.7	▲	12.7	81	59	137	2.96
DMX128M	12.8	▲	12.8	81	59	137	2.98
DMX129M	12.9	▲	12.9	81	59	137	3.01
DMX130M	13	▲	13	81	59	137	3.03
DMX131M	13.1	▲	13.1	87.1	60	144	3.05
DMX132M	13.2	▲	13.2	87.1	60	144	3.08
DMX133M	13.3	▲	13.3	87.1	60	144	3.1

▲ : To be discontinued

Designation	DC	AH170	DCONMS	LU	LS	LF	PL
DMX134M	13.4	▲	13.4	87.1	60	144	3.12
DMX135M	13.5	▲	13.5	87.2	60	144	3.15
DMX136M	13.6	▲	13.6	89.2	61	147	3.17
DMX137M	13.7	▲	13.7	89.2	61	147	3.19
DMX138M	13.8	▲	13.8	89.2	61	147	3.22
DMX139M	13.9	▲	13.9	89.2	61	147	3.24
DMX140M	14	▲	14	89.3	61	147	3.26
DMX141M	14.1	▲	14.1	92.3	62	151	3.29
DMX142M	14.2	▲	14.2	92.3	62	151	3.31
DMX143M	14.3	▲	14.3	92.3	62	151	3.33
DMX144M	14.4	▲	14.4	92.4	62	151	3.36
DMX145M	14.5	▲	14.5	92.4	62	151	3.38
DMX146M	14.6	▲	14.6	94.4	62	153	3.4
DMX147M	14.7	▲	14.7	94.4	62	153	3.43
DMX148M	14.8	▲	14.8	94.5	62	153	3.45
DMX149M	14.9	▲	14.9	94.5	62	153	3.47
DMX150M	15	▲	15	94.5	62	153	3.5
DMX151M	15.1	▲	15.1	97.5	63	157	3.52
DMX152M	15.2	▲	15.2	97.5	63	157	3.54
DMX153M	15.3	▲	15.3	97.6	63	157	3.57
DMX154M	15.4	▲	15.4	97.6	63	157	3.59
DMX155M	15.5	▲	15.5	97.6	63	157	3.61

Designation	DC	AH170	DCONMS	LU	LS	LF	PL
DMX156M	15.6	▲	15.6	99.6	64	160	3.64
DMX157M	15.7	▲	15.7	99.7	64	160	3.66
DMX158M	15.8	▲	15.8	99.7	64	160	3.68
DMX159M	15.9	▲	15.9	99.7	64	160	3.71
DMX160M	16	▲	16	99.7	64	160	3.73
DMX165M	16.5	▲	16.5	105.9	65	167	3.85
DMX170M	17	▲	17	106	65	167	3.96
DMX175M	17.5	▲	17.5	106.1	65	167	4.08
DMX180M	18	▲	18	106.2	65	167	4.2
DMX185M	18.5	▲	18.5	118.3	65	179	4.31
DMX190M	19	▲	19	118.4	65	179	4.43
DMX195M	19.5	▲	19.5	118.6	65	179	4.55
DMX200M	20	▲	20	118.7	65	179	4.66

- Coolant should be sufficiently supplied to the drill tip and the entrance of the hole.
- Use a water-soluble coolant.

▲ : To be discontinued

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Cutting speed: *Vc* (m/min)	Feed: *f* (mm/rev) ø3 ~ ø5	ø5 ~ ø10	ø10 ~ ø16	ø16 ~ ø20
P	Mild steels, Low carbon steels SS400, etc. E275A, etc.	< 180HB	40 - 80	0.15 - 0.25	0.15 - 0.3	0.2 - 0.4	0.25 - 0.5
	Carbon steels, Alloy steels S45C, etc. C55, etc.	180 ~ 300HB	40 - 80	0.15 - 0.25	0.15 - 0.3	0.2 - 0.4	0.25 - 0.5
	High alloy steels etc. SCM440, etc. 42CrMo4, etc.	250 ~ 350HB	40 - 70	0.1 - 0.2	0.15 - 0.25	0.15 - 0.3	0.2 - 0.4
M	Stainless steels SUS304, etc. X5CrNi18-9, etc.	< 200HB	20 - 40	0.05 - 0.2	0.1 - 0.25	0.1 - 0.3	0.15 - 0.3
K	Grey cast irons FC300, etc. 300, etc.	< 300HB	40 - 80	0.15 - 0.35	0.25 - 0.45	0.3 - 0.6	0.35 - 0.65
	Ductile cast irons FCD700, etc. 600-3, etc.	< 300HB	40 - 80	0.15 - 0.3	0.2 - 0.4	0.25 - 0.5	0.3 - 0.6
S	Titanium alloys Ti-6Al-4V, etc.		20 - 40	0.1- 0.2	0.15 - 0.25	0.15 - 0.3	0.2 - 0.4
	Heat-resistant alloys Inconel718, etc	250HB <	10 - 30	0.03 - 0.07	0.05 - 0.1	0.07 - 0.12	0.07 - 0.12
H	High hardened steels SKD11, etc. X153CrMoV12, etc.	< 45HRC	10 - 30	0.03 - 0.07	0.05 - 0.1	0.07 - 0.12	0.07 - 0.12

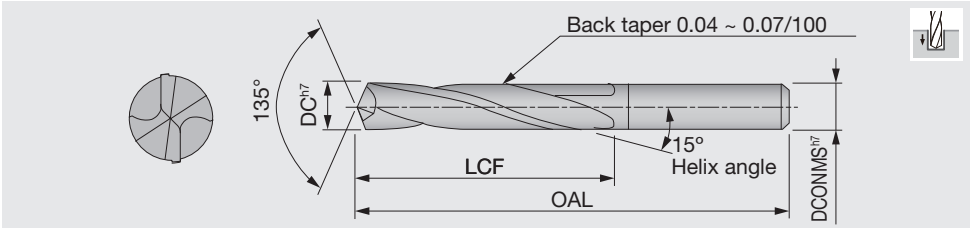
- Because the cutting conditions may be changed depending on the material type, hardness, machinability, machine tool, and coolant, the most appropriate conditions must be decided whilst referring the chip control condition and tool failure mode.
- When using the smaller side of the diameter range, the feed rate should be set lower.
- When drilling difficult-to-cut materials, coolant supplying conditions are critical for successful drilling. So, the use of constant and flood coolant is highly recommended.
- For the standard DMX-type drills, somewhat large honing width intended for drilling of general steels is applied. But, when drilling difficult-to-cut materials having high hardness, requiring lowering the feed rate, the honing width should be modified.
- The drills with special honing specification are made to order on request.
- Inconel is trademark of Huntington Alloys, Inc.

DMD-S

Solid drill for hardened material, 135° point angle, 15° helix angle, without coolant hole

L/D = 3





Designation	DC	EM10	LCF	OAL	Designation	DC	EM10	LCF	OAL
DMD-006S	0.6	▲	5	40	DMD-058S	5.8	▲	35	65
DMD-007S	0.7	▲	6	40	DMD-059S	5.9	▲	35	65
DMD-008S	0.8	▲	6	40	DMD-060S	6	▲	35	65
DMD-009S	0.9	▲	6	40	DMD-061S	6.1	▲	38	70
DMD-010S	1	▲	6	40	DMD-062S	6.2	▲	38	70
DMD-011S	1.1	▲	6	40	DMD-063S	6.3	▲	38	70
DMD-012S	1.2	▲	8	40	DMD-064S	6.4	▲	38	70
DMD-013S	1.3	▲	8	40	DMD-065S	6.5	▲	38	70
DMD-014S	1.4	▲	9	40	DMD-066S	6.6	▲	38	70
DMD-015S	1.5	▲	9	40	DMD-067S	6.7	▲	38	70
DMD-016S	1.6	▲	10	50	DMD-068S	6.8	▲	38	70
DMD-017S	1.7	▲	10	50	DMD-069S	6.9	▲	38	70
DMD-018S	1.8	▲	11	50	DMD-070S	7	▲	38	70
DMD-019S	1.9	▲	11	50	DMD-071S	7.1	▲	40	75
DMD-020S	2	▲	12	50	DMD-072S	7.2	▲	40	75
DMD-021S	2.1	▲	12	50	DMD-073S	7.3	▲	40	75
DMD-022S	2.2	▲	13	50	DMD-074S	7.4	▲	40	75
DMD-023S	2.3	▲	13	50	DMD-075S	7.5	▲	40	75
DMD-024S	2.4	▲	14	50	DMD-076S	7.6	▲	45	80
DMD-025S	2.5	▲	14	50	DMD-077S	7.7	▲	45	80
DMD-026S	2.6	▲	14	50	DMD-078S	7.8	▲	45	80
DMD-027S	2.7	▲	16	50	DMD-079S	7.9	▲	45	80
DMD-028S	2.8	▲	16	50	DMD-080S	8	▲	45	80
DMD-029S	2.9	▲	16	50	DMD-081S	8.1	▲	50	85
DMD-030S	3	▲	16	50	DMD-082S	8.2	▲	50	85
DMD-031S	3.1	▲	18	55	DMD-083S	8.3	▲	50	85
DMD-032S	3.2	▲	18	55	DMD-084S	8.4	▲	50	85
DMD-033S	3.3	▲	18	55	DMD-085S	8.5	▲	50	85
DMD-034S	3.4	▲	20	55	DMD-086S	8.6	▲	50	85
DMD-035S	3.5	▲	20	55	DMD-087S	8.7	▲	50	85
DMD-036S	3.6	▲	20	55	DMD-088S	8.8	▲	50	85
DMD-037S	3.7	▲	22	55	DMD-089S	8.9	▲	50	85
DMD-038S	3.8	▲	22	55	DMD-090S	9	▲	55	90
DMD-039S	3.9	▲	22	55	DMD-091S	9.1	▲	55	90
DMD-040S	4	▲	22	55	DMD-092S	9.2	▲	55	90
DMD-041S	4.1	▲	23	60	DMD-093S	9.3	▲	55	90
DMD-042S	4.2	▲	23	60	DMD-094S	9.4	▲	55	90
DMD-043S	4.3	▲	23	60	DMD-095S	9.5	▲	55	90
DMD-044S	4.4	▲	23	60	DMD-096S	9.6	▲	55	90
DMD-045S	4.5	▲	25	60	DMD-097S	9.7	▲	55	90
DMD-046S	4.6	▲	25	60	DMD-098S	9.8	▲	55	90
DMD-047S	4.7	▲	25	60	DMD-099S	9.9	▲	55	90
DMD-048S	4.8	▲	27	60	DMD-100S	10	▲	60	100
DMD-049S	4.9	▲	27	60	DMD-101S	10.1	▲	60	100
DMD-050S	5	▲	27	60	DMD-102S	10.2	▲	60	100
DMD-051S	5.1	▲	28	65	DMD-103S	10.3	▲	60	100
DMD-052S	5.2	▲	28	65	DMD-104S	10.4	▲	60	100
DMD-053S	5.3	▲	28	65	DMD-105S	10.5	▲	60	100
DMD-054S	5.4	▲	30	65	DMD-106S	10.6	▲	60	100
DMD-055S	5.5	▲	30	65	DMD-107S	10.7	▲	60	100
DMD-056S	5.6	▲	32	65	DMD-108S	10.8	▲	60	100
DMD-057S	5.7	▲	32	65	DMD-109S	10.9	▲	60	100

● : Line up
▲ : To be discontinued

Designation	DC	EM10	LCF	OAL
DMD-110S	11	▲	70	110
DMD-111S	11.1	▲	70	110
DMD-112S	11.2	▲	70	110
DMD-113S	11.3	▲	70	110
DMD-114S	11.4	▲	70	110
DMD-115S	11.5	▲	70	110
DMD-116S	11.6	▲	70	110
DMD-117S	11.7	▲	70	110
DMD-118S	11.8	▲	70	110
DMD-119S	11.9	▲	70	110
DMD-120S	12	▲	80	120

Designation	DC	EM10	LCF	OAL
DMD-121S	12.1	▲	80	120
DMD-122S	12.2	▲	80	120
DMD-123S	12.3	▲	80	120
DMD-124S	12.4	▲	80	120
DMD-125S	12.5	▲	80	120
DMD-126S	12.6	▲	80	120
DMD-127S	12.7	▲	80	120
DMD-128S	12.8	▲	80	120
DMD-129S	12.9	▲	80	120
DMD-130S	13	▲	90	130

● : Line up
▲ : To be discontinued

DC	Tolerance h7(mm)
DC ≦ 3	0 ~ -0.01
3 < DC ≦ 6	0 ~ -0.012
6 < DC ≦ 10	0 ~ -0.015
10 < DC ≦ 13	0 ~ -0.018

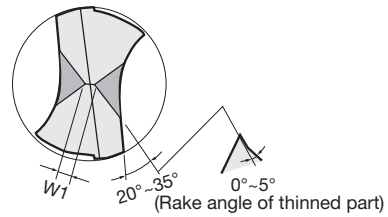
CAUTIONARY POINTS IN USE

- The standard cutting conditions are only the general guidelines. When using on a low rigidity drilling machine, using a small diameter drill, or drilling a hard material, the cutting speed and feed rate should be set lower.
- Cutting edges should be honed as follows:
  Honing width: 0.02 to 0.05 mm
  Honing angle: - 20° to - 30°
  Chipping is likely to occur on edges whilst drilling hard materials, a larger honing width is recommended. When drilling into an inclined surface, special care should be taken to prevent drill breakage. Use of drill bushing or pilot hole is recommended for such case.

CAUTIONARY POINTS IN REGRINDING

- Regrinding must be carried out before the corner wear reaches the same as the margin width.
- Use of a diamond wheel (#200 to #400) is recommended. Avoid use of a silicon carbide wheel and hand grinding.
- Thin the drill point. Cross thinning shown in the figure below is recommended. The recommended thinning width (W1) is 1/3 to 1/4 times the web thickness. In this case, too sharp thinned edge may cause drill breakage.

Thinning for DMD-S drills



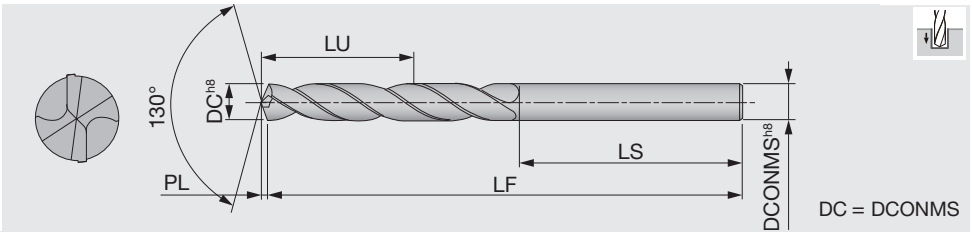
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed: *Vc* (m/min)	Feed: *f* (mm/rev)
H	Hardened steels (< 50HRC)	8 - 18	0.02 - 0.1
H	Hardened steels (> 50HRC)	3 - 9	0.01 - 0.06
P	High-manganese steels	8 - 12	0.03 - 0.1
S	Inconel	10 - 20	0.02 - 0.08
K	Chilled cast irons	8 - 12	0.02 - 0.08

DMX-FS L/D=2

Solid drill for cast iron and Aluminium alloy, without coolant hole, shank diameter = tool diameter, ø3 - ø14 mm





Designation	DC	MD20	LU	LS	LF	PL
DMX0300FS	3	▲	16.7	30	46	0.7
DMX0310FS	3.1	▲	18.7	31	49	0.72
DMX0320FS	3.2	▲	18.8	31	49	0.75
DMX0330FS	3.3	▲	18.8	31	49	0.77
DMX0340FS	3.4	▲	20.8	32	52	0.79
DMX0350FS	3.5	▲	20.8	32	52	0.82
DMX0360FS	3.6	▲	20.8	32	52	0.84
DMX0370FS	3.7	▲	20.9	32	52	0.86
DMX0380FS	3.8	▲	22.9	33	55	0.89
DMX0390FS	3.9	▲	22.9	33	55	0.91
DMX0400FS	4	▲	22.9	33	55	0.93
DMX0410FS	4.1	▲	23	33	55	0.96
DMX0420FS	4.2	▲	23	33	55	0.98
DMX0430FS	4.3	▲	25	34	58	1
DMX0440FS	4.4	▲	25	34	58	1.03
DMX0450FS	4.5	▲	25.1	34	58	1.05
DMX0460FS	4.6	▲	25.1	34	58	1.07
DMX0470FS	4.7	▲	25.1	34	58	1.1
DMX0480FS	4.8	▲	27.1	34	62	1.12
DMX0490FS	4.9	▲	27.1	34	62	1.14
DMX0500FS	5	▲	27.2	34	62	1.17
DMX0510FS	5.1	▲	27.2	34	62	1.19
DMX0520FS	5.2	▲	27.2	34	62	1.21
DMX0530FS	5.3	▲	27.2	34	62	1.24
DMX0540FS	5.4	▲	29.3	38	66	1.26
DMX0550FS	5.5	▲	29.3	38	66	1.28
DMX0560FS	5.6	▲	29.3	38	66	1.31
DMX0570FS	5.7	▲	29.3	38	66	1.33
DMX0580FS	5.8	▲	29.4	38	66	1.35
DMX0590FS	5.9	▲	29.4	38	66	1.38
DMX0600FS	6	▲	29.4	38	66	1.4
DMX0610FS	6.1	▲	32.4	39	70	1.42
DMX0620FS	6.2	▲	32.5	39	70	1.45
DMX0630FS	6.3	▲	32.5	39	70	1.47
DMX0640FS	6.4	▲	32.5	39	70	1.49
DMX0650FS	6.5	▲	32.5	39	70	1.52
DMX0660FS	6.6	▲	32.5	39	70	1.54
DMX0670FS	6.7	▲	32.6	39	70	1.56
DMX0680FS	6.8	▲	35.6	40	74	1.59
DMX0690FS	6.9	▲	35.6	40	74	1.61
DMX0700FS	7	▲	35.6	40	74	1.63
DMX0710FS	7.1	▲	35.7	40	74	1.66
DMX0720FS	7.2	▲	35.7	40	74	1.68
DMX0730FS	7.3	▲	35.7	40	74	1.7
DMX0740FS	7.4	▲	35.7	40	74	1.73
DMX0750FS	7.5	▲	35.8	40	74	1.75
DMX0760FS	7.6	▲	38.8	42	79	1.77
DMX0770FS	7.7	▲	38.8	42	79	1.8
DMX0780FS	7.8	▲	38.8	42	79	1.82
DMX0790FS	7.9	▲	38.8	42	79	1.84
DMX0800FS	8	▲	38.9	42	79	1.87
DMX0810FS	8.1	▲	38.9	42	79	1.89
DMX0820FS	8.2	▲	38.9	42	79	1.91
DMX0830FS	8.3	▲	38.9	42	79	1.94
DMX0840FS	8.4	▲	39	42	79	1.96
DMX0850FS	8.5	▲	39	42	79	1.98
DMX0860FS	8.6	▲	42	44	84	2.01
DMX0870FS	8.7	▲	42	44	84	2.03
DMX0880FS	8.8	▲	42.1	44	84	2.05
DMX0890FS	8.9	▲	42.1	44	84	2.08
DMX0900FS	9	▲	42.1	44	84	2.1
DMX0910FS	9.1	▲	42.1	44	84	2.12
DMX0920FS	9.2	▲	42.2	44	84	2.15
DMX0930FS	9.3	▲	42.2	44	84	2.17
DMX0940FS	9.4	▲	42.2	44	84	2.19
DMX0950FS	9.5	▲	42.2	44	84	2.21
DMX0960FS	9.6	▲	45.2	46	89	2.24
DMX0970FS	9.7	▲	45.3	46	89	2.26
DMX0980FS	9.8	▲	45.3	46	89	2.28
DMX0990FS	9.9	▲	45.3	46	89	2.31
DMX1000FS	10	▲	45.3	46	89	2.33
DMX1010FS	10.1	▲	45.4	46	89	2.35
DMX1020FS	10.2	▲	45.4	46	89	2.38
DMX1030FS	10.3	▲	45.4	46	89	2.4
DMX1040FS	10.4	▲	45.4	46	89	2.42
DMX1050FS	10.5	▲	45.5	46	89	2.45
DMX1060FS	10.6	▲	45.5	46	89	2.47
DMX1070FS	10.7	▲	49.5	48	95	2.49
DMX1080FS	10.8	▲	49.5	48	95	2.52
DMX1090FS	10.9	▲	49.5	48	95	2.54
DMX1100FS	11	▲	49.6	48	95	2.56
DMX1110FS	11.1	▲	49.6	48	95	2.59
DMX1120FS	11.2	▲	49.6	48	95	2.61
DMX1130FS	11.3	▲	49.6	48	95	2.63
DMX1140FS	11.4	▲	49.7	48	95	2.66
DMX1150FS	11.5	▲	49.7	48	95	2.68
DMX1160FS	11.6	▲	49.7	48	95	2.7
DMX1170FS	11.7	▲	49.7	48	95	2.73
DMX1180FS	11.8	▲	49.8	48	95	2.75
DMX1190FS	11.9	▲	53.8	51	102	2.77
DMX1200FS	12	▲	53.8	51	102	2.8
DMX1210FS	12.1	▲	53.8	51	102	2.82
DMX1220FS	12.2	▲	53.8	51	102	2.84
DMX1230FS	12.3	▲	53.9	51	102	2.87
DMX1240FS	12.4	▲	53.9	51	102	2.89
DMX1250FS	12.5	▲	53.9	51	102	2.91
DMX1260FS	12.6	▲	53.9	51	102	2.94
DMX1270FS	12.7	▲	54	51	102	2.96
DMX1280FS	12.8	▲	54	51	102	2.98
DMX1290FS	12.9	▲	54	51	102	3.01
DMX1300FS	13	▲	54	51	102	3.03
DMX1310FS	13.1	▲	54.1	51	102	3.05
DMX1320FS	13.2	▲	54.1	51	102	3.08
DMX1330FS	13.3	▲	57.1	53	107	3.1
DMX1340FS	13.4	▲	57.1	53	107	3.12
DMX1350FS	13.5	▲	57.2	53	107	3.15
DMX1360FS	13.6	▲	57.2	53	107	3.17
DMX1370FS	13.7	▲	57.2	53	107	3.19
DMX1380FS	13.8	▲	57.2	53	107	3.22
DMX1390FS	13.9	▲	57.2	53	107	3.24
DMX1400FS	14	▲	57.3	53	107	3.26

DC	Tolerance h8 (mm)
DC ≦ 3	0 ~ -0.014
3 < DC ≦ 6	0 ~ -0.018
6 < DC ≦ 10	0 ~ -0.022
10 < DC ≦ 18	0 ~ -0.027
18 < DC ≦ 20	0 ~ -0.033

▲ : To be discontinued

Reference pages: Standard cutting conditions → J067

DMX-FM L/D=3

Solid drill for cast iron and Aluminium alloy, without coolant hole, shank diameter = tool diameter, ø3 - ø14 mm

Designation	DC	MD20	LU	LS	LF	PL
DMX0300FM	3	▲	21.7	39	60	0.7
DMX0310FM	3.1	▲	24.7	36	60	0.72
DMX0320FM	3.2	▲	24.8	36	60	0.75
DMX0330FM	3.3	▲	24.8	36	60	0.77
DMX0340FM	3.4	▲	24.8	36	60	0.79
DMX0350FM	3.5	▲	24.8	36	60	0.82
DMX0360FM	3.6	▲	27.8	33	60	0.84
DMX0370FM	3.7	▲	27.9	33	60	0.86
DMX0380FM	3.8	▲	27.9	33	60	0.89
DMX0390FM	3.9	▲	27.9	33	60	0.91
DMX0400FM	4	▲	27.9	33	60	0.93
DMX0410FM	4.1	▲	30	34	63	0.96
DMX0420FM	4.2	▲	30	34	63	0.98
DMX0430FM	4.3	▲	30	34	63	1
DMX0440FM	4.4	▲	30	34	63	1.03
DMX0450FM	4.5	▲	30.1	34	63	1.05
DMX0460FM	4.6	▲	33.1	36	68	1.07
DMX0470FM	4.7	▲	33.1	36	68	1.1
DMX0480FM	4.8	▲	33.1	36	68	1.12
DMX0490FM	4.9	▲	33.1	36	68	1.14
DMX0500FM	5	▲	33.2	36	68	1.17
DMX0510FM	5.1	▲	35.2	38	72	1.19
DMX0520FM	5.2	▲	35.2	38	72	1.21
DMX0530FM	5.3	▲	35.2	38	72	1.24
DMX0540FM	5.4	▲	35.3	38	72	1.26
DMX0550FM	5.5	▲	35.3	38	72	1.28
DMX0560FM	5.6	▲	37.3	38	74	1.31
DMX0570FM	5.7	▲	37.3	38	74	1.33
DMX0580FM	5.8	▲	37.4	38	74	1.35
DMX0590FM	5.9	▲	37.4	38	74	1.38
DMX0600FM	6	▲	42.4	40	81	1.4
DMX0610FM	6.1	▲	42.4	40	81	1.42
DMX0620FM	6.2	▲	42.5	40	81	1.45
DMX0630FM	6.3	▲	42.5	40	81	1.47
DMX0640FM	6.4	▲	42.5	40	81	1.49
DMX0650FM	6.5	▲	42.5	40	81	1.52
DMX0660FM	6.6	▲	44.5	40	83	1.54
DMX0670FM	6.7	▲	44.6	40	83	1.56
DMX0680FM	6.8	▲	44.6	40	83	1.59
DMX0690FM	6.9	▲	44.6	40	83	1.61
DMX0700FM	7	▲	44.6	40	83	1.63
DMX0710FM	7.1	▲	46.7	42	87	1.66
DMX0720FM	7.2	▲	46.7	42	87	1.68
DMX0730FM	7.3	▲	46.7	42	87	1.7
DMX0740FM	7.4	▲	46.7	42	87	1.73
DMX0750FM	7.5	▲	46.8	42	87	1.75
DMX0760FM	7.6	▲	49.8	42	90	1.77
DMX0770FM	7.7	▲	49.8	42	90	1.8
DMX0780FM	7.8	▲	49.8	42	90	1.82
DMX0790FM	7.9	▲	49.8	42	90	1.84
DMX0800FM	8	▲	49.9	42	90	1.87
DMX0810FM	8.1	▲	54.9	43	96	1.89
DMX0820FM	8.2	▲	54.9	43	96	1.91
DMX0830FM	8.3	▲	54.9	43	96	1.94
DMX0840FM	8.4	▲	55	43	96	1.96
DMX0850FM	8.5	▲	55	43	96	1.98
DMX0860FM	8.6	▲	57	43	98	2.01
DMX0870FM	8.7	▲	57	43	98	2.03
DMX0880FM	8.8	▲	57.1	43	98	2.05
DMX0890FM	8.9	▲	57.1	43	98	2.08
DMX0900FM	9	▲	57.1	43	98	2.1

Designation	DC	MD20	LU	LS	LF	PL
DMX0910FM	9.1	▲	60.1	44	102	2.12
DMX0920FM	9.2	▲	60.2	44	102	2.15
DMX0930FM	9.3	▲	60.2	44	102	2.17
DMX0940FM	9.4	▲	60.2	44	102	2.19
DMX0950FM	9.5	▲	60.2	44	102	2.21
DMX0960FM	9.6	▲	62.2	45	105	2.24
DMX0970FM	9.7	▲	62.3	45	105	2.26
DMX0980FM	9.8	▲	62.3	45	105	2.28
DMX0990FM	9.9	▲	62.3	45	105	2.31
DMX1000FM	10	▲	62.3	45	105	2.33
DMX1010FM	10.1	▲	68.4	46	112	2.35
DMX1020FM	10.2	▲	68.4	46	112	2.38
DMX1030FM	10.3	▲	68.4	46	112	2.4
DMX1040FM	10.4	▲	68.4	46	112	2.42
DMX1050FM	10.5	▲	68.5	46	112	2.45
DMX1060FM	10.6	▲	70.5	46	114	2.47
DMX1070FM	10.7	▲	70.5	46	114	2.49
DMX1080FM	10.8	▲	70.5	46	114	2.52
DMX1090FM	10.9	▲	70.5	46	114	2.54
DMX1100FM	11	▲	70.6	46	114	2.56
DMX1110FM	11.1	▲	73.6	47	118	2.59
DMX1120FM	11.2	▲	73.6	47	118	2.61
DMX1130FM	11.3	▲	73.6	47	118	2.63
DMX1140FM	11.4	▲	73.7	47	118	2.66
DMX1150FM	11.5	▲	73.7	47	118	2.68
DMX1160FM	11.6	▲	75.7	48	121	2.7
DMX1170FM	11.7	▲	75.7	48	121	2.73
DMX1180FM	11.8	▲	75.8	48	121	2.75
DMX1190FM	11.9	▲	75.8	48	121	2.77
DMX1200FM	12	▲	75.8	48	121	2.8
DMX1210FM	12.1	▲	78.8	59	135	2.82
DMX1220FM	12.2	▲	78.8	59	135	2.84
DMX1230FM	12.3	▲	78.9	59	135	2.87
DMX1240FM	12.4	▲	78.9	59	135	2.89
DMX1250FM	12.5	▲	78.9	59	135	2.91
DMX1260FM	12.6	▲	80.9	59	137	2.94
DMX1270FM	12.7	▲	81	59	137	2.96
DMX1280FM	12.8	▲	81	59	137	2.98
DMX1290FM	12.9	▲	81	59	137	3.01
DMX1300FM	13	▲	81	59	137	3.03
DMX1310FM	13.1	▲	87.1	60	144	3.05
DMX1320FM	13.2	▲	87.1	60	144	3.08
DMX1330FM	13.3	▲	87.1	60	144	3.1
DMX1340FM	13.4	▲	87.1	60	144	3.12
DMX1350FM	13.5	▲	87.2	60	144	3.15
DMX1360FM	13.6	▲	89.2	61	147	3.17
DMX1370FM	13.7	▲	89.2	61	147	3.19
DMX1380FM	13.8	▲	89.2	61	147	3.22
DMX1390FM	13.9	▲	89.2	61	147	3.24
DMX1400FM	14	▲	89.3	61	147	3.26

DC	Tolerance h8 (mm)
DC ≦ 3	0 ~ -0.014
3 < DC ≦ 6	0 ~ -0.018
6 < DC ≦ 10	0 ~ -0.022
10 < DC ≦ 18	0 ~ -0.027
18 < DC ≦ 20	0 ~ -0.033

▲ : To be discontinued

Reference pages: Standard cutting conditions → J067

DMX-FL L/D=5

Solid drill for cast iron and Aluminium alloy, without coolant hole, shank diameter = tool diameter, ø3 - ø20 mm

Designation	DC	MD20	LU	LS	LF	PL
DMX0300FL	3	▲	27.7	39	66	0.7
DMX0310FL	3.1	▲	31.7	36	67	0.72
DMX0320FL	3.2	▲	31.8	36	67	0.75
DMX0330FL	3.3	▲	31.8	36	67	0.77
DMX0340FL	3.4	▲	31.8	36	67	0.79
DMX0350FL	3.5	▲	31.8	36	67	0.82
DMX0360FL	3.6	▲	35.8	33	68	0.84
DMX0370FL	3.7	▲	35.9	33	68	0.86
DMX0380FL	3.8	▲	35.9	33	68	0.89
DMX0390FL	3.9	▲	35.9	33	68	0.91
DMX0400FL	4	▲	35.9	33	68	0.93
DMX0410FL	4.1	▲	39	34	72	0.96
DMX0420FL	4.2	▲	39	34	72	0.98
DMX0430FL	4.3	▲	39	34	72	1
DMX0440FL	4.4	▲	39	34	72	1.03
DMX0450FL	4.5	▲	39.1	34	72	1.05
DMX0460FL	4.6	▲	43.1	36	78	1.07
DMX0470FL	4.7	▲	43.1	36	78	1.1
DMX0480FL	4.8	▲	43.1	36	78	1.12
DMX0490FL	4.9	▲	43.1	36	78	1.14
DMX0500FL	5	▲	43.2	36	78	1.17
DMX0510FL	5.1	▲	46.2	38	83	1.19
DMX0520FL	5.2	▲	46.2	38	83	1.21
DMX0530FL	5.3	▲	46.2	38	83	1.24
DMX0540FL	5.4	▲	46.3	38	83	1.26
DMX0550FL	5.5	▲	46.3	38	83	1.28
DMX0560FL	5.6	▲	49.3	38	86	1.31
DMX0570FL	5.7	▲	49.3	38	86	1.33
DMX0580FL	5.8	▲	49.4	38	86	1.35
DMX0590FL	5.9	▲	49.4	38	86	1.38
DMX0600FL	6	▲	55.4	40	94	1.4
DMX0610FL	6.1	▲	55.4	40	94	1.42
DMX0620FL	6.2	▲	55.5	40	94	1.45
DMX0630FL	6.3	▲	55.5	40	94	1.47
DMX0640FL	6.4	▲	55.5	40	94	1.49
DMX0650FL	6.5	▲	55.5	40	94	1.52
DMX0660FL	6.6	▲	58.5	40	97	1.54
DMX0670FL	6.7	▲	58.6	40	97	1.56
DMX0680FL	6.8	▲	58.6	40	97	1.59
DMX0690FL	6.9	▲	58.6	40	97	1.61
DMX0700FL	7	▲	58.6	40	97	1.63
DMX0710FL	7.1	▲	61.7	42	102	1.66
DMX0720FL	7.2	▲	61.7	42	102	1.68
DMX0730FL	7.3	▲	61.7	42	102	1.7
DMX0740FL	7.4	▲	61.7	42	102	1.73
DMX0750FL	7.5	▲	61.8	42	102	1.75
DMX0760FL	7.6	▲	65.8	42	106	1.77
DMX0770FL	7.7	▲	65.8	42	106	1.8
DMX0780FL	7.8	▲	65.8	42	106	1.82
DMX0790FL	7.9	▲	65.8	42	106	1.84
DMX0800FL	8	▲	65.9	42	106	1.87
DMX0810FL	8.1	▲	71.9	43	113	1.89
DMX0820FL	8.2	▲	71.9	43	113	1.91
DMX0830FL	8.3	▲	71.9	43	113	1.94
DMX0840FL	8.4	▲	72	43	113	1.96
DMX0850FL	8.5	▲	72	43	113	1.98
DMX0860FL	8.6	▲	75	43	116	2.01
DMX0870FL	8.7	▲	75	43	116	2.03
DMX0880FL	8.8	▲	75.1	43	116	2.05
DMX0890FL	8.9	▲	75.1	43	116	2.08
DMX0900FL	9	▲	75.1	43	116	2.1

Designation	DC	MD20	LU	LS	LF	PL
DMX0910FL	9.1	▲	79.1	44	121	2.12
DMX0920FL	9.2	▲	79.2	44	121	2.15
DMX0930FL	9.3	▲	79.2	44	121	2.17
DMX0940FL	9.4	▲	79.2	44	121	2.19
DMX0950FL	9.5	▲	79.2	44	121	2.21
DMX0960FL	9.6	▲	82.2	45	125	2.24
DMX0970FL	9.7	▲	82.3	45	125	2.26
DMX0980FL	9.8	▲	82.3	45	125	2.28
DMX0990FL	9.9	▲	82.3	45	125	2.31
DMX1000FL	10	▲	82.3	45	125	2.33
DMX1010FL	10.1	▲	89.4	46	133	2.35
DMX1020FL	10.2	▲	89.4	46	133	2.38
DMX1030FL	10.3	▲	89.4	46	133	2.4
DMX1040FL	10.4	▲	89.4	46	133	2.42
DMX1050FL	10.5	▲	89.5	46	133	2.45
DMX1060FL	10.6	▲	92.5	46	136	2.47
DMX1070FL	10.7	▲	92.5	46	136	2.49
DMX1080FL	10.8	▲	92.5	46	136	2.52
DMX1090FL	10.9	▲	92.5	46	136	2.54
DMX1100FL	11	▲	92.6	46	136	2.56
DMX1110FL	11.1	▲	96.6	47	141	2.59
DMX1120FL	11.2	▲	96.6	47	141	2.61
DMX1130FL	11.3	▲	96.6	47	141	2.63
DMX1140FL	11.4	▲	96.7	47	141	2.66
DMX1150FL	11.5	▲	96.7	47	141	2.68
DMX1160FL	11.6	▲	99.7	48	145	2.7
DMX1170FL	11.7	▲	99.7	48	145	2.73
DMX1180FL	11.8	▲	99.8	48	145	2.75
DMX1190FL	11.9	▲	99.8	48	145	2.77
DMX1200FL	12	▲	99.8	48	145	2.8
DMX1210FL	12.1	▲	103.8	59	160	2.82
DMX1220FL	12.2	▲	103.8	59	160	2.84
DMX1230FL	12.3	▲	103.9	59	160	2.87
DMX1240FL	12.4	▲	103.9	59	160	2.89
DMX1250FL	12.5	▲	103.9	59	160	2.91
DMX1260FL	12.6	▲	106.9	59	163	2.94
DMX1270FL	12.7	▲	107	59	163	2.96
DMX1280FL	12.8	▲	107	59	163	2.98
DMX1290FL	12.9	▲	107	59	163	3.01
DMX1300FL	13	▲	107	59	163	3.03
DMX1310FL	13.1	▲	114.1	60	171	3.05
DMX1320FL	13.2	▲	114.1	60	171	3.08
DMX1330FL	13.3	▲	114.1	60	171	3.1
DMX1340FL	13.4	▲	114.1	60	171	3.12
DMX1350FL	13.5	▲	114.2	60	171	3.15
DMX1360FL	13.6	▲	117.2	61	175	3.17
DMX1370FL	13.7	▲	117.2	61	175	3.19
DMX1380FL	13.8	▲	117.2	61	175	3.22
DMX1390FL	13.9	▲	117.2	61	175	3.24
DMX1400FL	14	▲	117.3	61	175	3.26
DMX1410FL	14.1	▲	121.3	62	180	3.29
DMX1420FL	14.2	▲	121.3	62	180	3.31
DMX1430FL	14.3	▲	121.3	62	180	3.33
DMX1440FL	14.4	▲	121.4	62	180	3.36
DMX1450FL	14.5	▲	121.4	62	180	3.38
DMX1460FL	14.6	▲	124.4	62	183	3.4
DMX1470FL	14.7	▲	124.4	62	183	3.43
DMX1480FL	14.8	▲	124.5	62	183	3.45
DMX1490FL	14.9	▲	124.5	62	183	3.47
DMX1500FL	15	▲	124.5	62	183	3.5

▲ : To be discontinued

Designation	DC	MD20	LU	LS	LF	PL
DMX1510FL	15.1	▲	128.5	63	188	3.52
DMX1520FL	15.2	▲	128.5	63	188	3.54
DMX1530FL	15.3	▲	128.6	63	188	3.57
DMX1540FL	15.4	▲	128.6	63	188	3.59
DMX1550FL	15.5	▲	128.6	63	188	3.61
DMX1560FL	15.6	▲	131.6	64	192	3.64
DMX1570FL	15.7	▲	131.7	64	192	3.66
DMX1580FL	15.8	▲	131.7	64	192	3.68
DMX1590FL	15.9	▲	131.7	64	192	3.71
DMX1600FL	16	▲	131.7	64	192	3.73
DMX1650FL	16.5	▲	139.9	65	201	3.85
DMX1700FL	17	▲	140	65	201	3.96
DMX1750FL	17.5	▲	140.1	65	201	4.08
DMX1800FL	18	▲	140.2	65	201	4.2
DMX1850FL	18.5	▲	156.3	65	217	4.31
DMX1900FL	19	▲	156.4	65	217	4.43
DMX1950FL	19.5	▲	156.6	65	217	4.55
DMX2000FL	20	▲	156.7	65	217	4.66

▲ : To be discontinued

DC	Tolerance h8 (mm)
DC ≦ 3	0 ~ -0.014
3 < DC ≦ 6	0 ~ -0.018
6 < DC ≦ 10	0 ~ -0.022
10 < DC ≦ 18	0 ~ -0.027
18 < DC ≦ 20	0 ~ -0.033

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed: *Vc* (m/min)	Feed: *f* (mm/rev) ø3 ~ ø5	ø5 ~ ø10	ø10 ~ ø16	ø16 ~ ø20
N	Aluminium alloys	60 - 120	0.2 - 0.4	0.3 - 0.5	0.4 - 0.6	0.5 - 0.7
K	Grey cast irons	40 - 80	0.15 - 0.35	0.25 - 0.45	0.3 - 0.6	0.35 - 0.65
K	Ductile cast irons	30 - 70	0.15 - 0.3	0.2 - 0.4	0.25 - 0.5	0.3 - 0.6

- The above table shows standard and typical cutting conditions for DMX - FM type drills.
- Because the cutting conditions may be changed depending on the material type, hardness, machinability, machine tool, and coolant, the most appropriate conditions must be decided whilst referring the chip control condition and tool failure mode.
- When using the smaller side of the diameter range, the feed rate should be set lower.
- When working with long overhang or using "L" type drills, the feed rate should be set lower.



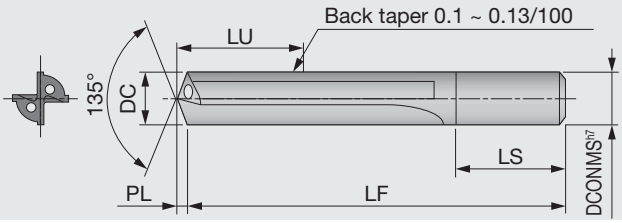
NOTE ON CUTTING FLUID

- Cutting fluid should be sufficiently supplied to the drill point and the entrance of the hole.
- Use a water soluble cutting fluid containing relatively high content of extreme pressure additive for heavy duty cutting or use a water insoluble cutting fluid.

FDC-S L/D=5

Solid drill for cast iron and Aluminium alloy, with straight flute, 135° point angle, with coolant hole, L/D = 5, ø5 - ø16 mm





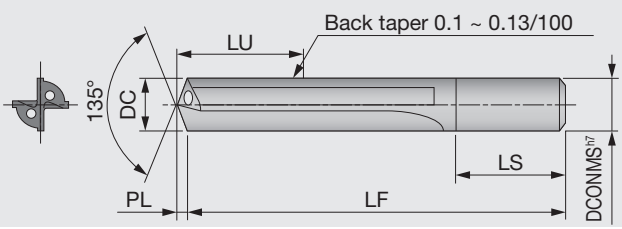
Designation	DC	G1F	DCONMS	LU	LS	LF	PL	Designation	DC	G1F	DCONMS	LU	LS	LF	PL
FDC0510S	5.1	●	6	45.1	40	85	1.06	FDC1250S	12.5	●	13	102.6	50	160	2.59
FDC0600S	6	●	6	49.2	40	90	1.24	FDC1300S	13	●	13	106.7	50	160	2.69
FDC0840S	8.4	●	9	69.7	44	115	1.74	FDC1350S	13.5	●	14	110.8	52	170	2.8
FDC0860S	8.6	●	9	73.8	44	120	1.78	FDC1400S	14	●	14	114.9	52	170	2.9
FDC1050S	10.5	●	11	86.2	46	140	2.17	FDC1450S	14.5	●	15	119	54	180	3
FDC1100S	11	●	11	90.3	46	140	2.28	FDC1500S	15	●	15	123.1	54	180	3.11
FDC1150S	11.5	●	12	94.4	48	150	2.38	FDC1550S	15.5	●	16	127.2	56	190	3.21
FDC1200S	12	●	12	98.5	48	150	2.49	FDC1600S	16	●	16	131.3	56	190	3.31

● : Line up

DC	Tolerance (mm)
5 ≦ DC ≦ 6	+0.02 ~ +0.01
6 < DC ≦ 16	+0.025 ~ +0.015

FDC-L L/D=8





Designation	DC	G1F	DCONMS	LU	LS	LF	PL	Designation	DC	G1F	DCONMS	LU	LS	LF	PL
FDC0500L	5	●	5	56	38	95	1.04	FDC0780L	7.8	●	8	89.6	42	130	1.62
FDC0550L	5.5	●	6	62.1	40	105	1.14	FDC0800L	8	●	8	89.7	42	130	1.66
FDC0600L	6	●	6	67.2	40	110	1.24	FDC0850L	8.5	●	9	95.8	44	140	1.76
FDC0620L	6.2	●	7	73.3	40	115	1.28	FDC0860L	8.6	●	9	100.8	44	145	1.78
FDC0650L	6.5	●	7	73.4	40	115	1.35	FDC0900L	9	●	9	100.9	44	145	1.86
FDC0680L	6.8	●	7	78.4	40	120	1.41	FDC0950L	9.5	●	10	107	44	150	1.97
FDC0700L	7	●	7	78.5	40	120	1.45	FDC1000L	10	●	10	112.1	46	160	2.07
FDC0750L	7.5	●	8	84.6	42	125	1.55								

● : Line up

DC	Tolerance (mm)
5 ≦ DC ≦ 6	+0.02 ~ +0.01
6 < DC < 10	+0.025 ~ +0.015

Coolant

- Supply coolant through the inside of a drill.
- The coolant pressure should be 0.5 to 1.0 MPa.
- Use water-soluble coolant containing a large amount of extreme pressure additive.

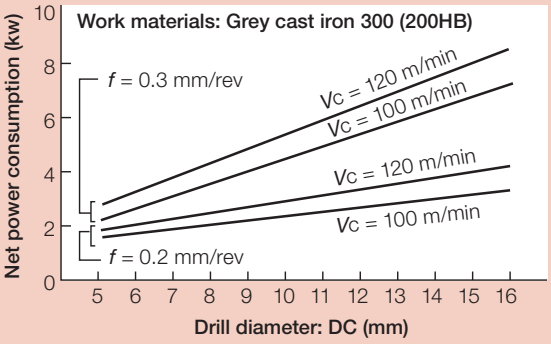
Reference pages: Standard cutting conditions → J069

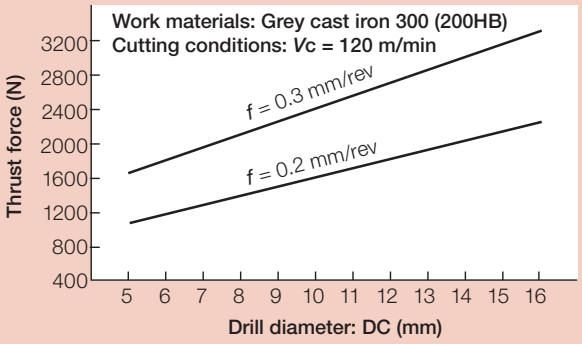
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed: *Vc* (m/min)			Feed: *f* (mm/rev)		
		ø5 ~ ø8	ø8 ~ ø12	ø12 ~ ø16	ø5 ~ ø8	ø8 ~ ø12	ø12 ~ ø16
N	Aluminium alloys	100 - 140	120 - 160	140 - 180	0.1 - 0.25	0.15 - 0.3	0.15 - 0.3
K	Grey cast irons	90 - 120	110 - 140	130 - 160	0.1 - 0.25	0.2 - 0.3	0.2 - 0.30
	Ductile cast irons	60 - 80	70 - 90	70 - 100	0.1 - 0.25	0.15 - 0.3	0.15 - 0.3

Caution: When changing a tool, completely clean the chips which may be clogging in the collet or adapter.
Note: The cutting conditions shown left may vary depending on the work material, coolant dilution ratio and coolant supply pressure used.

CUTTING PERFORMANCE

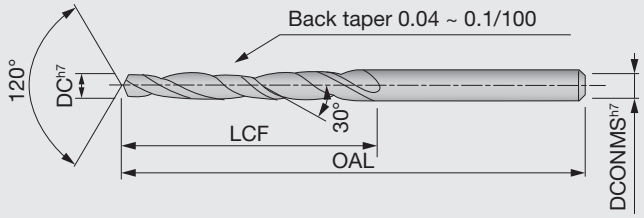




CDS

Solid drill for Aluminium alloy and cast iron, with 120°point angle, without coolant hole, shank diameter = tool diameter, Max. L/D = 12, ø4 - ø13 mm





DC = DCONMS

Designation	DC	UM	LCF	OAL
CDS-004	0.4	▲	6	30
CDS-005	0.5	●	6	30
CDS-006	0.6	▲	6	30
CDS-007	0.7	●	6	30
CDS-008	0.8	▲	8	30
CDS-009	0.9	▲	8	30
CDS-010	1	●	10	38
CDS-011	1.1	▲	10	38
CDS-012	1.2	●	10	38
CDS-013	1.3	▲	10	38
CDS-014	1.4	▲	10	38
CDS-015	1.5	●	10	38
CDS-016	1.6	●	22	45
CDS-017	1.7	▲	22	45
CDS-018	1.8	●	22	45
CDS-019	1.9	●	22	45
CDS-020	2	●	22	45
CDS-021	2.1	●	22	45
CDS-022	2.2	●	22	45
CDS-023	2.3	●	22	45
CDS-024	2.4	●	22	45
CDS-025	2.5	●	22	45
CDS-026	2.6	●	22	45
CDS-027	2.7	●	25	45
CDS-028	2.8	●	25	45
CDS-029	2.9	●	25	45
CDS-030	3	●	25	45
CDS-031	3.1	▲	27	50
CDS-032	3.2	●	27	50
CDS-033	3.3	●	27	50
CDS-034	3.4	●	27	50
CDS-035	3.5	●	27	55
CDS-036	3.6	▲	30	55
CDS-037	3.7	▲	30	55
CDS-038	3.8	●	30	55
CDS-039	3.9	▲	30	55
CDS-040	4	●	30	55
CDS-041	4.1	●	34	60
CDS-042	4.2	●	34	60
CDS-043	4.3	●	34	60
CDS-044	4.4	●	34	60
CDS-045	4.5	●	34	60
CDS-046	4.6	▲	34	60
CDS-047	4.7	●	34	60
CDS-048	4.8	●	34	60
CDS-049	4.9	●	34	60
CDS-050	5	●	34	60
CDS-051	5.1	●	38	65
CDS-052	5.2	●	38	65
CDS-053	5.3	●	38	65
CDS-054	5.4	●	38	65

Designation	DC	UM	LCF	OAL
CDS-055	5.5	●	38	65
CDS-056	5.6	▲	40	70
CDS-057	5.7	▲	40	70
CDS-058	5.8	▲	40	70
CDS-059	5.9	▲	40	70
CDS-060	6	●	40	70
CDS-062	6.2	▲	43	75
CDS-064	6.4	●	43	75
CDS-065	6.5	●	43	75
CDS-066	6.6	●	46	80
CDS-068	6.8	●	46	80
CDS-070	7	●	46	80
CDS-072	7.2	▲	46	80
CDS-074	7.4	▲	46	80
CDS-075	7.5	●	46	80
CDS-076	7.6	●	50	85
CDS-078	7.8	▲	50	85
CDS-080	8	●	50	85
CDS-0805	8.05	▲	53	85
CDS-0810	8.1	▲	53	85
CDS-0815	8.15	▲	53	85
CDS-0820	8.2	▲	53	85
CDS-0825	8.25	▲	53	85
CDS-0830	8.3	▲	53	85
CDS-0835	8.35	▲	53	85
CDS-0840	8.4	▲	53	85
CDS-0845	8.45	▲	53	85
CDS-085	8.5	▲	53	85
CDS-0855	8.55	▲	53	85
CDS-0860	8.6	▲	53	85
CDS-0865	8.65	▲	53	85
CDS-0870	8.7	▲	53	85
CDS-0875	8.75	▲	53	85
CDS-0880	8.8	▲	53	85
CDS-0885	8.85	▲	53	85
CDS-0890	8.9	▲	53	85
CDS-0895	8.95	▲	53	85
CDS-090	9	▲	53	85
CDS-0905	9.05	▲	60	90
CDS-0910	9.1	▲	60	90
CDS-0915	9.15	▲	60	90
CDS-0920	9.2	▲	60	90
CDS-0925	9.25	▲	60	90
CDS-0930	9.3	▲	60	90
CDS-0935	9.35	▲	60	90
CDS-0940	9.4	▲	60	90
CDS-0945	9.45	▲	60	90
CDS-095	9.5	▲	60	90
CDS-0955	9.55	▲	60	90
CDS-0960	9.6	▲	60	90
CDS-0965	9.65	▲	60	90

● : Line up
▲ : To be discontinued

Reference pages: Standard cutting conditions → J071

Designation	DC	UM	LCF	OAL
CDS-0970	9.7	▲	60	90
CDS-0975	9.75	▲	60	90
CDS-0980	9.8	▲	60	90
CDS-0985	9.85	▲	60	90
CDS-0990	9.9	▲	60	90
CDS-0995	9.95	▲	60	90
CDS-100	10	▲	60	90
CDS-1010	10.1	▲	80	120
CDS-1020	10.2	▲	80	120
CDS-1030	10.3	▲	80	120
CDS-1040	10.4	▲	80	120
CDS-1050	10.5	▲	80	120
CDS-1060	10.6	▲	80	120
CDS-1070	10.7	▲	80	120
CDS-1080	10.8	▲	80	120
CDS-1090	10.9	▲	80	120
CDS-1100	11	▲	80	120
CDS-1110	11.1	▲	80	120
CDS-1120	11.2	▲	80	120

Designation	DC	UM	LCF	OAL
CDS-1130	11.3	▲	80	120
CDS-1140	11.4	▲	80	120
CDS-1150	11.5	▲	80	120
CDS-1160	11.6	▲	80	120
CDS-1170	11.7	▲	80	120
CDS-1180	11.8	▲	80	120
CDS-1190	11.9	▲	80	120
CDS-1200	12	▲	80	120
CDS-1210	12.1	▲	80	120
CDS-1220	12.2	▲	80	120
CDS-1230	12.3	▲	80	120
CDS-1240	12.4	▲	80	120
CDS-1250	12.5	▲	80	120
CDS-1260	12.6	▲	80	120
CDS-1270	12.7	▲	80	120
CDS-1280	12.8	▲	80	120
CDS-1290	12.9	▲	80	120
CDS-1300	13	▲	80	120

● : Line up
▲ : To be discontinued

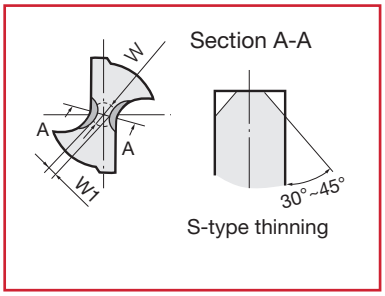
DC	Tolerance h7 (mm)
DC ≦ 3	0 ~ -0.01
3 < DC ≦ 6	0 ~ -0.012
6 < DC ≦ 10	0 ~ -0.015
10 < DC ≦ 13	0 ~ -0.018

CAUTIONARY NOTES

- To prevent edge chipping, hone cutting edges as follows:
  Honing width: 0.02 ~ 0.05 mm
  Honing angle: -20˚ to -30˚.
  Chipping is likely to occur on edges whilst drilling hard materials, a larger honing width is recommended.
- When drilling into an inclined surface, special care should be taken to prevent drill breakage. Use of drill bushing is recommended for such case.

REGRINDING

- Carry out regrinding when corner wear reaches the margin width.
- Avoid using silicon carbide grinding wheels or hand grinding whenever possible. Use diamond grinding wheels of 200 to 400 mesh.
- Apply web thinning for the drill above ø6 mm. S-type thinning shown in figure at right is recommended. Preferable thinning width (W1) is about 1/2 to 1/3 of web thickness (W).



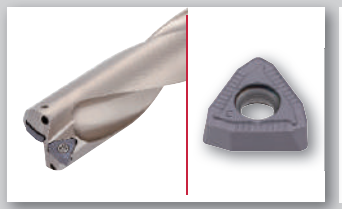
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed: *Vc* (m/min)		Feed: *f* (mm/rev)				
		ø0.4 ~ ø2	ø2 ~ ø13	ø0.4 ~ ø1	ø1 ~ ø2	ø2 ~ ø3	ø3 ~ ø5	ø5 ~ ø13
K	Grey cast irons (200HB)	20 - 40	30 - 50	0.005 - 0.03	0.01 - 0.06	0.03 - 0.12	0.05 - 0.15	0.1 - 0.4
K	Ductile cast irons (300HB)	20 - 40	30 - 50	0.005 - 0.02	0.01 - 0.05	0.03 - 0.1	0.03 - 0.1	0.07 - 0.25
N	Aluminium alloys	20 - 50	30 - 50	0.01 - 0.05	0.04 - 0.15	0.06 - 0.2	0.1 - 0.25	0.15 - 0.5
N	Copper alloys	20 - 50	30 - 50	0.01 - 0.05	0.04 - 0.15	0.06 - 0.2	0.1 - 0.25	0.15 - 0.5
N	Reinforced plastics	20 - 40	30 - 50	0.01 - 0.05	0.04 - 0.15	0.06 - 0.2	0.1 - 0.25	0.15 - 0.5



TungSix-Drill

Indexable drill



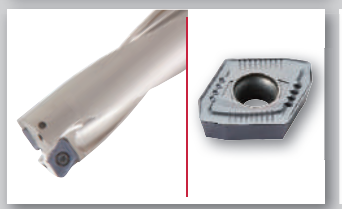
TUNGSIX-DRILL

TungSix-Drill

Indexable drill with 6-corner inserts for high productivity

ø20 mm - ø54 mm / L/D = 2, 3, 4

J006,
J074 - J081



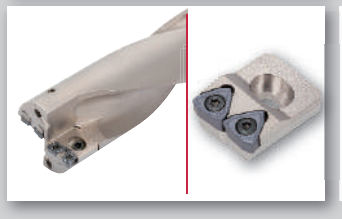
TUNGDRILLTWISTED

Tungdrill-Twisted

Indexable drill with 4-corner inserts for various drilling applications

ø12.5 mm - ø54 mm / L/D = 2, 3, 4, 5

J006,
J082 - J094



TUNGDRILLBIG

TungDrill-Big

Large diameter drill with cartridges for TungSix-Drill and TungDrillTwisted inserts

ø55 mm - ø80 mm / L/D = 2.5

J006,
J095 - J101

TUNGSIX-DRILL

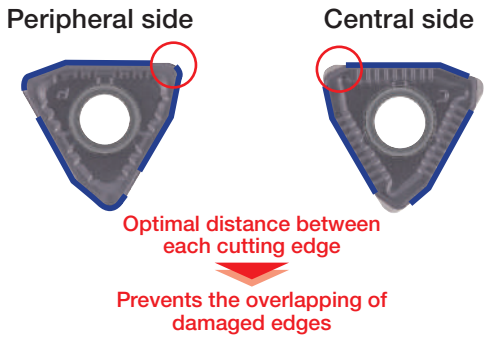


Indexable drill

6 cornered insert with high performance and high economical solution

Double-sided insert with 6-cutting edges

TungSixDrill is the fi rst indexable drill in the world to adapt double-sided inserts with 6-cutting edges, reducing the insert consumption for the customers.



One insert type for both the central and peripheral pockets

One side has the centrak edeg and other side has the peripheral edge.

Low cutting force even with double sided insert

The cutting forces are almost equal to competitors positive single sided inserts, especially at higher feed rates, thus complementing higher productivity.



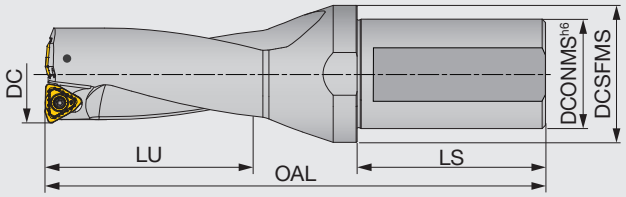
Reference pages: J074 - J081

TUNGSIX-DRILL

TDS-F L/D=2

L/D = 2, flat, tool diameter ø20 - ø54 mm





Designation	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset (radial)	WT(kg)	Insert
TDS200F25-2	20	25	32	40.8	54	115.8	1	0.3	WWMU05X205R-D*
TDS205F25-2	20.5	25	32	41.8	54	117.3	0.9	0.3	WWMU05X205R-D*
TDS210F25-2	21	25	32	42.8	54	118.8	0.8	0.3	WWMU05X205R-D*
TDS215F25-2	21.5	25	32	43.8	54	119.8	0.6	0.3	WWMU05X205R-D*
TDS220F25-2	22	25	32	44.8	54	120.8	0.5	0.3	WWMU05X205R-D*
TDS225F25-2	22.5	25	37	45.8	54	122.3	0.4	0.3	WWMU05X205R-D*
TDS230F25-2	23	25	37	46.8	54	123.8	0.3	0.4	WWMU05X205R-D*
TDS235F25-2	23.5	25	37	47.8	54	124.8	0.2	0.4	WWMU05X205R-D*
TDS240F25-2	24	25	37	48.9	54	125.9	1.2	0.4	WWMU060306R-D*
TDS245F25-2	24.5	25	37	49.9	54	127.4	1	0.4	WWMU060306R-D*
TDS250F25-2	25	25	37	50.9	54	128.9	0.8	0.4	WWMU060306R-D*
TDS255F25-2	25.5	25	37	51.9	54	130.4	0.6	0.4	WWMU060306R-D*
TDS260F25-2	26	25	37	52.9	54	131.9	0.5	0.4	WWMU060306R-D*
TDS270F32-2	27	32	40	54.9	59	138.9	0.3	0.6	WWMU060306R-D*
TDS280F32-2	28	32	40	57.1	59	142.1	1.3	0.6	WWMU08X408R-D*
TDS290F32-2	29	32	40	59.1	59	144.1	1.1	0.7	WWMU08X408R-D*
TDS300F32-2	30	32	40	61.1	59	147.1	0.8	0.7	WWMU08X408R-D*
TDS310F32-2	31	32	40	63.1	59	150.1	0.5	0.7	WWMU08X408R-D*
TDS320F32-2	32	32	40	65.1	59	152.1	0.2	0.8	WWMU08X408R-D*
TDS330F40-2	33	40	50	67.3	69	165.3	1.7	1.2	WWMU09X510R-D*
TDS340F40-2	34	40	50	69.3	69	168.3	1.4	1.2	WWMU09X510R-D*
TDS350F40-2	35	40	50	71.3	69	171.3	1.2	1.2	WWMU09X510R-D*
TDS360F40-2	36	40	50	73.3	69	174.3	0.9	1.3	WWMU09X510R-D*
TDS370F40-2	37	40	50	75.3	69	175.3	0.7	1.3	WWMU09X510R-D*
TDS380F40-2	38	40	50	77.3	69	178.3	0.4	1.3	WWMU09X510R-D*
TDS390F40-2	39	40	50	79.6	69	180.6	2.2	1.4	WWMU11X512R-D*
TDS400F40-2	40	40	50	81.6	69	183.6	1.9	1.4	WWMU11X512R-D*
TDS410F40-2	41	40	50	83.6	69	187.6	1.7	1.5	WWMU11X512R-D*
TDS420F40-2	42	40	55	85.6	69	189.6	1.5	1.6	WWMU11X512R-D*
TDS430F40-2	43	40	55	87.6	69	192.6	1.3	1.6	WWMU11X512R-D*
TDS440F40-2	44	40	55	89.6	69	194.6	1	1.7	WWMU11X512R-D*
TDS450F40-2	45	40	55	91.6	69	197.6	0.7	1.7	WWMU11X512R-D*
TDS460F40-2	46	40	55	93.6	69	200.6	0.4	1.8	WWMU11X512R-D*
TDS470F40-2	47	40	55	95.8	69	202.8	2.6	1.9	WWMU13X512R-D*
TDS480F40-2	48	40	55	97.8	69	205.8	2.4	1.9	WWMU13X512R-D*
TDS490F40-2	49	40	55	99.8	69	207.8	2.2	1.9	WWMU13X512R-D*
TDS500F40-2	50	40	55	101.8	69	210.8	2	2	WWMU13X512R-D*
TDS510F40-2	51	40	55	103.8	69	214.8	1.7	2.1	WWMU13X512R-D*
TDS520F40-2	52	40	55	105.8	69	216.8	1.5	2.2	WWMU13X512R-D*
TDS530F40-2	53	40	55	107.8	69	219.8	1.3	2.3	WWMU13X512R-D*
TDS540F40-2	54	40	55	109.8	69	221.8	1	2.4	WWMU13X512R-D*

SPARE PARTS

Designation	Clamping screw	Wrench
TDS200... - TDS235...	CSPB-2.2	IP-7D
TDS240... - TDS270...	CSPB-2.5	IP-8D
TDS280... - TDS320...	CSTB-3	T-9D
TDS330... - TDS380...	CSTB-4	T-15D
TDS390... - TDS540...	CSTB-5	T-20D

Tool diameter	Tool diameter tolerance	Hole diameter tolerance
ø20 - ø27	+ 0.2 / 0	+ 0.25 / 0
ø28 - ø54	+ 0.2 / 0	+ 0.3 / 0

Recommended clamping torque (N·m): CSPB-2.2 = 1, CSPB-2.5 = 1.3, CSTB-3 = 2.3, CSTB-4 = 3.5, CSTB-5 = 5

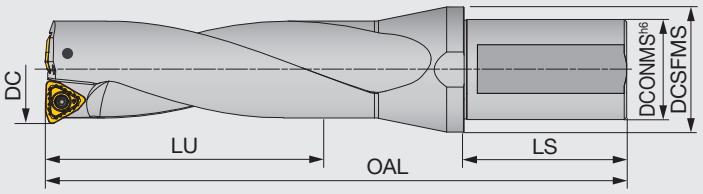
Reference pages: Inserts → J079 - J080, Standard cutting conditions → J078 - J079

TUNGSIX-DRILL

TDS-F L/D=3

L/D = 3, flat, tool diameter ø20 - ø54 mm





Designation	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset (radial)	WT(kg)	Insert
TDS200F25-3	20	25	32	60.8	54	135.8	1	0.3	WWMU05X205R-D*
TDS205F25-3	20.5	25	32	62.3	54	136.8	0.9	0.3	WWMU05X205R-D*
TDS209F25-3 (1)	20.9	25	32	63.5	54	138.8	0.8	0.3	WWMU05X205R-D*
TDS210F25-3	21	25	32	63.8	54	138.8	0.8	0.4	WWMU05X205R-D*
TDS215F25-3	21.5	25	32	65.3	54	140.8	0.6	0.4	WWMU05X205R-D*
TDS220F25-3	22	25	32	66.8	54	141.8	0.5	0.4	WWMU05X205R-D*
TDSU0875F25-3 (2)	22.2	25	32	66.8	54	141.8	0.4	0.4	WWMU05X205R-D*
TDS225F25-3	22.5	25	37	68.3	54	144.8	0.4	0.4	WWMU05X205R-D*
TDS230F25-3	23	25	37	69.8	54	145.8	0.3	0.4	WWMU05X205R-D*
TDS235F25-3	23.5	25	37	71.3	54	147.8	0.2	0.4	WWMU05X205R-D*
TDS239F25-3 (1)	23.9	25	37	72.6	54	149.9	1.2	0.4	WWMU060306R-D*
TDS240F25-3	24	25	37	72.9	54	149.9	1.2	0.4	WWMU060306R-D*
TDS245F25-3	24.5	25	37	74.4	54	151.9	1	0.5	WWMU060306R-D*
TDS250F25-3	25	25	37	75.9	54	153.9	0.8	0.5	WWMU060306R-D*
TDS255F25-3	25.5	25	37	77.4	54	154.9	0.6	0.5	WWMU060306R-D*
TDS260F25-3 (1)	26	25	37	78.9	54	156.9	0.5	0.5	WWMU060306R-D*
TDS264F32-3	26.4	32	40	80.1	59	163.4	0.4	0.6	WWMU060306R-D*
TDS265F32-3	26.5	32	40	80.4	59	163.4	0.4	0.6	WWMU060306R-D*
TDS270F32-3	27	32	40	81.9	59	164.9	0.3	0.6	WWMU060306R-D*
TDS275F32-3	27.5	32	40	83.1	59	168.1	0	0.6	WWMU08X408R-D*
TDS280F32-3	28	32	40	85.1	59	169.1	1.3	0.7	WWMU08X408R-D*
TDS285F32-3	28.5	32	40	86.1	59	171.1	1.1	0.7	WWMU08X408R-D*
TDSU1125F32-3 (2)	28.6	32	40	87.1	59	172.1	1.1	0.7	WWMU08X408R-D*
TDS290F32-3	29	32	40	88.1	59	172.1	1.1	0.7	WWMU08X408R-D*
TDS295F32-3	29.5	32	40	89.1	59	176.1	0.8	0.7	WWMU08X408R-D*
TDS300F32-3	30	32	40	91.1	59	177.1	0.8	0.8	WWMU08X408R-D*
TDS305F32-3	30.5	32	40	92.1	59	181.1	0.5	0.8	WWMU08X408R-D*
TDS310F32-3	31	32	40	94.1	59	181.1	0.5	0.8	WWMU08X408R-D*
TDSU1250F32-3 (2)	31.8	32	40	96.1	59	184.1	0.2	0.8	WWMU08X408R-D*
TDS320F32-3	32	32	40	97.1	59	184.1	0.2	0.9	WWMU08X408R-D*
TDS330F40-3	33	40	50	100.3	69	198.3	1.7	1.3	WWMU09X510R-D*
TDS340F40-3	34	40	50	103.3	69	201.3	1.4	1.3	WWMU09X510R-D*
TDS350F40-3	35	40	50	106.3	69	205.3	1.2	1.3	WWMU09X510R-D*
TDS360F40-3	36	40	50	109.3	69	209.3	0.9	1.4	WWMU09X510R-D*
TDS370F40-3	37	40	50	112.3	69	212.3	0.7	1.4	WWMU09X510R-D*
TDS380F40-3	38	40	50	115.3	69	216.3	0.4	1.5	WWMU09X510R-D*
TDS390F40-3	39	40	50	118.6	69	219.6	2.2	1.6	WWMU11X512R-D*
TDS400F40-3	40	40	50	121.6	69	223.6	1.9	1.6	WWMU11X512R-D*
TDS410F40-3	41	40	50	124.6	69	227.6	1.7	1.7	WWMU11X512R-D*
TDS420F40-3	42	40	55	127.6	69	230.6	1.5	1.8	WWMU11X512R-D*
TDS430F40-3	43	40	55	130.6	69	234.6	1.3	1.8	WWMU11X512R-D*
TDS440F40-3	44	40	55	133.6	69	237.6	1	1.9	WWMU11X512R-D*
TDS450F40-3	45	40	55	136.6	69	242.6	0.7	2	WWMU11X512R-D*
TDS460F40-3	46	40	55	139.6	69	246.6	0.4	2.1	WWMU11X512R-D*
TDS470F40-3	47	40	55	142.8	69	249.8	2.6	2.2	WWMU13X512R-D*
TDS480F40-3	48	40	55	145.8	69	253.8	2.4	2.3	WWMU13X512R-D*
TDS490F40-3	49	40	55	148.8	69	256.8	2.2	2.3	WWMU13X512R-D*
TDS500F40-3	50	40	55	151.8	69	260.8	2	2.4	WWMU13X512R-D*
TDS510F40-3	51	40	55	154.8	69	264.8	1.7	2.5	WWMU13X512R-D*
TDS520F40-3	52	40	55	157.8	69	267.8	1.5	2.6	WWMU13X512R-D*
TDS530F40-3	53	40	55	160.8	69	271.8	1.3	2.7	WWMU13X512R-D*
TDS540F40-3	54	40	55	163.8	69	274.8	1	2.9	WWMU13X512R-D*

SPARE PARTS





Designation	Clamping screw	Wrench
TDS200... - TDS235...	CSPB-2.2	IP-7D
TDS240... - TDS270...	CSPB-2.5	IP-8D
TDS280... - TDS320...	CSTB-3	T-9D
TDS330... - TDS380...	CSTB-4	T-15D
TDS390... - TDS540...	CSTB-5	T-20D

Recommended clamping torque (N·m): CSPB-2.2 = 1, CSPB-2.5 = 1.3, CSTB-3 = 2.3, CSTB-4 = 3.5, CSTB-5 = 5

(1) For pre thread hole: DC = 20.9 mm: M24x3, DC = 23.9 mm: M27x3, DC = 26.4 mm: M30x3.5
(2) For inch size: DC: 22.2 mm = 0.875", DC: 28.6 mm = 1.125", DC: 31.8 mm = 1.250"

Tool diameter	Tool diameter tolerance	Hole diameter tolerance
ø20 - ø27	+ 0.2 / 0	+ 0.25 / 0
ø28 - ø54	+ 0.2 / 0	+ 0.3 / 0

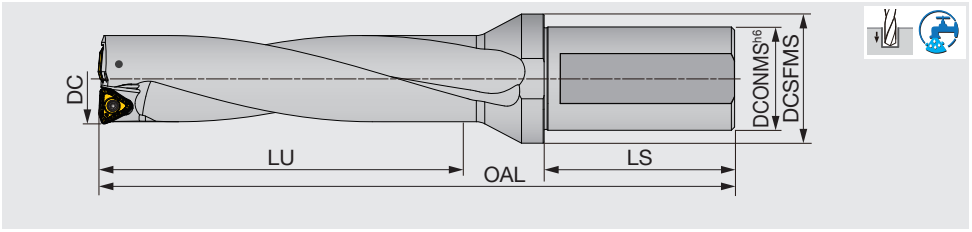
Reference pages: Inserts → J079 - J080
Standard cutting conditions → J078 - J079

TUNGSIX-DRILL

TDS-F L/D=4

L/D = 4, flat, tool diameter ø28 - ø54 mm





Designation	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset (radial)	WT(kg)	Insert
TDS200F25-4	20	25	32	80.8	54	155.8	1	0.4	WWMU05X205R-D*
TDS205F25-4	20.5	25	32	82.8	54	157.8	0.9	0.4	WWMU05X205R-D*
TDS210F25-4	21	25	32	84.8	54	159.8	0.8	0.4	WWMU05X205R-D*
TDS215F25-4	21.5	25	32	86.8	54	161.8	0.6	0.4	WWMU05X205R-D*
TDS220F25-4	22	25	32	88.8	54	163.8	0.5	0.4	WWMU05X205R-D*
TDS225F25-4	22.5	25	37	90.8	54	166.3	0.4	0.4	WWMU05X205R-D*
TDS230F25-4	23	25	37	92.8	54	168.8	0.3	0.4	WWMU05X205R-D*
TDS235F25-4	23.5	25	37	94.8	54	171.3	0.2	0.5	WWMU05X205R-D*
TDS240F25-4	24	25	37	96.9	54	173.9	1.2	0.5	WWMU060306R-D*
TDS245F25-4	24.5	25	37	98.9	54	176.4	1	0.5	WWMU060306R-D*
TDS250F25-4	25	25	37	100.9	54	178.9	0.8	0.5	WWMU060306R-D*
TDS255F25-4	25.5	25	37	102.9	54	180.9	0.6	0.6	WWMU060306R-D*
TDS260F25-4	26	25	37	104.9	54	182.9	0.5	0.5	WWMU060306R-D*
TDS270F32-4	27	32	40	108.9	59	191.9	0.3	0.7	WWMU060306R-D*
TDS280F32-4	28	32	40	113.1	59	197.1	1.3	0.8	WWMU08X408R-D*
TDS290F32-4	29	32	40	117.1	59	201.1	1.1	0.8	WWMU08X408R-D*
TDS300F32-4	30	32	40	121.1	59	207.1	0.8	0.9	WWMU08X408R-D*
TDS310F32-4	31	32	40	125.1	59	212.1	0.5	0.9	WWMU08X408R-D*
TDS320F32-4	32	32	40	129.1	59	216.1	0.2	1	WWMU08X408R-D*
TDS330F40-4	33	40	50	133.3	69	231.3	1.7	1.4	WWMU09X510R-D*
TDS340F40-4	34	40	50	137.3	69	235.3	1.4	1.4	WWMU09X510R-D*
TDS350F40-4	35	40	50	141.3	69	240.3	1.2	1.4	WWMU09X510R-D*
TDS360F40-4	36	40	50	145.3	69	245.3	0.9	1.5	WWMU09X510R-D*
TDS370F40-4	37	40	50	149.3	69	249.3	0.7	1.5	WWMU09X510R-D*
TDS380F40-4	38	40	50	153.3	69	254.3	0.4	1.7	WWMU09X510R-D*
TDS390F40-4	39	40	50	157.5	69	259	2.2	1.8	WWMU11X512R-D*
TDS400F40-4	40	40	50	161.5	69	264	1.9	1.8	WWMU11X512R-D*
TDS410F40-4	41	40	50	165.5	69	269	1.7	1.9	WWMU11X512R-D*
TDS420F40-4	42	40	55	169.5	69	273	1.5	2	WWMU11X512R-D*
TDS430F40-4	43	40	55	173.5	69	278	1.3	2	WWMU11X512R-D*
TDS440F40-4	44	40	55	177.5	69	282	1	2.1	WWMU11X512R-D*
TDS450F40-4	45	40	55	181.5	69	288	0.7	2.3	WWMU11X512R-D*
TDS460F40-4	46	40	55	185.5	69	293	0.4	2.4	WWMU11X512R-D*
TDS470F40-4	47	40	55	189.8	69	297.3	2.6	2.5	WWMU13X512R-D*
TDS480F40-4	48	40	55	193.8	69	302.3	2.4	2.7	WWMU13X512R-D*
TDS490F40-4	49	40	55	197.8	69	306.3	2.2	2.7	WWMU13X512R-D*
TDS500F40-4	50	40	55	201.8	69	311.3	2	2.8	WWMU13X512R-D*
TDS510F40-4	51	40	55	205.8	69	316.3	1.7	2.9	WWMU13X512R-D*
TDS520F40-4	52	40	55	209.8	69	320.3	1.5	3	WWMU13X512R-D*
TDS530F40-4	53	40	55	213.8	69	325.3	1.3	3.1	WWMU13X512R-D*
TDS540F40-4	54	40	55	217.8	69	329.3	1	3.4	WWMU13X512R-D*

SPARE PARTS

Designation	Clamping screw	Wrench
TDS200... - TDS235...	CSPB-2.2	IP-7D
TDS240... - TDS270...	CSPB-2.5	IP-8D
TDS280... - TDS320...	CSTB-3	T-9D
TDS330... - TDS380...	CSTB-4	T-15D
TDS390... - TDS540...	CSTB-5	T-20D

Tool diameter	Tool diameter tolerance	Hole diameter tolerance
ø20 - ø27	+ 0.2 / 0	+ 0.3 / 0
ø28 - ø54	+ 0.2 / 0	+ 0.35 / 0

Recommended clamping torque (N·m): CSPB-2.2 = 1, CSPB-2.5 = 1.3, CSTB-3 = 2.3, CSTB-4 = 3.5, CSTB-5 = 5

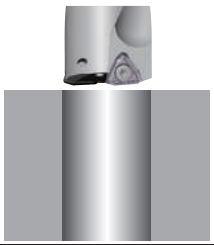
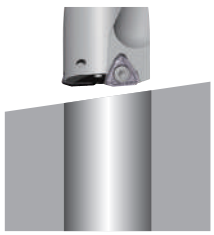
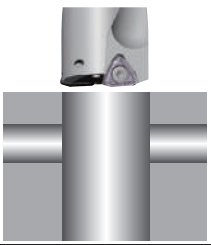
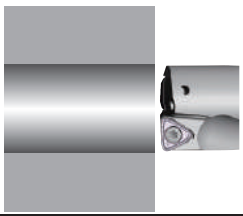
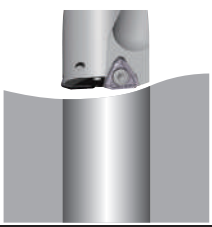
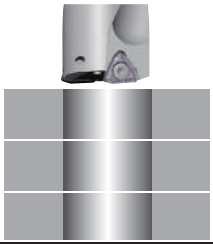
Reference pages: Inserts → J079 - J080, Standard cutting conditions → J078 - J079

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Priority	Chip breakers	Grade	Cutting speed *Vc* (m/min)
P	Low carbon steels (C < 0.3) SS400, SM490, S25C, etc. St42-1, St52-3, C25, etc.	First choice	DS	AH6030	160 - 250
		Wear resistance	DJ	AH9030	160 - 320
	Carbon steels (C > 0.3) S45C, S55C, etc. C45, C55, etc.	First choice	DJ	AH9030	80 - 250
		Fracture resistance	DJ	AH3135	80 - 250
	Low alloy steels SCM415, etc.	First choice	DS	AH6030	160 - 250
		Wear resistance	DJ	AH9030	160 - 250
	Alloy steels SCM440, SCr420, etc. 42CrMo4, 20Cr4, etc.	First choice	DJ	AH9030	80 - 200
		Fracture resistance	DJ	AH3135	80 - 200
M	Stainless steels (Austenitic) SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	First choice	DS	AH6030	100 - 200
		Fracture resistance	DJ	AH3135	100 - 200
	Stainless steels (Martensitic and ferritic) SUS430, SUS416, etc. X6Cr17, X20Cr13, etc.	First choice	DS	AH6030	100 - 200
		Fracture resistance	DJ	AH3135	100 - 200
	Stainless steels (Precipitation hardening) SUS630, etc. X5CrNiCuNb16-4, etc.	First choice	DS	AH6030	80 - 120
		Fracture resistance	DJ	AH3135	80 - 120
K	Grey cast irons FC250, etc. GG25, etc.	First choice	DJ	AH9030	80 - 250
		Fracture resistance	DJ	AH3135	80 - 200
	Ductile cast irons FCD700, etc. GGG70, etc.	First choice	DJ	AH9030	80 - 200
		Fracture resistance	DJ	AH3135	80 - 150
N	Aluminium alloy	First choice	DS	AH6030	200 - 400
S	Heat resistant alloy Inconel718, etc	First choice	DS	AH6030	20 - 60
		Fracture resistance	DJ	AH3135	20 - 60
	Titanium alloys Ti-6Al-4V, etc.	First choice	DS	AH6030	40 - 120
		Fracture resistance	DJ	AH3135	40 - 120
H	Hardened steel Over 40HRC	First choice	DJ	AH9030	50 - 100
		Fracture resistance	DJ	AH3135	40 - 80

APPLICATION RANGE

*In case of Interrupted cutting, feed should be decreased.

Feed *f* (mm/rev)	Refer to J078 - J079 page	0.05	0.05	0.05
Application range	OK Plane surface	OK Slant surface	OK Cross hole	OK Plunging
				
Feed *f* (mm/rev)	**0.1**	**0.05**	**Disapprove**	**Disapprove**
Application range	OK Boring	OK Round surface	Stacked plates	Back boring
				

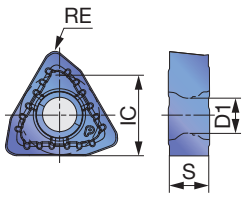
Feed: *f* (mm/rev)

L/D = 2, 3			L/D = 4		
DC (mm)			DC (mm)		
ø20 - ø27.5	ø28 - ø38	ø39 - ø54	ø20 - ø27	ø28 - ø38	ø39 - ø54
0.04 - 0.1	0.04 - 0.1	0.04 - 0.1	0.04- 0.1	0.04 - 0.1	0.04 - 0.1
0.04 - 0.1	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
0.06 - 0.15	0.06 - 0.16	0.08 - 0.18	0.06 - 0.15	0.06 - 0.15	0.08 - 0.17
0.04 - 0.12	0.04 - 0.13	0.04 - 0.15	0.04 - 0.12	0.04 - 0.13	0.04 - 0.15
0.04 - 0.12	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12
0.06 - 0.12	0.06 - 0.14	0.06 - 0.14	0.06 - 0.12	0.06 - 0.14	0.06 - 0.14
0.06 - 0.15	0.06 - 0.16	0.08 - 0.18	0.06 - 0.15	0.06 - 0.15	0.08 - 0.17
0.04 - 0.12	0.04 - 0.13	0.04 - 0.15	0.04 - 0.12	0.04 - 0.13	0.04 - 0.15
0.04 - 0.1	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12
0.04 - 0.1	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12
0.04 - 0.1	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12
0.04 - 0.1	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12
0.04 - 0.1	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
0.04 - 0.1	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
0.06 - 0.15	0.06 - 0.18	0.08 - 0.2	0.06 - 0.15	0.06 - 0.16	0.08 - 0.18
0.06 - 0.13	0.06 - 0.16	0.08 - 0.18	0.06 - 0.13	0.06 - 0.16	0.08 - 0.18
0.06 - 0.15	0.06 - 0.18	0.08 - 0.2	0.06 - 0.15	0.06 - 0.16	0.08 - 0.18
0.06 - 0.13	0.06 - 0.16	0.08 - 0.18	0.06 - 0.13	0.06 - 0.16	0.08 - 0.18
0.1 - 0.18	0.1 - 0.2	0.1 - 0.25	0.1 - 0.18	0.1 - 0.2	0.1 - 0.2
0.1 - 0.18	0.1 - 0.2	0.1 - 0.25	0.1 - 0.18	0.1 - 0.2	0.1 - 0.2
0.04 - 0.08	0.04 - 0.08	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
0.04 - 0.08	0.04 - 0.08	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
0.06 - 0.1	0.06 - 0.12	0.06 - 0.14	0.06 - 0.14	0.06 - 0.14	0.06 - 0.14
0.06 - 0.1	0.06 - 0.12	0.06 - 0.14	0.06 - 0.14	0.06 - 0.14	0.06 - 0.14
0.04 - 0.08	0.04 - 0.08	0.04 - 0.1	0.04 - 0.08	0.04 - 0.08	0.04 - 0.08
0.04 - 0.08	0.04 - 0.08	0.04 - 0.1	0.04 - 0.08	0.04 - 0.08	0.04 - 0.08

INSERT

DJ





P	Steel	☆	★
M	Stainless	★	☆
K	Cast iron	☆	★
N	Non-ferrous	★	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

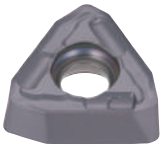
★ : First choice
☆ : Second choice

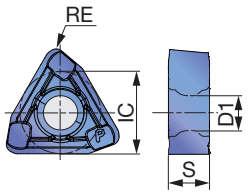
Designation	IC	S	Coated		D1	RE	DCN	DCX
			AH3135	AH9030				
WWMU05X205R-DJ	5.8	2.4	●	●	2.5	0.5	20	23.5
WWMU060306R-DJ	6.7	2.9	●	●	3	0.6	23.9	27
WWMU08X408R-DJ	8	3.9	●	●	3.4	0.8	27.5	32
WWMU09X510R-DJ	9.7	4.9	●	●	4.4	1	33	33.8
WWMU11X512R-DJ	11.3	5.7	●	●	5.5	1.2	39	46
WWMU13X512R-DJ	13	5.7	●	●	5.5	1.2	47	54

●: Line up

INSERT

DS





P	Steel	★																
M	Stainless	★																
K	Cast iron																	
N	Non-ferrous																	
S	Superalloys	★																
H	Hard materials																	

★ : First choice
☆ : Second choice

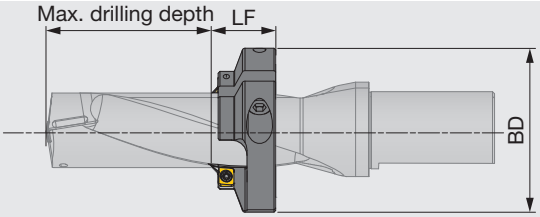
Designation	IC	S	Coated												D1	RE	DCN	DCX
			AH6030															
WWMU05X205R-DS	5.8	2.4	●												5.8	2.4	5.8	2.4
WWMU060306R-DS	6.7	2.9	●												6.7	2.9	6.7	2.9
WWMU08X408R-DS	8	3.9	●												8	3.9	8	3.9
WWMU09X510R-DS	9.7	4.9	●												9.7	4.9	9.7	4.9
WWMU11X512R-DS	11.3	5.7	●												11.3	5.7	11.3	5.7
WWMU13X512R-DS	13	5.7	●												13	5.7	13	5.7

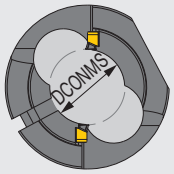
●: Line up

TUNGSIX-DRILL

TDXCF chamfering tool

Chamfering tool for TungDrillTwisted and TungSix-Drill





Designation	DCONMS	BD	LF	Application drill	Max. drilling depth		
					L/D = 2	L/D = 3	L/D = 4
TDXCF200L25	19.1	49	25	TDS200*25-*	15.5	35.5	62.5
TDXCF210L25	20.1	49	25	TDS205*25-*	16.5	37	64.6
TDXCF210L25	20.1	49	25	TDS209F25-3	-	38.5	-
TDXCF210L25	20.1	49	25	TDS210*25-*	17.5	38.5	66.5
TDXCF220L25	21.1	49	25	TDS215*25-*	18.5	40	68.6
TDXCF220L25	21.1	49	25	TDS220*25-*	19.5	41.5	70.5
TDXCF230L25	22.1	49	25	TDS225*25-*	20.5	43	72.6
TDXCF230L25	22.1	49	25	TDS230*25-*	21.5	44.5	74.5
TDXCF240L25	23.1	49	25	TDS235*25-*	22.5	46	76.6
TDXCF240L25	23.1	49	25	TDS239F25-3	-	47.5	-
TDXCF240L25	23.1	49	25	TDS240*25-*	23.5	47.5	78.5
TDXCF250L25	23.95	49	25	TDS245*25-*	24.5	49	80.6
TDXCF250L25	23.95	49	25	TDS250*25-*	25.5	50.5	82.5
TDXCF260L30	24.95	64	30	TDS255*25-*	21.5	47	79.6
TDXCF260L30	24.95	64	30	TDS260*25-*	22.5	48.5	81.5
TDXCF270L30	25.9	64	30	TDS264F32-3	-	50	-
TDXCF270L30	25.9	64	30	TDS265F32-3	-	50	-
TDXCF270L30	25.9	64	30	TDS270*32-*	24.5	51.5	85.5
TDXCF280L30	26.9	64	30	TDS280*32-*	26.5	54.5	89.5
TDXCF290L30	27.9	64	30	TDS290*32-*	28.5	57.5	93.5
TDXCF300L30	28.9	64	30	TDS300*32-*	30.5	60.5	97.5
TDXCF310L30	29.9	64	30	TDS310*32-*	32.5	63.5	101.5
TDXCF320L30	30.9	64	30	TDS320*32-*	34.5	66.5	105.5

SPARE PARTS

Designation	Screw for insert	Screw for ring	Wrench for insert	Wrench for ring
TDXCF130 - 230	CSPB-4S	CM6X16	IP-15D	P-5
TDXCF260 - 540	CSPB-4S	CM8X1.25X20-A	IP-15D	P-6

Recommended clamping torque (N·m): CSPB-4S = 3.5

INSERT

XHGX-45A



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	PNA	C	Coated
			GH130
XHGX090700R-45A	45	2.5	●

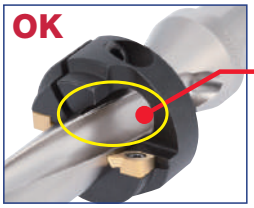
●: Line up

Caution in mounting the chamfering tool on the drill body

① Place the ring on the drill body and match the positions of fl utes on drill and ring. Temporarily clamp the ring with the ring screw tightened lightly.

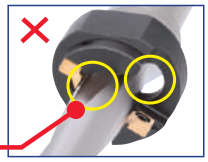
② Place the inserts, and tighten the insert screw lightly.

③ Adjust the ring position with a presetter, height gauge, or Vernier caliper, and securely tighten the ring screw, then the insert screw.

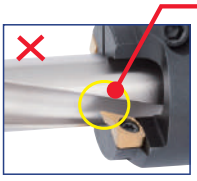


Match the positions of flutes on drill and ring.
(Inserts will be automatically set to the right positions.)

The cutting edge of the insert is in the ring flute.



The flutes on drill and ring do not match.

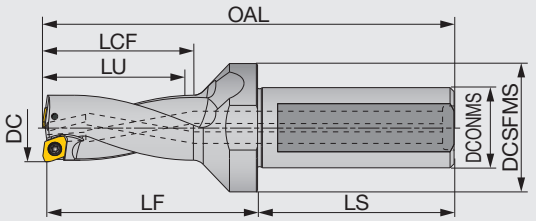


TUNGDRILLTWISTED

TDX-F L/D=2

L/D = 2, flat, tool diameter ø12.5 - ø54 mm





Designation	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset (radial)	WT(kg)	Insert
TDX125F20-2	12.5	20	25	25.4	49	28.4	41	90.4	0.8	0.2	XPMT040104R-D*
TDX130F20-2	13	20	25	26.4	49	29.4	42	91.4	0.7	0.2	XPMT040104R-D*
TDX135F20-2	13.5	20	25	27.4	49	30.4	43	92.4	0.6	0.2	XPMT040104R-D*
TDX140F20-2	14	20	25	28.4	49	31.4	44	93.4	0.5	0.2	XPMT040104R-D*
TDX145F20-2	14.5	20	25	29.4	49	32.4	46	95.4	0.4	0.2	XPMT040104R-D*
TDX150F20-2	15	20	25	30.5	49	33.5	47	96.5	0.9	0.2	XPMT050204R-D*
TDX155F20-2	15.5	20	32	31.5	49	34.5	49	98.5	0.8	0.2	XPMT050204R-D*
TDX160F20-2	16	20	32	32.5	49	35.5	51	100.5	0.6	0.2	XPMT050204R-D*
TDX165F20-2	16.5	20	32	33.5	49	36.5	52	101.5	0.5	0.2	XPMT050204R-D*
TDX170F20-2	17	20	32	34.5	49	37.5	53	102.5	0.4	0.2	XPMT050204R-D*
TDX175F25-2	17.5	25	32	35.5	54	38.5	55	109.5	1.2	0.3	XPMT06X308R-D*
TDX180F25-2	18	25	32	36.5	54	39.5	56	110.5	1.1	0.3	XPMT06X308R-D*
TDX185F25-2	18.5	25	32	37.5	54	40.5	57	111.5	0.9	0.3	XPMT06X308R-D*
TDX190F25-2	19	25	32	38.5	54	41.5	58	112.5	0.8	0.3	XPMT06X308R-D*
TDX195F25-2	19.5	25	32	39.5	54	42.5	60	114.5	0.7	0.3	XPMT06X308R-D*
TDX200F25-2	20	25	32	40.5	54	45.5	61	115.5	0.5	0.3	XPMT06X308R-D*
TDX205F25-2	20.5	25	32	41.5	54	46.5	62.5	117	0.4	0.3	XPMT06X308R-D*
TDX210F25-2	21	25	32	42.5	54	47.5	64	118.5	0.3	0.3	XPMT06X308R-D*
TDX215F25-2	21.5	25	32	43.5	54	48.5	65	119.5	0.2	0.3	XPMT06X308R-D*
TDX220F25-2	22	25	32	44.6	54	49.6	66	120.6	1.2	0.3	XPMT07H308R-D*
TDX225F25-2	22.5	25	37	45.6	54	50.6	67.5	122.1	1.1	0.3	XPMT07H308R-D*
TDX230F25-2	23	25	37	46.6	54	51.6	69	123.6	0.9	0.4	XPMT07H308R-D*
TDX235F25-2	23.5	25	37	47.6	54	52.6	70	124.6	0.8	0.4	XPMT07H308R-D*
TDX240F25-2	24	25	37	48.6	54	53.6	71	125.6	0.7	0.4	XPMT07H308R-D*
TDX245F25-2	24.5	25	37	49.6	54	54.6	72.5	127.1	0.5	0.4	XPMT07H308R-D*
TDX250F25-2	25	25	37	50.6	54	55.6	74	128.6	0.4	0.4	XPMT07H308R-D*
TDX255F25-2	25.5	25	37	51.6	54	56.6	75.5	130.1	0.3	0.4	XPMT07H308R-D*
TDX260F25-2	26	25	37	52.6	54	57.6	77	131.6	0.2	0.4	XPMT07H308R-D*
TDX270F32-2	27	32	40	54.7	59	59.7	79	138.7	1.5	0.6	XPMT08T308R-D*
TDX280F32-2	28	32	40	56.7	59	61	82.3	142	1.2	0.6	XPMT08T308R-D*
TDX290F32-2	29	32	40	58.7	59	63	84.3	144	1	0.7	XPMT08T308R-D*
TDX300F32-2	30	32	40	60.7	59	65	87.3	147	0.7	0.7	XPMT08T308R-D*
TDX310F32-2	31	32	40	62.7	59	67	90.3	150	0.4	0.7	XPMT08T308R-D*
TDX320F32-2	32	32	40	64.7	59	69	92.3	152	0.2	0.8	XPMT08T308R-D*
TDX330F40-2	33	40	50	67.1	69	71.7	95.6	165.7	2.3	1.2	XPMT110412R-D*
TDX340F40-2	34	40	50	69.1	69	73.7	98.6	168.7	2.1	1.2	XPMT110412R-D*
TDX350F40-2	35	40	50	71.1	69	75.7	101.6	171.7	1.8	1.2	XPMT110412R-D*
TDX360F40-2	36	40	50	73.1	69	77.7	104.6	174.7	1.5	1.3	XPMT110412R-D*
TDX370F40-2	37	40	50	75.1	69	79.7	105.6	175.7	1.3	1.3	XPMT110412R-D*
TDX380F40-2	38	40	50	77.1	69	81.7	108.6	178.7	1	1.3	XPMT110412R-D*
TDX390F40-2	39	40	50	79.1	69	83.7	110.6	180.7	0.7	1.4	XPMT110412R-D*
TDX400F40-2	40	40	50	81.1	69	85.7	113.6	183.7	0.5	1.4	XPMT110412R-D*
TDX410F40-2	41	40	50	83.1	69	87.7	117.6	187.7	0.2	1.5	XPMT110412R-D*
TDX420F40-2	42	40	55	85.6	69	90.6	120	190.6	3.1	1.6	XPMT150512R-D*
TDX430F40-2	43	40	55	87.6	69	92.6	123	193.6	2.9	1.6	XPMT150512R-D*
TDX440F40-2	44	40	55	89.6	69	94.6	125	195.6	2.6	1.7	XPMT150512R-D*
TDX450F40-2	45	40	55	91.6	69	96.6	128	198.6	2.3	1.7	XPMT150512R-D*
TDX460F40-2	46	40	55	93.6	69	98.6	131	201.6	2.1	1.8	XPMT150512R-D*
TDX470F40-2	47	40	55	95.6	69	100.6	133	203.6	1.8	1.9	XPMT150512R-D*
TDX480F40-2	48	40	55	97.6	69	102.6	136	206.6	1.5	1.9	XPMT150512R-D*
TDX490F40-2	49	40	55	99.6	69	104.6	138	208.6	1.3	1.9	XPMT150512R-D*
TDX500F40-2	50	40	55	101.6	69	106.6	141	211.6	1	2	XPMT150512R-D*

Designation	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset (radial)	WT(kg)	Insert
TDX510F40-2	51	40	55	103.6	69	108.6	145	215.6	0.7	2.1	XPMT150512R-D*
TDX520F40-2	52	40	55	105.6	69	110.6	147	217.6	0.5	2.2	XPMT150512R-D*
TDX530F40-2	53	40	55	107.6	69	112.6	150	220.6	-	2.3	XPMT150512R-D*
TDX540F40-2	54	40	55	109.6	69	114.6	152	222.6	-	2.4	XPMT150512R-D*

Tool diameter	Tool diameter tolerance	Hole diameter tolerance
ø12.5 - ø17	+ 0.1 / 0	+ 0.25 / 0
ø17.5 - ø54	+ 0.2 / 0	+ 0.3 / 0

SPARE PARTS




Designation	Clamping screw	Wrench
TDX125 - 145	CSPB-2H	IP-6DB
TDX150 - 170	CSPB-2L043	IP-6DB
TDX175 - 215	CSPB-2.2	IP-7D
TDX220 - 260	CSPB-2.5	IP-8D
TDX270 - 320	CSTB-3	T-9D
TDX330 - 410	CSTB-4	T-15D
TDX420 - 540	CSTB-5	T-20D

Recommended clamping torque (N·m): CSPB-2H/CSPB-2L043=0.7, CSPB-2.2=1, CSPB-2.5=1.3, CSTB-3=2.3, CSTB-4=3.5, CSTB-5=5

Reference pages: Inserts → J090 - J091
Standard cutting conditions → J092

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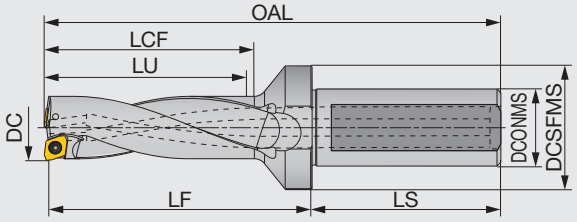
TDX-F L/D=3

L/D = 3, flat, tool diameter ø12.5 - ø54 mm





Designation	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset (radial)	WT(kg)	Insert
TDX125F20-3	12.5	20	25	37.9	49	40.9	53	102.4	0.8	0.2	XPMT040104R-D*
TDX130F20-3	13	20	25	39.4	49	42.4	55	104.4	0.7	0.2	XPMT040104R-D*
TDX135F20-3	13.5	20	25	40.9	49	43.9	56	105.4	0.6	0.2	XPMT040104R-D*
TDX140F20-3	14	20	25	42.4	49	45.4	58	107.4	0.5	0.2	XPMT040104R-D*
TDX145F20-3	14.5	20	25	43.9	49	46.9	60	109.4	0.4	0.2	XPMT040104R-D*
TDX150F20-3	15	20	25	45.4	49	48.4	62	111.4	0.9	0.2	XPMT050204R-D*
TDX155F20-3	15.5	20	32	46.9	49	49.9	64	113.4	0.8	0.2	XPMT050204R-D*
TDX160F20-3	16	20	32	48.4	49	51.4	66	115.4	0.6	0.2	XPMT050204R-D*
TDX165F20-3	16.5	20	32	49.9	49	52.9	68	117.4	0.5	0.2	XPMT050204R-D*
TDX170F20-3	17	20	32	51.4	49	54.4	69	118.4	0.4	0.2	XPMT050204R-D*
TDX175F25-3	17.5	25	32	53	54	56	72	126.5	1.2	0.3	XPMT06X308R-D*
TDX180F25-3	18	25	32	54.5	54	57.5	73	127.5	1.1	0.3	XPMT06X308R-D*
TDX185F25-3	18.5	25	32	56	54	59	75	129.5	0.9	0.3	XPMT06X308R-D*
TDX190F25-3	19	25	32	57.5	54	60.5	76	130.5	0.8	0.3	XPMT06X308R-D*
TDX195F25-3	19.5	25	32	59	54	62	79	133.5	0.7	0.3	XPMT06X308R-D*
TDX200F25-3	20	25	32	60.5	54	65.5	81	135.5	0.5	0.3	XPMT06X308R-D*
TDX205F25-3	20.5	25	32	62	54	67	82	136.5	0.4	0.3	XPMT06X308R-D*
TDX210F25-3	21	25	32	63.5	54	68.5	84	138.5	0.3	0.3	XPMT06X308R-D*
TDX215F25-3	21.5	25	32	65	54	70	86	140.5	0.2	0.4	XPMT06X308R-D*
TDX220F25-3	22	25	32	66.6	54	71.6	87	141.6	1.2	0.4	XPMT07H308R-D*
TDX225F25-3	22.5	25	37	68.1	54	73.1	90	144.6	1.1	0.4	XPMT07H308R-D*
TDX230F25-3	23	25	37	69.6	54	74.6	91	145.6	0.9	0.4	XPMT07H308R-D*
TDX235F25-3	23.5	25	37	71.1	54	76.1	93	147.6	0.8	0.4	XPMT07H308R-D*
TDX240F25-3	24	25	37	72.6	54	77.6	95	149.6	0.7	0.4	XPMT07H308R-D*
TDX245F25-3	24.5	25	37	74.1	54	79.1	97	151.6	0.5	0.5	XPMT07H308R-D*
TDX250F25-3	25	25	37	75.6	54	80.6	99	153.6	0.4	0.5	XPMT07H308R-D*
TDX255F25-3	25.5	25	37	77.1	54	82.1	100	154.6	0.3	0.5	XPMT07H308R-D*
TDX260F25-3	26	25	37	78.6	54	83.6	102	156.6	0.2	0.5	XPMT07H308R-D*
TDX270F32-3	27	32	40	81.7	59	86.7	105	164.7	1.5	0.6	XPMT08T308R-D*
TDX280F32-3	28	32	40	84.7	59	89	109.3	169	1.2	0.7	XPMT08T308R-D*
TDX290F32-3	29	32	40	87.7	59	92	112.3	172	1	0.7	XPMT08T308R-D*
TDX300F32-3	30	32	40	90.7	59	95	117.3	177	0.7	0.8	XPMT08T308R-D*
TDX310F32-3	31	32	40	93.7	59	98	121.3	181	0.4	0.8	XPMT08T308R-D*
TDX320F32-3	32	32	40	96.7	59	101	124.3	184	0.2	0.9	XPMT08T308R-D*
TDX330F40-3	33	40	50	100.1	69	104.7	128.6	198.7	2.3	1.3	XPMT110412R-D*
TDX340F40-3	34	40	50	103.1	69	107.7	131.6	201.7	2.1	1.3	XPMT110412R-D*
TDX350F40-3	35	40	50	106.1	69	110.7	135.6	205.7	1.8	1.3	XPMT110412R-D*
TDX360F40-3	36	40	50	109.1	69	113.7	139.6	209.7	1.5	1.4	XPMT110412R-D*
TDX370F40-3	37	40	50	112.1	69	116.7	142.6	212.7	1.3	1.4	XPMT110412R-D*
TDX380F40-3	38	40	50	115.1	69	119.7	146.6	216.7	1	1.5	XPMT110412R-D*
TDX390F40-3	39	40	50	118.1	69	122.7	149.6	219.7	0.7	1.6	XPMT110412R-D*
TDX400F40-3	40	40	50	121.1	69	125.7	153.6	223.7	0.5	1.6	XPMT110412R-D*
TDX410F40-3	41	40	50	124.1	69	128.7	157.6	227.7	0.2	1.7	XPMT110412R-D*
TDX420F40-3	42	40	55	127.6	69	132.6	161	231.6	3.1	1.8	XPMT150512R-D*
TDX430F40-3	43	40	55	130.6	69	135.6	165	235.6	2.9	1.8	XPMT150512R-D*
TDX440F40-3	44	40	55	133.6	69	138.6	168	238.6	2.6	1.9	XPMT150512R-D*
TDX450F40-3	45	40	55	136.6	69	141.6	173	243.6	2.3	2	XPMT150512R-D*
TDX460F40-3	46	40	55	139.6	69	144.6	177	247.6	2.1	2.1	XPMT150512R-D*
TDX470F40-3	47	40	55	142.6	69	147.6	180	250.6	1.8	2.2	XPMT150512R-D*
TDX480F40-3	48	40	55	145.6	69	150.6	184	254.6	1.5	2.3	XPMT150512R-D*
TDX490F40-3	49	40	55	148.6	69	153.6	187	257.6	1.3	2.3	XPMT150512R-D*

Designation	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset (radial)	WT(kg)	Insert
TDX500F40-3	50	40	55	151.6	69	156.6	191	261.6	1	2.4	XPMT150512R-D*
TDX510F40-3	51	40	55	154.6	69	159.6	195	265.6	0.7	2.5	XPMT150512R-D*
TDX520F40-3	52	40	55	157.6	69	162.6	198	268.6	0.5	2.6	XPMT150512R-D*
TDX530F40-3	53	40	55	160.6	69	165.6	202	272.6	-	2.7	XPMT150512R-D*
TDX540F40-3	54	40	55	163.6	69	168.6	205	275.6	-	2.9	XPMT150512R-D*

Tool diameter	Tool diameter tolerance	Hole diameter tolerance
ø12.5 - ø17	+ 0.1 / 0	+ 0.25 / 0
ø17.5 - ø54	+ 0.2 / 0	+ 0.3 / 0

SPARE PARTS





Designation	Clamping screw	Wrench
TDX125 - 145	CSPB-2H	IP-6DB
TDX150 - 170	CSPB-2L043	IP-6DB
TDX175 - 215	CSPB-2.2	IP-7D
TDX220 - 260	CSPB-2.5	IP-8D
TDX270 - 320	CSTB-3	T-9D
TDX330 - 410	CSTB-4	T-15D
TDX420 - 540	CSTB-5	T-20D

Recommended clamping torque (N·m): CSPB-2H/CSPB-2L043=0.7, CSPB-2.2=1, CSPB-2.5=1.3, CSTB-3=2.3, CSTB-4=3.5, CSTB-5=5

Reference pages: Inserts → J090 - J091, Standard cutting conditions → J092

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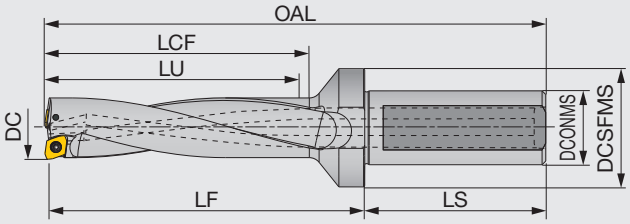
TDX-F L/D=4

L/D = 4, flat, tool diameter ø12.5 - ø54 mm





Designation	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset (radial)	WT(kg)	Insert
TDX125F20-4	12.5	20	25	50.4	49	53.4	66	115.4	0.8	0.2	XPMT040104R-D*
TDX130F20-4	13	20	25	52.4	49	55.4	68	117.4	0.7	0.2	XPMT040104R-D*
TDX135F20-4	13.5	20	25	54.4	49	57.4	70	119.4	0.6	0.2	XPMT040104R-D*
TDX140F20-4	14	20	25	56.4	49	59.4	72	121.4	0.5	0.2	XPMT040104R-D*
TDX145F20-4	14.5	20	25	58.4	49	61.4	75	124.4	0.4	0.2	XPMT040104R-D*
TDX150F20-4	15	20	25	60.4	49	63.4	77	126.4	0.9	0.2	XPMT050204R-D*
TDX155F20-4	15.5	20	32	62.4	49	65.4	79	128.4	0.8	0.2	XPMT050204R-D*
TDX160F20-4	16	20	32	64.4	49	67.4	82	131.4	0.6	0.2	XPMT050204R-D*
TDX165F20-4	16.5	20	32	66.4	49	69.4	84	133.4	0.5	0.2	XPMT050204R-D*
TDX170F20-4	17	20	32	68.4	49	71.4	86	135.4	0.4	0.2	XPMT050204R-D*
TDX175F25-4	17.5	25	32	70.5	54	73.5	89	143.5	1.2	0.3	XPMT06X308R-D*
TDX180F25-4	18	25	32	72.5	54	75.5	91	145.5	1.1	0.3	XPMT06X308R-D*
TDX185F25-4	18.5	25	32	74.5	54	77.5	93	147.5	0.9	0.3	XPMT06X308R-D*
TDX190F25-4	19	25	32	76.5	54	79.5	95	149.5	0.8	0.3	XPMT06X308R-D*
TDX195F25-4	19.5	25	32	78.5	54	81.5	99	153.5	0.7	0.4	XPMT06X308R-D*
TDX200F25-4	20	25	32	80.5	54	84.5	101	155.5	0.5	0.4	XPMT06X308R-D*
TDX205F25-4	20.5	25	32	82.5	54	86.5	103	157.5	0.4	0.4	XPMT06X308R-D*
TDX210F25-4	21	25	32	84.5	54	88.5	105	159.5	0.3	0.4	XPMT06X308R-D*
TDX215F25-4	21.5	25	32	86.5	54	90.5	107	161.5	0.2	0.4	XPMT06X308R-D*
TDX220F25-4	22	25	32	88.6	54	92.6	109	163.6	1.2	0.5	XPMT07H308R-D*
TDX225F25-4	22.5	25	37	90.6	54	94.6	111.5	166.1	1.1	0.5	XPMT07H308R-D*
TDX230F25-4	23	25	37	92.6	54	96.6	114	168.6	0.9	0.4	XPMT07H308R-D*
TDX235F25-4	23.5	25	37	94.6	54	98.6	116.5	171.1	0.8	0.4	XPMT07H308R-D*
TDX240F25-4	24	25	37	96.6	54	100.6	119	173.6	0.7	0.4	XPMT07H308R-D*
TDX245F25-4	24.5	25	37	98.6	54	102.6	121.5	176.1	0.5	0.6	XPMT07H308R-D*
TDX250F25-4	25	25	37	100.6	54	104.6	124	178.6	0.4	0.6	XPMT07H308R-D*
TDX255F25-4	25.5	25	37	102.6	54	106.6	126	180.6	0.3	0.6	XPMT07H308R-D*
TDX260F25-4	26	25	37	104.6	54	108.6	128	182.6	0.2	0.6	XPMT07H308R-D*
TDX270F32-4	27	32	40	108.7	59	112.7	132	191.7	1.5	0.6	XPMT08T308R-D*
TDX280F32-4	28	32	40	112.7	59	116.7	137	196.7	1.2	0.8	XPMT08T308R-D*
TDX290F32-4	29	32	40	116.7	59	120.7	141	200.7	1	0.7	XPMT08T308R-D*
TDX300F32-4	30	32	40	120.7	59	124.7	147	206.7	0.7	0.9	XPMT08T308R-D*
TDX310F32-4	31	32	40	124.7	59	128.7	152	211.7	0.4	0.9	XPMT08T308R-D*
TDX320F32-4	32	32	40	128.7	59	132.7	156	215.7	0.2	1	XPMT08T308R-D*
TDX330F40-4	33	40	50	133.1	69	137.1	161	231.1	2.3	1.4	XPMT110412R-D*
TDX340F40-4	34	40	50	137.1	69	141.1	165	235.1	2.1	1.4	XPMT110412R-D*
TDX350F40-4	35	40	50	141.1	69	145.1	170	240.1	1.8	1.4	XPMT110412R-D*
TDX360F40-4	36	40	50	145.1	69	149.1	175	245.1	1.5	1.5	XPMT110412R-D*
TDX370F40-4	37	40	50	149.1	69	153.1	179	249.1	1.3	1.5	XPMT110412R-D*
TDX380F40-4	38	40	50	153.1	69	157.1	184	254.1	1	1.7	XPMT110412R-D*
TDX390F40-4	39	40	50	157.1	69	161.1	188	258.1	0.7	1.8	XPMT110412R-D*
TDX400F40-4	40	40	50	161.1	69	165.1	193	263.1	0.5	1.8	XPMT110412R-D*
TDX410F40-4	41	40	50	165.1	69	169.1	198	268.1	0.2	1.9	XPMT110412R-D*
TDX420F40-4	42	40	55	169.6	69	173.6	202	272.6	3.1	2	XPMT150512R-D*
TDX430F40-4	43	40	55	173.6	69	177.6	207	277.6	2.9	2	XPMT150512R-D*
TDX440F40-4	44	40	55	177.6	69	181.6	211	281.6	2.6	2.1	XPMT150512R-D*
TDX450F40-4	45	40	55	181.6	69	185.6	217	287.6	2.3	2.3	XPMT150512R-D*
TDX460F40-4	46	40	55	185.6	69	189.6	222	292.6	2.1	2.4	XPMT150512R-D*
TDX470F40-4	47	40	55	189.6	69	193.6	226	296.6	1.8	2.5	XPMT150512R-D*
TDX480F40-4	48	40	55	193.6	69	197.6	231	301.6	1.5	2.7	XPMT150512R-D*
TDX490F40-4	49	40	55	197.6	69	201.6	235	305.6	1.3	2.7	XPMT150512R-D*
TDX500F40-4	50	40	55	201.6	69	205.6	240	310.6	1	2.8	XPMT150512R-D*

Designation	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset (radial)	WT(kg)	Insert
TDX510F40-4	51	40	55	205.6	69	209.6	245	315.6	0.7	2.9	XPMT150512R-D*
TDX520F40-4	52	40	55	209.6	69	213.6	249	319.6	0.5	3	XPMT150512R-D*
TDX530F40-4	53	40	55	213.6	69	217.6	254	324.6	-	3.1	XPMT150512R-D*
TDX540F40-4	54	40	55	217.6	69	221.6	258	328.6	-	3.4	XPMT150512R-D*

Tool diameter	Tool diameter tolerance	Hole diameter tolerance
ø12.5 - ø17	+ 0.1 / 0	+ 0.4 / 0
ø17.5 - ø54	+ 0.2 / 0	+ 0.45 / 0

SPARE PARTS





Designation	Clamping screw	Wrench
TDX125 - 145	CSPB-2H	IP-6DB
TDX150 - 170	CSPB-2L043	IP-6DB
TDX175 - 215	CSPB-2.2	IP-7D
TDX220 - 260	CSPB-2.5	IP-8D
TDX270 - 320	CSTB-3	T-9D
TDX330 - 410	CSTB-4	T-15D
TDX420 - 540	CSTB-5	T-20D

Recommended clamping torque (N·m): CSPB-2H/CSPB-2L043=0.7, CSPB-2.2=1, CSPB-2.5=1.3, CSTB-3=2.3, CSTB-4=3.5, CSTB-5=5

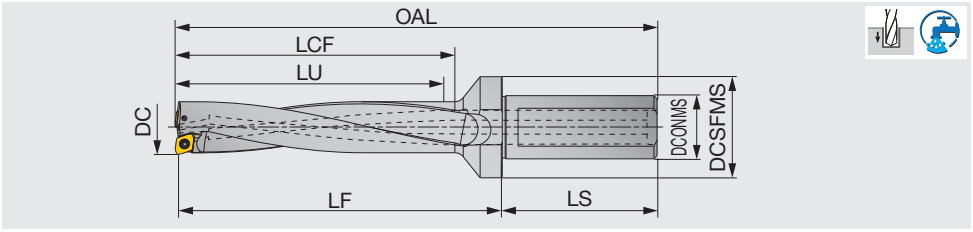
Reference pages: Inserts → J090 - J091, Standard cutting conditions → J092

TUNGDRILLTWISTED

TDX-F L/D=5

L/D = 5, flat, tool diameter ø12.5 - ø54 mm





Designation	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset (radial)	WT(kg)	Insert
TDX125F20-5	12.5	20	25	62.9	49	65.9	78.5	127.9	0.8	0.2	XPMT040104R-D*
TDX130F20-5	13	20	25	65.4	49	68.4	81	130.4	0.7	0.2	XPMT040104R-D*
TDX135F20-5	13.5	20	25	67.9	49	70.9	83.5	132.9	0.6	0.2	XPMT040104R-D*
TDX140F20-5	14	20	25	70.4	49	73.4	86	135.4	0.5	0.2	XPMT040104R-D*
TDX145F20-5	14.5	20	25	72.9	49	75.9	89.5	138.9	0.4	0.2	XPMT040104R-D*
TDX150F20-5	15	20	25	75.4	49	78.4	92	141.4	0.9	0.2	XPMT050204R-D*
TDX155F20-5	15.5	20	32	77.9	49	80.9	94.5	143.9	0.8	0.2	XPMT050204R-D*
TDX160F20-5	16	20	32	80.4	49	83.4	98	147.4	0.6	0.2	XPMT050204R-D*
TDX165F20-5	16.5	20	32	82.9	49	85.9	100.5	149.9	0.5	0.2	XPMT050204R-D*
TDX170F20-5	17	20	32	85.4	49	88.4	103	152.4	0.4	0.2	XPMT050204R-D*
TDX175F25-5	17.5	25	32	88	54	91	106.5	161	1.2	0.3	XPMT06X308R-D*
TDX180F25-5	18	25	32	90.5	54	93.5	109	163.5	1.1	0.3	XPMT06X308R-D*
TDX185F25-5	18.5	25	32	93	54	96	111.5	166	0.9	0.4	XPMT06X308R-D*
TDX190F25-5	19	25	32	95.5	54	98.5	114	168.5	0.8	0.4	XPMT06X308R-D*
TDX195F25-5	19.5	25	32	98	54	101	118.5	173	0.7	0.4	XPMT06X308R-D*
TDX200F25-5	20	25	32	100.5	54	104.5	121	175.5	0.5	0.4	XPMT06X308R-D*
TDX205F25-5	20.5	25	32	103	54	107	123.5	178	0.4	0.4	XPMT06X308R-D*
TDX210F25-5	21	25	32	105.5	54	109.5	126	180.5	0.3	0.4	XPMT06X308R-D*
TDX215F25-5	21.5	25	32	108	54	112	128.5	183	0.2	0.4	XPMT06X308R-D*
TDX220F25-5	22	25	32	110.6	54	114.6	131	185.6	1.2	0.6	XPMT07H308R-D*
TDX225F25-5	22.5	25	37	113.1	54	117.1	134	188.6	1.1	0.6	XPMT07H308R-D*
TDX230F25-5	23	25	37	115.6	54	119.6	137	191.6	0.9	0.4	XPMT07H308R-D*
TDX235F25-5	23.5	25	37	118.1	54	122.1	140	194.6	0.8	0.4	XPMT07H308R-D*
TDX240F25-5	24	25	37	120.6	54	124.6	143	197.6	0.7	0.4	XPMT07H308R-D*
TDX245F25-5	24.5	25	37	123.1	54	127.1	146	200.6	0.5	0.7	XPMT07H308R-D*
TDX250F25-5	25	25	37	125.6	54	129.6	149	203.6	0.4	0.7	XPMT07H308R-D*
TDX255F25-5	25.5	25	37	128.1	54	132.1	151.5	206.1	0.3	0.7	XPMT07H308R-D*
TDX260F25-5	26	25	37	130.6	54	134.6	154	208.6	0.2	0.7	XPMT07H308R-D*
TDX270F32-5	27	32	40	135.7	59	139.7	159	218.7	1.5	0.6	XPMT08T308R-D*
TDX280F32-5	28	32	40	140.7	59	144.7	165	224.7	1.2	0.9	XPMT08T308R-D*
TDX290F32-5	29	32	40	145.7	59	149.7	170	229.7	1	0.7	XPMT08T308R-D*
TDX300F32-5	30	32	40	150.7	59	154.7	177	236.7	0.7	1	XPMT08T308R-D*
TDX310F32-5	31	32	40	155.7	59	159.7	183	242.7	0.4	1	XPMT08T308R-D*
TDX320F32-5	32	32	40	160.7	59	164.7	188	247.7	0.2	1.1	XPMT08T308R-D*
TDX330F40-5	33	40	50	166.1	69	170.1	194	264.1	2.3	1.5	XPMT110412R-D*
TDX340F40-5	34	40	50	171.1	69	175.1	199	269.1	2.1	1.5	XPMT110412R-D*
TDX350F40-5	35	40	50	176.1	69	180.1	205	275.1	1.8	1.5	XPMT110412R-D*
TDX360F40-5	36	40	50	181.1	69	185.1	211	281.1	1.5	1.6	XPMT110412R-D*
TDX370F40-5	37	40	50	186.1	69	190.1	216	286.1	1.3	1.6	XPMT110412R-D*
TDX380F40-5	38	40	50	191.1	69	195.1	222	292.1	1	1.9	XPMT110412R-D*
TDX390F40-5	39	40	50	196.1	69	200.1	227	297.1	0.7	2	XPMT110412R-D*
TDX400F40-5	40	40	50	201.1	69	205.1	233	303.1	0.5	2	XPMT110412R-D*
TDX410F40-5	41	40	50	206.1	69	210.1	239	309.1	0.2	2.1	XPMT110412R-D*
TDX420F40-5	42	40	55	211.6	69	215.6	244	314.6	3.1	2.2	XPMT150512R-D*
TDX430F40-5	43	40	55	216.6	69	220.6	250	320.6	2.9	2.2	XPMT150512R-D*
TDX440F40-5	44	40	55	221.6	69	225.6	255	325.6	2.6	2.3	XPMT150512R-D*
TDX450F40-5	45	40	55	226.6	69	230.6	262	332.6	2.3	2.6	XPMT150512R-D*
TDX460F40-5	46	40	55	231.6	69	235.6	268	338.6	2.1	2.7	XPMT150512R-D*
TDX470F40-5	47	40	55	236.6	69	240.6	273	343.6	1.8	2.8	XPMT150512R-D*
TDX480F40-5	48	40	55	241.6	69	245.6	279	349.6	1.5	3.1	XPMT150512R-D*
TDX490F40-5	49	40	55	246.6	69	250.6	284	354.6	1.3	3.1	XPMT150512R-D*
TDX500F40-5	50	40	55	251.6	69	255.6	290	360.6	1	3.2	XPMT150512R-D*

Designation	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset (radial)	WT(kg)	Insert
TDX510F40-5	51	40	55	256.6	69	260.6	296	366.6	0.7	3.3	XPMT150512R-D*
TDX520F40-5	52	40	55	261.6	69	265.6	301	371.6	0.5	3.4	XPMT150512R-D*
TDX530F40-5	53	40	55	266.6	69	270.6	307	377.6	-	3.5	XPMT150512R-D*
TDX540F40-5	54	40	55	271.6	69	275.6	312	382.6	-	3.9	XPMT150512R-D*

Tool diameter	Tool diameter tolerance	Hole diameter tolerance
ø12.5 - ø17	+ 0.1 / 0	+ 0.4 / 0
ø17.5 - ø54	+ 0.2 / 0	+ 0.45 / 0

SPARE PARTS





Designation	Clamping screw	Wrench
TDX125 - 145	CSPB-2H	IP-6DB
TDX150 - 170	CSPB-2L043	IP-6DB
TDX175 - 215	CSPB-2.2	IP-7D
TDX220 - 260	CSPB-2.5	IP-8D
TDX270 - 320	CSTB-3	T-9D
TDX330 - 410	CSTB-4	T-15D
TDX420 - 540	CSTB-5	T-20D

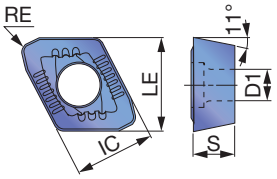
Recommended clamping torque (N·m): CSPB-2H/CSPB-2L043=0.7, CSPB-2.2=1, CSPB-2.5=1.3, CSTB-3=2.3, CSTB-4=3.5, CSTB-5=5

Reference pages: Inserts → J090 - J091, Standard cutting conditions → J092

INSERT

DJ





P	Steel			★	☆	
M	Stainless	☆		★		
K	Cast iron		☆	☆	★	
N	Non-ferrous	☆		★		
S	Superalloys	☆		★	☆	
H	Hard materials	☆		★	☆	

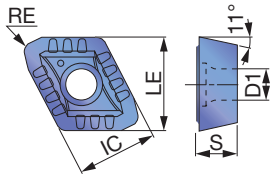
★ : First choice
☆ : Second choice

Designation	IC	LE	Coated				S	D1	RE	DCN	DCX	AN
			AH725	T1115	AH6030	AH9030						
XPMT040104R-DJ	4.3	4.5	●	●	●	●	1.59	2.3	0.4	12.5	14.5	11
XPMT050204R-DJ	5.2	5.4	●	●	●	●	2.38	2.3	0.4	15	17	11
XPMT06X308R-DJ	6	7	●	●	●	●	3	2.5	0.8	17.5	21.5	11
XPMT07H308R-DJ	7	8.2	●	●	●	●	3.6	2.8	0.8	22	26	11
XPMT08T308R-DJ	8.5	9.9	●	●	●	●	3.97	3.4	0.8	27	32	11
XPMT110412R-DJ	11.2	12.5	●	●	●	●	4.76	4.4	1.2	33	41	11
XPMT150512R-DJ	15	16.1	●	●	●	●	5.56	5.5	1.2	42	54	11

●: Line up

DS





P	Steel	☆	★
M	Stainless	☆	★
K	Cast iron		
N	Non-ferrous	☆	
S	Superalloys	☆	★
H	Hard materials		

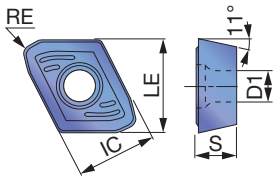
★ : First choice
☆ : Second choice

Designation	IC	LE	Coated		S	D1	RE	DCN	DCX	AN
			AH725	AH6030						
XPMT040104R-DS	4.3	4.5	●	●	1.59	2.3	0.4	12.5	14.5	11
XPMT050204R-DS	5.2	5.4	●	●	2.38	2.3	0.4	15	17	11
XPMT06X308R-DS	6	7	●	●	3	2.5	0.8	17.5	21.5	11
XPMT07H308R-DS	7	8.2	●	●	3.6	2.8	0.8	22	26	11
XPMT08T308R-DS	8.5	9.9	●	●	3.97	3.4	0.8	27	32	11
XPMT110412R-DS	11.2	12.5	●	●	4.76	4.4	1.2	33	41	11
XPMT150512R-DS	15	16.1	●	●	5.56	5.5	1.2	42	54	11

●: Line up

DW





P	Steel	☆	★	☆
M	Stainless	☆	★	☆
K	Cast iron		☆	★
N	Non-ferrous	☆	★	
S	Superalloys	☆	★	☆
H	Hard materials	☆	★	☆

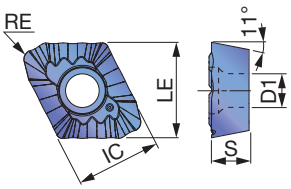
★ : First choice
☆ : Second choice

Designation	IC	LE	Coated			S	D1	RE	DCN	DCX	AN
			AH725	AH6030	AH9030						
XPMT040104R-DW	4.3	4.5	●	●	●	1.59	2.3	0.4	12.5	14.5	11
XPMT050204R-DW	5.2	5.4	●	●	●	2.38	2.3	0.4	15	17	11
XPMT06X308R-DW	6	7	●	●	●	3	2.5	0.8	17.5	21.5	11
XPMT07H308R-DW	7	8.2	●	●	●	3.6	2.8	0.8	22	26	11
XPMT08T308R-DW	8.5	9.9	●	●	●	3.97	3.4	0.8	27	32	11
XPMT110412R-DW	11.2	12.5	●	●	●	4.76	4.4	1.2	33	41	11
XPMT150512R-DW	15	16.1	●	●	●	5.56	5.5	1.2	42	54	11

●: Line up

DG





P	Steel	★
M	Stainless	☆
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	IC	LE	Coated	S	D1	RE	DCN	DCX	AN
			AH725						
XPMT08T308R-DG	8.5	9.9	●	3.97	3.4	0.8	27	32	11
XPMT110412R-DG	11.2	12.5	●	4.76	4.4	1.2	33	41	11
XPMT150512R-DG	15	16.1	●	5.56	5.5	1.2	42	54	11

●: Line up

RECOMMENDED INSERT

ISO	Workpiece material	First choice	High feed	High speed	Troubleshooting			
					Chipping resistance	Wear resistance	Surface finish	Chip control
P	Low carbon steels (C ≤ 0.3%)	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
P	Carbon steels (C > 0.3%) Alloy steels	DJ, AH6030	DW, AH6030	DJ, AH9030	DW, AH725	DJ, AH9030	DW, AH6030	-
P	Low alloy steels	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	-
M	Stainless steel	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
K	Grey cast irons	DJ, AH9030	DW, AH9030	DJ, T1115	DW, AH725	-	DW, AH9030	-
K	Ductile cast irons	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-
N	Aluminium alloy	DJ, AH725	DW, AH725	DS, AH6030	-	-	DW, AH725	DG, AH725
S	Titanium alloys Heat-resistant alloys	DS, AH6030	-	-	DW, AH725	-	DW, AH725	DG, AH725
H	Hardened steel	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed *Vc* (m/min)	Series L/D	Feed: *f* (mm/rev)				
				ø12.5 ~ ø14.5	ø15 ~ ø17	ø17.5 ~ ø26	ø27 ~ ø32	ø33 ~ ø54
P	Low carbon steels (C < 0.3) SS400, SM490, S25C, etc. st42-1, St52-3, C25, etc.	160 - 320	2D, 3D	0.02 - 0.06	0.02 - 0.06	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
			4D, 5D	0.02 - 0.06	0.02 - 0.06	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
P	Carbon steels (C > 0.3) S45C, S55C, etc. C45, C55, etc.	80 - 250	2D, 3D	0.04 - 0.1	0.04 - 0.12	0.06 - 0.13	0.06 - 0.15	0.08 - 0.18
			4D, 5D	0.04 - 0.08	0.04- 0.08	0.06 - 0.1	0.06 - 0.12	0.08 - 0.14
P	Low alloy steels SCM415, etc.	160 - 250	2D, 3D	0.04 - 0.08	0.04 - 0.08	0.06 - 0.12	0.06 - 0.12	0.06 - 0.14
			4D, 5D	0.04 - 0.08	0.04 - 0.08	0.06 - 0.12	0.06 - 0.12	0.06 - 0.14
P	Alloy steels SCM440, SCr420, etc. 42CrMo4, 20Cr4, etc.	80 - 200	2D, 3D	0.04 - 0.1	0.04 - 0.12	0.06 - 0.13	0.06 - 0.15	0.08 - 0.18
			4D, 5D	0.04 - 0.08	0.04 - 0.08	0.06 - 0.1	0.06 - 0.12	0.08 - 0.14
M	Stainless steels (Austenitic) SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	100 - 200	2D, 3D	0.02 - 0.08	0.02 - 0.08	0.04 - 0.1	0.04 - 0.12	0.04 - 0.12
			4D, 5D	0.02 - 0.08	0.02 - 0.08	0.04 - 0.1	0.04 - 0.12	0.04 - 0.12
M	Stainless steels (Martensitic and ferritic) SUS430, SUS416, etc. X6Cr17, X20Cr13, etc.	100 - 220	2D, 3D	0.02 - 0.08	0.02 - 0.08	0.04 - 0.1	0.04 - 0.12	0.04 - 0.12
			4D, 5D	0.02 - 0.08	0.02 - 0.08	0.04 - 0.1	0.04 - 0.12	0.04 - 0.12
M	Stainless steels (Precipitation hardening) SUS630, etc. X5CrNiCuNb16-4, etc.	80 - 120	2D, 3D	0.04 - 0.08	0.04 - 0.08	0.04 - 0.08	0.04 - 0.1	0.06 - 0.1
			4D, 5D	0.04 - 0.08	0.04 - 0.08	0.04 - 0.08	0.04 - 0.1	0.06 - 0.1
K	Grey cast irons FC250, etc., 250, etc.	80 - 250	2D, 3D	0.06 - 0.12	0.06 - 0.12	0.06 - 0.15	0.06 - 0.18	0.08 - 0.2
			4D, 5D	0.06 - 0.1	0.06 - 0.1	0.06 - 0.12	0.06 - 0.14	0.08 - 0.16
K	Ductile cast irons FCD700, etc., 600-3, etc.	80 - 200	2D, 3D	0.04 - 0.12	0.04 - 0.12	0.06 - 0.15	0.06 - 0.18	0.08 - 0.2
			4D, 5D	0.04 - 0.1	0.04 - 0.1	0.06 - 0.12	0.06 - 0.14	0.08 - 0.16
N	Aluminium alloy A2017, ADC12, etc. AlCu4SiMg, AlSi11Cu3, etc.	200 - 400	2D, 3D	0.1 - 0.12	0.1 - 0.15	0.15 - 0.2	0.15 - 0.2	0.15 - 0.25
			4D, 5D	0.08 - 0.12	0.08 - 0.12	0.12 - 0.16	0.12 - 0.16	0.12 - 0.2
S	Heat-resistant alloys Inconel 718, etc.	20 - 60	2D, 3D	0.04 - 0.08	0.04 - 0.08	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
		20 - 60	4D, 5D	0.04 - 0.08	0.04 - 0.08	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
S	Titanium alloys Ti-6Al-4V, etc.	40 - 120	2D, 3D	0.06 - 0.1	0.06 - 0.1	0.06 - 0.12	0.06 - 0.12	0.06 - 0.12
		40 - 120	4D, 5D	0.06 - 0.08	0.06 - 0.08	0.06 - 0.1	0.06 - 0.1	0.06 - 0.1
H	Hardened steel ≥ 40HRC	40 - 100	2D, 3D	0.04 - 0.08	0.04 - 0.08	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
		40 - 100	4D, 5D	0.04 - 0.08	0.04 - 0.08	0.04 - 0.08	0.04 - 0.08	0.04 - 0.08

STANDARD CUTTING CONDITIONS FOR DG TYPE CHIPBREAKER

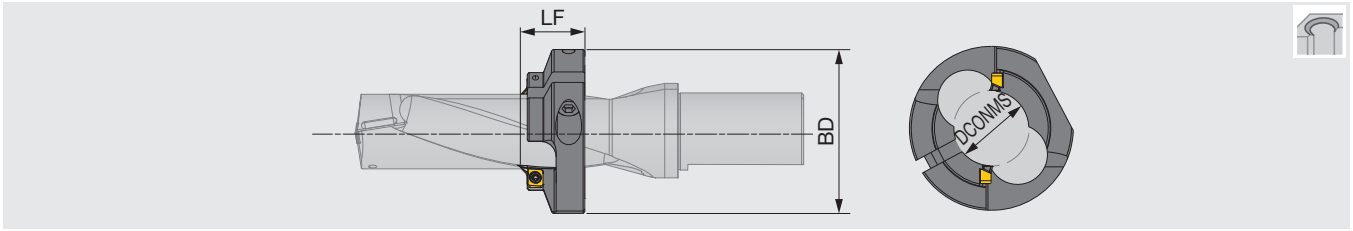
ISO	Workpiece material	Cutting speed *Vc* (m/min)	Series L/D	Feed: *f* (mm/rev)	
				ø27 ~ ø32	ø33 ~ ø54
P	Low carbon steels (C < 0.3) SS400, SM490, S25C, etc. st42-1, St52-3, C25, etc.	60 - 180	2D, 3D 4D, 5D	0.04 - 0.1	

- When using the smaller side of the diameter range, the feed rate should be set lower.
- When using DW insert for work materials of 40 HRC, the feed rate should be set below 50%.
- For difficult-to-cut materials (heat-resistant alloys, etc.), the cutting speed should be set 25% below that of carbon steels.
- High speed machining means cutting speeds over 150 m/min.
- For high-feed machining, apply a feed rate that is approximately 1.5 times the standard feed conditions.
- When using DW insert for troubleshooting, use it within the range of standard cutting conditions.
- DG type chipbreaker is suitable for heavy machines that have low-rpm spindles. If chatter occurs, a lower feed rate is recommended.

TUNGDRILLTWISTED

TDXCF chamfering tool

Chamfering tool for TungDrillTwisted and TungSix-Drill



Designation	DCONMS	BD	LF	Application drill	L/D = 2		L/D = 3		L/D = 4		L/D = 5	
					TDX***F	TDX***W	TDX***F	TDX***W	TDX***F	TDX***W	TDX***F	TDX***W
TDXCF180L25	17.3	49	25	TDX175*25-*	13	18.8	30.5	36.3	48	53.8	65.5	71.3
TDXCF180L25	17.3	49	25	TDX180*25-*	14	19.9	32	37.9	50	55.9	68	73.9
TDXCF190L25	18.1	49	25	TDX185*25-*	15	21.1	33.5	39.6	52	58.1	70.5	76.6
TDXCF190L25	18.1	49	25	TDX190*25-*	16	22.2	35	41.2	54	60.2	73	79.2
TDXCF200L25	19.1	49	25	TDX195*25-*	17	23.4	36.5	42.9	56	62.4	75.5	81.9
TDXCF200L25	19.1	49	25	TDX200*25-*	20	24.5	40	44.5	59	64.5	79	84.5
TDXCF210L25	20.1	49	25	TDX205*25-*	21	25.7	41.5	46.2	61	66.7	81.5	87.2
TDXCF210L25	20.1	49	25	TDX210*25-*	22	26.8	43	47.8	63	68.8	84	89.8
TDXCF220L25	21.1	49	25	TDX215*25-*	23	28	44.5	49.5	65	71	86.5	92.5
TDXCF220L25	21.1	49	25	TDX220*25-*	24	29.1	46	51.1	67	73.1	89	95.1
TDXCF230L25	22.1	49	25	TDX225*25-*	25	30.3	47.5	52.8	69	75.3	91.5	97.8
TDXCF230L25	22.1	49	25	TDX230*25-*	26	31.4	49	54.4	71	77.4	94	100.4
TDXCF240L25	23.1	49	25	TDX235*25-*	27	32.6	50.5	56.1	73	79.6	96.5	103.1
TDXCF240L25	23.1	49	25	TDX240*25-*	28	33.7	52	57.7	75	81.7	99	105.7
TDXCF250L25	23.95	49	25	TDX245*25-*	29	34.9	53.5	59.4	77	83.9	101.5	108.4
TDXCF250L25	23.95	49	25	TDX250*25-*	30	36	55	61	79	86	104	111
TDXCF260L30	24.95	64	30	TDX255*25-*	26	32.2	51.5	57.7	76	83.2	101.5	108.7
TDXCF260L30	24.95	64	30	TDX260*25-*	27	33.3	53	59.3	78	85.3	104	111.3
TDXCF270L30	25.9	64	30	TDX270*32-*	29	35.6	56	62.6	82	89.6	109	116.6
TDXCF280L30	26.9	64	30	TDX280*32-*	30.3	37.9	58.3	65.9	86	93.9	114	121.9
TDXCF290L30	27.9	64	30	TDX290*32-*	32.3	40.2	61.3	69.2	90	98.2	119	127.2
TDXCF300L30	28.9	64	30	TDX300*32-*	34.3	42.5	64.3	72.5	94	102.5	124	132.5
TDXCF310L30	29.9	64	30	TDX310*32-*	36.3	44.8	67.3	75.8	98	106.8	129	137.8
TDXCF320L30	30.9	64	30	TDX320*32-*	38.3	47.1	70.3	79.1	102	111.1	134	143.1

SPARE PARTS

Designation	Screw for insert	Screw for ring	Wrench for insert	Wrench for ring
TDXCF130 - 250	CSPB-4S	CM6X16	IP-15D	P-5
TDXCF260 - 540	CSPB-4S	CM8X1.25X20-A	IP-15D	P-6

Recommended clamping torque (N·m): CSPB-4S = 3.5

INSERT

XHGX-45A



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	PNA	C	Coated GH130
XHGX090700R-45A	45	2.5	●

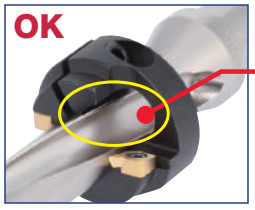
●: Line up

Caution in mounting the chamfering tool on the drill body

① Place the ring on the drill body and match the positions of fl utes on drill and ring. Temporarily clamp the ring with the ring screw tightened lightly.

② Place the inserts, and tighten the insert screw lightly.

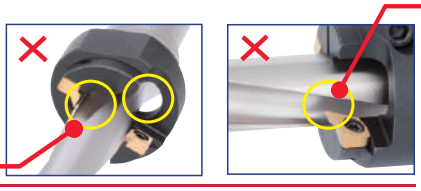
③ Adjust the ring position with a presetter, height gauge, or Vernier caliper, and securely tighten the ring screw, then the insert screw.



Match the positions of flutes on drill and ring.

(Inserts will be automatically set to the right positions.)

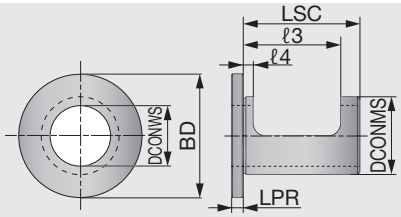
The cutting edge of the insert is in the ring flute.



The flutes on drill and ring do not match.

EZ sleeve

Eccentric sleeve for TungDrillTwisted and TungSix-Drill



Designation	DCONWS	DCONMS	BD	LSC	LPR	ℓ3	ℓ4	Hole diameter adjustment	Cutting edge height adjustment
EZ2025	20	25	46	49	5	32.5	4	+0.4 ~ - 0.2	+0.2 ~ - 0.15
EZ2532	25	32	51	52	5	38	4	+0.4 ~ - 0.2	+0.2 ~ - 0.15
EZ3240	32	40	54	62	5	43	4	+0.4 ~ - 0.2	+0.2 ~ - 0.15
EZ4050	40	50	69	63	5	55	4	+0.6 ~ - 0.2	+0.3 ~ - 0.2

SPARE PARTS

Designation	Wrench
EZ...	P-2.5

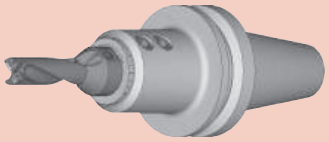
Use EZ sleeves for the following purposes

Hole diameter adjustment on the milling machine

Adjusting the finishing diameter when milling

Adjusting the finishing diameter in tool-rotating applications such as on machining centres and milling machines:

By using EZ sleeve, the finishing diameter can be adjusted in the range from +0.6 mm to -0.2 mm.



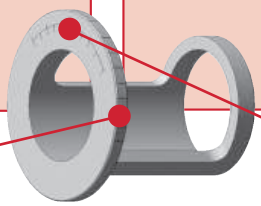
Adjusting cutting edge height on lathe

Lathe

Adjusting of the cutting edge height in work rotating applications such as on lathes:

By using EZ sleeve, the cutting edge height can be adjusted in the range from +0.3 mm to -0.2 mm. It results in eliminating troubles caused by improper cutting-edge height.





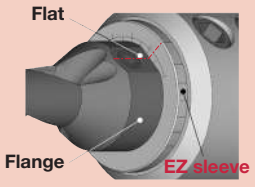
Scale for adjusting finishing diameter in milling (Periphery of sleeve)

Scale for adjusting cutting edge height in turning (Front face of sleeve)

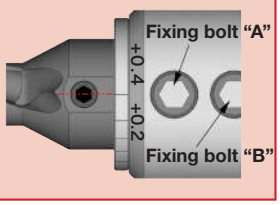
Setting of EZ sleeve

Hole diameter adjustment on the milling machine

As shown in the Figure right, set the EZ sleeve between the drill shank and the toolholder.

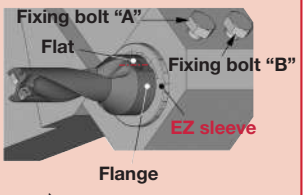


Align the graduated scale on the periphery of the EZ sleeve with the center of the flat of the drill flange. In the Figure shown right, the sleeve is set so that the finishing diameter will be increased by 0.4 mm.

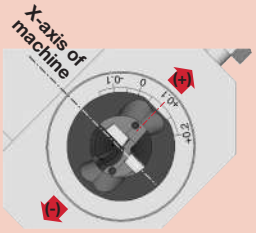


Adjusting cutting edge height on lathe

As shown in the Figure right, set the EZ sleeve between the drill shank and the toolblock.



Align the graduated scale on the front face of the Esleeve with the center of the flat of the drill flange.
In the Figure shown right, the sleeve is set so that the center of the drill will shift by 0.1 mm to the plus (+) direction.



When rotating the EZ sleeve, insert the wrench into the hole at the flange periphery and rotate the EZ sleeve.
Screws A + B have to be loosened.
Secure the drill by screw A.
Secure the EZ sleeve by lightly tightening screw B.
Tighten screw B only lightly otherwise EZ sleeve can be damaged!

Cautious points

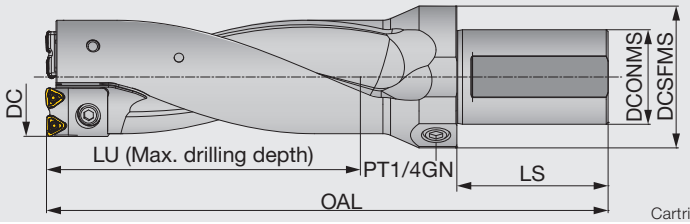
- The scale is only a rough guide, so be sure to measure the actual drilling diameter to confirm the result. Especially in turning, test machining is recommended as the drilling diameter will vary according to theadjustment.
- Can not be used for collect chuck holders.
- Over L/D 4 or bigger adjustment, please reduce feed.
- For smaller adjustment, the drill itself will interfere with the hole diameter. It is recommended that hole diameter should be adjusted to a larger diameter than the drill diameter.

TUNGDRILLBIG

TDB, TDS cartridge set

Adjustable tool diameter, L/D = 2.5, tool diameter ø55 - ø80 mm,



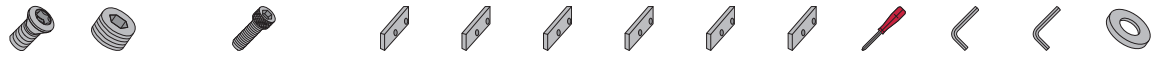


Cartridge set is sold separately.

Body Designation	Cartridge set Designation	DC	DCONMS	DCSFMS	LU	LS	OAL	WT(kg)	Setting plate Designation	Setting plate Thickness (mm)	Insert
TDB55-56F50-2.5	TDSCA55-56	55	50	75	140	80	262	3.2	-	-	WWMU08X408R-D*
TDB55-56F50-2.5	TDSCA55-56	56	50	75	140	80	262	3.2	AP0801	0.5	WWMU08X408R-D*
TDB57-62F50-2.5	TDSCA57-62	57	50	75	155	80	282	3.6	-	-	WWMU08X408R-D*
TDB57-62F50-2.5	TDSCA57-62	58	50	75	155	80	282	3.6	AP0801	0.5	WWMU08X408R-D*
TDB57-62F50-2.5	TDSCA57-62	59	50	75	155	80	282	3.6	AP0802	1	WWMU08X408R-D*
TDB57-62F50-2.5	TDSCA57-62	60	50	75	155	80	282	3.6	AP0803	1.5	WWMU08X408R-D*
TDB57-62F50-2.5	TDSCA57-62	61	50	75	155	80	282	3.6	AP0804	2	WWMU08X408R-D*
TDB57-62F50-2.5	TDSCA57-62	62	50	75	155	80	282	3.6	AP0805	2.5	WWMU08X408R-D*
TDB63-66F50-2.5	TDSCA63-66	63	50	75	165	80	297	4.2	-	-	WWMU08X408R-D*
TDB63-66F50-2.5	TDSCA63-66	64	50	75	165	80	297	4.2	AP0801	0.5	WWMU08X408R-D*
TDB63-66F50-2.5	TDSCA63-66	65	50	75	165	80	297	4.2	AP0802	1	WWMU08X408R-D*
TDB63-66F50-2.5	TDSCA63-66	66	50	75	165	80	297	4.2	AP0803	1.5	WWMU08X408R-D*
TDB67-73F50-2.5	TDSCA67-73	67	50	75	183	80	322	5	-	-	WWMU09X510R-D*
TDB67-73F50-2.5	TDSCA67-73	68	50	75	183	80	322	5	AP1101	0.5	WWMU09X510R-D*
TDB67-73F50-2.5	TDSCA67-73	69	50	75	183	80	322	5	AP1102	1	WWMU09X510R-D*
TDB67-73F50-2.5	TDSCA67-73	70	50	75	183	80	322	5	AP1103	1.5	WWMU09X510R-D*
TDB67-73F50-2.5	TDSCA67-73	71	50	75	183	80	322	5	AP1104	2	WWMU09X510R-D*
TDB67-73F50-2.5	TDSCA67-73	72	50	75	183	80	322	5	AP1105	2.5	WWMU09X510R-D*
TDB67-73F50-2.5	TDSCA67-73	73	50	75	183	80	322	5	AP1106	3	WWMU09X510R-D*
TDB74-80F50-2.5	TDSCA74-80	74	50	75	200	80	333	5.7	-	-	WWMU11X512R-D*
TDB74-80F50-2.5	TDSCA74-80	75	50	75	200	80	333	5.7	AP1101	0.5	WWMU11X512R-D*
TDB74-80F50-2.5	TDSCA74-80	76	50	75	200	80	333	5.7	AP1102	1	WWMU11X512R-D*
TDB74-80F50-2.5	TDSCA74-80	77	50	75	200	80	333	5.7	AP1103	1.5	WWMU11X512R-D*
TDB74-80F50-2.5	TDSCA74-80	78	50	75	200	80	333	5.7	AP1104	2	WWMU11X512R-D*
TDB74-80F50-2.5	TDSCA74-80	79	50	75	200	80	333	5.7	AP1105	2.5	WWMU11X512R-D*
TDB74-80F50-2.5	TDSCA74-80	80	50	75	200	80	333	5.7	AP1106	3	WWMU11X512R-D*

Body

SPARE PARTS



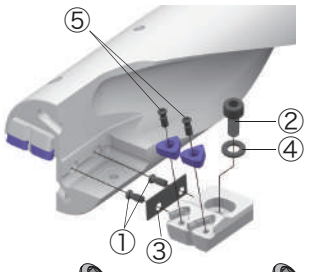
Designation	① Setting plate screw	Plug Screw	② Cartridge screw	③ Setting plate 1	③ Setting plate 2	③ Setting plate 3	③ Setting plate 4	③ Setting plate 5	③ Setting plate 6	Wrench for setting plate	Wrench for cartridge	Wrench for plug	④ Washer
TDB55-56F50-2.5	CSTB-3	PT1/4GN	CM5X0.8X12	AP0801	-	-	-	-	-	T-9D	P-4	P-6	5.3X10X1
TDB57-62F50-2.5	CSTB-3	PT1/4GN	CM5X0.8X12	AP0801	AP0802	AP0803	AP0804	AP0805	-	T-9D	P-4	P-6	5.3X10X1
TDB63-66F50-2.5	CSTB-3	PT1/4GN	CHHM6-15	AP0801	AP0802	AP0803	-	-	-	T-9D	P-5	P-6	6.4X12.5X1.6
TDB67-73F50-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6
TDB74-80F50-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6

Cartridge set

SPARE PARTS



Designation	⑤ Insert screw	Wrench
TDSCA55 - 56	CSTB-3	T-9F
TDSCA57 - 62	CSTB-3	T-9F
TDSCA63 - 66	CSTB-3	T-9F
TDSCA67 - 73	CSTB-4	T-15F
TDSCA74 - 80	CSTB-5	T-20F



Cartridge

SPARE PARTS



Designation	Insert screw (x2)	Setting plate screw
TDS08CA-C-55-56	CSTB-3	-
TDS08CA-C-57-62	CSTB-3	-
TDS08CA-C-63-66	CSTB-3	-
TDS09CA-C-67-73	CSTB-4	-
TDS11CA-C-74-80	CSTB-5	-

SPARE PARTS



Designation	Insert screw (x2)	Setting plate screw (x2)
TDS08CA-P-55-56	CSTB-3	CSTB-3
TDS08CA-P-57-62	CSTB-3	CSTB-3
TDS08CA-P-63-66	CSTB-3	CSTB-3
TDS09CA-P-67-73	CSTB-4	CSTB-3
TDS11CA-P-74-80	CSTB-5	CSTB-3

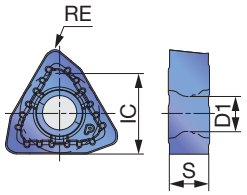
Recommended clamping torque (N·m): CSTB-3 = 2.3, CSTB-4 = 3.5, CSTB-5 = 5

Reference pages: Inserts → J096, Standard cutting conditions → J097

INSERT

DJ





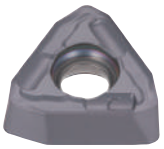
P	Steel	☆	★
M	Stainless	★	☆
K	Cast iron	☆	★
N	Non-ferrous	★	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

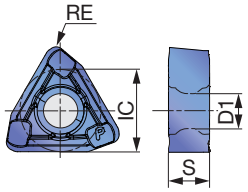
★ : First choice
☆ : Second choice

Designation	IC	S	Coated		D1	RE	DCN	DCX
			AH3135	AH9030				
WWMU05X205R-DJ	5.8	2.4	●	●	2.5	0.5	20	23.5
WWMU060306R-DJ	6.7	2.9	●	●	3	0.6	23.9	27
WWMU08X408R-DJ	8	3.9	●	●	3.4	0.8	27.5	32
WWMU09X510R-DJ	9.7	4.9	●	●	4.4	1	33	33.8
WWMU11X512R-DJ	11.3	5.7	●	●	5.5	1.2	39	46
WWMU13X512R-DJ	13	5.7	●	●	5.5	1.2	47	54

●: Line up

DS





P	Steel	★	
M	Stainless	★	
K	Cast iron		
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	IC	S	Coated	D1	RE	DCN	DCX
			AH6030				
WWMU05X205R-DS	5.8	2.4	●	5.8	2.4	5.8	2.4
WWMU060306R-DS	6.7	2.9	●	6.7	2.9	6.7	2.9
WWMU08X408R-DS	8	3.9	●	8	3.9	8	3.9
WWMU09X510R-DS	9.7	4.9	●	9.7	4.9	9.7	4.9
WWMU11X512R-DS	11.3	5.7	●	11.3	5.7	11.3	5.7
WWMU13X512R-DS	13	5.7	●	13	5.7	13	5.7

●: Line up

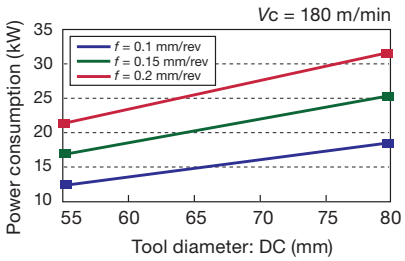
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Priority	Chip breakers	Grade	Cutting speed	Feed: *f* (mm/rev) DC (mm)		
					Vc (m/min)	ø55 - ø56	ø57 - ø73	ø74 - ø80
P	Low carbon steels (C<0.3) SS400, SM490, S25C, etc. st42-1, St52-3, C25, etc.	First choice	DS	AH6030	160 - 250	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
		Wear resistance	DJ	AH9030	160 - 320	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
	Carbon steels (C>0.3) S45C, S55C, etc. C45, C55, etc	First choice	DJ	AH9030	80 - 250	0.06 - 0.16	0.06 - 0.18	0.08 - 0.2
		Fracture resistance	DJ	AH3135	80 - 250	0.04 - 0.13	0.04 - 0.15	0.04 - 0.16
	Low alloy steels SCM415, etc. 18CrMo4, etc.	First choice	DS	AH6030	160 - 250	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12
		Wear resistance	DJ	AH9030	160 -250	0.06 - 0.14	0.06 - 0.14	0.06 - 0.14
	Alloy steels SCM440, SCr420, etc. 42CrMo4, 20Cr4, etc.	First choice	DJ	AH9030	80 - 200	0.06 - 0.16	0.06 - 0.18	0.08 - 0.2
		Fracture resistance	DJ	AH3135	80 - 200	0.04 - 0.13	0.04 - 0.14	0.04 - 0.15
M	Stainless steels (Austenitic) SUS304, SUS316, etc. X5CrNi189, X5CrNiMo17-12-2, etc.	First choice	DS	AH6030	100 - 200	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12
		—	DJ	AH3135	100 - 200	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12
	Stainless steel (Martensitic and ferritic) SUS430, etc. X6Cr17, X12CrS13, etc.	First choice	DS	AH6030	100 - 200	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12
		—	DJ	AH3135	100 - 200	0.04 - 0.12	0.04 - 0.12	0.04 - 0.12
	Stainless steels (Precipitation hardening) SUS630, etc. X5CrNiCuNb16-4, etc.	First choice	DS	AH6030	80 - 120	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
		—	DJ	AH3135	80 - 120	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
K	Grey cast irons FC250, etc. 250, etc.	First choice	DJ	AH9030	80 - 250	0.06 - 0.18	0.08 - 0.2	0.08 - 0.22
		Fracture resistance	DJ	AH3135	80 - 200	0.06 - 0.15	0.08 - 0.16	0.08 - 0.18
	Ductile cast irons FCD700, etc. 700-2, etc.	First choice	DJ	AH9030	80 - 200	0.06 - 0.16	0.06 - 0.18	0.08 - 0.2
		Fracture resistance	DJ	AH3135	80 - 150	0.06 - 0.15	0.08 - 0.16	0.08 - 0.18
N	Aluminium alloy	First choice	DS	AH6030	200 - 400	0.1 - 0.2	0.1 - 0.23	0.1 - 0.25
		—	DJ	AH9030	200 - 400	0.1 - 0.2	0.1 - 0.23	0.1 - 0.25
S	Heat-resistant alloys Inconel718, etc.	First choice	DS	AH6030	20 - 60	0.04 - 0.08	0.04 - 0.1	0.04 - 0.1
		—	DJ	AH3135	20 - 60	0.04 - 0.08	0.04 - 0.1	0.04 - 0.1
	Titanium alloys Ti-6Al-4V, etc.	First choice	DS	AH6030	40 - 120	0.06 - 0.12	0.06 - 0.14	0.06 - 0.14
		—	DJ	AH3135	40 - 120	0.06 - 0.12	0.06 - 0.14	0.06 - 0.14
H	Hardened steel < 40HRC	First choice	DJ	AH9030	50 - 100	0.04 - 0.08	0.04 - 0.1	0.04 - 0.1
		Fracture resistance	DJ	AH3135	40 - 80	0.04 - 0.08	0.04 - 0.1	0.04 - 0.1

Caution

Machine

- Use drills on a fully covered machine to maintain safety.
- Use drills on a high powered machine such as a BT50.
- Figure on right shows reference of required machine power.



Cutting coolant

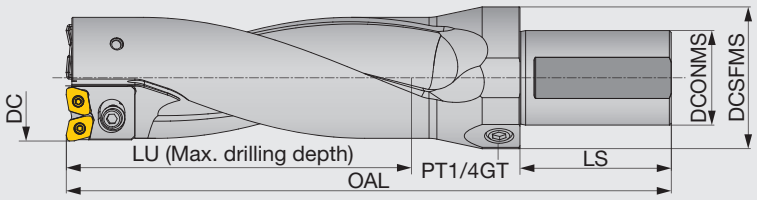
- Internal coolant supply is recommended.
- Coolant pressure higher than 1MPa is essential.
- Use water soluble type coolant.

TUNGDRILLBIG

TDB, TDX cartridge set

Adjustable tool diameter, L/D = 2.5, tool diameter ø55 - ø80 mm,





Cartridge set is sold separately.

Body Designation	Cartridge set Designation	DC	DCONMS	DCSFMS	LU	LS	OAL	WT(kg)	Setting plate Designation	Setting plate Thickness (mm)	Insert
TDB55-56F50-2.5	TDXCA55-56	55	50	75	140	80	260	3.2	-	-	XPMT08T308R-D*
TDB55-56F50-2.5	TDXCA55-56	56	50	75	140	80	260	3.2	AP0801	0.5	XPMT08T308R-D*
TDB57-62F50-2.5	TDXCA57-62	57	50	75	155	80	280	3.6	-	-	XPMT08T308R-D*
TDB57-62F50-2.5	TDXCA57-62	58	50	75	155	80	280	3.6	AP0801	0.5	XPMT08T308R-D*
TDB57-62F50-2.5	TDXCA57-62	59	50	75	155	80	280	3.6	AP0802	1	XPMT08T308R-D*
TDB57-62F50-2.5	TDXCA57-62	60	50	75	155	80	280	3.6	AP0803	1.5	XPMT08T308R-D*
TDB57-62F50-2.5	TDXCA57-62	61	50	75	155	80	280	3.6	AP0804	2	XPMT08T308R-D*
TDB57-62F50-2.5	TDXCA57-62	62	50	75	155	80	280	3.6	AP0805	2.5	XPMT08T308R-D*
TDB63-66F50-2.5	TDXCA63-66	63	50	75	165	80	295	4.2	-	-	XPMT08T308R-D*
TDB63-66F50-2.5	TDXCA63-66	64	50	75	165	80	295	4.2	AP0801	0.5	XPMT08T308R-D*
TDB63-66F50-2.5	TDXCA63-66	65	50	75	165	80	295	4.2	AP0802	1	XPMT08T308R-D*
TDB63-66F50-2.5	TDXCA63-66	66	50	75	165	80	295	4.2	AP0803	1.5	XPMT08T308R-D*
TDB67-73F50-2.5	TDXCA67-73	67	50	75	183	80	320	5	-	-	XPMT110412R-D*
TDB67-73F50-2.5	TDXCA67-73	68	50	75	183	80	320	5	AP1101	0.5	XPMT110412R-D*
TDB67-73F50-2.5	TDXCA67-73	69	50	75	183	80	320	5	AP1102	1	XPMT110412R-D*
TDB67-73F50-2.5	TDXCA67-73	70	50	75	183	80	320	5	AP1103	1.5	XPMT110412R-D*
TDB67-73F50-2.5	TDXCA67-73	71	50	75	183	80	320	5	AP1104	2	XPMT110412R-D*
TDB67-73F50-2.5	TDXCA67-73	72	50	75	183	80	320	5	AP1105	2.5	XPMT110412R-D*
TDB67-73F50-2.5	TDXCA67-73	73	50	75	183	80	320	5	AP1106	3	XPMT110412R-D*
TDB74-80F50-2.5	TDXCA74-80	74	50	75	200	80	330	5.7	-	-	XPMT110412R-D*
TDB74-80F50-2.5	TDXCA74-80	75	50	75	200	80	330	5.7	AP1101	0.5	XPMT110412R-D*
TDB74-80F50-2.5	TDXCA74-80	76	50	75	200	80	330	5.7	AP1102	1	XPMT110412R-D*
TDB74-80F50-2.5	TDXCA74-80	77	50	75	200	80	330	5.7	AP1103	1.5	XPMT110412R-D*
TDB74-80F50-2.5	TDXCA74-80	78	50	75	200	80	330	5.7	AP1104	2	XPMT110412R-D*
TDB74-80F50-2.5	TDXCA74-80	79	50	75	200	80	330	5.7	AP1105	2.5	XPMT110412R-D*
TDB74-80F50-2.5	TDXCA74-80	80	50	75	200	80	330	5.7	AP1106	3	XPMT110412R-D*

Body

SPARE PARTS



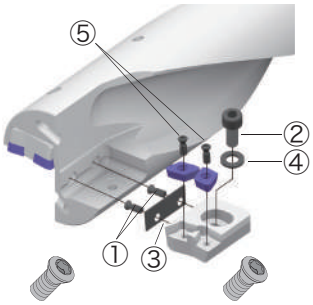
Designation	① Setting plate screw	Plug Screw	② Cartridge screw	③ Setting plate 1	③ Setting plate 2	③ Setting plate 3	③ Setting plate 4	③ Setting plate 5	③ Setting plate 6	Wrench for setting plate	Wrench for cartridge	Wrench for plug	④ Washer
TDB55-56F50-2.5	CSTB-3	PT1/4GN	CM5X0.8X12	AP0801	-	-	-	-	-	T-9D	P-4	P-6	5.3X10X1
TDB57-62F50-2.5	CSTB-3	PT1/4GN	CM5X0.8X12	AP0801	AP0802	AP0803	AP0804	AP0805	-	T-9D	P-4	P-6	5.3X10X1
TDB63-66F50-2.5	CSTB-3	PT1/4GN	CHHM6-15	AP0801	AP0802	AP0803	-	-	-	T-9D	P-5	P-6	6.4X12.5X1.6
TDB67-73F50-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6
TDB74-80F50-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6

Cartridge set

SPARE PARTS



Designation	⑤ Insert screw	Wrench
TDXCA55 - 56	CSTB-3	T-9F
TDXCA57 - 62	CSTB-3	T-9F
TDXCA63 - 66	CSTB-3	T-9F
TDXCA67 - 73	CSTB-4	T-15F
TDXCA74 - 80	CSTB-4	T-15F



Cartridge

SPARE PARTS



Designation	Insert screw (x2)	Setting plate screw
TDX08CA-C0	CSTB-3	-
TDX08CA-C1	CSTB-3	-
TDX08CA-C2	CSTB-3	-
TDX11CA-C1	CSTB-4	-
TDX11CA-C2	CSTB-4	-

SPARE PARTS

Designation	Insert screw (x2)	Setting plate screw (x2)
TDX08CA-P0	CSTB-3	CSTB-3
TDX08CA-P1	CSTB-3	CSTB-3
TDX08CA-P2	CSTB-3	CSTB-3
TDX11CA-P1	CSTB-4	CSTB-3
TDX11CA-P2	CSTB-4	CSTB-3

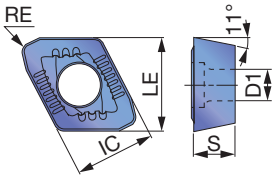
Recommended clamping torque (N·m): CSTB-3=2.3, CSTB-4=3.5

Reference pages: Inserts → J099 - J100, Standard cutting conditions → J100 - J101

INSERT

DJ





P	Steel			★	☆													
M	Stainless	☆		★														
K	Cast iron		☆	☆	★													
N	Non-ferrous	☆		★														
S	Superalloys	☆		★	☆													
H	Hard materials	☆		★	☆													

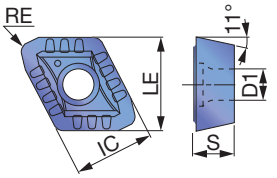
★ : First choice
☆ : Second choice

Designation	IC	LE	Coated										S	D1	RE	DCN	DCX	AN
			AH725	T1115	AH6030	AH9030												
XPMT08T308R-DJ	8.5	9.9	●	●	●	●							3.97	3.4	0.8	27	32	11
XPMT110412R-DJ	11.2	12.5	●	●	●	●							4.76	4.4	1.2	33	41	11

●: Line up

DS





P	Steel	☆	★															
M	Stainless	☆	★															
K	Cast iron																	
N	Non-ferrous	☆																
S	Superalloys	☆	★															
H	Hard materials																	

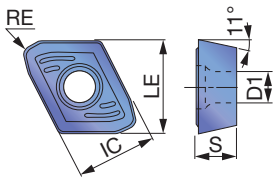
★ : First choice
☆ : Second choice

Designation	IC	LE	Coated										S	D1	RE	DCN	DCX	AN
			AH725	AH6030														
XPMT08T308R-DS	8.5	9.9	●	●									3.97	3.4	0.8	27	32	11
XPMT110412R-DS	11.2	12.5	●	●									4.76	4.4	1.2	33	41	11

●: Line up

DW





P	Steel	☆	★	☆														
M	Stainless	☆	★	☆														
K	Cast iron		☆	★														
N	Non-ferrous	☆	★															
S	Superalloys	☆	★	☆														
H	Hard materials	☆	★	☆														

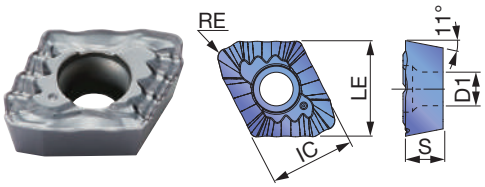
★ : First choice
☆ : Second choice

Designation	IC	LE	Coated										S	D1	RE	DCN	DCX	AN
			AH725	AH6030	AH9030													
XPMT08T308R-DW	8.5	9.9	●	●	●								3.97	3.4	0.8	27	32	11
XPMT110412R-DW	11.2	12.5	●	●	●								4.76	4.4	1.2	33	41	11

●: Line up

INSERT

DG



P	Steel	★
M	Stainless	☆
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	IC	LE	Coated	S	D1	RE	DCN	DCX	AN
			AH725						
XPMT08T308R-DG	8.5	9.9	●	3.97	3.4	0.8	27	32	11
XPMT110412R-DG	11.2	12.5	●	4.76	4.4	1.2	33	41	11

●: Line up

RECOMMENDED INSERT

ISO	Workpiece material	First choice	High feed	High speed	Troubleshooting: Chipping resistance	Troubleshooting: Wear resistance	Troubleshooting: Surface finish	Troubleshooting: Chip control
P	Low carbon steels (C ≤ 0.3%)	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
	Carbon steels (C > 0.3%) Alloy steels	DJ, AH6030	DW, AH6030	DJ, AH9030	DW, AH725	DJ, AH9030	DW, AH6030	-
	Low alloy steels	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	-
M	Stainless steel	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
K	Grey cast irons	DJ, AH9030	DW, AH9030	DJ, T1115	DW, AH725	-	DW, AH9030	-
	Ductile cast irons	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-
N	Aluminium alloy	DJ, AH725	DW, AH725	DS, AH6030		-	DW, AH725	DG, AH725
S	Titanium alloys Heat-resistant alloys	DS, AH6030	-	-	DW, AH725	-	DW, AH725	DG, AH725
H	Hardened steel	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed *Vc* (m/min)	Feed: *f* (mm/rev) ø55 ~ ø62	ø63 ~ ø73	ø74 ~ ø80
P	Low carbon steels (C < 0.3) SS400, SM490, S25C, etc. st42-1, St52-3, C25, etc.	160 - 320	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
P	Carbon steels (C > 0.3) S45C, S55C, etc. C45, C55, etc.	80 - 250	0.08 - 0.18	0.08 - 0.18	0.1 - 0.2
P	Low alloy steels SCM415, etc. 15CrMo5, etc.	160 - 250	0.04 - 0.16	0.04 - 0.16	0.04 - 0.16
P	Alloy steels SCM440, SCr420, etc. 42CrMo4, 20Cr4, etc.	80 - 200	0.08 - 0.18	0.08 - 0.18	0.08 - 0.2
M	Stainless steels (Austenitic) SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	100 - 200	0.04 - 0.12	0.04 - 0.12	0.06 - 0.14
M	Stainless steels (Martensitic and ferritic) SUS430, SUS416, etc. X6Cr17, X20Cr13, etc.	100 - 200	0.04 - 0.12	0.04 - 0.12	0.06 - 0.14
M	Stainless steels (Precipitation hardening) SUS630, etc. X5CrNiCuNb16-4, etc.	80 - 120	0.04 - 0.1	0.04 - 0.1	0.06 - 0.12
K	Grey cast irons FC250, etc. 250, etc.	80 - 250	0.08 - 0.2	0.08 - 0.2	0.1 - 0.22
K	Ductile cast irons FCD600, etc. 600-3, etc.	80 - 200	0.08 - 0.2	0.08 - 0.2	0.1 - 0.22
N	Aluminium alloy A2017, ADC12, etc. AlCu4SiMg, AlSi11Cu3, etc.	200 - 400	0.15 - 0.25	0.15 - 0.25	0.18 - 0.28
S	Heat-resistant alloys	20 - 60	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1
S	Titanium alloys	40 - 120	0.06 - 0.12	0.06 - 0.12	0.06 - 0.12
H	Hardened steel	40 - 100	0.04 - 0.1	0.04 - 0.1	0.04 - 0.1

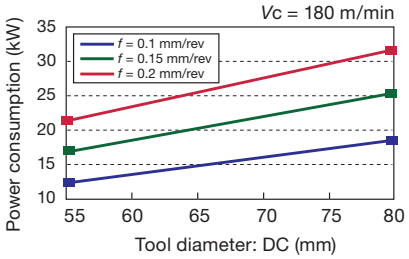
Standard cutting conditions for DG type chipbreaker

ISO	Workpiece material	Cutting speed *Vc* (m/min)	Series L/D	Feed: *f* (mm/rev) ø27 ~ ø32	ø33 ~ ø54
P	Low carbon steels (C < 0.3) SS400, SM490, S25C, etc. st42-1, St52-3, C25, etc.	60 - 180	2D, 3D 4D, 5D	0.04 - 0.1	

Caution

Machine

- Use drills on a fully covered machine to maintain safety.
- Use drills on a high powered machine such as a BT50.
- Figure on right shows reference of required machine power.



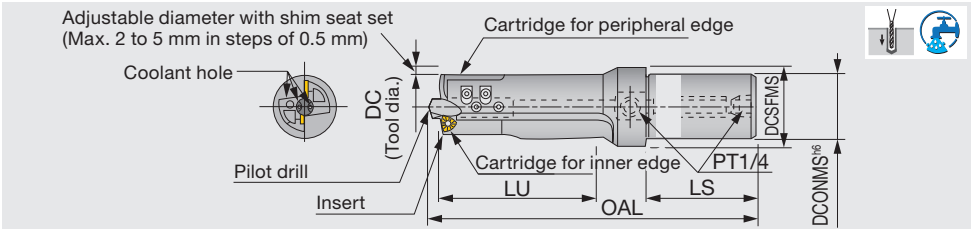
Cutting coolant

- Use water soluble type coolant with internal supply.
- Coolant pressure higher than 1MPa is essential.

TDP L/D=5

Indexable drill with pilot drill





Designation	DC	DCONMS	DCSFMS	OAL	LU	LS	Insert	Pilot drill (included in the package)
TDP30-32	30 ~ 32	32	40	248	150	60	WPMT040208-D3	DP08 (ø8)
TDP37-40	37 ~ 40	40	50	295	185	70	WPMT050308-D3	DP10 (ø10)
TDP40-45	40 ~ 45	40	50	310	200	70	WPMT050308-D3	DP12 (ø12)
TDP45-50	45 ~ 50	40	50	347	225	70	WPMT06T308-D3	DP12 (ø12)
TDP60-65	60 ~ 65	50	58.5	470	300	120	WPMT080412-D3	DP12 (ø12)

Diameter is adjustable with shim seat set. (Max. 2 to 5 mm in steps of 0.5 mm)
Pilot drill is included, but inserts are not.

L/D = Hole depth / Drill diameter

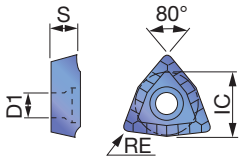
SPARE PARTS

Designation	Cartridge		Clamping screw			Coolant hole plug screw	Wrench				Shim seat set
	for peripheral edge	for inner edge	for insert	Wrench for cartridge	for pilot drill		for insert	Wrench for cartridge	for pilot drill	Coolant hole plug screw	
TDP30-32	CW04A	CW04B	CSTB-2.5S	BHM4-8	SSHM5-10	PT1/4GN	T-8D	P-2.5	Same for cartridge	P-6	SW04
TDP37-40	CW05A	CW05B	CSTB-3S	BHM4-10	SSHM5-10	PT1/4GN	T-9D	P-2.5	Same for cartridge	P-6	SW05
TDP40-45	CW05A	CW05B	CSTB-3S	BHM4-10	SSHM6-12	PT1/4GN	T-9D	P-2.5	P-3	P-6	SW05
TDP45-50	CW06A	CW06B	CSTB-3.5D	BHM5-14	SSHM6-12	PT1/4GN	T-9D	P-3	Same for cartridge	P-6	SW06
TDP60-65	CW08A	CW08B	CSTB-4M	CHHM5-18 (CM5×0.8×18)	SSHM6-20	PT1/4GN	T-15D	P-4	P-3	P-6	SW08

Recommended clamping torque (N·m): CSTB-2.5S = 1.3, CSTB-3S = 2.3, CSTB-3.5D = 2.3, CSTB-4M = 3.5
BHM4-8/BHM4-10 = 2.2, BHM5-14 = 3, CHHM5-18 = 5, SSHM5-10 = 2, SSHM6-12/SSHM6-20 = 3

INSERT

WPMT04/05/06/08-D3

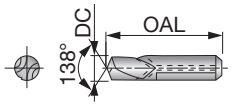


Designation	T313W	IC	S	RE	D1
WPMT040208-D3	●	6.35	2.38	0.8	2.86
WPMT050308-D3	●	7.938	3.18	0.8	3.4
WPMT06T308-D3	●	9.525	3.97	0.8	3.9
WPMT080412-D3	●	12.7	4.76	1.2	4.4

(The chipbreaker shape of WPMT040208-D3 insert is different from the drawing above.)

PILOT DRILL

DP08/10/12



Designation	HSS	DC	OAL
DP08	●	8	42
DP10	●	10	48
DP12	●	12	55

Note : DP08 type drill does not have oil hole.

Package quantity: 1pc
● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Carbon steels	60 - 70	0.07 - 0.17
P	Alloy steels	60 - 70	0.07 - 0.17
K	Cast iron	70 - 100	0.1 - 0.2

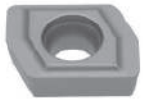
Note: tool Dia. Smaller than ø37 mm, feed should be set less than 0.13 mm/rev for steel, 0.15 mm/rev for cast iron.

Cautionary points in use

- When drilling steel, a water soluble coolant should be used. Coolant pressure of 1MPa or higher and quantity of 10 litter/min or more are essential.
- For tool-rotating applications, side-lock holder with coolant through hole is recommended.
  (For standard TDP60-65 and 65-70, please check the toolholder that will be used because the mounting shank diameter is ø50.)
- Drilling into stacked plates is not recommended.
- Not suitable for low carbon steels and stainless steels, because of chip control issues.

Drilling Insert

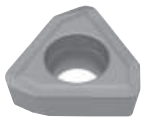
● LPMT03X206R-D4, LPMT05X204-D4

Shape	Designation	Coated					Applicable drill diameter	Applicable drill
		T313W						
	LPMT03X206R-D4	●					ø14 ~ ø17.5	TDJ (Former products)
	LPMT05X204-D4	●					ø14 ~ ø17.5	

● SPMP831DS, SPMP/M**2ERD

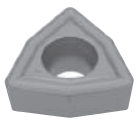
Shape	Designation	ISO Metric Designation	Coated					Applicable drill diameter	Applicable drill
			T313W						
	SPMP831DS	SPMT060204-DS	●					ø18 ~ ø19.5	TDR, for Peripheral side (Former products)
	SPMP042ERD	SPMP080308ER-D	●					ø20 ~ ø28.5	
	SPMM322ERD	SPMT090308ER-D	●					ø29 ~ ø34.5	
	SPMM432ERD	SPMT120408ER-D	●					ø35 ~ ø49	

● TPMP**ZDS, TPMP**ZERD, TPMM**ZERD

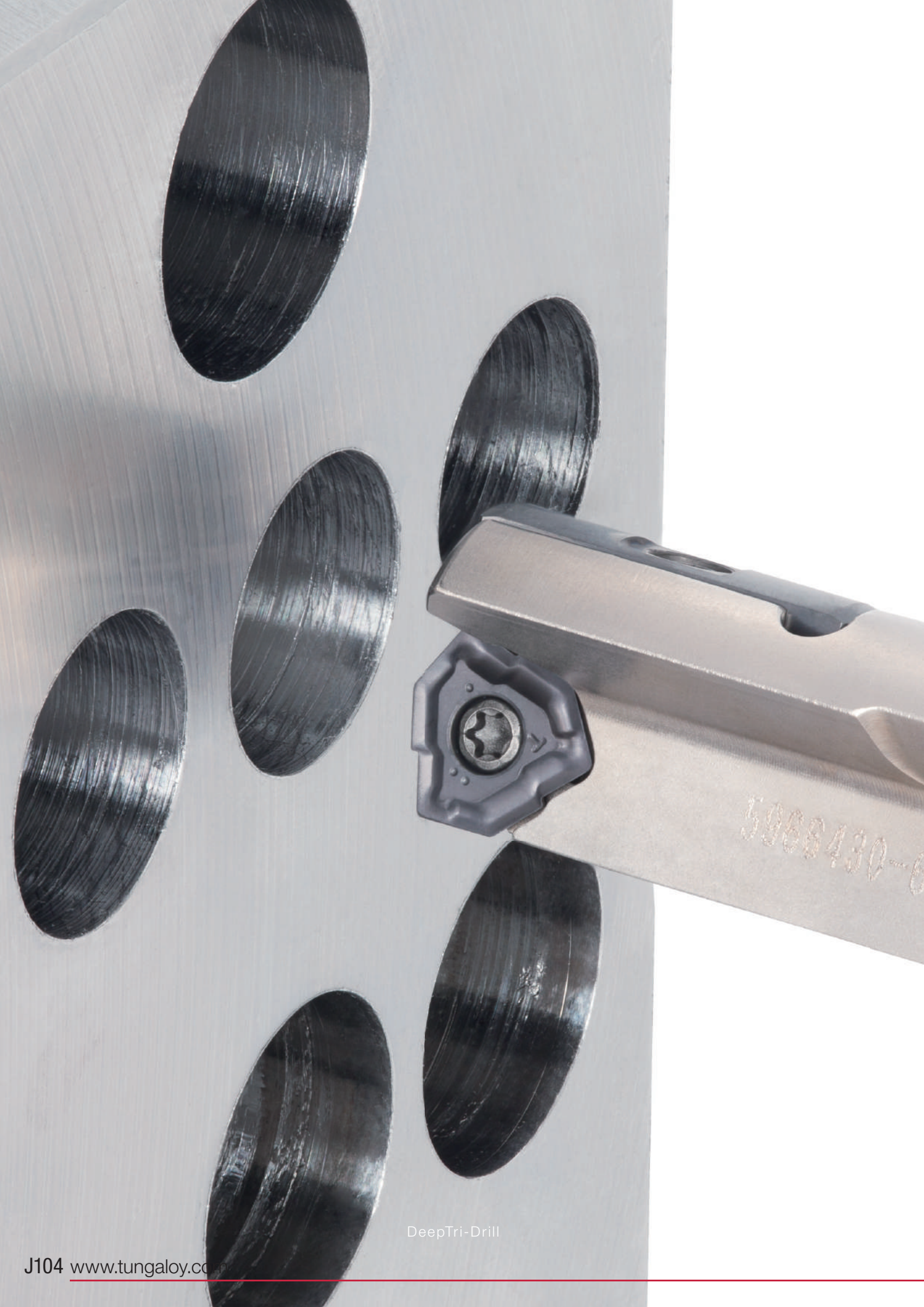
Shape	Designation	Coated					Applicable drill diameter	Applicable drill
		T313W						
	TPMP83ZDS	●					ø18 ~ ø19.5	TDR, for Central side (Former products)
	TPMP04ZERD	●					ø20 ~ ø28.5	
	TPMM32ZERD	●					ø29 ~ ø34.5	
	TPMM43ZERD	●					ø35 ~ ø54	

TPMM43ZERD can be used on the peripheral side.

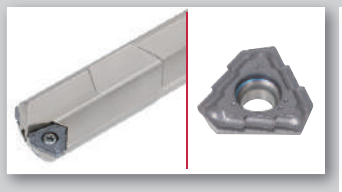
● WCMT**-D...

Shape	Designation	Coated						Applicable drill
		AH120	AH140	T313W				
	WCMT050308-DC			●				for counter boring, and drilling.
	WCMT050308-D4	●	●	●				
	WCMT06T308-DC			●				
	WCMT06T308-D4	●	●	●				
	WCMT080412-DC			●				
	WCMT080412-D4			●				

● : Line up



Deep Hole Drill

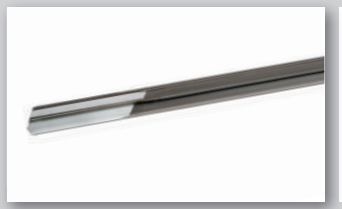


DEEP TRI DRILL

Excellent productivity and stability in deep hole drilling

ø12 mm - ø39.1 mm / L/D = 8, 10, 15, 20, 25, for machining centers
OAL < 1650 mm for gundrill machines (standard line-ups)

J007, J106
J107 - J129



GUNDRILL

Brazed gundrills suitable for small diameter deep hole drilling

ø3 mm - ø12.2 mm / OAL ≤ 1650 mm (standard line-ups)

J007, J106
J130 - J131



TRI-FINE

Direct mount drill head with 3-cornered inserts

ø16 mm - ø28 mm

J007, J132
J136 - J139



FINE-BEAM

Direct mount deep hole drilling heads

ø25 mm - ø65 mm

J007, J132
J140 - J145



UNIDEX

Indexable deep hole drilling heads with adjustable diameters

ø38 mm - ø106.99 mm

J007, J132
J146 - J151

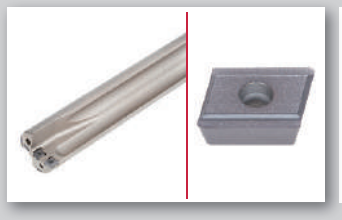


Brazed BTA tool

New solution for BTA drilling with two types of tools: single tube and double tube

ø8 - ø65

J007, J133
J152 - J164



HF drills for deep hole drilling TAILOREDTOOL

Indexable deep hole drills for large diameter with high productivity

ø30 mm - ø63 mm, hole depth: L/D=14

J007, J165

Indexable Gundrill guide

Indexable Gundrills & Brazed Gundrills

Drill type		Lathes & machining centers			Gundrill machines			Brazed tool
		MCTR	MCTRCH	MCTR	TRLG	TRLGCH	TRLG	SLJ
Indexable Gundrills Brazed Gundrill								
Drill diameter (mm)		ø12 - ø28	ø14 - ø28	ø28.01 - ø40	ø12 - ø28	ø14 - ø28	ø28.01 - ø40	ø3 - ø12.2
Drilling depth - MCTR Tool over all length - TRLG, SLJ		Max L/D = 25	Max L/D = 25	Max L/D = 25	400 mm - 2400 mm	400 mm - 2400 mm	400 mm - 2400 mm	ø3 - ø4.1 : Max = 800 mm ø4.1 - ø4.9 : Max = 1250 mm ø4.9 - ø12.2 : Max = 2000 mm
Hole tolerance*1		+ 0.05 / - 0.1	+ 0.05 / - 0.12	+ 0.05 / - 0.1	+ 0.05 / - 0.1	+ 0.05 / - 0.12	+ 0.05 / - 0.1	+0.03 / -0.01
Surface finish Ra (µm)*1		3	3	3	3	3	3	3 - 25
Machine	Deep hole drilling machines	-	-	-	-	-	-	-
	NC machines	○	○	○	-	-	-	-
	Lathes	○	○	○	△	△	△	△
	Machining centers M/C	○	○	○	△	△	△	△
	Gundrill machines	-	-	-	○	○	○	○
Workpiece material	P Steel	★★★	★★★	★★★	★★★	★★★	★★★	★★
	M Stainless steel	★★	★★	★★	★★	★★	★★	★
	K Cast iron	★★★	★★★	★★★	★★★	★★★	★★★	★★★
	N Aluminium alloys	★★	★★	★★	★★	★★	★★	★★★
	S Heat resistant alloys	★★	★★	★★	★★	★★	★★	★
	H Hardened steel (≥40HRC)	★★★	★★★	★★★	★★★	★★★	★★★	★
Insert type		LOGT / TOHT	TOHT	FBH / FBM	LOGT / TOHT	TOHT	FBH / FBM	-
Page		J108 - J111	J112	J113 - J117	J118 - J119	J120	J121 - J129	J130 - J131

*1: Just for reference

★★★(Excellent) ◄► ★(Standard)

DeepTri-Drill



Indexable gundrill for extreme productivity and stability

Ultimate efficiency

Unique chipbreakers on the cutting edge enable impressive chip control and high feed rates.

Excellent chip control

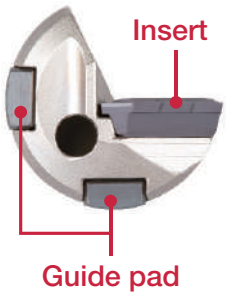
- Chip splitters breaks chips into smaller segments to facilitate smooth Chip evacuation process
- Its smooth chip evacuation ability allows the use in standard lathes and machining centers



NDJ chipbreaker

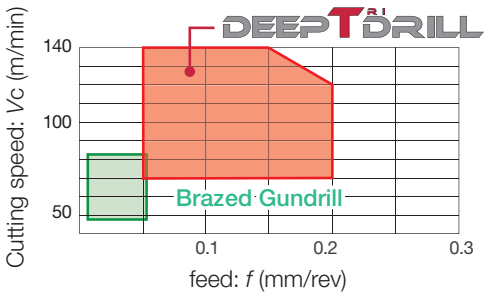


- Low cutting force
- For general purpose



Performance comparison with other types of drills

P S55C



Chip control

P S55C Drill diameter : DC = 21 mm



Cutting speed : Vc = 100 m/min
feed : f = 0.15 mm/rev



Vc = 60 m/min
f = 0.05 mm/rev

Two bodies available for machining centers, lathes, and gundrill machines

MCTR : for machining centers and lathes



Tool dia. : DC = 12 - 36 mm
*Max. DC = 40: Available tailor-made tools
L/D : 8, 10, 15, 20, 25

TRLG : for gundrill machines



Tool dia. : DC = 12 - 30 mm
*Max. DC = 40: Available tailor-made tools
Overall length: 800, 1000, 1500, 1650 mm
* Can be tailored up to 2400 mm overall length

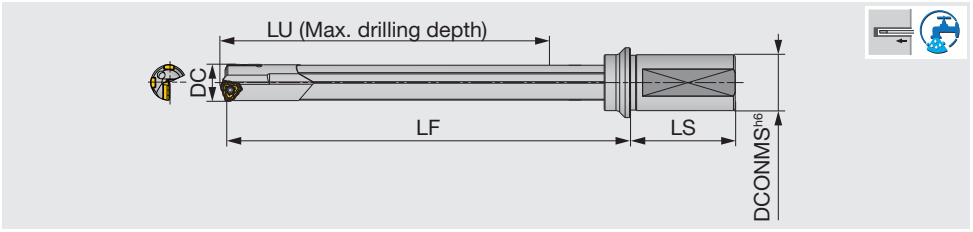
Reference pages: J108 - J129, Technical references → L092

DEEP TRI DRILL

MCTR L/D=10

Drill body for lathes and machining centers, L/D = 10, tool diameter ø16 - ø28 mm





Designation	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR16.00XM25A-10	16	25	172.2	56	209	TOHT08...	GP05-075
MCTR16.50XM25A-10	16.5	25	172.2	56	209	TOHT08...	GP05-075
MCTR17.00XM25A-10	17	25	182.2	56	220	TOHT08...	GP05-075
MCTR18.00XM25A-10	18	25	192.2	56	232	TOHT08...	GP05-075
MCTR19.00XM25-10	19	25	203	56	243	TOHT09...	GP06-085
MCTR20.00XM32-10	20	32	213	60	255	TOHT09...	GP06-085
MCTR21.00XM32-10	21	32	223.2	60	266	TOHT10...	GP06-085
MCTR22.00XM32-10	22	32	233.4	60	278	TOHT11...	GP06-100
MCTR23.00XM32-10	23	32	243.4	60	289	TOHT11...	GP06-100
MCTR24.00XM32-10	24	32	253.4	60	301	TOHT11...	GP06-100
MCTR25.00XM32-10	25	32	263.4	60	312	TOHT11...	GP06-100
MCTR26.00XM40-10	26	40	273.7	70	324	TOHT12...	GP06
MCTR27.00XM40-10	27	40	283.7	70	335	TOHT12...	GP06
MCTR28.00XM40-10	28	40	283.7	70	337	TOHT12...	GP06
MCTR17.45XU25.4A-10	17.45	25.4	182.2	56	220	TOHT08..	GP05-075
MCTR18.24XU25.4-10	18.24	25.4	193	56	232	TOHT09..	GP06-085
MCTR18.64XU25.4-10	18.64	25.4	193	56	232	TOHT09..	GP06-085
MCTR19.05XU25.4-10	19.05	25.4	203	56	243	TOHT09..	GP06-085
MCTR19.94XU31.75-10	19.94	31.75	213	60	255	TOHT09..	GP06-085
MCTR20.62XU31.75-10	20.62	31.75	213.2	60	255	TOHT10..	GP06-085
MCTR22.23XU31.75-10	22.23	31.75	233.4	60	278	TOHT11..	GP06-100
MCTR23.80XU31.75-10	23.8	31.75	253.4	60	301	TOHT11..	GP06-100
MCTR25.40XU31.75-10	25.4	31.75	263.7	60	312	TOHT12..	GP06
MCTR26.97XU31.75X-10*	26.97	31.75	283.7	60	335	TOHT12..	GP06

*Will be released in 2019.

DC	Tool diameter tolerance	Hole diameter tolerance*
16 - 28	0 / - 0.07	+ 0.05 / - 0.1

*Just for reference

SPARE PARTS






Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR16... - MCTR20.00...	SR14-560/S	T-8F	SR34-508	T-7F
MCTR20.62... - MCTR21...	SR34-506	T-9F	SR34-508	T-7F
MCTR22... - MCTR25.00...	SR14-571/S	T-10/5	SR34-508	T-7F
MCTR25.4... - MCTR28...	SR14-506	T-15F	SR34-508	T-7F

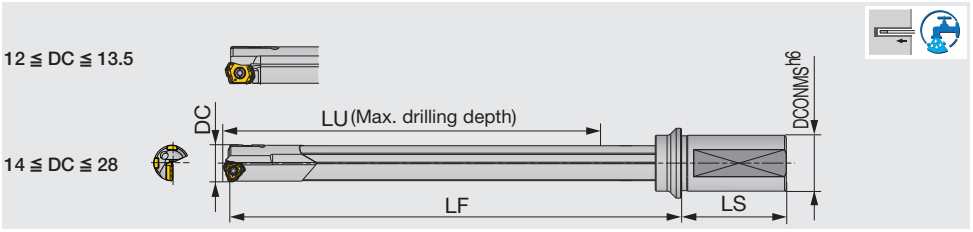
Recommended clamping torque (N·m): SR34-506=0.9, SR34-508=0.9, SR14-560/S=1.2, SR14-571/S=3.2, SR14-506=4.8

Reference pages: Inserts, Guide pads → J123 - J126, Standard cutting conditions → J127

MCTR L/D=15

Drill body for lathes and machining centers, L/D = 15, tool diameter ø12 - ø28 mm





Designation	DC	DCONMS	LU	LS	LF	insert	Guide pad
MCTR12.00XM20-15	12	20	196.8	50	225	LOGT06...	GP04-055
MCTR12.50XM20-15	12.5	20	196.8	50	226	LOGT06...	GP04-055
MCTR13.00XM25-15	13	25	211.8	56	245	LOGT06...	GP04-055
MCTR13.50XM25-15	13.5	25	211.8	56	245	LOGT06...	GP04-055
MCTR14.00XM25-15	14	25	227	56	245	TOHT07...	GP05-060
MCTR14.50XM25-15	14.5	25	227	56	262	TOHT07...	GP05-060
MCTR15.00XM25-15	15	25	242	56	278	TOHT07...	GP05-060
MCTR16.00XM25A-15	16	25	257.2	56	294	TOHT08...	GP05-075
MCTR16.50XM25A-15	16.5	25	257.2	56	294	TOHT08...	GP05-075
MCTR17.00XM25A-15	17	25	272.2	56	310	TOHT08...	GP05-075
MCTR17.50XM25A-15	17.5	25	272.2	56	310	TOHT08...	GP05-075
MCTR18.00XM25A-15	18	25	287.2	56	327	TOHT08...	GP05-075
MCTR18.50XM25-15	18.5	25	288	56	327	TOHT09...	GP06-085
MCTR19.00XM25-15	19	25	303	56	343	TOHT09...	GP06-085
MCTR19.50XM25-15	19.5	25	303	56	343	TOHT09...	GP06-085
MCTR20.00XM32-15	20	32	318	60	360	TOHT09...	GP06-085
MCTR21.00XM32-15	21	32	333.2	60	376	TOHT10...	GP06-085
MCTR22.00XM32-15	22	32	348.4	60	393	TOHT11...	GP06-100
MCTR23.00XM32-15	23	32	363.4	60	409	TOHT11...	GP06-100
MCTR24.00XM32-15	24	32	378.4	60	426	TOHT11...	GP06-100
MCTR25.00XM32-15	25	32	393.4	60	442	TOHT11...	GP06-100
MCTR26.00XM40-15	26	40	408.7	70	459	TOHT12...	GP06
MCTR27.00XM40-15	27	40	423.7	70	475	TOHT12...	GP06
MCTR28.00XM40-15	28	40	423.7	70	477	TOHT12...	GP06
MCTR12.70XU25.4-15*	12.7	25.4	196.8	56	229	LOGT06..	GP04-055
MCTR13.49XU25.4-15*	13.49	25.4	211.8	56	245	LOGT06..	GP04-055
MCTR14.27XU25.4-15	14.27	25.4	227	56	261	TOHT07..	GP05-060
MCTR15.88XU25.4-15	15.88	25.4	242	56	279	TOHT07..	GP05-060
MCTR17.45XU25.4A-15	17.45	25.4	272.2	56	310	TOHT08..	GP05-075
MCTR18.24XU25.4-15	18.24	25.4	288	56	327	TOHT09..	GP06-085
MCTR18.64XU25.4-15	18.64	25.4	288	56	327	TOHT09..	GP06-085
MCTR19.05XU25.4-15	19.05	25.4	303	56	343	TOHT09..	GP06-085
MCTR19.94XU31.75-15	19.94	31.75	318	60	360	TOHT09..	GP06-085
MCTR20.62XU31.75-15	20.62	31.75	318.2	60	360	TOHT10..	GP06-085
MCTR22.23XU31.75-15	22.23	31.75	348.4	60	393	TOHT11..	GP06-100
MCTR23.80XU31.75-15	23.8	31.75	378.4	60	426	TOHT11..	GP06-100
MCTR25.40XU31.75-15	25.4	31.75	393.7	60	442	TOHT12..	GP06
MCTR26.97XU31.75X-15*	26.97	31.75	423.7	60	475	TOHT12..	GP06

will be released in 2019.

DC	Tool diameter tolerance	Hole diameter tolerance*
12 - 28	0 / - 0.07	+ 0.05 / - 0.1

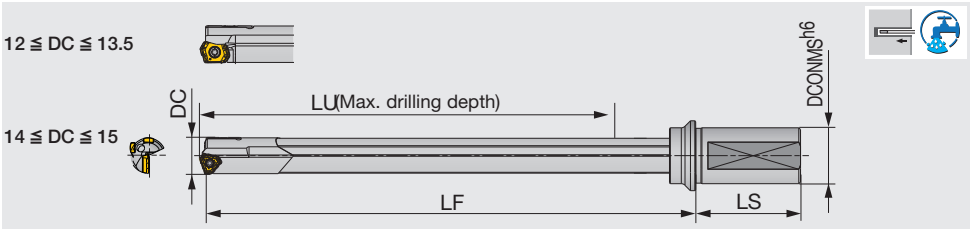
Reference pages: Inserts, Guide pads → J123 - J126, Standard cutting conditions → J127

DEEP TRI DRILL

MCTR L/D=20

Drill body for lathes and machining centers, L/D = 20, tool diameter ø12 - ø15 mm





Designation	DC	DCONMS	LU	LS	LF	insert	Guide pad
MCTR12.00XM20-20	12	20	261.8	50	290	LOGT06...	GP04-055
MCTR12.50XM20-20	12.5	20	261.8	50	291	LOGT06...	GP04-055
MCTR13.00XM25-20	13	25	281.8	56	315	LOGT06...	GP04-055
MCTR13.50XM25-20	13.5	25	281.8	56	315	LOGT06...	GP04-055
MCTR14.00XM25-20	14	25	302	56	336	TOHT07...	GP05-060
MCTR14.50XM25-20	14.5	25	302	56	337	TOHT07...	GP05-060
MCTR15.00XM25-20	15	25	322	56	358	TOHT07...	GP05-060

øDc	Tool diameter tolerance	Hole diameter tolerance*
12 - 15	0 / - 0.07	+ 0.05 / - 0.1

SPARE PARTS



Designation	insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR12...-MCTR13.5...	SR10503833L040	T-7F	CSPB-2L043	IP-6F
MCTR14...-MCTR15...	SR14-560/S	T-8F	SR34-508	T-7F

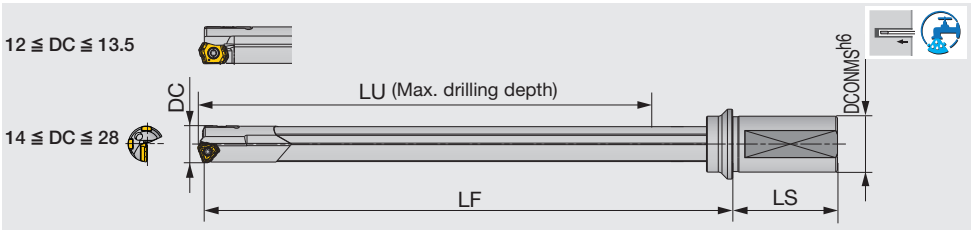
Recommended clamping torque (N·m): CSPB-2L043=0.7, SR34-508=0.9, SR14-560/S=1.2, SR10503833L040=1.3

Reference pages: Inserts, Guide pads → J123 - J126, Standard cutting conditions → J127

MCTR L/D=25

Drill body for lathes and machining centers, L/D = 25, tool diameter ø12 - ø28 mm





Designation	DC	DCONMS	LU	LS	LF	insert	Guide pad
MCTR12.00XM20-25	12	20	326.8	50	355	LOGT06...	GP04-055
MCTR12.50XM20-25	12.5	20	326.8	50	356	LOGT06...	GP04-055
MCTR13.00XM25-25	13	25	351.8	56	385	LOGT06...	GP04-055
MCTR13.50XM25-25	13.5	25	351.8	56	385	LOGT06...	GP04-055
MCTR14.00XM25-25	14	25	377	56	411	TOHT07...	GP05-060
MCTR14.50XM25-25	14.5	25	377	56	412	TOHT07...	GP05-060
MCTR15.00XM25-25	15	25	402	56	438	TOHT07...	GP05-060
MCTR16.00XM25A-25	16	25	427.2	56	464	TOHT08...	GP05-075
MCTR16.50XM25A-25	16.5	25	427.2	56	464	TOHT08...	GP05-075
MCTR17.00XM25A-25	17	25	452.2	56	490	TOHT08...	GP05-075
MCTR17.50XM25A-25	17.5	25	452.2	56	490	TOHT08...	GP05-075
MCTR18.00XM25A-25	18	25	477.2	56	517	TOHT08...	GP05-075
MCTR18.50XM25-25	18.5	25	478	56	517	TOHT09...	GP06-085
MCTR19.00XM25-25	19	25	503	56	543	TOHT09...	GP06-085
MCTR19.50XM25-25	19.5	25	503	56	543	TOHT09...	GP06-085
MCTR20.00XM32-25	20	32	528	60	570	TOHT09...	GP06-085
MCTR21.00XM32-25	21	32	553.2	60	596	TOHT10...	GP06-085
MCTR22.00XM32-25	22	32	578.4	60	623	TOHT11...	GP06-100
MCTR23.00XM32-25	23	32	603.4	60	649	TOHT11...	GP06-100
MCTR24.00XM32-25	24	32	628.4	60	676	TOHT11...	GP06-100
MCTR25.00XM32-25	25	32	653.4	60	702	TOHT11...	GP06-100
MCTR26.00XM40-25	26	40	678.7	70	729	TOHT12...	GP06
MCTR27.00XM40-25	27	40	703.7	70	755	TOHT12...	GP06
MCTR28.00XM40-25	28	40	703.7	70	757	TOHT12...	GP06
MCTR12.70XU25.4-25*	12.7	25.4	326.8	56	359	LOGT06..	GP04-055
MCTR13.49XU25.4-25*	13.49	25.4	351.8	56	385	LOGT06..	GP04-055
MCTR14.27XU25.4-25	14.27	25.4	377	56	411	TOHT07..	GP05-060
MCTR15.88XU25.4-25	15.88	25.4	402	56	439	TOHT07..	GP05-060
MCTR17.45XU25.4A-25	17.45	25.4	452.2	56	490	TOHT08..	GP05-075
MCTR18.24XU25.4-25	18.24	25.4	478	56	517	TOHT09..	GP06-085
MCTR18.64XU25.4-25	18.64	25.4	478	56	517	TOHT09..	GP06-085
MCTR19.05XU25.4-25	19.05	25.4	503	56	543	TOHT09..	GP06-085
MCTR19.94XU31.75-25	19.94	31.75	528	60	570	TOHT09..	GP06-085
MCTR20.62XU31.75-25	20.62	31.75	528.2	60	570	TOHT10..	GP06-085
MCTR22.23XU31.75-25	22.23	31.75	578.4	60	623	TOHT11..	GP06-100
MCTR23.80XU31.75-25	23.8	31.75	628.4	60	676	TOHT11..	GP06-100
MCTR25.40XU31.75-25	25.4	31.75	653.7	60	702	TOHT12..	GP06
MCTR26.97XU31.75X-25*	26.97	31.75	703.7	60	755	TOHT12..	GP06

will be released in 2019.

DC	Tool diameter tolerance	Hole diameter tolerance*
12 - 28	0 / - 0.07	+ 0.05 / - 0.1

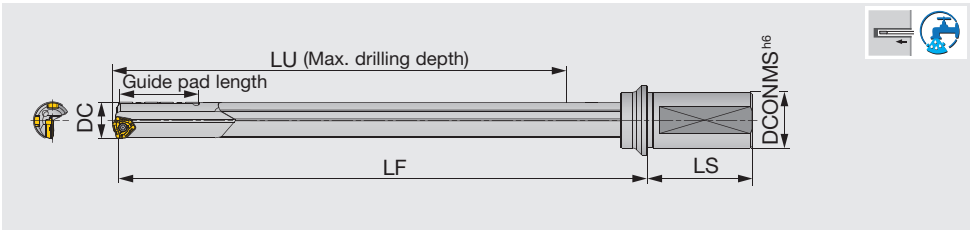
Reference pages: Inserts, Guide pads → J123 - J126, Standard cutting conditions → J127

DEEP TRI DRILL

MCTRCH L/D=25

Drill body for lathes and machining centers, available for crossed hole, L/D = 25, tool diameter ø14 - ø28 mm





Designation	DC	DCONMS	LU	LS	LF	insert	Guide pad	Guide pad length
MCTRCH14.00XM25-25	14	25	377	56	411	TOHT07...	GP05 - 060	32
MCTRCH15.00XM25-25	15	25	402	56	438	TOHT07...	GP05 - 060	32
MCTRCH16.00XM25A-25	16	25	427.2	56	464	TOHT08...	GP05 - 075	32
MCTRCH18.00XM25A-25	18	25	477.2	56	517	TOHT08...	GP05 - 075	32
MCTRCH19.00XM25-25	19	25	503	56	543	TOHT09...	GP06 - 085	40
MCTRCH20.00XM32-25	20	32	528	60	570	TOHT09...	GP06 - 085	40
MCTRCH23.00XM32-25	23	32	603.4	60	649	TOHT11...	GP06 - 100	40
MCTRCH24.00XM32-25	24	32	628.4	60	676	TOHT11...	GP06 - 100	40
MCTRCH28.00XM40-25	28	40	703.7	70	757	TOHT12...	GP06	40
MCTRCH14.68XU25.4-25	14.68	25.4	377	56	412	TOHT07...	GP05 - 060	32
MCTRCH15.06XU25.4-25	15.06	25.4	402	56	438	TOHT07...	GP05 - 060	32
MCTRCH18.24XU25.4-25	18.24	25.4	478	56	517	TOHT09...	GP06 - 085	40
MCTRCH18.64XU25.4-25	18.64	25.4	478	56	517	TOHT09...	GP06 - 085	40
MCTRCH23.80XU31.75-25	23.8	31.75	628.4	60	676	TOHT11...	GP06 - 100	40

DC	Tool diameter tolerance	Hole diameter tolerance*
ø14 - ø28	0 / - 0.09	+ 0.05 / - 0.12

SPARE PARTS

Designation	insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTRCH14... - MCTRCH20...	SR14-560/S	T-8F	SR34-508	T-7F
MCTRCH23... - MCTRCH24...	SR14-571/S	T-10/5	SR34-508	T-7F
MCTRCH28...	SR14-506	T-15F	SR34-508	T-7F

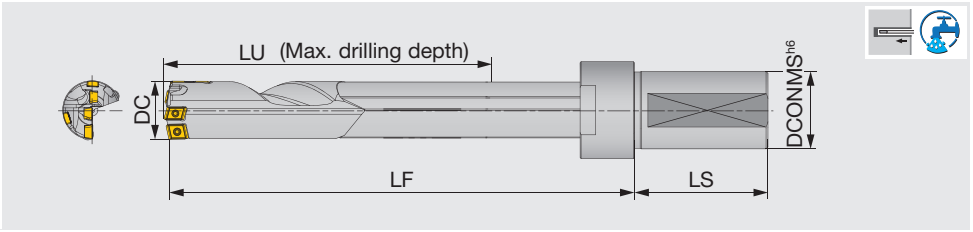
Recommended clamping torque (N·m): SR34-508=0.9, SR14-560/S=1.2, SR14-571/S=3.2, SR14-506=4.8

Reference pages: Inserts, Guide pads → J123 - J126, Standard cutting conditions → J127

MCTR L/D=8

Drill body for lathes and machining centers, L/D = 8, tool diameter ø33.1, ø39.1 mm





Designation	DC	DCONMS	LU	LS	LF	insert	Guide pad
MCTR33.10XFM40-8	33.1	40	272	69	350	FBM06**-C, FBM06**-I, FBH07**-P	GP07
MCTR39.10XFM40-8	39.1	40	320	69	407	FBM08**-C, FBM06**-I, FBH09**-P	GP08

DC	Tool diameter tolerance	Hole diameter tolerance*
33.1, 39.1	0 / - 0.07	+ 0.05 / - 0.1

*Max. DC = 40: Available tailor-made tools

SPARE PARTS



Designation	insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
MCTR33.1..., MCTR39.1...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F

Recommended clamping torque (N·m): CSTB-2.5=1.3, CSTB-3S=2.3

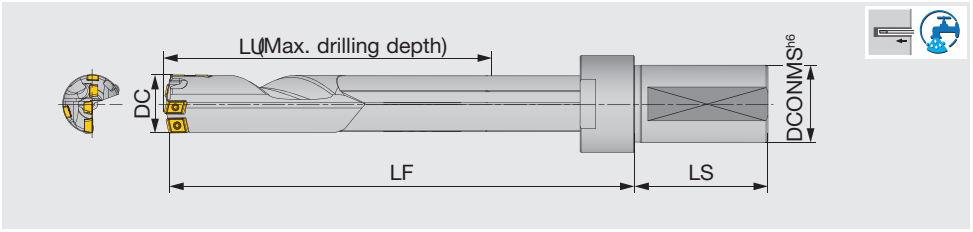
Caution:
The drill pipe is blackened to increase the resistance to corrosion, and the finished surface may appear uneven.
This, however, will not affect the performance of the drill.

Reference pages: Inserts, Guide pads → J123 - J126, Standard cutting conditions → J127

DEEP TRI DRILL
MCTR L/D=10

Drill body for lathes and machining centers, L/D = 10, tool diameter ø29 - ø36 mm





Designation	DC	DCONMS	LU	LS	LF	insert	Guide pad
MCTR29.00XFM40-10	29	40	292.6	69	360	FBM06**-C, FBM05**-I, FBH06**-P	GP06
MCTR30.00XFM40-10	30	40	312.9	69	383	FBM06**-C, FBM06**-I, FBH07**-P	GP06
MCTR31.00XFM40-10	31	40	312.9	69	383	FBM06**-C, FBM06**-I, FBH07**-P	GP06
MCTR32.00XFM40-10	32	40	323	69	395	FBM06**-C, FBM06**-I, FBH07**-P	GP06
MCTR33.00XFM40-10	33	40	333.1	69	406	FBM06**-C, FBM06**-I, FBH07**-P	GP06
MCTR34.00XFM40-10	34	40	343	69	418	FBM06**-C, FBM06**-I, FBH07**-P	GP07
MCTR35.00XFM40-10	35	40	353.1	69	428	FBM06**-C, FBM06**-I, FBH07**-P	GP07
MCTR36.00XFM40-10	36	40	363.1	69	441	FBM08**-C, FBM06**-I, FBH07**-P	GP07
MCTR28.58XFU31.75-10*	28.58	31.75	292.6	69	360	FBM06**-C, FBM05**-I, FBH06**-P	GP06
MCTR31.75XFU31.75-10*	31.75	31.75	323	69	395	FBM06**-C, FBM06**-I, FBH07**-P	GP06
MCTR34.93XFU31.75-10*	34.93	31.75	353.1	69	428	FBM06**-C, FBM06**-I, FBH07**-P	GP07
MCTR38.10XFU31.75-10*	38.1	31.75	393.4	69	474	FBM08**-C, FBM06**-I, FBH09**-P	GP08

will be released in 2019.

DC	Tool diameter tolerance	Hole diameter tolerance*
28.58 - 38.1	0 / - 0.07	+ 0.05 / - 0.1

*Max. DC = 40: Available tailor-made tools

SPARE PARTS



Designation	insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
MCTR28.58... - MCTR29...	CSTB-2.5	T-8F	CSTB-2.2	T-7F	CSTB-2.2	T-7F	SR34-508	T-7F
MCTR30... - MCTR33...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	SR34-508	T-7F
MCTR34... - MCTR38.1...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F

Recommended clamping torque (N·m): SR34-508=0.9, CSTB-2.2=1, CSTB-2.5=1.3, CSTB-3S=2.3,

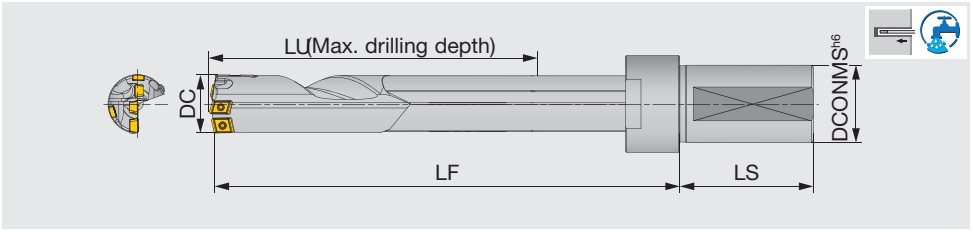
Caution:
The drill pipe is blackened to increase the resistance to corrosion, and the finished surface may appear uneven.
This, however, will not affect the performance of the drill.

Reference pages: Inserts, Guide pads → J123 - J126, Standard cutting conditions → J127

MCTR L/D=15

Drill body for lathes and machining centers, L/D = 15, tool diameter ø29 - ø36 mm





Designation	DC	DCONMS	LU	LS	LF	insert	Guide pad
MCTR29.00XFM40-15	29	40	437.6	69	505	FBM06**-C, FBM05**-I, FBH06**-P	GP06
MCTR30.00XFM40-15	30	40	467.9	69	538	FBM06**-C, FBM06**-I, FBH07**-P	GP06
MCTR31.00XFM40-15	31	40	467.9	69	538	FBM06**-C, FBM06**-I, FBH07**-P	GP06
MCTR32.00XFM40-15	32	40	483	69	555	FBM06**-C, FBM06**-I, FBH07**-P	GP06
MCTR33.00XFM40-15	33	40	498.1	69	571	FBM06**-C, FBM06**-I, FBH07**-P	GP06
MCTR34.00XFM40-15	34	40	513	69	588	FBM06**-C, FBM06**-I, FBH07**-P	GP07
MCTR35.00XFM40-15	35	40	528.1	69	603	FBM06**-C, FBM06**-I, FBH07**-P	GP07
MCTR36.00XFM40-15	36	40	543.1	69	621	FBM08**-C, FBM06**-I, FBH07**-P	GP07
MCTR28.58XFU31.75-15*	28.58	31.75	437.6	69	505	FBM06**-C, FBM05**-I, FBH06**-P	GP06
MCTR31.75XFU31.75-15*	31.75	31.75	483	69	555	FBM06**-C, FBM06**-I, FBH07**-P	GP06
MCTR34.93XFU31.75-15*	34.93	31.75	528.1	69	603	FBM06**-C, FBM06**-I, FBH07**-P	GP07
MCTR38.10XFU31.75-15*	38.1	31.75	588.4	69	669	FBM08**-C, FBM06**-I, FBH09**-P	GP08

will be released in 2019.

DC	Tool diameter tolerance	Hole diameter tolerance*
28.58 - 38.1	0 / - 0.07	+ 0.05 / - 0.1

*Max. DC = 40: Available tailor-made tools

SPARE PARTS



Designation	insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
MCTR28.58... - MCTR29...	CSTB-2.5	T-8F	CSTB-2.2	T-7F	CSTB-2.2	T-7F	SR34-508	T-7F
MCTR30... - MCTR33...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	SR34-508	T-7F
MCTR34... - MCTR38...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F

Recommended clamping torque (N·m): SR34-508=0.9, CSTB-2.2=1, CSTB-2.5=1.3, CSTB-3S=2.3,

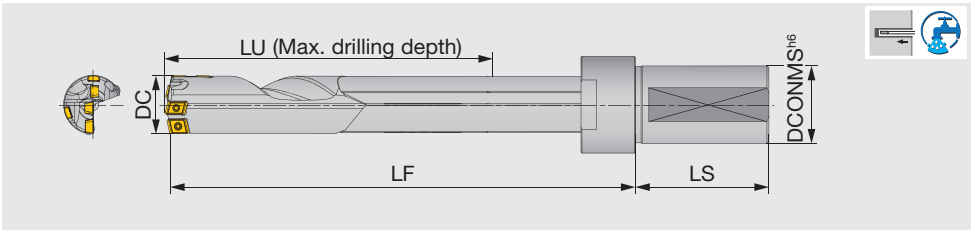
Caution:
The drill pipe is blackened to increase the resistance to corrosion, and the finished surface may appear uneven.
This, however, will not affect the performance of the drill.

Reference pages: Inserts, Guide pads → J123 - J126, Standard cutting conditions → J127

DEEP TRI DRILL
MCTR L/D=25

Drill body for lathes and machining centers, L/D = 25, tool diameter ø29 - ø36 mm





Designation	DC	DCONMS	LU	LS	LF	insert	Guide pad
MCTR30.00XFM40-25	30	40	777.9	69	848	FBM06**-C/I, FBH07**-P	GP06
MCTR28.58XFU31.75-25*	28.58	31.75	727.6	69	795	FBM06**-C, FBM05**-I, FBH06**-P	GP06
MCTR31.75XFU31.75-25*	31.75	31.75	803	69	875	FBM06**-C, FBM06**-I, FBH07**-P	GP06
MCTR34.93XFU31.75-25*	34.93	31.75	878.1	69	953	FBM06**-C, FBM06**-I, FBH07**-P	GP07
MCTR38.10XFU31.75-25*	38.1	31.75	978.4	69	1059	FBM08**-C, FBM06**-I, FBH09**-P	GP08

will be released in 2019.

DC	Tool diameter tolerance	Hole diameter tolerance*
28.58 - 38.1	0 / - 0.07	+ 0.05 / - 0.1

*Max. DC = 40: Available tailor-made tools

SPARE PARTS



Designation	insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
MCTR28...	CSTB-2.5	T-8F	CSTB-2.2	T-7F	CSTB-2.2	T-7F	SR34-508	T-7F
MCTR30... - MCTR31...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	SR34-508	T-7F
MCTR34... - MCTR38...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F

Recommended clamping torque (N·m): SR34-508=0.9, CSTB-2.2=1, CSTB-2.5=1.3, CSTB-3S=2.3,

Caution:
The drill pipe is blackened to increase the resistance to corrosion, and the finished surface may appear uneven.
This, however, will not affect the performance of the drill.

Reference pages: Inserts, Guide pads → J123 - J126, Standard cutting conditions → J127

DESIGNATION FOR TAILOR MADE TOOLS

For tailor-made drills, use the below guide line to make the designation (Cat. No).

MCTR	18.50	XM	25	-	22
①	②		③		④

① Series	
MCTR	DeepTri-Drill (For machining centers and lathes)
MCTRCH	DeepTri-Drill (For gundrill machines, cross hole specification)

② Drill diameter DC (mm)	
18.50	18.50

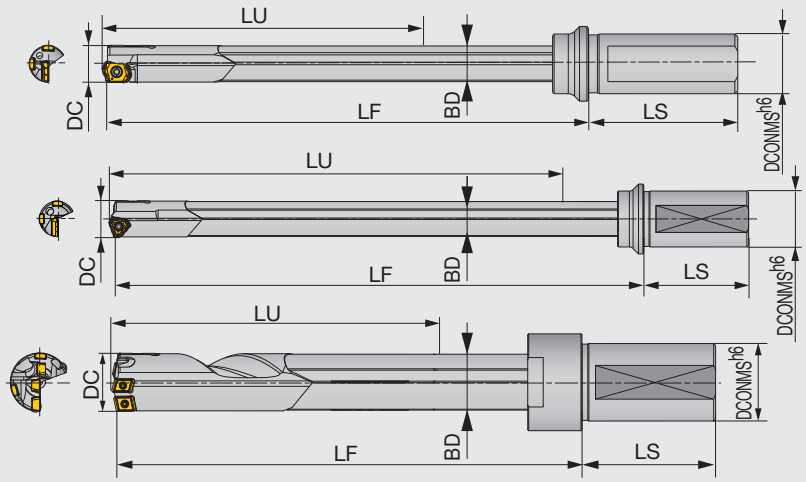
③ Driver diameter DCONMS (mm)	
25	25

④ L/D ratio

12 ≦ DC < 14

14 ≦ DC ≦ 28

28 < DC ≦ 40



AVAILABLE RANGE OF TAILOR MADE DRILL BODIES

DC	DCONMS	LU	LS	LF
12 - 12.49	20	124.8 - 326.8	50	153 - 225
12.5 - 12.99	20	123.8 - 326.8	50	153 - 226
13 - 13.99	25	122.8 - 351.8	56	156 - 245
14 - 14.49	25	122 - 377	56	156 - 411
14.5 - 14.99	25	122 - 377	56	157 - 412
15 - 15.99	25	130 - 402	56	166 - 438
16 - 16.79	25	138.2 - 427.2	56	175 - 464
16.8 - 17.69	25	146.2 - 452.2	56	184 - 490
17.7 - 18.69	25	154.2 - 478	56	194 - 517
18.7 - 19.69	25	163 - 503	56	203 - 543
19.7 - 20.69	32	171 - 528.2	60	213 - 570
20.7 - 21.69	32	179.2 - 553.2	60	222 - 596
21.7 - 22.69	32	187.2 - 578.4	60	232 - 623
22.7 - 23.69	32	195.4 - 603.4	60	241 - 649
23.7 - 24.69	32	203.4 - 628.4	60	251 - 676
24.7 - 25.69	32	211.4 - 653.7	60	260 - 702

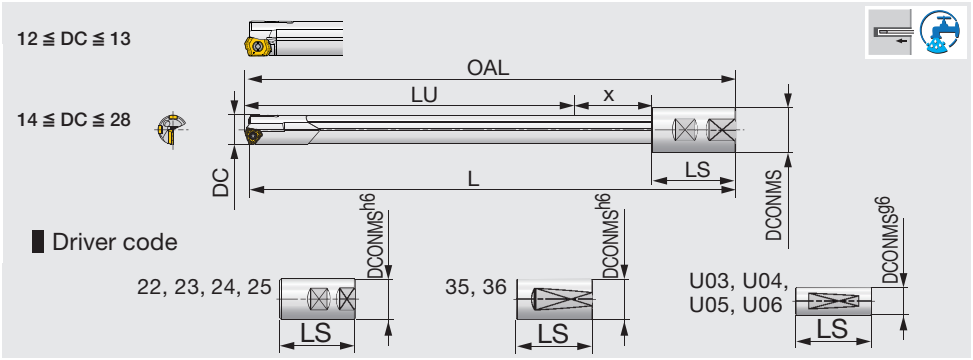
DC	DCONMS	LU	LS	LF
25.7 - 26.69	40	219.7 - 678.7	70	270 - 719
26.7 - 27.69	40	227.7 - 703.7	70	279 - 745
27.7 - 28	40	227.7 - 703.7	70	281 - 747
28.01 - 29	40	148.7 - 728.7	69	215 - 795
29.01 - 29.99	40	153.7 - 753.7	69	222 - 822
30 - 31	40	158.7 - 778.7	69	228 - 848
31.01 - 32	40	163.7 - 803.7	69	235 - 875
32.01 - 33	40	168.7 - 828.7	69	241 - 901
33.01 - 34	40	173.7 - 853.7	69	248 - 928
34.01 - 35	40	178.7 - 878.7	69	253 - 953
35.01 - 36	40	183.7 - 903.7	69	261 - 981
36.01 - 37	40	188.7 - 928.7	69	266 - 1006
37.01 - 38	40	193.7 - 953.7	69	274 - 1034
38.01 - 39	40	198.7 - 978.7	69	279 - 1059
39.01 - 40	40	203.7 - 1003.7	69	287 - 1087

DEEP TRI DRILL

TRLG

Drill body for gundrill machines, tool diameter ø12 - ø28 mm





Designation	DC	L	DCONMS	LU	OAL	LS	x	Driver code	insert	Guide pad
TRLG12.00X800-U03	12	800	19.05	713.8	801.8	70	18	U03	LOGT06...	GP04-055
TRLG12.00X800-22	12	800	20	733.8	801.8	50	18	U22	LOGT06...	GP04-055
TRLG12.00X1000-U03	12	1000	19.05	913.8	1001.8	70	18	U03	LOGT06...	GP04-055
TRLG12.00X1000-22	12	1000	20	933.8	1001.8	50	18	U22	LOGT06...	GP04-055
TRLG12.00X1650-U03	12	1650	19.05	1563.8	1651.8	70	18	U03	LOGT06...	GP04-055
TRLG12.00X1650-22	12	1650	20	1583.8	1651.8	50	18	U22	LOGT06...	GP04-055
TRLG13.00X800-U04	13	800	25.4	711.8	801.8	70	20	U04	LOGT06...	GP04-055
TRLG13.00X800-23	13	800	25	725.8	801.8	56	20	U23	LOGT06...	GP04-055
TRLG13.00X1000-U04	13	1000	25.4	911.8	1001.8	70	20	U04	LOGT06...	GP04-055
TRLG13.00X1000-23	13	1000	25	925.8	1001.8	56	20	U23	LOGT06...	GP04-055
TRLG13.00X1650-U04	13	1650	25.4	1561.8	1651.8	70	20	U04	LOGT06...	GP04-055
TRLG13.00X1650-23	13	1650	25	1575.8	1651.8	56	20	U23	LOGT06...	GP04-055
TRLG14.00X800-23	14	800	25	725	802	56	21	23	TOHT07...	GP05-060
TRLG14.00X800-U04	14	800	25.4	711	802	70	21	U04	TOHT07...	GP05-060
TRLG14.00X1000-23	14	1000	25	925	1002	56	21	23	TOHT07...	GP05-060
TRLG14.00X1000-U04	14	1000	25.4	911	1002	70	21	U04	TOHT07...	GP05-060
TRLG14.00X1650-23	14	1650	25	1575	1652	56	21	23	TOHT07...	GP05-060
TRLG14.00X1650-U04	14	1650	25.4	1561	1652	70	21	U04	TOHT07...	GP05-060
TRLG14.50X800-23	14.5	800	25	724	802	56	22	23	TOHT07...	GP05-060
TRLG14.50X800-U04	14.5	800	25.4	710	802	70	22	U04	TOHT07...	GP05-060
TRLG14.50X1000-23	14.5	1000	25	924	1002	56	22	23	TOHT07...	GP05-060
TRLG14.50X1000-U04	14.5	1000	25.4	910	1002	70	22	U04	TOHT07...	GP05-060
TRLG14.50X1650-23	14.5	1650	25	1574	1652	56	22	23	TOHT07...	GP05-060
TRLG14.50X1650-U04	14.5	1650	25.4	1560	1652	70	22	U04	TOHT07...	GP05-060
TRLG15.00X800-23	15	800	25	723	802	56	23	23	TOHT07...	GP05-060
TRLG15.00X800-U04	15	800	25.4	709	802	70	23	U04	TOHT07...	GP05-060
TRLG15.00X1000-23	15	1000	25	923	1002	56	23	23	TOHT07...	GP05-060
TRLG15.00X1000-U04	15	1000	25.4	909	1002	70	23	U04	TOHT07...	GP05-060
TRLG15.00X1650-23	15	1650	25	1573	1652	56	23	23	TOHT07...	GP05-060
TRLG15.00X1650-U04	15	1650	25.4	1559	1652	70	23	U04	TOHT07...	GP05-060
TRLG16.00X800-23A	16	800	25	722.2	802.2	56	24	23	TOHT08...	GP05-075
TRLG16.00X800-U04A	16	800	25.4	708.2	802.2	70	24	U04	TOHT08...	GP05-075
TRLG16.00X1000-23A	16	1000	25	922.2	1002.2	56	24	23	TOHT08...	GP05-075
TRLG16.00X1000-U04A	16	1000	25.4	908.2	1002.2	70	24	U04	TOHT08...	GP05-075
TRLG16.00X1500-23A	16	1500	25	1422.2	1502.2	56	24	23	TOHT08...	GP05-075
TRLG16.00X1500-U04A	16	1500	25.4	1408.2	1502.2	70	24	U04	TOHT08...	GP05-075
TRLG17.00X800-23A	17	800	25	721.2	802.2	56	25	23	TOHT08...	GP05-075
TRLG17.00X800-U04A	17	800	25.4	707.2	802.2	70	25	U04	TOHT08...	GP05-075
TRLG17.00X1000-23A	17	1000	25	921.2	1002.2	56	25	23	TOHT08...	GP05-075
TRLG17.00X1000-U04A	17	1000	25.4	907.2	1002.2	70	25	U04	TOHT08...	GP05-075
TRLG18.00X800-23A	18	800	25	719.2	802.2	56	27	23	TOHT08...	GP05-075

Reference pages: Inserts, Guide pads → J123 - J126, Standard cutting conditions → J127

Designation	DC	L	DCONMS	LU	OAL	LS	x	Driver code	insert	Guide pad
TRLG18.00X800-U04A	18	800	25.4	705.2	802.2	70	27	U04	TOHT08...	GP05-075
TRLG18.00X1000-23A	18	1000	25	919.2	1002.2	56	27	23	TOHT08...	GP05-075
TRLG18.00X1000-U04A	18	1000	25.4	905.2	1002.2	70	27	U04	TOHT08...	GP05-075
TRLG18.00X1500-23A	18	1500	25	1419.2	1502.2	56	27	23	TOHT08...	GP05-075
TRLG18.00X1500-U04A	18	1500	25.4	1405.2	1502.2	70	27	U04	TOHT08...	GP05-075
TRLG18.50X1500-23	18.5	1500	25	1420	1503	56	27	23	TOHT09...	GP06-085
TRLG18.50X1500-U04	18.5	1500	25.4	1406	1503	70	27	U04	TOHT09...	GP06-085
TRLG19.00X800-23	19	800	25	719	803	56	28	23	TOHT09...	GP06-085
TRLG19.00X800-U04	19	800	25.4	705	803	70	28	U04	TOHT09...	GP06-085
TRLG19.00X1000-23	19	1000	25	919	1003	56	28	23	TOHT09...	GP06-085
TRLG19.00X1000-U04	19	1000	25.4	905	1003	70	28	U04	TOHT09...	GP06-085
TRLG20.00X800-24	20	800	32	713	803	60	30	24	TOHT09...	GP06-085
TRLG20.00X800-U05	20	800	31.75	703	803	70	30	U05	TOHT09...	GP06-085
TRLG20.00X1000-24	20	1000	32	913	1003	60	30	24	TOHT09...	GP06-085
TRLG20.00X1000-U05	20	1000	31.75	903	1003	70	30	U05	TOHT09...	GP06-085
TRLG21.00X1000-24	21	1000	32	912.2	1003.2	60	31	24	TOHT10...	GP06-085
TRLG21.00X1000-U05	21	1000	31.75	902.2	1003.2	70	31	U05	TOHT10...	GP06-085
TRLG22.00X1000-24	22	1000	32	910.4	1003.4	60	33	24	TOHT11...	GP06-100
TRLG22.00X1000-U05	22	1000	31.75	900.4	1003.4	70	33	U05	TOHT11...	GP06-100
TRLG22.00X1500-24	22	1500	32	1410.4	1503.4	60	33	24	TOHT11...	GP06-100
TRLG22.00X1500-U05	22	1500	31.75	1400.4	1503.4	70	33	U05	TOHT11...	GP06-100
TRLG23.00X1000-24	23	1000	32	909.4	1003.4	60	34	24	TOHT11...	GP06-100
TRLG23.00X1000-U05	23	1000	31.75	899.4	1003.4	70	34	U05	TOHT11...	GP06-100
TRLG23.00X1500-24	23	1500	32	1409.4	1503.4	60	34	24	TOHT11...	GP06-100
TRLG23.00X1500-U05	23	1500	31.75	1399.4	1503.4	70	34	U05	TOHT11...	GP06-100
TRLG24.00X1000-24	24	1000	32	907.4	1003.4	60	36	24	TOHT11...	GP06-100
TRLG24.00X1000-U05	24	1000	31.75	897.4	1003.4	70	36	U05	TOHT11...	GP06-100
TRLG24.00X1500-24	24	1500	32	1407.4	1503.4	60	36	24	TOHT11...	GP06-100
TRLG24.00X1500-U05	24	1500	31.75	1397.4	1503.4	70	36	U05	TOHT11...	GP06-100
TRLG25.00X1000-24	25	1000	32	906.4	1003.4	60	37	24	TOHT11...	GP06-100
TRLG25.00X1000-U05	25	1000	31.75	896.4	1003.4	70	37	U05	TOHT11...	GP06-100
TRLG26.00X1000-25	26	1000	40	894.7	1003.7	70	39	25	TOHT12...	GP06
TRLG26.00X1000-U06	26	1000	38.1	894.7	1003.7	70	39	U06	TOHT12...	GP06
TRLG27.00X1000-25	27	1000	40	893.7	1003.7	70	40	25	TOHT12...	GP06
TRLG27.00X1000-U06	27	1000	38.1	893.7	1003.7	70	40	U06	TOHT12...	GP06
TRLG28.00X1000-25	28	1000	40	891.7	1003.7	70	42	25	TOHT12...	GP06
TRLG28.00X1000-U06	28	1000	38.1	891.7	1003.7	70	42	U06	TOHT12...	GP06
TRLG12.70X1219-U04*	12.7	1219	25.4	1131.8	1220.8	70	19	U04	LOGT06..	GP04-055
TRLG12.70X1524-U04*	12.7	1524	25.4	1436.8	1525.8	70	19	U04	LOGT06..	GP04-055
TRLG13.49X1219-U04*	13.49	1219	25.4	1130.8	1220.8	70	20	U04	LOGT06..	GP04-055
TRLG13.49X1527-U04*	13.49	1527	25.4	1438.8	1528.8	70	20	U04	LOGT06..	GP04-055

will be released in 2019.

DC	Tool diameter tolerance	Hole diameter tolerance*
12 - 28	0 / - 0.07	+ 0.05 / - 0.1

SPARE PARTS






Designation	insert		Guide pad	
	Screw	Wrench	Screw	Wrench
TRLG12... - TRLG13...	SR10503833L040	T-7F	CSPB-2L043	IP-6F
TRLG14... - TRLG20...	SR14-560/S	T-8F	SR34-508	T-7F
TRLG21...	SR34-506	T-9F	SR34-508	T-7F
TRLG22... - TRLG25...	SR14-571/S	T-10/5	SR34-508	T-7F
TRLG26... - TRLG28...	SR14-506	T-15F	SR34-508	T-7F

Recommended clamping torque (N·m): CSPB-2L043=0.7, SR34-508=0.9, SR34-506=0.9, SR14-560/S=1.2, SR10503833L040=1.3, SR14-571/S=3.2, SR14-506=4.8

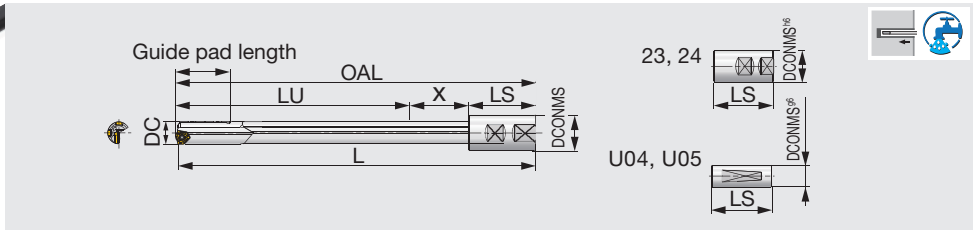
Reference pages: Inserts, Guide pads → J123 - J126, Standard cutting conditions → J127

DEEP TRI DRILL

TRLGCH

Drill body for gundrill machines, available for crossed hole, tool diameter ø12 - ø28 mm





Designation	DC	L	DCONMS	LU	OAL	LS	X	Driver code	insert	Guide pad	Guide pad length
TRLGCH15.00X1650-U04	15	1650	25.4	1559	1652	70	23	U04	TOHT07...	GP05 - 060	32
TRLGCH18.00X1650-U04A	18	1650	25.4	1555.2	1652.2	70	27	U04	TOHT08...	GP05 - 075	32
TRLGCH23.00X1650-U05	23	1650	31.75	1549.4	1653.4	70	34	U05	TOHT11...	GP06 - 100	40
TRLGCH24.00X1650-U05	24	1650	31.75	1547.4	1653.4	70	36	U05	TOHT11...	GP06 - 100	40
TRLGCH15.00X1650-23	15	1650	25	1573	1652	56	23	23	TOHT07...	GP05 - 060	40
TRLGCH18.00X1650-23A	18	1650	25	1569.2	1652.2	56	27	23	TOHT08...	GP05 - 075	40
TRLGCH23.00X1650-24	23	1650	32	1559.4	1653.4	60	34	24	TOHT11...	GP06 - 100	40
TRLGCH24.00X1650-24	24	1650	32	1557.4	1653.4	60	36	24	TOHT11...	GP06 - 100	40
TRLGCH14.68X1830-U05	14.68	1830	31.75	1740	1832	70	22	U05	TOHT07...	GP05 - 060	40
TRLGCH15.06X1830-U05	15.06	1830	31.75	1739	1832	70	23	U05	TOHT07...	GP05 - 060	40
TRLGCH18.24X1830-U05	18.24	1830	31.75	1736	1833	70	27	U05	TOHT09...	GP06 - 085	40
TRLGCH18.64X1830-U05	18.64	1830	31.75	1736	1833	70	27	U05	TOHT09...	GP06 - 085	40
TRLGCH23.42X1830-U05	23.42	1830	31.75	1729.4	1833.4	70	34	U05	TOHT11...	GP06 - 100	40
TRLGCH23.80X1830-U05	23.8	1830	31.75	1727.4	1833.4	70	36	U05	TOHT11...	GP06 - 100	40

DC	Tool diameter tolerance	Hole diameter tolerance*
ø14.68 - ø24	0 / - 0.09	+ 0.05 / - 0.12

SPARE PARTS






Designation	insert		Guide pad	
	Screw	Wrench	Screw	Wrench
TRLGCH14... - TRLGCH15...	SR14-560/S	T-8F	SR34-508	T-7F
TRLGCH18.0**A	SR14-560/S	T-8F	SR34-508	T-7F
TRLGCH18.2... - TRLGCH18.6...	SR14-560/S	T-8F	SR34-508	T-7F
TRLGCH23... - TRLGCH24...	SR14-571/S	T-9F	SR34-508	T-7F

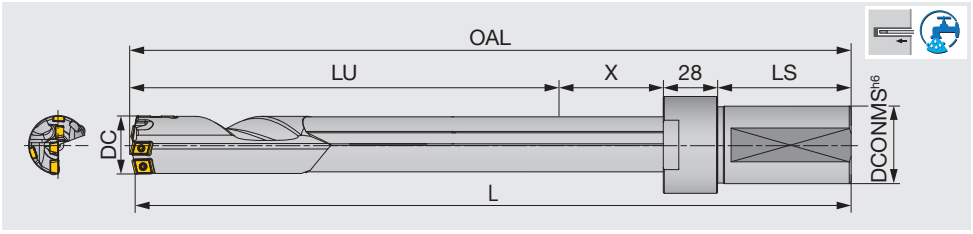
Recommended clamping torque (N·m): SR14-560/S=1.2, SR14-571/S=3.2, SR34-508=0.9

Reference pages: Inserts, Guide pads → J123 - J126, Standard cutting conditions → J127

TRLG

Drill body for gundrill machines, tool diameter ø30 mm





Designation	DC	L	DCONMS	LU	OAL	LS	X	Driver code	insert	Guide pad
TRLG30.00X1000-FM40	30	1000	40	860.9	1002.9	69	45	FM40	FBM06**-C, FBM06**-I, FBH07**-P	GP06
TRLG30.00X1650-FM40	30	1650	40	1510.9	1652.9	69	45	FM40	FBM06**-C, FBM06**-I, FBH07**-P	GP06
TRLG30.00X1650-FU38.1	30	1650	38.1	1510.9	1652.9	69	45	FU38.1	FBM06**-C, FBM06**-I, FBH07**-P	GP06

DC	Tool diameter tolerance	Hole diameter tolerance*
30	0 / - 0.07	+ 0.05 / - 0.1

*Max. DC = 40: Available tailor-made tools

SPARE PARTS



Designation	insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
TRLG30...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	SR34-508	T-7F

Recommended clamping torque (N·m): CSTB-2.5=1.3, SR34-508=0.9

Caution:
The drill pipe is blackened to increase the resistance to corrosion, and the finished surface may appear uneven.
This, however, will not affect the performance of the drill.

Reference pages: Inserts, Guide pads → J123 - J126, Standard cutting conditions → J127

DESIGNATION FOR TAILOR MADE TOOLS

For tailor-made drills, use the below guide line to make the designation (Cat. No).

①	②		③		④
TRLG	18.50	X	900	-	23

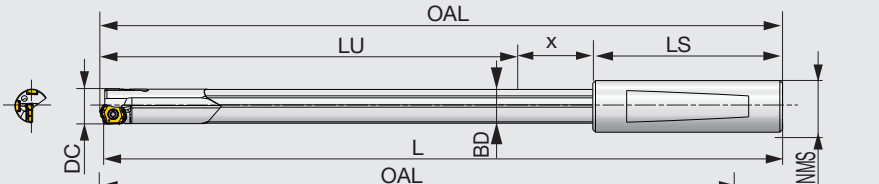
① Series	
TRLG	DeepTri-Drill (for gundrill machines)
TRLGCH	DeepTri-Drill (For gundrill machines, cross hole specification)

② Drill diameter DC (mm)	
18.50	18.50

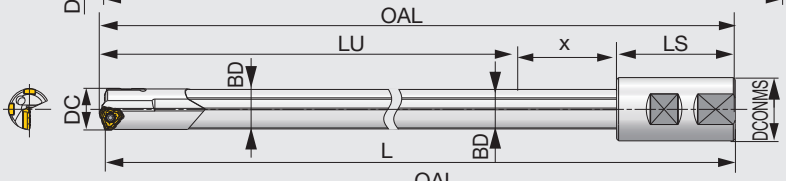
③ Overall length: L (mm)	
900	900

④ Driver code	
23	23

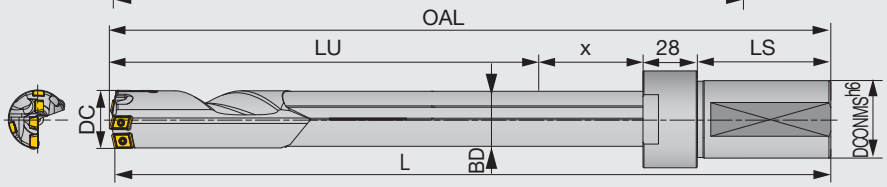
12 ≦ DC < 14



14 ≦ DC ≦ 28



28 < DC ≦ 40



AVAILABLE RANGE OF TAILOR MADE DRILL BODIES

DC	L	x
12 - 12.49	400 - 2400	18
12.5 - 12.99	400 - 2400	19
13 - 13.99	400 - 2400	20
14 - 14.49	400 - 2400	21
14.5 - 14.99	400 - 2400	22
15 - 15.99	400 - 2400	23
16 - 16.79	400 - 2400	24
16.8 - 17.69	400 - 2400	25
17.7 - 18.69	400 - 2400	27
18.7 - 19.69	400 - 2400	28
19.7 - 20.69	400 - 2400	30
20.7 - 21.69	400 - 2400	31
21.7 - 22.69	400 - 2400	33
22.7 - 23.69	400 - 2400	34
23.7 - 24.69	400 - 2400	36
24.7 - 25.69	400 - 2400	37

DC	L	x
25.7 - 26.69	400 - 2400	39
26.7 - 27.69	400 - 2400	40
27.7 - 28	400 - 2400	42
28.01 - 29	400 - 2400	42
29.01 - 29.99	400 - 2400	44
30 - 31	400 - 2400	45
31.01 - 32	400 - 2400	47
32.01 - 33	400 - 2400	48
33.01 - 34	400 - 2400	50
34.01 - 35	400 - 2400	50
35.01 - 36	400 - 2400	53
36.01 - 37	400 - 2400	53
37.01 - 38	400 - 2400	56
38.01 - 39	400 - 2400	56
39.01 - 40	400 - 2400	59

Please provide the driver shape depending on your request

TUBE DIAMETER

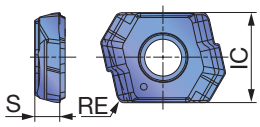
DC	BD
12 - 12.49	11.5
12.5 - 12.99	12
13 - 13.49	12.5
13.5 - 13.99	13
14 - 14.49	13.5
14.5 - 14.99	14
15 - 15.99	14.5
16 - 16.79	15.5
16.8 - 17.69	16.2
17.7 - 18.69	17.2
18.7 - 19.69	18.2
19.7 - 20.69	19
20.7 - 21.69	20
21.7 - 22.69	21
22.7 - 23.69	22
23.7 - 24.69	23

DC	BD
24.7 - 25.69	24
25.7 - 26.69	25
26.7 - 27.69	26
27.7 - 28	27
28.01 - 29	27
29.01 - 29.99	28
30 - 31	29
31.01 - 32	30
32.01 - 33	31
33.01 - 34	32
34.01 - 35	32
35.01 - 36	34
36.01 - 37	34
37.01 - 38	36
38.01 - 39	36
39.01 - 40	38

INSERT

LOGT-NDJ





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

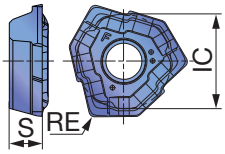
★ : First choice
☆ : Second choice

Designation	DCN	DCX	Coated AH725	S	RE
LOGT060204R-NDJ	12	13.99	●	2	0.4

●: Line - up
Package quantity = 10 pcs.

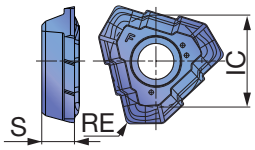
TOHT-NDL (07..., 08...)





TOHT-NDL (09... - 12...)





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

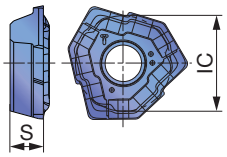
Designation	DCN	DCX	Coated AH725	IC	S	RE
TOHT070304R-NDL	14	15.99	●	7.69	2.3	0.4
TOHT080305R-NDL	16	18	●	8.55	2.8	0.5
TOHT090305R-NDL	18.01	20	●	8.32	3	0.5
TOHT100305R-NDL	20.01	21.99	●	9.23	3.3	0.5
TOHT110405R-NDL	22	25	●	10.4	3.8	0.5
TOHT120405R-NDL	25.01	28	●	11.59	4.3	0.5

●: Line - up
Package quantity = 10 pcs.

INSERT

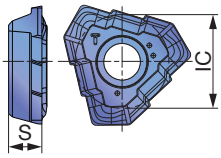
TOHT-NDJ (070..., 080...)





TOHT-NDJ (090... - 120...)





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

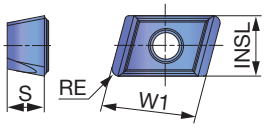
★ : First choice
☆ : Second choice

Designation	DCN	DCX	Coated AH725	IC	S
TOHT070304R-NDJ	14	15.99	●	7.69	2.3
TOHT080305R-NDJ	16	18	●	8.55	2.8
TOHT090305R-NDJ	18.01	20	●	8.32	3
TOHT100305R-NDJ	20.01	21.99	●	9.23	3.3
TOHT110405R-NDJ	22	25	●	10.4	3.8
TOHT120405R-NDJ	25.01	28	●	11.59	4.3

●: Line - up
Package quantity = 10 pcs.

FBM-C (For central)





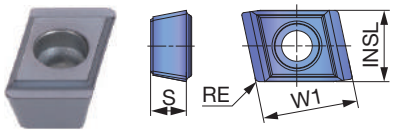
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	INSL	W1	Coated UC2220	S	DCN	DCX	RE
FBM06504LG-C	6.5	10	●	4	28.01	35	0.8
FBM08004LG-C	8	10	●	4	35.01	44	0.8

●: Line - up
Package quantity = 10 pcs.

FBM-I (For intermediate)



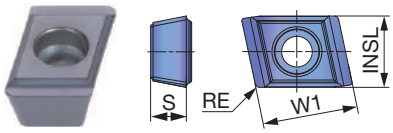
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	INSL	W1	Coated	S	DCN	DCX	RE
			UC2220				
FBM05503RG-I	5.5	8		3	25	29.99	0.4
FBM06504RG-I	6.5	10	●	4	30	41	0.4
FBM08004RG-I	8	10	●	4	41.01	51	0.4
FBM09504RG-I	9.5	10	●	4	51.01	64	0.4
FBM12504RG-I	12.5	10	●	4	64.01	65	0.4

●: Line - up
Package quantity = 10 pcs.

FBH-P (For peripheral)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

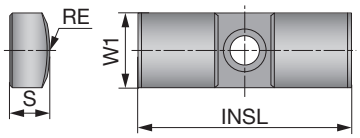
★ : First choice
☆ : Second choice

Designation	INSL	W1	Coated	S	DCN	DCX	RE
			UC2220				
FBH06003RG-P	6	8	●	3	25	29.99	0.4
FBH07504RG-P	7.5	10	●	4	30	38	0.4
FBH09004RG-P	9	10	●	4	38.01	47	0.4
FBH11004RG-P	11	10	●	4	47.01	60	0.4
FBH13004RG-P	13	10	●	4	60.01	65	0.4

●: Line - up
Package quantity = 10 pcs.

GUIDE PAD

GP04, 05, 06, 07, 08



P	Steel	☆	★
M	Stainless	☆	★
K	Cast iron	☆	★
N	Non-ferrous	☆	★
S	Superalloys	☆	★
H	Hard materials	☆	★

★ : First choice
☆ : Second choice

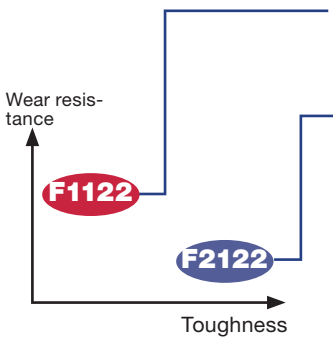
Designation	DCN	DCX	Coated		W1	INSL	S	RE
			F1122	F2122				
GP06	25.01	33	●	●	6	20	3	12
GP07	33.01	38	●	●	7	20	3.5	12
GP08	38.01	40	●	●	8	25	4.5	15.5
GP04-055	12	13.99	●	●	4	16	2	5.5
GP05-060	14	15.99	●	●	5	18	2.5	6
GP05-075	16	18	●	●	5	18	2.5	7.5
GP06-085	18.01	21	●	●	6	20	3	8.5
GP06-100	21.01	25	●	●	6	20	3	10

●: Line - up
Package quantity = 5 pcs.

Replacing guide pads

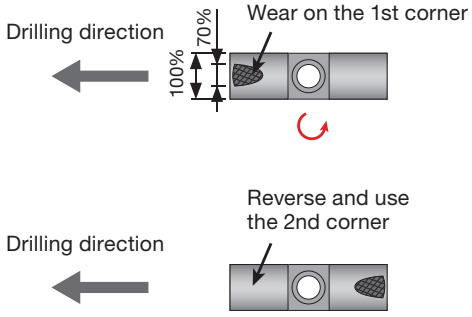
Guide pads are subject to wear, like inserts

- The guide pad has two corners.
- Each guide pad can be used on two sides. When the first corner wears out a 70% of the width, reverse the guide pad to use the second corner.
- Replace with a new guide pad when the second corner wears out.



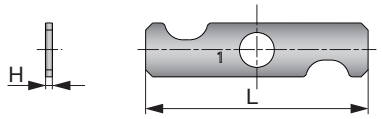
For higher wear resistance
- High wear-resistant grade

First recommendation
- Suitable for various workpiece materials
- Long tool life due to unique substrate and coating

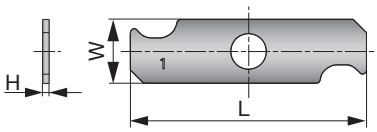


SHIM

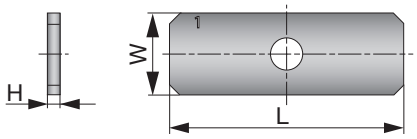
SHIMSET-GP04



SHIMSET-GP05



SHIMSET-GP06



Designation	DC	W	L	H
SHIMSET-GP04	12 - 13.99	4	16	2
SHIMSET-GP05	14 - 15.99	5	18	2.5
SHIMSET-GP06	16 - 18	5	18	2.5

Note: Shim thickness: 0.01 / 0.02 / 0.03 / 0.04 / 0.05 mm Package quantity = 5 pcs. (1pc per each thickness)
Note: Shim sheets are sold as set.

Shim sheet combinations by adjusting diameter

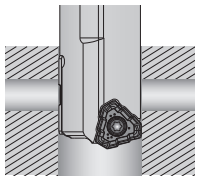
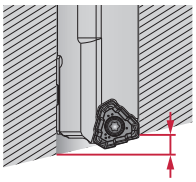
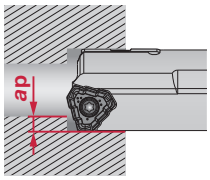
Adjustment diameter	Shim thickness in guide pad of diameter side.	Shim thickness in guide pad of bearing side.	Required number of shim set
+0.01	0.01	-	1
+0.02	0.02	0.01	1
+0.03	0.03	0.01 + 0.02	1
+0.04	0.04	0.01 + 0.03	1
+0.05	0.05	0.02 + 0.03	1
+0.06	0.01 + 0.05	0.02 + 0.04	1
+0.07	0.02 + 0.05	0.03 + 0.04	1
+0.08	0.03 + 0.05	0.04 + 0.04	2
+0.09	0.04 + 0.05	0.04 + 0.05	2
+0.1	0.05 + 0.05	0.04 + 0.04 + 0.02	2



STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Priority	Chip breaker	Cutting speed *Vc* (m/min)	feed: *f* (mm/rev) ø12 - ø13.99	ø14 - ø18	ø18.01 - ø28	ø28.01 - ø40
P	Low carbon steel (C < 0.3) SS400 / St42-1, SM490 / St52-3, S25C / C25, etc.	Lower feed	NDL	50 - 100	-	0.03 - 0.1	0.03 - 0.1	-
		First recommendation	NDJ/G	80 - 140	0.05 - 0.1	0.05 - 0.1	0.05 - 0.1	0.1 - 0.2
	Carbon steel (C > 0.3) S45C / C45, S55C / C55, etc.	Lower feed	NDL	50 - 100	-	0.03 - 0.1	0.03 - 0.12	-
		First recommendation	NDJ/G	80 - 140	0.05 - 0.16	0.05 - 0.16	0.05 - 0.2	0.1 - 0.2
	Low alloy steel (C < 0.3 SCM415, 18CrMo4, etc.	Lower feed	NDL	50 - 100	-	0.03 - 0.1	0.03 - 0.1	-
		First recommendation	NDJ/G	80 - 140	0.05 - 0.1	0.05 - 0.1	0.05 - 0.1	0.1 - 0.2
	Alloy steel (C > 0.3) SCM440 / 42CrMo4, SCr420 / 20Cr4, etc.	Lower feed	NDL	50 - 100	-	0.03 - 0.1	0.03 - 0.12	-
		First recommendation	NDJ/G	80 - 120	0.05 - 0.16	0.05 - 0.16	0.05 - 0.2	0.1 - 0.2
M	Stainless steel (Austenitic) SUS304 / X5CrNi18-9, SUS316 / X5CrNiMo17-12-3, etc.	Lower feed	NDL	50 - 100	-	0.03 - 0.06	0.03 - 0.06	-
		First recommendation	NDJ/G	60 - 100	0.05 - 0.1	0.05 - 0.1	0.05 - 0.1	0.1 - 0.15
	Stainless steels Stainless steel (Martensitic, Ferritic) SUS430 / X6Cr17, SUS416 / X12CrS13, etc.	Lower feed	NDL	50 - 100	-	0.03 - 0.06	0.03 - 0.06	-
		First recommendation	NDJ/G	60 - 100	0.05 - 0.1	0.05 - 0.1	0.05 - 0.1	0.1 - 0.15
	Stainless steel (Precipitation hardening) SUS630 / X5CrNiCuNb16-4, etc.	Lower feed	NDL	50 - 100	-	0.03 - 0.06	0.03 - 0.06	-
		First recommendation	NDJ/G	60 - 100	0.05 - 0.1	0.05 - 0.1	0.05 - 0.1	0.1 - 0.15
K	Grey cast iron FC250 / 250, etc.	Lower feed	NDL	50 - 100	-	0.03 - 0.15	0.05 - 0.18	-
		First recommendation	NDJ/G	80 - 140	0.05 - 0.25	0.05 - 0.25	0.05 - 0.3	0.1 - 0.3
	Ductile cast iron FCD700 / 700-2, etc.	Lower feed	NDL	50 - 100	-	0.03 - 0.15	0.05 - 0.18	-
		First recommendation	NDJ/G	80 - 140	0.05 - 0.25	0.05 - 0.25	0.05 - 0.3	0.1 - 0.3
N	Aluminium alloys	Lower feed	NDL	80 - 160	-	0.03 - 0.15	0.03 - 0.15	-
		First recommendation	NDJ/G	100 - 200	0.05 - 0.2	0.05 - 0.2	0.05 - 0.2	0.1 - 0.25
S	Heat resistant alloys Inconel 718, etc.	Lower feed	NDL	20 - 50	-	0.03 - 0.06	0.03 - 0.08	-
		First recommendation	NDJ/G	20 - 50	0.04 - 0.08	0.04 - 0.08	0.04 - 0.1	0.06 - 0.13
	Titanium alloys Ti-6Al-4V, etc.	Lower feed	NDL	30 - 60	-	0.03 - 0.1	0.03 - 0.12	-
		First recommendation	NDJ/G	30 - 60	0.05 - 0.13	0.05 - 0.13	0.05 - 0.15	0.1 - 0.18
H	Hardened steel ≧ 40HRC	Lower feed	NDL	40 - 100	-	0.03 - 0.08	0.03 - 0.08	-
		First recommendation	NDJ/G	50 - 100	0.04 - 0.08	0.04 - 0.08	0.04 - 0.1	0.06 - 0.13

APPLICATION RANGE

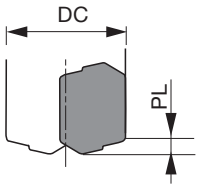
feed *f* (mm/rev)	0.03 - 0.05	0.03 - 0.05	0.1 - 0.3
Application	**OK** Cross hole drilling 	**OK** Inclined exit  16 mm or less (for standard drill)	**OK** Boring 

Note 1) When drilling cross holes or exiting the inclined surface, make sure the guide-pads are suitable.
Note 2) A pilot hole is needed prior to a boring operation. ap ≥ 1 mm is recommended for boring operations.

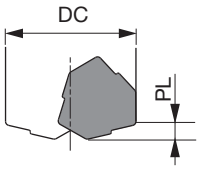
SHAPES OF THE HOLE BOTTOM

DC	insert	Maximum difference PL
12 - 13.99	LOGT06	1.8
14 - 15.99	TOHT07	2
16 - 18	TOHT08	2.2
18.01 - 20	TOHT09	3
20.01 - 21.99	TOHT10	3.2
22 - 25	TOHT11	3.4
25.01 - 28	TOHT12	3.7

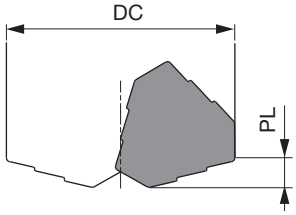
LOGT06...



TOHT07..., 08...

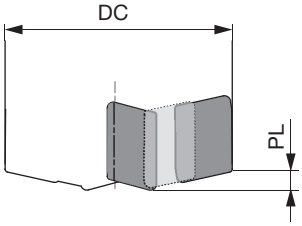


TOHT09... - TOHT12...



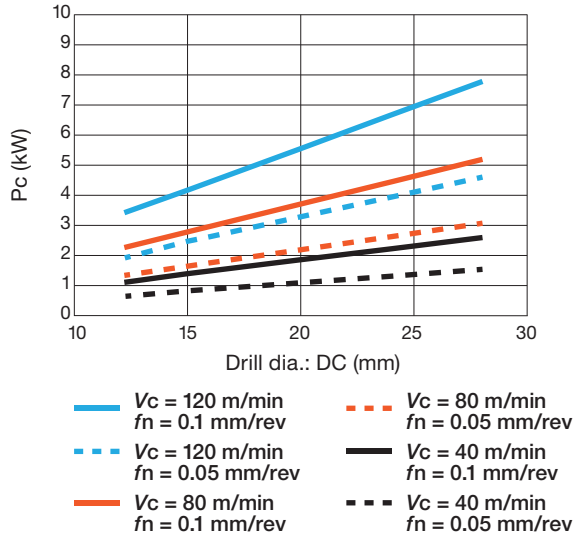
DC	insert Central	insert Intermediate	insert Peripheral	Maximum difference PL
28.01 - 29	FBM06504LG-C	FBM05503RG-I	FBH06003RG-P	2.6
29.01 - 29.99	FBM06504LG-C	FBM05503RG-I	FBH06003RG-P	2.6
30 - 31	FBM06504LG-C	FBM06504RG-I	FBH07504RG-P	2.9
31.01 - 32	FBM06504LG-C	FBM06504RG-I	FBH07504RG-P	3
32.01 - 33	FBM06504LG-C	FBM06504RG-I	FBH07504RG-P	3.1
33.01 - 34	FBM06504LG-C	FBM06504RG-I	FBH07504RG-P	3
34.01 - 35	FBM06504LG-C	FBM06504RG-I	FBH07504RG-P	3.1
35.01 - 36	FBM08004LG-C	FBM06504RG-I	FBH07504RG-P	3.1
36.01 - 37	FBM08004LG-C	FBM06504RG-I	FBH07504RG-P	3
37.01 - 38	FBM08004LG-C	FBM06504RG-I	FBH07504RG-P	3.1
38.01 - 39	FBM08004LG-C	FBM06504RG-I	FBH09004RG-P	3.4
39.01 - 40	FBM08004LG-C	FBM06504RG-I	FBH09004RG-P	3.3

FBM...

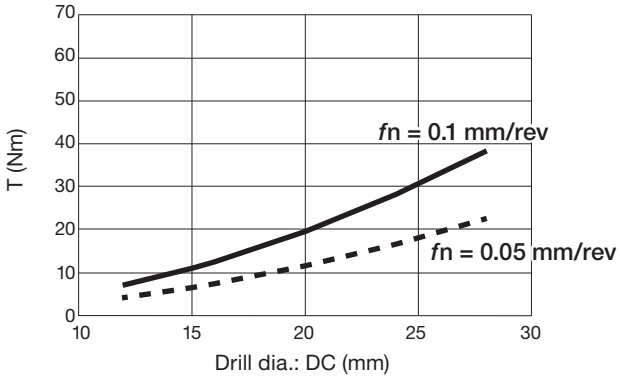


REQUIRED SPINDLE POWER AND COOLANT PRESSURE

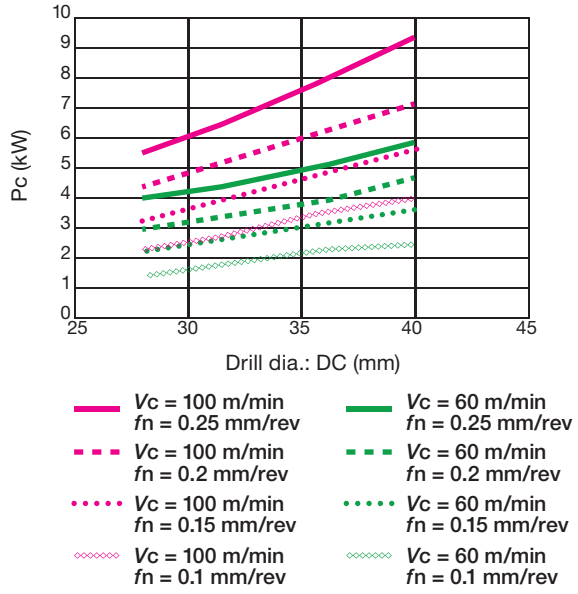
Net power (S45C, C45)



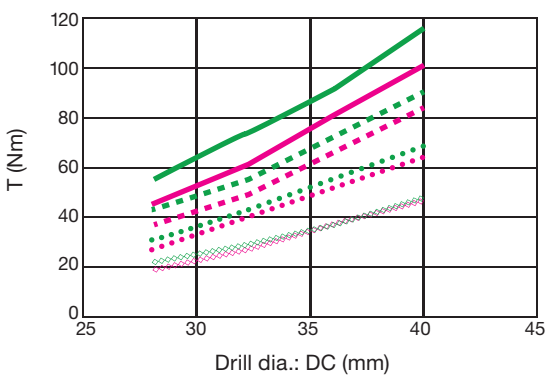
Torque (S45C, C45)



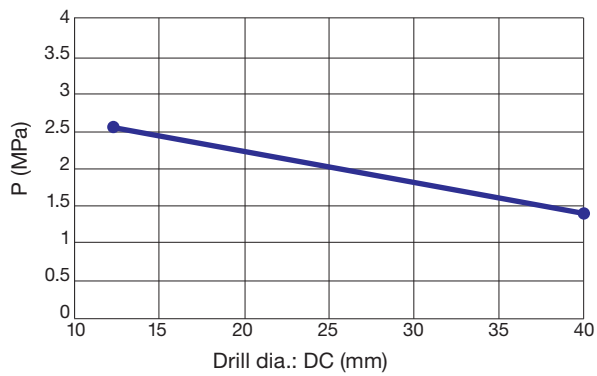
Net power (S45C, C45)



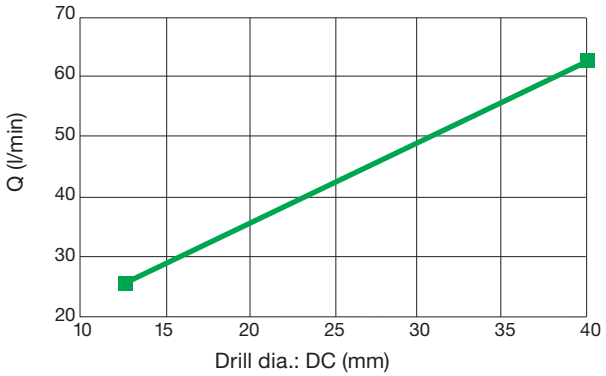
Torque (S45C, C45)



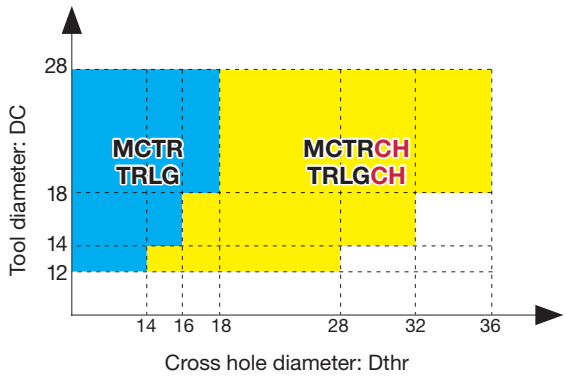
Coolant pressure (Recommended value)

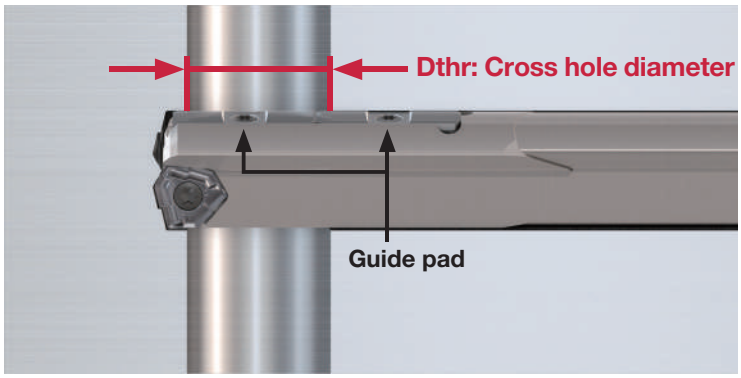


Coolant flow rate (Recommended value)



PROPER DEEPTRI-DRILL MODEL FOR SUITABLE CROSS HOLE DISTANCE.





CAUTIONS FOR CROSS HOLE DRILLING

- Decrease the feed rate when the drill head comes in contact with a cross hole. (*f* = 0.03 - 0.05 mm/rev)
- Retract the gundrill with a slow rotation. (*n* = 100 m^{in}-1, *V*f = 300 mm/min)
- When the gundrill is rapidly pulled out without rotating, the insert and/or guide pads may come in contact with burrs on the cross holes on the way back, resulting in damages

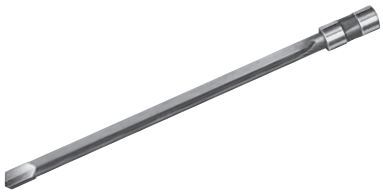


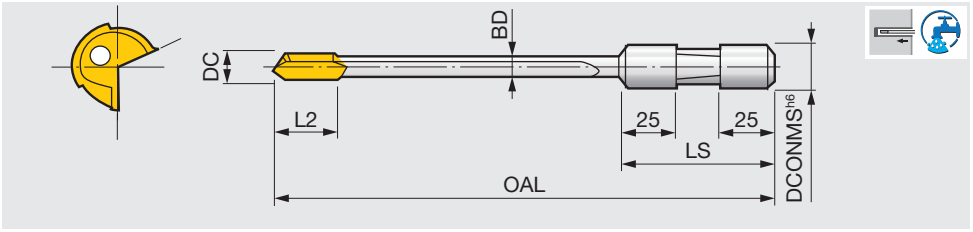
A tailor-made tool for a cross hole distance over 16 mm

GUNDRILL

GunDrill SLJ

Brazed gundrill, tool diameter ø3 - ø12.2 mm





Designation	DC	DCONMS	L2	OAL
SLJ0300L0400NA	3	12.7	15	400
SLJ0300L0600NA	3	12.7	15	600
SLJ0500L0600NA	5	12.7	25	600
SLJ0550L0600NA	5.5	19.05	25	600
SLJ0600L0600NA	6	19.05	25	600
SLJ0700L0600NA	7	19.05	25	600
SLJ0800L0600NA	8	19.05	25	600
SLJ1000L0600NA	10	19.05	30	600
SLJ0500L1000NA	5	12.7	25	1000
SLJ0600L1000NA	6	19.05	25	1000
SLJ0700L1000NA	7	19.05	25	1000
SLJ0800L1000NA	8	19.05	25	1000
SLJ1000L1000NA	10	19.05	30	1000
SLJ0600L1250NA	6	19.05	25	1250
SLJ0610L1250NA	6.1	19.05	25	1250
SLJ0620L1250NA	6.2	19.05	25	1250
SLJ0700L1250NA	7	19.05	25	1250
SLJ0800L1250NA	8	19.05	25	1250
SLJ0810L1250NA	8.1	19.05	25	1250
SLJ0820L1250NA	8.2	19.05	25	1250
SLJ1000L1250NA	10	19.05	30	1250
SLJ1010L1250NA	10.1	19.05	30	1250
SLJ1020L1250NA	10.2	19.05	30	1250
SLJ1200L1250NA	12	19.05	30	1250
SLJ1210L1250NA	12.1	19.05	30	1250
SLJ1220L1250NA	12.2	19.05	30	1250
SLJ0600L1650NA	6	19.05	25	1650
SLJ0610L1650NA	6.1	19.05	25	1650
SLJ0620L1650NA	6.2	19.05	25	1650
SLJ0700L1650NA	7	19.05	25	1650
SLJ0800L1650NA	8	19.05	25	1650
SLJ0810L1650NA	8.1	19.05	25	1650
SLJ0820L1650NA	8.2	19.05	25	1650
SLJ1000L1650NA	10	19.05	30	1650
SLJ1010L1650NA	10.1	19.05	30	1650
SLJ1020L1650NA	10.2	19.05	30	1650
SLJ1200L1650NA	12	19.05	30	1650
SLJ1210L1650NA	12.1	19.05	30	1650
SLJ1220L1650NA	12.2	19.05	30	1650

TUBE DIAMETER

DC	BD
3 - 3.19	2.9
3.2 - 3.39	3.1
3.4 - 3.59	3.3
3.6 - 3.89	3.5
3.9 - 4.09	3.7
4.1 - 4.29	3.9
4.3 - 4.49	4.1
4.5 - 4.89	4.3
4.9 - 5.19	4.7

DC	BD
5.2 - 5.49	5
5.5 - 5.79	5.3
5.8 - 5.99	5.6
6 - 6.19	5.8
6.2 - 6.59	5.9
6.6 - 7.09	6.4
7.1 - 7.59	6.9
7.6 - 8.09	7.4
8.1 - 8.69	7.9

DC	BD
8.7 - 9.19	8.5
9.2 - 9.69	9
9.7 - 10.39	9.5
10.4 - 10.89	10
10.9 - 11.39	10.6
11.4 - 11.99	11.1
12 - 12.2	11.7

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Heat treatment	Hardness HB	Hardness HRC	Cutting speed *Vc* (m/min)	feed *f* (mm/rev)
P	Free-cutting carbon steel		160 - 190	(5) - (11)	130	Refer to Fig. 1
	S10C ~ S15C	Cold drawn				
	S30C ~ S50C	Cold drawn	200 - 230	(12) - 20	100	
	S35C ~ S50C	Hardened and tempered	250 - 300	25 - 32	80	
	Carbon steels		110 ~ 120		130	
	S10C ~ S35C	Annealed				
	S10C ~ S50C	Annealed	120 ~ 185	~ (9)	120	
	S50C ~	Annealed	170 ~ 200	(5) ~ (13)	100	
	S20C ~ S30C	Hardened and tempered	210 ~ 250	(16) ~ 24	90	Refer to Fig. 2
	S30C ~ S55C	Hardened and tempered	260 ~ 310	26 ~ 33	70	
	S50C ~	Hardened and tempered	320 ~ 375	34 ~ 40	50	
	S55C ~	Hardened and tempered	380 ~ 440	41 ~ 47	40	
	Alloy steels SCr, SNC SNCM, SCM SMn	Annealed	150 ~ 230	~ (20)	90	Refer to Fig. 2
		Annealed or Hardened and tempered	240 ~ 310	23 ~ 33	70	Refer to Fig. 2
			315 ~ 370	34 ~ 40	50	Refer to Fig. 3
			380 ~ 440	40 ~ 47	40	
			450 ~ 500	48 ~ 51	30	
	Cast steels SC	Hardened and tempered	140 ~ 180	~ (8)	100	Refer to Fig. 2
		Annealed	190 ~ 240	(11) ~ 22	90	
	Tool steels SKS, SKD	Annealed	150 ~ 200	~ (13)	70	Refer to Fig. 3
		Annealed	210 ~ 300	(16) ~ 32	50	
M	Stainless steels Stainless steels Ferritic SUS405, 430	Annealed	150 ~ 200	~ (13)	70	Refer to Fig. 3
	Austenitic SUS304, 305	Annealed	160 ~ 220	~ (18)	50	
	Martensitic SUS403, 410	Annealed Hardened and tempered	160 ~ 220	~ (18)	70	
			300 ~ 350	32 ~ 38	50	
K	Grey cast iron Grey cast irons		110 ~ 180		90	Refer to Fig. 4
			190 ~ 220		80	
			220 ~ 260		70	
	Ductile cast iron Ductile cast irons		120 ~ 170		80	Refer to Fig. 5
			180 ~ 240		65	
			240 ~ 280		55	
			260 ~ 320		40	
	Malleable cast irons FCMB FCMP		110 ~ 180		90	
			190 ~ 220		80	
			220 ~ 260		70	
N	Cast aluminium alloys Aluminium die cast alloys	Annealed	5000load		180	Refer to Fig. 4
			40 ~ 100			
	Copper alloys	Annealed	120 ~ 160		< 150	Refer to Fig. 4
			160 ~ 205		< 150	Refer to Fig. 5
H	Bearing steels		150 ~ 210		70	Refer to Fig. 3
	High-resistant alloys				20	
	High speed steels		210 ~ 285	(16) ~ 30	50	

Fig. 1 Carbon steels

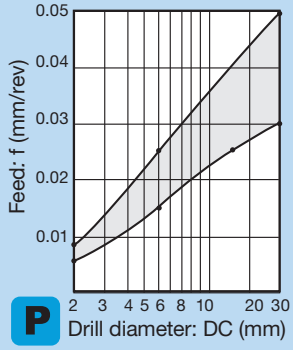


Fig. 2 Alloy steels

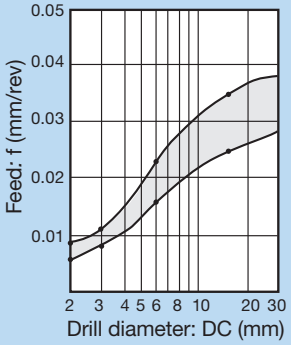


Fig. 3 Tool steels and other special steels

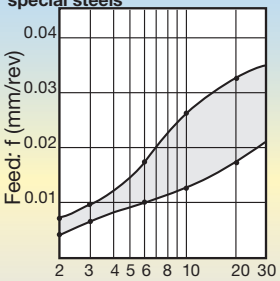


Fig. 4 Cast irons, aluminium alloys

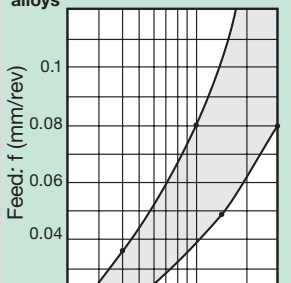
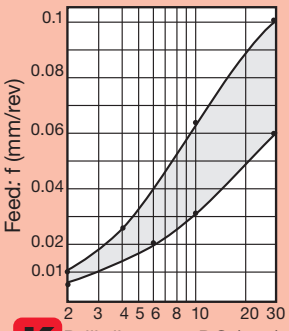
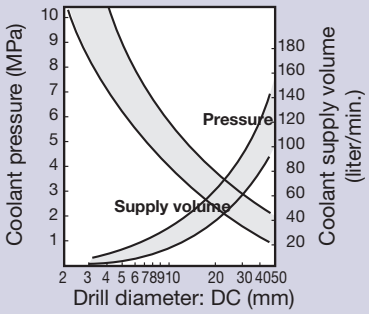


Fig. 5 Ductile and malleable cast irons



Coolant supply pressure and volume



Guidelines for attainable accuracies

Workpiece material	Surface roughness (µm)	Roundness (µm)	Cylindricity (µm)	Oversizing (µm)
Carbon and alloy steels	6 ~ 25	5 ~ 10	10 ~ 15	- 5 ~ 30
Cast irons	3 ~ 15	3 ~ 5	5 ~ 10	- 5 ~ 15
Aluminium alloys, Copper alloys	0.3 ~ 6	3 ~ 5	5 ~ 10	- 10 ~ 5

Note: Over size values given in the table are based on the drill diameter.

Cutting fluid

A water-insoluble fluid is recommended when machining with gun drills.
When using water soluble fluid, use the fluid for heavy duty cutting in higher concentration.
A water-insoluble fluid must be taken care for Fire prevention

Drill Head Category

Solid drilling - Indexable drill heads -

Applications		STS (Single Tube System)			DTS (Double Tube System)		
		TRI-FINE	FINE-BEAM	UNIDEX	TRI-FINE	FINE-BEAM	UNIDEX
		FNTR	FNBM	KUSTS	FNTR-D	FNBM-D	KUDTS
Solid drill head							
Drill diameter (mm)		ø16 - ø28	ø25 - ø65	ø38 - ø293.99	ø18.4 - ø28	ø25 - ø65	ø38 - ø183.99
Thread type	External quadruple thread	○	○	○	○	○	○
	Internal single thread	○	○	○	-	-	-
Hole tolerance*1		IT10	IT10	IT10	IT10	IT10	IT10
Surface finish Ra (μm)*1		2	2	3	2	2	3
Machine	Deep hole drilling machines	○	○	○	○	○	○
	NC machines	-	-	-	○	○	○
	Lathes	-	-	-	○	○	○
	Machining centers M/C	-	-	-	○	○	○
	Gundrill machines	-	-	-	-	-	-
Workpiece material	P Steel	★★★	★★★	★★★	★★★	★★★	★★★
	M Stainless steel	★★★	★★★	★★★	★★★	★★★	★★★
	K Cast iron	★★★	★★★	★★★	★★★	★★★	★★★
	N Aluminium alloys	★★★	★★★	★★★	★★★	★★★	★★★
	S Heat resistant alloys	★★	★★	★★	★★	★★	★★
	H Hardened steel (≥40HRC)	★★	★★	★★	★★	★★	★★
Insert type		TOHT	FBH / FBM	508 / 1123	TOHT	FBH / FBM	508 / 1123
Plus Cartridge and Guide pad +1 mm - +5 mm		-	-	○	-	-	○
Page		J136 - J139	J140 - J141 J143 - J145	J146 - J147 J150 - J151	J137 - J139	J142 - J145	J148 - J151

*1: Just for reference

★★★(Excellent) ◄—► ★(Standard)

Solid drilling - Brazed drill heads -

Applications		STS (Single Tube System)			DTS (Double Tube System)
		MBU	UTE	BTU	ETU
Brazed drilling heads					
Drill diameter (mm)		ø8 - ø14.79	ø12.6 - ø20	ø12.6 - ø65	ø18.4 - ø65
Thread type	External single thread	○	-	-	-
	External double thread	-	○*1	○*1	-
	External quadruple thread	-	○*2	○*2	○
	Internal single thread	-	-	-	-
Hole tolerance*3		IT9	IT9	IT9	IT9
Surface finish Ra (μm)*3		2	2	2	2
Machine	Deep hole drilling machines	○	○	○	○
	NC machines	-	-	-	○
	Lathes	-	-	-	○
	Machining centers M/C	-	-	-	○
	Gundrill machines	-	-	-	-
Workpiece material	P Steel	★★★	★★★	★★★	★★★
	M Stainless steel	★★★	★★★	★★★	★★★
	K Cast iron	★★★	★★★	★★★	★★★
	N Aluminium alloys	★★★	★★★	★★★	★★★
	S Heat resistant alloys	★★	★★	★★	★★
	H Hardened steel (≥40HRC)	★★	★★	★★	★★
Page		J152	J153	J154 - J155	J156

*1: UTE & BTU Drill head : ø12.6 - ø15.59mm, External double thread
*2: UTE & BTU Drill head : ø15.6mm -, External quadruple thread
*3: Just for reference

★★★ (Excellent) ◄—► ★ (Standard)

Drill Tube Category

Drill Tubes

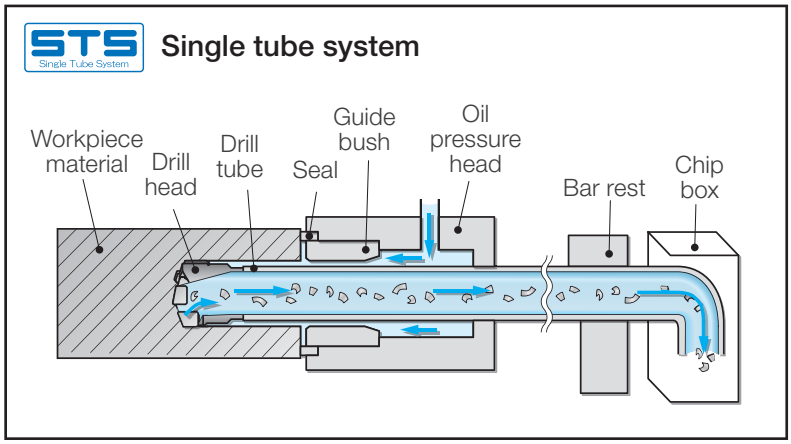
Applications				STS (Single Tube System)				DTS (Double Tube System)	
				UMBB	ST	ST	UB	OT	IT
Drill tubes									
Tube diameter (mm)				ø7.1 - ø12	ø11 - ø13	ø14 - ø274	ø12 - ø274	ø18 - ø166	ø10 - ø130
Thread type				Internal single thread	Internal double thread	Internal quadruple thread	External single thread	Internal quadruple thread	-
Drill Head	Indexable	Solid	FNTR	-	-	○	○	○	○
			FNBM	-	-	○	○	○	○
			KUSTS	-	-	○	○	-	-
			KUDTS	-	-	-	-	○	○
		Counter	KUSTR	-	-	○	○	-	-
			KUDTR	-	-	-	-	○	○
		Trepanning	UTT	-	-	○	○	-	-
	Brazed	Solid	MBU	○	-	-	-	-	-
			UTE	-	○	○	-	-	-
			BTU	-	○	○	-	-	-
			ETU	-	-	-	-	○	○
Drill diameter (mm)				ø8 - ø14.79	ø12.6 - ø15.59	ø15.6 - ø291.99	ø14.5 - ø293.99	ø18.4 - ø183.99	ø18.4 - ø183.99
Solid				○	○	○	○	○	○
Counter				-	-	○*1	○*1	○*1	○
Trepanning				-	-	○*2	○*2	-	-
Page				J158	J158	J158	J160	J162	J162

*1. Counter : ST / UB / OT Tube - Drill diameter ø25 mm or more
*2. Trepanning : ST / UB Tube - Drill diameter ø100 mm or more

Single Tube System (STS) and Double Tube System (DTS)

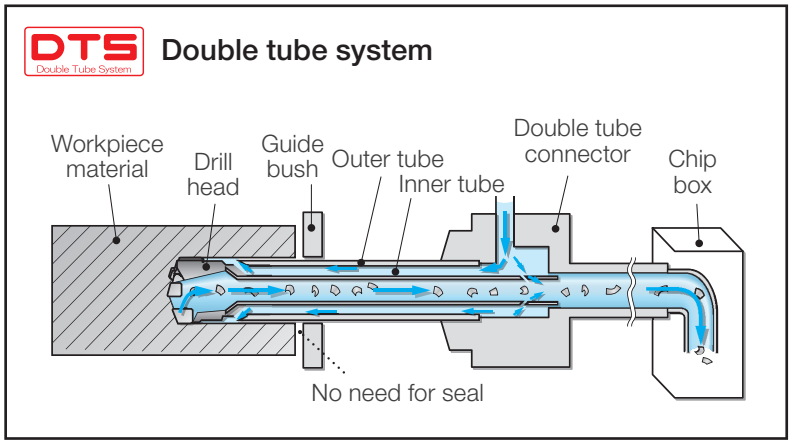
Single Tube System (STS)

The STS may also be referred to as the BTA system in the deep hole drilling process. A large volume of coolant is pumped under high pressure to the cutting area in the workpiece. Chips are then forced out through the drill tube at the back and they do not touch workpiece allowing super surface finish. STS is a very good method to obtain holes of high productivity and high accuracy by using a dedicated drilling machine and a sealing with the workpiece.



Double Tube System (DTS)

The DTS is characterized by its two tube construction and is therefore known as the double tube system. A sealing system and pressure head, which is required in the Single Tube System (STS) is not necessary for the DTS and it is therefore suitable for conventional general purpose machines such as lathes or machining centers.
In general, because of less efficient chip evacuation than the STS the recommended max drilling depth is 1000mm. However, the unique DTC-R tube connector that is capable of supplying high pressure coolant can successfully achieve drilling depths of up to 2000mm.

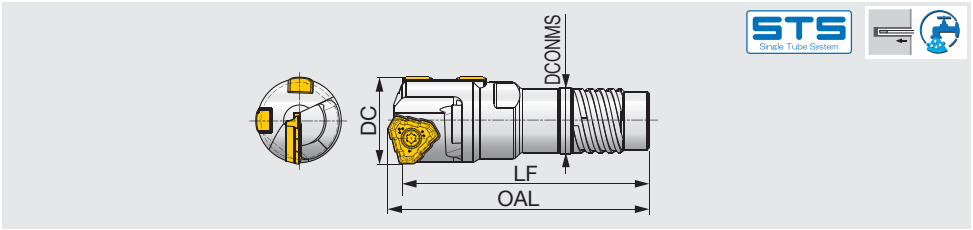


TRI-FINE

TRI-FINE STS-EX

Indexable head with external quadruple thread for single tube system





Designation	DC	Drill tube		OAL	LF	DCONMS	Insert	Guide pad
		Designation	Dia. (mm)					
FNTR-0097S-16.00	16	ST0097	14	57	55	12.6	TOHT080305R	GP06-075
FNTR-0098S-17.00	17	ST0098	15	57	55	13.6	TOHT080305R	GP06-075
FNTR-0000S-20.00	20	ST0000	17	59	56	15.5	TOHT090305R	GP06-085
FNTR-00S-21.00	21	ST00	18	63	60	16	TOHT100305R	GP06-085
FNTR-01S-22.00	22	ST01	20	69	65.5	18	TOHT110405R	GP06-100
FNTR-01S-24.00	24	ST01	20	69	65.5	18	TOHT110405R	GP06-100
FNTR-02S-25.00	25	ST02	22	69	65.5	19.5	TOHT110405R	GP06-100
FNTR-02S-25.40	25.4	ST02	22	69	65.5	19.5	TOHT120405R	GP06
FNTR-02S-26.00	26	ST02	22	69	65.5	19.5	TOHT120405R	GP06
FNTR-03S-28.00	28	ST03	24	69	65.5	21	TOHT120405R	GP06

INSERT SPARE PARTS

Designation	Screw	Wrench
TOHT080305R	CSTB-2.5S	T-8F
TOHT080305R	CSTB-2.5S	T-8F
TOHT090305R	CSTB-2.5S	T-8F
TOHT100305R	CSTB-3S	T-9F
TOHT110405R	CSTB-3.5H	T-15F
TOHT110405R	CSTB-3.5H	T-15F
TOHT110405R	CSTB-3.5H	T-15F
TOHT120405R	CSTB-4S	T-15F
TOHT120405R	CSTB-4S	T-15F
TOHT120405R	CSTB-4S	T-15F

GUIDE PAD SPARE PARTS

Designation	Screw	Wrench
GP06-075	CSTB-2.2S	T-7F
GP06-075	CSTB-2.2S	T-7F
GP06-085	CSTB-2.2S	T-7F
GP06-085	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F

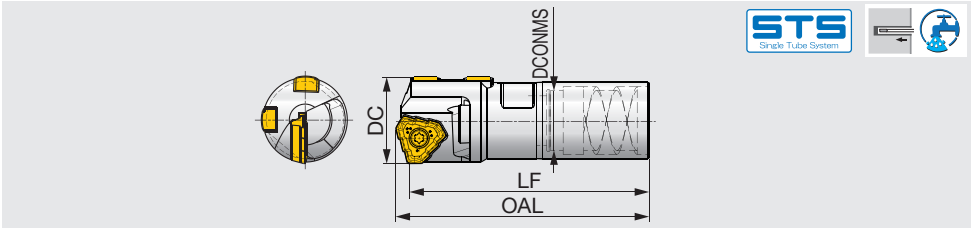
Recommended clamping torque (N·m): CSTB-2.2S=1, CSTB-2.5S=1.3, CSTB-3S=2.3, CSTB-3.5H=3, CSTB-4S=3

TRI-FINE

TRI-FINE STS-IN

Indexable head with internal single thread for single tube system





Designation	DC	Drill tube		OAL	LF	DCONMS	Insert	Guide pad
		Designation	Dia. (mm)					
FNTR-13N-1-16.00	16	UB13-1	13	55.5	53.5	10.8	TOHT080305R	GP06-075
FNTR-14N-2-18.00	18	UB14-2	14	55.5	53.5	12.1	TOHT080305R	GP06-075
FNTR-18N-20.00	20	UB18	18	61	58	14.5	TOHT090305R	GP06-085
FNTR-20N-22.00	22	UB20	20	63.5	60	16	TOHT110405R	GP06-100
FNTR-20N-24.00	24	UB20	20	63.5	60	16	TOHT110405R	GP06-100
FNTR-22N-25.00	25	UB22	22	63.5	60	17	TOHT110405R	GP06-100
FNTR-22N-26.00	26	UB22	22	68.5	65	17	TOHT120405R	GP06
FNTR-24N-28.00	28	UB24	24	68.5	65	19	TOHT120405R	GP06

INSERT SPARE PARTS

Designation	Screw	Wrench
TOHT080305R	CSTB-2.5S	T-8F
TOHT080305R	CSTB-2.5S	T-8F
TOHT090305R	CSTB-2.5S	T-8F
TOHT110405R	CSTB-3.5H	T-15F
TOHT110405R	CSTB-3.5H	T-15F
TOHT110405R	CSTB-3.5H	T-15F
TOHT120405R	CSTB-4S	T-15F
TOHT120405R	CSTB-4S	T-15F

GUIDE PAD SPARE PARTS

Designation	Screw	Wrench
GP06-075	CSTB-2.2S	T-7F
GP06-075	CSTB-2.2S	T-7F
GP06-085	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F

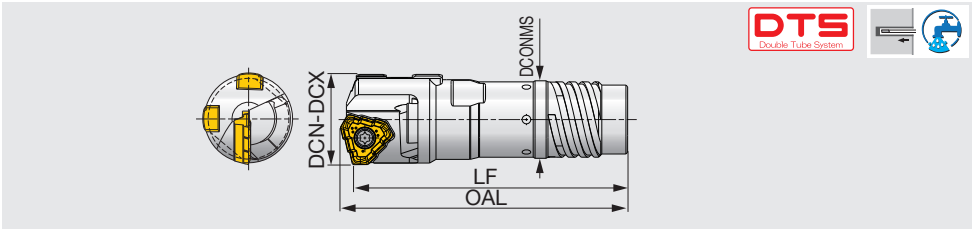
Recommended clamping torque (N·m): CSTB-2.2S=1, CSTB-2.5S, CSTB-3S=2.3, CSTB-3.5H=3, CSTB-4S=3

TRI-FINE

TRI-FINE DTS

Indexable head with external quadruple thread for double tube system





Designation	DCN	DCX	Outer tube		OAL	LF	DCONMS	Insert	Guide pad
			Designation	Dia. (mm)					
FNTR-00D-xx.xx	18.41	20	OT00	18	62	59	16	TOHT090305R	GP06-085
FNTR-01D-xx.xx	20.01	21	OT01	19.5	66.5	63.5	18	TOHT100305R	GP06-085
FNTR-01D-xx.xx	21.01	21.8	OT01	19.5	66.5	63.5	18	TOHT100305R	GP06-100
FNTR-02D-xx.xx	21.81	21.99	OT02	21.5	66.5	63.5	19.5	TOHT100305R	GP06-100
FNTR-02D-xx.xx	22	24.1	OT02	21.5	69	65.5	19.5	TOHT110405R	GP06-100
FNTR-03D-xx.xx	24.11	25	OT03	23.5	69	65.5	21	TOHT110405R	GP06-100
FNTR-03D-xx.xx	25.01	26.4	OT03	23.5	71	67.5	21	TOHT120405R	GP06
FNTR-04D-xx.xx	26.41	28	OT04	26	74	70.5	23.5	TOHT120405R	GP06

INSERT SPARE PARTS

Designation	Screw	Wrench
TOHT090305R	CSTB-2.5S	T-8F
TOHT100305R	CSTB-3S	T-9F
TOHT100305R	CSTB-3S	T-9F
TOHT100305R	CSTB-3S	T-9F
TOHT110405R	CSTB-3.5H	T-15F
TOHT110405R	CSTB-3.5H	T-15F
TOHT120405R	CSTB-4S	T-15F
TOHT120405R	CSTB-4S	T-15F

GUIDE PAD SPARE PARTS

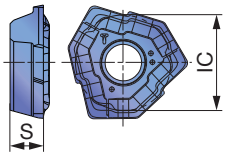
Designation	Screw	Wrench
GP06-085	CSTB-2.2S	T-7F
GP06-085	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F

Recommended clamping torque (N·m): CSTB-2.2S=1, CSTB-2.5S, CSTB-3S=2.3, CSTB-3.5H=3, CSTB-4S=3

INSERT

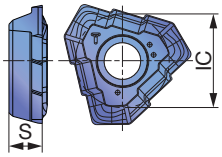
TOHT-NDJ (070..., 080...)





TOHT-NDJ (090... - 120...)





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	DCN	DCX	Coated	IC	S
			AH725		
TOHT080305R-NDJ	16	18	●	8.55	2.8
TOHT090305R-NDJ	18.01	20	●	8.32	3
TOHT100305R-NDJ	20.01	21.99	●	9.23	3.3
TOHT110405R-NDJ	22	25	●	10.4	3.8
TOHT120405R-NDJ	25.01	28	●	11.59	4.3

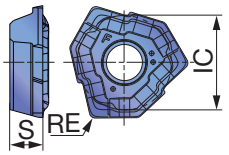
●: Line - up
Package quantity = 10 pcs.

Reference pages: Inserts → J137 - J138, Guide pads → J139,
Drill tube (STS) → J158 -, Drill tube (DTS) → J162

INSERT

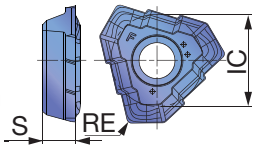
TOHT-NDL (07..., 08...)





TOHT-NDL (09... - 12...)





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	DCN	DCX	Coated AH725	IC	S	RE
TOHT070304R-NDL	14	15.99	●	7.69	2.3	0.4
TOHT080305R-NDL	16	18	●	8.55	2.8	0.5
TOHT090305R-NDL	18.01	20	●	8.32	3	0.5
TOHT100305R-NDL	20.01	21.99	●	9.23	3.3	0.5
TOHT110405R-NDL	22	25	●	10.4	3.8	0.5
TOHT120405R-NDL	25.01	28	●	11.59	4.3	0.5

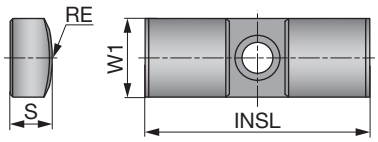
●: Line - up
Package quantity = 10 pcs.

ISO classification for Insert grade

	Grade	ISO classification						
		10	15	20	25	30	35	40
P	AH725		■	■	■	■		
M	AH725			■	■	■		
K	AH725		■	■	■			
S	AH725		■	■	■			
N	AH725		■	■	■			
H	AH725			■	■	■		

GUIDE PAD

GP06



P	Steel	☆	★
M	Stainless	☆	★
K	Cast iron	☆	★
N	Non-ferrous	☆	★
S	Superalloys	☆	★
H	Hard materials	☆	★

★ : First choice
☆ : Second choice

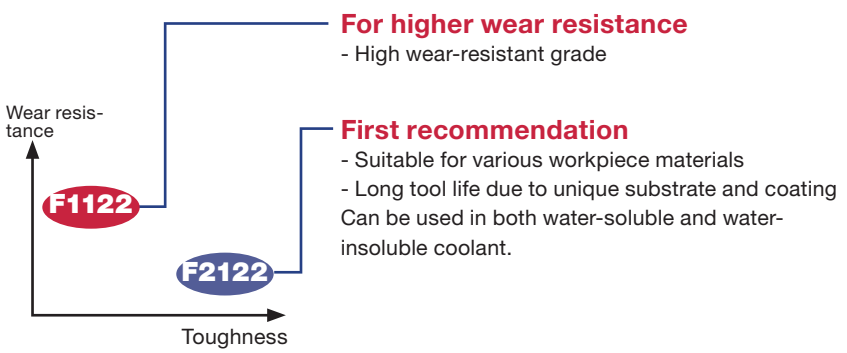
Designation	DCN	DCX	Coated		W1	INSL	S	RE
			F1122	F2122				
GP06	25.01	28	●	●	6	20	3	12
GP06-075	16	18	●	●	6	20	3	7.5
GP06-085	18.01	21	●	●	6	20	3	8.5
GP06-100	21.01	25	●	●	6	20	3	10

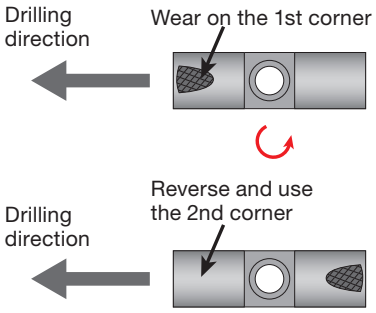
●: Standard stocked

Replacing guide pads

Guide pads are subject to wear, like inserts

- The guide pad has two corners.
- Each guide pad can be used on two sides. When the first corner wears out a 70% of the width, reverse the guide pad to use the second corner.
- Replace with a new guide pad when the second corner wears out.





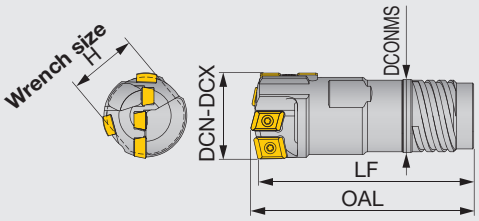
GP	06-075	F2122
Series	Size	Grade

FINE-BEAM

FINE BEAM STS-EX

Direct mount indexable head with external quadruple thread for single tube system (STS), tool diameter: ø25 - ø65 mm





STS Single Tube System

Designation	DCN	DCX	Drill tube		Drill head			
			Designation	Dia. (mm)	OAL	LF	DCONMS	H
FNBM-02S-xx.xx	25.00	26.40	ST02	22	73	70	19.5	19
FNBM-03S-xx.xx	26.41	28.70	ST03	24	73	70	21	21
FNBM-04S-xx.xx	28.71	31.00	ST04	26	78	75	23.5	24
FNBM-05S-xx.xx	31.01	33.30	ST05	28	78	75	25.5	26
FNBM-06S-xx.xx	33.31	36.20	ST06	30	83	80	28	28
FNBM-07S-xx.xx	36.21	39.60	ST07	33	93	90	30	30
FNBM-08S-xx.xx	39.61	43.00	ST08	36	99	95	33	32
FNBM-09S-xx.xx	43.01	47.00	ST09	39	104	100	36	36
FNBM-10S-xx.xx	47.01	51.70	ST10	43	104	100	39	38
FNBM-11S-xx.xx	51.71	56.20	ST11	47	114	110	43	46
FNBM-12S-xx.xx	56.21	65.00	ST12	51	120	115	47.5	50
FNBM-13S-xx.xx	60.61	65.00	ST13	56	120	115	51	54

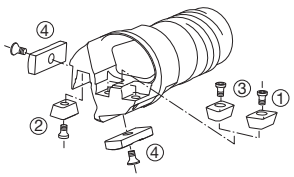
e.g. Designation for tool diameter ø30.00 mm : FNBM-04S-30.00

SPARE PARTS

Tool diameter DCN - DCX (mm)	Insert									Guide pad		
	①Peripheral			②Intermediate			③Central			④		
	Insert	Screw	Wrench	Insert	Screw	Wrench	Insert	Screw	Wrench	Guide pad	Screw	Wrench
25.00 - 28.00	FBH06003RG-P	CSTB-2.2	T-7F	FBM05503RG-I	CSTB-2.2	T-7F	FBM05503LG-C	CSTB-2.2	T-7F	GP06	SR34-508	T-7F
	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM060308L-HF-C	CSTB-2.2	T-7F	GP06	SR34-508	T-7F
28.01 - 29.99	FBH06003RG-P	CSTB-2.2	T-7F	FBM05503RG-I	CSTB-2.2	T-7F	FBM06504LG-C	SR14-560-HG	T-8F	GP06	SR34-508	T-7F
	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP06	SR34-508	T-7F
30.00 - 35.00	FBH07504RG-P	SR14-560-HG	T-8F	FBM06504RG-I	SR14-560-HG	T-8F	FBM06504LG-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
35.01 - 38.00	FBH07504RG-P	SR14-560-HG	T-8F	FBM06504RG-I	SR14-560-HG	T-8F	FBM08004LG-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
38.01 - 39.00	FBH09004RG-P	SR14-560-HG	T-8F	FBM06504RG-I	SR14-560-HG	T-8F	FBM08004LG-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
39.01 - 41.00	FBH09004RG-P	SR14-560-HG	T-8F	FBM06504R	SR14-560-HG	T-8F	FBM08004LG-C	SR14-560-HG	T-8F	GP08	SR34-506-C	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	SR34-506-C	T-9F
41.01 - 44.00	FBH09004RG-P	SR14-560-HG	T-8F	FBM08004RG-I	SR14-560-HG	T-8F	FBM08004LG-C	SR14-560-HG	T-8F	GP08	SR34-506-C	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP08	SR34-506-C	T-9F
44.01 - 45.00	FBH09004RG-P	SR14-560-HG	T-8F	FBM08004RG-I	SR14-560-HG	T-8F	FBM09504LG-C	SR14-560-HG	T-8F	GP08	SR34-506-C	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP08	SR34-506-C	T-9F
45.01 - 47.00	FBH09004RG-P	SR14-560-HG	T-8F	FBM08004RG-I	SR14-560-HG	T-8F	FBM09504LG-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
47.01 - 51.00	FBH11004RG-P	SR14-560-HG	T-8F	FBM08004RG-I	SR14-560-HG	T-8F	FBM09504LG-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
51.01 - 54.00	FBH11004RG-P	SR14-560-HG	T-8F	FBM09504RG-I	SR14-560-HG	T-8F	FBM09504LG-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
54.01 - 57.00	FBH11004RG-P	SR14-560-HG	T-8F	FBM09504RG-I	SR14-560-HG	T-8F	FBM12504LG-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
57.01 - 60.00	FBH11004RG-P	SR14-560-HG	T-8F	FBM09504RG-I	SR14-560-HG	T-8F	FBM12504LG-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5
60.01 - 64.00	FBH13004RG-P	SR14-560-HG	T-8F	FBM09504RG-I	SR14-560-HG	T-8F	FBM12504LG-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5
	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5
64.01 - 65.00	FBH13004RG-P	SR14-560-HG	T-8F	FBM12504RG-I	SR14-560-HG	T-8F	FBM12504LG-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5
	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM130404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5

G type chipbreaker	HF type chipbreaker
FBH06003RG-P	FBH060308R-HF-P
FBH07504RG-P	FBH080408R-HF-P
FBH09004RG-P	FBH090408R-HF-P
FBH11004RG-P	FBH110408R-HF-P
FBH13004RG-P	FBH130408R-HF-P
FBM05503RG-I	FBM060304R-HF-I
FBM06504RG-I	FBM070404R-HF-I
FBM08004RG-I	FBM080404R-HF-I
FBM09504RG-I	FBM100404R-HF-I
FBM12504RG-I	FBM130404R-HF-I
FBM05503LG-C	FBM060308L-HF-C
FBM06504LG-C	FBM070408L-HF-C
FBM08004LG-C	FBM080408L-HF-C
FBM09504LG-C	FBM100408L-HF-C
FBM12504LG-C	FBM130408L-HF-C

Please see the page J143 - J145 for the grades of inserts and guide pads.
Drill heads come with clamping screws and wrenches but do not include inserts and guide pads.
Please purchase inserts and guide pads separately.
Recommended clamping torque (N·m): CSTB-2.2/CSTB-2.2S = 1, CSTB-2.5 = 1.3, CSTB-3S = 2.3, CSTB-3.5 = 3.5



The designation of insert with G type and HF type is different, even in the same shape.
Please refer to the table on the left to check the insert designation. Both inserts can be mounted on the drill head.

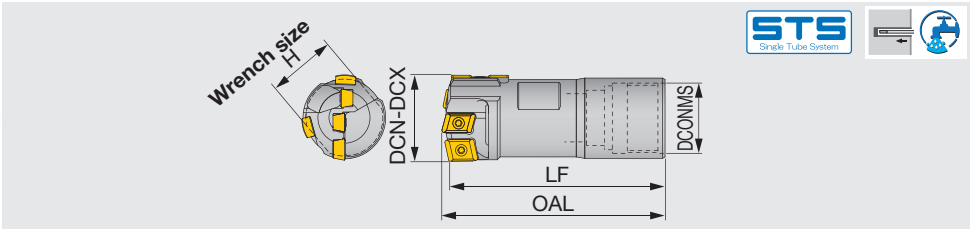
Reference pages: Inserts → J143 - J144, Guide pads → J145, Drill tube (STS) → J158

FINE-BEAM

FINE BEAM STS-IN

Direct mount indexable head with internal single thread for single tube system (STS), tool diameter: ø25 - ø65 mm





Designation	DCN	DCX	Drill tube		Drill head			
			Designation	Dia. (mm)	OAL	LF	DCONMS	H
FNBM-22N-xx.xx	25.00	26.99	UB22	22	73	70	20	19
FNBM-24N-xx.xx	27.00	29.00	UB24	24	73	70	22	21
FNBM-24N-xx.xx	29.01	29.99	UB24	24	73	70	22	24
FNBM-26N-xx.xx	30.00	31.99	UB26	26	78	75	24	24
FNBM-28N-xx.xx	32.00	33.99	UB28	28	78	75	26	26
FNBM-30N-xx.xx	34.00	36.99	UB30	30	93	90	27	28
FNBM-33N-xx.xx	37.00	39.99	UB33	33	98	95	30	30
FNBM-36N-xx.xx	40.00	43.99	UB36	36	104	100	33	32
FNBM-39N-xx.xx	44.00	46.99	UB39	39	109	105	37	36
FNBM-43N-xx.xx	47.00	51.99	UB43	43	109	105	41	38
FNBM-47N-xx.xx	52.00	56.99	UB47	47	114	110	44	46
FNBM-51N-xx.xx	57.00	60.99	UB51	51	120	115	49	46
FNBM-56N-xx.xx	61.00	65.00	UB56	56	120	115	53	54

e.g. Designation for tool diameter ø30.00 mm : FNBM-26N-30.00

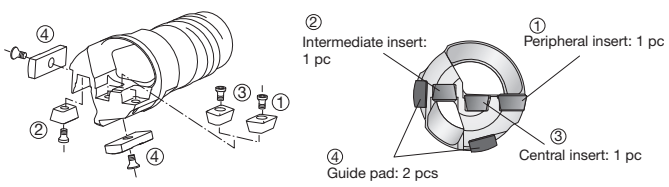
SPARE PARTS



Tool diameter DCN - DCX (mm)	Insert									Guide pad		
	①Peripheral			②Intermediate			③Central			④		
	Insert	Screw	Wrench	Insert	Screw	Wrench	Insert	Screw	Wrench	Guide pad	Screw	Wrench
25.00 - 28.00	FBH06003RG-P	CSTB-2.2	T-7F	FBM05503RG-I	CSTB-2.2	T-7F	FBM05503LG-C	CSTB-2.2	T-7F	GP06	SR34-508	T-7F
	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM060308L-HF-C	CSTB-2.2	T-7F	GP06	SR34-508	T-7F
28.01 - 29.99	FBH06003RG-P	CSTB-2.2	T-7F	FBM05503RG-I	CSTB-2.2	T-7F	FBM06504LG-C	SR14-560-HG	T-8F	GP06	SR34-508	T-7F
	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP06	SR34-508	T-7F
30.00 - 35.00	FBH07504RG-P	SR14-560-HG	T-8F	FBM06504RG-I	SR14-560-HG	T-8F	FBM06504LG-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
35.01 - 38.00	FBH07504RG-P	SR14-560-HG	T-8F	FBM06504RG-I	SR14-560-HG	T-8F	FBM08004LG-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
38.01 - 39.00	FBH09004RG-P	SR14-560-HG	T-8F	FBM06504RG-I	SR14-560-HG	T-8F	FBM08004LG-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
39.01 - 41.00	FBH09004RG-P	SR14-560-HG	T-8F	FBM06504R	SR14-560-HG	T-8F	FBM08004LG-C	SR14-560-HG	T-8F	GP08	SR34-506-C	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	SR34-506-C	T-9F
41.01 - 44.00	FBH09004RG-P	SR14-560-HG	T-8F	FBM08004RG-I	SR14-560-HG	T-8F	FBM08004LG-C	SR14-560-HG	T-8F	GP08	SR34-506-C	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP08	SR34-506-C	T-9F
44.01 - 45.00	FBH09004RG-P	SR14-560-HG	T-8F	FBM08004RG-I	SR14-560-HG	T-8F	FBM09504LG-C	SR14-560-HG	T-8F	GP08	SR34-506-C	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP08	SR34-506-C	T-9F
45.01 - 47.00	FBH09004RG-P	SR14-560-HG	T-8F	FBM08004RG-I	SR14-560-HG	T-8F	FBM09504LG-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
47.01 - 51.00	FBH11004RG-P	SR14-560-HG	T-8F	FBM08004RG-I	SR14-560-HG	T-8F	FBM09504LG-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
51.01 - 54.00	FBH11004RG-P	SR14-560-HG	T-8F	FBM09504RG-I	SR14-560-HG	T-8F	FBM09504LG-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
54.01 - 57.00	FBH11004RG-P	SR14-560-HG	T-8F	FBM09504RG-I	SR14-560-HG	T-8F	FBM12504LG-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
57.01 - 60.00	FBH11004RG-P	SR14-560-HG	T-8F	FBM09504RG-I	SR14-560-HG	T-8F	FBM12504LG-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5
60.01 - 64.00	FBH13004RG-P	SR14-560-HG	T-8F	FBM09504RG-I	SR14-560-HG	T-8F	FBM12504LG-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5
	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5
64.01 - 65.00	FBH13004RG-P	SR14-560-HG	T-8F	FBM12504RG-I	SR14-560-HG	T-8F	FBM12504LG-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5
	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM130404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5

G type chipbreaker	HF type chipbreaker
FBH06003RG-P	FBH060308R-HF-P
FBH07504RG-P	FBH080408R-HF-P
FBH09004RG-P	FBH090408R-HF-P
FBH11004RG-P	FBH110408R-HF-P
FBH13004RG-P	FBH130408R-HF-P
FBM05503RG-I	FBM060304R-HF-I
FBM06504RG-I	FBM070404R-HF-I
FBM08004RG-I	FBM080404R-HF-I
FBM09504RG-I	FBM100404R-HF-I
FBM12504RG-I	FBM130404R-HF-I
FBM05503LG-C	FBM060308L-HF-C
FBM06504LG-C	FBM070408L-HF-C
FBM08004LG-C	FBM080408L-HF-C
FBM09504LG-C	FBM100408L-HF-C
FBM12504LG-C	FBM130408L-HF-C

Please see the page J143 - J145 for the grades of inserts and guide pads.
Drill heads come with clamping screws and wrenches but do not include inserts and guide pads.
Please purchase inserts and guide pads separately.
Recommended clamping torque (N·m): CSTB-2.2/CSTB-2.2S = 1, CSTB-2.5 = 1.3, CSTB-3S = 2.3, CSTB-3.5 = 3.5



The designation of insert with G type and HF type is different, even in the same shape.
Please refer to the table on the left to check the insert designation. Both inserts can be mounted on the drill head.

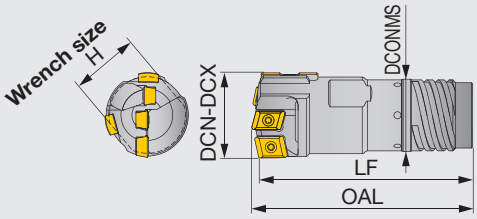
Reference pages: Inserts → J143 - J144, Guide pads → J145, Drill tube (STS) → J160

FINE-BEAM

FINE BEAM DTS

Direct mount indexable head with external quadruple thread for double tube system (DTS), tool diameter: ø25 - ø65 mm





Designation	DCN	DCX	Outer tube		Drill head			
			Designation	Dia. (mm)	OAL	LF	DCONMS	H
FNBM-03D-xx.xx	25	26.4	OT03	23.5	73	70	21	19
FNBM-04D-xx.xx	26.41	28.7	OT04	26	78	75	23.5	21
FNBM-05D-xx.xx	28.71	31	OT05	28	78	75	25.5	24
FNBM-06D-xx.xx	31.01	33.3	OT06	30.5	83	80	28	26
FNBM-07D-xx.xx	33.31	36.2	OT07	33	93	90	30	28
FNBM-08D-xx.xx	36.21	39.6	OT08	35.5	99	95	33	30
FNBM-09D-xx.xx	39.61	43	OT09	39	104	100	36	32
FNBM-10D-xx.xx	43.01	47	OT10	42.5	104	100	39	36
FNBM-11D-xx.xx	47.01	51.7	OT11	46.5	114	110	43	38
FNBM-12D-xx.xx	51.71	56.2	OT12	51	120	115	47.5	46
FNBM-13D-xx.xx	56.21	60.6	OT13	55.5	120	115	51	50
FNBM-13D-xx.xx	60.61	65	OT13	55.5	120	115	51	54

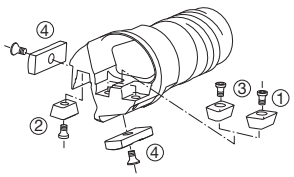
e.g. Designation for tool diameter ø30.00 mm : FNBM-05D-30.00

SPARE PARTS

Tool diameter DCN - DCX (mm)	Insert									Guide pad		
	①Peripheral			②Intermediate			③Central			④		
	Insert	Screw	Wrench	Insert	Screw	Wrench	Insert	Screw	Wrench	Guide pad	Screw	Wrench
25.00 - 28.00	FBH06003RG-P	CSTB-2.2	T-7F	FBM05503RG-I	CSTB-2.2	T-7F	FBM05503LG-C	CSTB-2.2	T-7F	GP06	SR34-508	T-7F
	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM060308L-HF-C	CSTB-2.2	T-7F	GP06	SR34-508	T-7F
28.01 - 29.99	FBH06003RG-P	CSTB-2.2	T-7F	FBM05503RG-I	CSTB-2.2	T-7F	FBM06504LG-C	SR14-560-HG	T-8F	GP06	SR34-508	T-7F
	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP06	SR34-508	T-7F
30.00 - 35.00	FBH07504RG-P	SR14-560-HG	T-8F	FBM06504RG-I	SR14-560-HG	T-8F	FBM06504LG-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
35.01 - 38.00	FBH07504RG-P	SR14-560-HG	T-8F	FBM06504RG-I	SR14-560-HG	T-8F	FBM08004LG-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
38.01 - 39.00	FBH09004RG-P	SR14-560-HG	T-8F	FBM06504RG-I	SR14-560-HG	T-8F	FBM08004LG-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
39.01 - 41.00	FBH09004RG-P	SR14-560-HG	T-8F	FBM06504R	SR14-560-HG	T-8F	FBM08004LG-C	SR14-560-HG	T-8F	GP08	SR34-506-C	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	SR34-506-C	T-9F
41.01 - 44.00	FBH09004RG-P	SR14-560-HG	T-8F	FBM08004RG-I	SR14-560-HG	T-8F	FBM08004LG-C	SR14-560-HG	T-8F	GP08	SR34-506-C	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP08	SR34-506-C	T-9F
44.01 - 45.00	FBH09004RG-P	SR14-560-HG	T-8F	FBM08004RG-I	SR14-560-HG	T-8F	FBM09504LG-C	SR14-560-HG	T-8F	GP08	SR34-506-C	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP08	SR34-506-C	T-9F
45.01 - 47.00	FBH09004RG-P	SR14-560-HG	T-8F	FBM08004RG-I	SR14-560-HG	T-8F	FBM09504LG-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
47.01 - 51.00	FBH11004RG-P	SR14-560-HG	T-8F	FBM08004RG-I	SR14-560-HG	T-8F	FBM09504LG-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
51.01 - 54.00	FBH11004RG-P	SR14-560-HG	T-8F	FBM09504RG-I	SR14-560-HG	T-8F	FBM09504LG-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
54.01 - 57.00	FBH11004RG-P	SR14-560-HG	T-8F	FBM09504RG-I	SR14-560-HG	T-8F	FBM12504LG-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP10S	SR14-571/S	T-10/5
57.01 - 60.00	FBH11004RG-P	SR14-560-HG	T-8F	FBM09504RG-I	SR14-560-HG	T-8F	FBM12504LG-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5
60.01 - 64.00	FBH13004RG-P	SR14-560-HG	T-8F	FBM09504RG-I	SR14-560-HG	T-8F	FBM12504LG-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5
	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5
64.01 - 65.00	FBH13004RG-P	SR14-560-HG	T-8F	FBM12504RG-I	SR14-560-HG	T-8F	FBM12504LG-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5
	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM130404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	SR14-571/S	T-10/5

G type chipbreaker	HF type chipbreaker
FBH06003RG-P	FBH060308R-HF-P
FBH07504RG-P	FBH080408R-HF-P
FBH09004RG-P	FBH090408R-HF-P
FBH11004RG-P	FBH110408R-HF-P
FBH13004RG-P	FBH130408R-HF-P
FBM05503RG-I	FBM060304R-HF-I
FBM06504RG-I	FBM070404R-HF-I
FBM08004RG-I	FBM080404R-HF-I
FBM09504RG-I	FBM100404R-HF-I
FBM12504RG-I	FBM130404R-HF-I
FBM05503LG-C	FBM060308L-HF-C
FBM06504LG-C	FBM070408L-HF-C
FBM08004LG-C	FBM080408L-HF-C
FBM09504LG-C	FBM100408L-HF-C
FBM12504LG-C	FBM130408L-HF-C

Please see the page J143 - J145 for the grades of inserts and guide pads.
Drill heads come with clamping screws and wrenches but do not include inserts and guide pads.
Please purchase inserts and guide pads separately.
Recommended clamping torque (N·m): CSTB-2.2/CSTB-2.2S = 1, CSTB-2.5 = 1.3, CSTB-3S = 2.3, CSTB-3.5 = 3.5



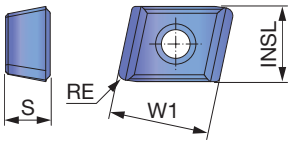
The designation of insert with G type and HF type is different, even in the same shape.
Please refer to the table on the left to check the insert designation. Both inserts can be mounted on the drill head.

Reference pages: Inserts → J143 - J144, Guide pads → J145,
Drill tube (DTS) → J162

INSERT

FBM-C (Central insert)





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

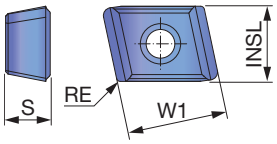
★ : First choice
☆ : Second choice

Designation	INSL	W1	Coated		S	DCN	DCX	RE
			UC2220	UC8015				
FBM05503LG-C	5.5	8	●		3	25	28	0.8
FBM060308L-HF-C	5.5	8	●	●	3	25	28	0.8
FBM06504LG-C	6.5	10	●		4	28.1	35	0.8
FBM070408L-HF-C	6.5	10	●	●	4	28.1	35	0.8
FBM08004LG-C	8	10	●		4	35.01	44	0.8
FBM080408L-HF-C	8	10	●	●	4	35.01	44	0.8
FBM09504LG-C	9.5	10	●		4	44.01	54	0.8
FBM100408L-HF-C	9.5	10	●	●	4	44.01	54	0.8
FBM12504LG-C	12.5	10	●		4	54.01	65	0.8
FBM130408L-HF-C	12.5	10	●	●	4	54.01	65	0.8

● : Line-up

FBM-I (Intermediate insert)





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

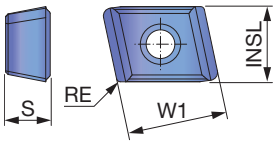
★ : First choice
☆ : Second choice

Designation	INSL	W1	Coated		S	DCN	DCX	RE
			UC2220	UC8015				
FBM05503RG-I	5.5	8	●		3	25	29.99	0.4
FBM060304R-HF-I	5.5	8	●	●	3	25	29.99	0.4
FBM06504RG-I	6.5	10	●		4	30	41	0.4
FBM070404R-HF-I	6.5	10	●	●	4	30	41	0.4
FBM08004RG-I	8	10	●		4	41.01	51	0.4
FBM080404R-HF-I	8	10	●	●	4	41.01	51	0.4
FBM09504RG-I	9.5	10	●		4	51.01	64	0.4
FBM100404R-HF-I	9.5	10	●	●	4	51.01	64	0.4
FBM12504RG-I	12.5	10	●		4	64.01	65	0.4
FBM130404R-HF-I	12.5	10	●	●	4	64.01	65	0.4

● : Line-up

FBH-P (Peripheral insert)





P	Steel	★																
M	Stainless	★																
K	Cast iron	★																
N	Non-ferrous	★																
S	Superalloys	★																
H	Hard materials	★																

★ : First choice
☆ : Second choice

Designation	INSL	W1	Coated												S	DCN	DCX	RE
			UC2220	UC8015														
FBH06003RG-P	6	8	●												3	25	29.99	0.4
FBH060308R-HF-P	6	8	●	●											3	25	29.99	0.8
FBH07504RG-P	7.5	10	●												4	30	38	0.4
FBH080408R-HF-P	7.5	10	●	●											4	30	38	0.8
FBH09004RG-P	9	10	●												4	38.01	47	0.4
FBH090408R-HF-P	9	10	●	●											4	38.01	47	0.8
FBH11004RG-P	11	10	●												4	47.01	60	0.4
FBH110408R-HF-P	11	10	●	●											4	47.01	60	0.8
FBH13004RG-P	13	10	●												4	60.01	65	0.4
FBH130408R-HF-P	13	10	●	●											4	60.01	65	0.8

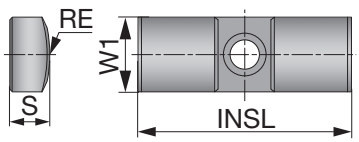
● : Line-up

Insert grade

	Grade	(old description)	ISO classification							
			5	10	15	20	25	30	35	40
P	UC2220	(NLX)								
	UC1125	(DLXT)								
	UC3120	(KLXT)								
M	UC2220	(NLX)								
	UC3120	(KLXT)								
K	UC2220	(NLX)								
	UC3120	(KLXT)								
S	UC3120	(KLXT)								
	UC2220	(NLX)								
	UC1125	(DLXT)								
N	UC2220	(NLX)								

GUIDE PAD

GP06, 07, 08, 10S, 12

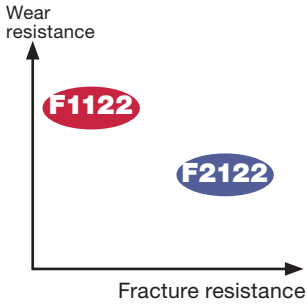




Designation	Dimensions			Solid	
	INSL	W1	S	F1122	F2122
GP06	20	6	3	●	●
GP07	20	7	3.5	●	●
GP08	25	8	4.5	●	●
GP10S	30	10	4.5	●	●
GP12	35	12	5.5	●	●

All of the above guide pads are finished with coating.

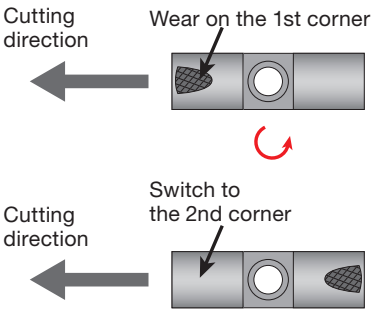
● : Line-up



REPLACING GUIDE PADS

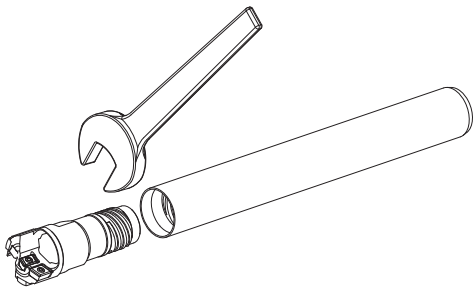
Guide pads are subject to wear, like inserts

- The guide pad has two corners.
- Each guide pad can be used on two sides. When the first corner wears out a 70% of the width, reverse the guide pad to use the second corner.
- Replace with a new guide pad when the second corner wears out.



NOTE FOR MOUNTING A DRILL HEAD

Please be sure to use a wrench for a drill head to be clamped firmly.



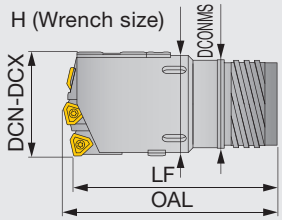
*Wrenches are sold separately.

UNIDEX

UNIDEX STS-EX

Indevable drill head with external quadruple thread for single tube system (STS), diameters adjustable, tool diameter ø38.00 - ø106.99 mm





Designation	DCN	DCX	CICT	Drill tube		Drill head			
				Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUSTS07E-xx.xx	38	39.6	3	ST07	33	90	85	30	37
KUSTS08E-xx.xx	39.61	43	3	ST08	36	91	85	33	40
KUSTS09E-xx.xx	43.01	47	3	ST09	39	101	95	36	43
KUSTS10E-xx.xx	47.01	51.7	3	ST10	43	102	95	39	48
KUSTS11E-xx.xx	51.71	56.2	3	ST11	47	107	100	43	52
KUSTS12E-xx.xx	56.21	60.6	3	ST12	51	118	110	47	57
KUSTS13E-xx.xx	60.61	65	3	ST13	56	119	110	51	61
KUSTS14E-xx.xx	65	66.99	3	ST14	56	159	150	52	63
KUSTS15E-xx.xx	67	72.99	3	ST15	62	159	150	58	69
KUSTS16E-xx.xx	73	79.99	3	ST16	68	160	150	63	76
KUSTS17E-xx.xx	80	86.99	3	ST17	75	191	180	70	83
KUSTS18E-xx.xx	87	99.99	3	ST18	82	193	180	77	96
KUSTS19E-xx.xx	100	106.99	3	ST19	94	193	180	89	102

e.g. Designation for tool diameter ø60 mm: KUSTS12E-60.00

* Drill heads with the diameter ø92 mm or over have a top guide pocket.

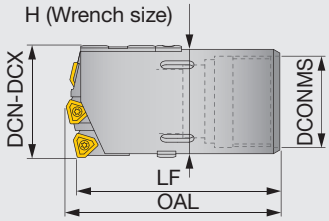
* adjusting diameters has to be required before using.

UNIDEX

UNIDEX STS-IN

Indexable drill head with internal single thread for single tube system (STS), diameter adjustablr, tool diameter ø38.00 - ø106.99 mm





Designation	DCN	DCX	CICT	Drill tube		Drill head			
				Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUSTS33-xx.xx	38	39.99	3	UB33	33	85	80	30	37
KUSTS36-xx.xx	40	43.99	3	UB36	36	86	80	33	41
KUSTS39-xx.xx	44	46.99	3	UB39	39	96	90	37	43
KUSTS43-xx.xx	47	51.99	3	UB43	43	97	90	41	48
KUSTS47-xx.xx	52	56.99	3	UB47	47	107	100	44	53
KUSTS51-xx.xx	57	60.99	3	UB51	51	118	110	49	57
KUSTS56-xx.xx	61	67.99	3	UB56	56	119	110	53	64
KUSTS62-xx.xx	68	74.99	3	UB62	62	129	120	59	71
KUSTS68-xx.xx	75	80.99	3	UB68	68	161	150	65	77
KUSTS75-xx.xx	81	90.99	3	UB75	75	162	150	71	87
KUSTS82-xx.xx	91	98.99	3	UB82	82	162	150	79	95
KUSTS94-xx.xx	99	106.99	3	UB94	94	163	150	90	102

e.g. Designation for tool diameter ø60 mm: KUSTS51-60.00

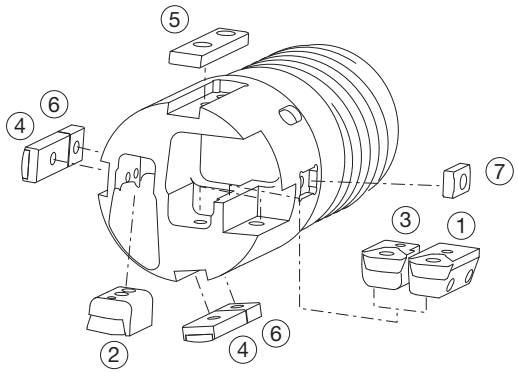
* Drill heads with the diameter ø92 mm or over have a top guide pocket.

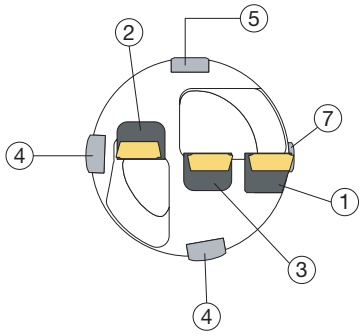
* adjusting diameters has to be required before using.

Reference pages: UNIDEX STS-EX: Inserts → J150, Standard cutting conditions → J151, Drill tube (STS) → J158
UNIDEX STS-IN: Inserts → J150, Standard cutting conditions → J151, Drill tube (STS) → J160

SPARE PARTS

Tool diameter DCN-DCX (mm)	Cartridge			Guide pad							
	Peripheral	Intermediate	Central	Guide pad		Filler		Protector		Sub guide pad	
	Cartridge①	Cartridge②	Cartridge③	④	Qty.	⑤	Qty.	⑥	Qty.	⑦	Qty.
38 - 39.99	OZ05R	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
40 - 44.99	OZ402 - 04	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
45 - 47.99	OZ402 - 04	IOZ05R	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
48 - 51.99	OZ402 - 04	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
52 - 54.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
55 - 57.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
58 - 59.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
60 - 63.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG08	1
64 - 67.99	OZ402 - 43	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG10	1
68 - 77.99	OZ402 - 32	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
78 - 84.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
85 - 91.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
92 - 98.99	OZ402 - 43	IOZ402 - 63	IOZ402 - 63	GP14	2	FILLER14	1	GPT14	2	CUG10	1
99 - 106.99	OZ402 - 63	IOZ402 - 63	IOZ402 - 63	GP18	2	FL18 - M	1	GPT18 - M	2	CUG14 - M	1





* Depending on tool diameters, parts may not be positioned as shown in the above.

INSERT

Tool diameter DCN-DCX (mm)	Peripheral insert	Qty.	Intermediate insert	Qty.	Central insert	Qty.
38 - 39.99	508 - 05R	1	508 - 05R	1	508 - 05R	1
40 - 44.99	1123 - 04R	1	508 - 05R	1	508 - 05R	1
45 - 47.99	1123 - 04R	1	508 - 05R	1	1123 - 04R	1
48 - 51.99	1123 - 04R	1	1123 - 04R	1	1123 - 04R	1
52 - 54.99	1123 - 32R	1	1123 - 04R	1	1123 - 04R	1
55 - 57.99	1123 - 32R	1	1123 - 04R	1	1123 - 32R	1
58 - 59.99	1123 - 32R	1	1123 - 32R	1	1123 - 32R	1
60 - 63.99	1123 - 32R	1	1123 - 32R	1	1123 - 32R	1
64 - 67.99	1123 - 43R	1	1123 - 32R	1	1123 - 32R	1
68 - 77.99	1123 - 32R	1	1123 - 43R	1	1123 - 43R	1
78 - 84.99	1123 - 43R	1	1123 - 43R	1	1123 - 43R	1
85 - 91.99	1123 - 63R	1	1123 - 43R	1	1123 - 43R	1
92 - 98.99	1123 - 43R	1	1123 - 63R	1	1123 - 63R	1
99 - 106.99	1123 - 63R	1	1123 - 63R	1	1123 - 63R	1

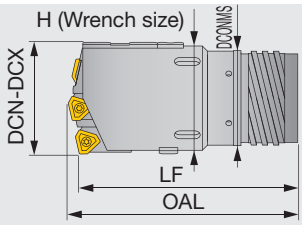
- The tool diameter can be increased up to 5 mm using the plus (+) spare parts. (The expansion allowance depends on tool diameters.)
- Drill heads come with cartridge, guide pad, filler, protector, sub guide pad, and wrench, but do not include inserts.

UNIDEX

UNIDEX DTS

Indexable drill head with external quadruple thread for double tube system (DTS), diameter adjustable, tool diameter ø38 - ø106.99 mm





DTS Double Tube System

Designation	DCN	DCX	CICT	Drill tube		Drill head			
				Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUDTS08E-xx.xx	38	39.6	3	OT08	35.5	90	85	33	37
KUDTS09E-xx.xx	39.61	43	3	OT09	39	91	85	36	40
KUDTS10E-xx.xx	43.01	47	3	OT10	42.5	101	95	39	43
KUDTS11E-xx.xx	47.01	51.7	3	OT11	46.5	102	100	43	48
KUDTS12E-xx.xx	51.71	56.2	3	OT12	51	107	100	47	52
KUDTS13E-xx.xx	56.21	65	3	OT13	55.5	119	110	51	61
KUDTS14E-xx.xx	65	66.99	3	OT14	56	159	150	52	63
KUDTS15E-xx.xx	67	72.99	3	OT15	62	159	150	58	69
KUDTS16E-xx.xx	73	79.99	3	OT16	68	160	150	63	76
KUDTS17E-xx.xx	80	86.99	3	OT17	75	191	180	70	83
KUDTS18E-xx.xx	87	99.99	3	OT18	82	193	180	77	96
KUDTS19E-xx.xx	100	106.99	3	OT19	94	193	180	89	102

e.g. Designation for tool diameter ø60 mm: KUDTS13E-60

* Drill heads with the diameter ø92 mm or over have a top guide pocket.

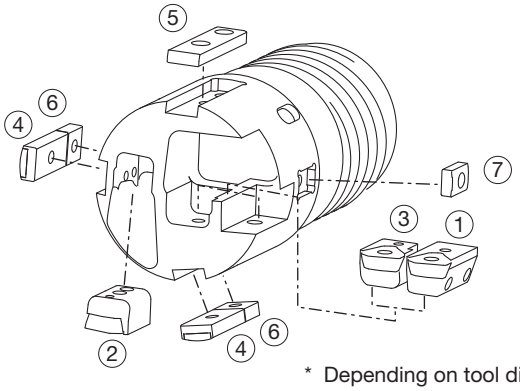
* adjusting diameters has to be required before using.

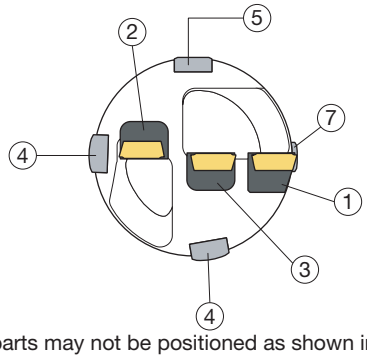
SPARE PARTS



Tool diameter DCN-DCX (mm)	Cartridge			Guide pad							
	Peripheral	Intermediate	Central	Guide pad		Filler		Protector		Sub guide pad	
	Cartridge ①	Cartridge ②	Cartridge③	④	Qty.	⑤	Qty.	⑥	Qty.	⑦	Qty.
38 - 39.99	OZ05R	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
40 - 44.99	OZ402 - 04	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
45 - 47.99	OZ402 - 04	IOZ05R	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
48 - 51.99	OZ402 - 04	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
52 - 54.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
55 - 57.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
58 - 59.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
60 - 63.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG08	1
64 - 67.99	OZ402 - 43	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG10	1
68 - 77.99	OZ402 - 32	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
78 - 84.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
85 - 91.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
92 - 98.99	OZ402 - 43	IOZ402 - 63	IOZ402 - 63	GP14	2	FILLER14	1	GPT14	2	CUG10	1
99 - 106.99	OZ402 - 63	IOZ402 - 63	IOZ402 - 63	GP18	2	FL18 - M	1	GPT18 - M	2	CUG14 - M	1

Filler is to protect a top guide pocket and included in the drill heads with ø92 mm or over.





* Depending on tool diameters, parts may not be positioned as shown in the above.

Reference pages: Inserts → J150, Standard cutting conditions → J151, Drill tube (DTS) → J162

INSERT

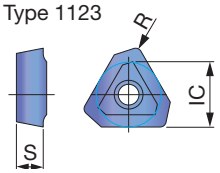
Tool diameter DCN-DCX (mm)	Peripheral insert	Qty.	Intermediate insert	Qty.	Central insert	Qty.
38 - 39.99	508 - 05R	1	508 - 05R	1	508 - 05R	1
40 - 44.99	1123 - 04R	1	508 - 05R	1	508 - 05R	1
45 - 47.99	1123 - 04R	1	508 - 05R	1	1123 - 04R	1
48 - 51.99	1123 - 04R	1	1123 - 04R	1	1123 - 04R	1
52 - 54.99	1123 - 32R	1	1123 - 04R	1	1123 - 04R	1
55 - 57.99	1123 - 32R	1	1123 - 04R	1	1123 - 32R	1
58 - 59.99	1123 - 32R	1	1123 - 32R	1	1123 - 32R	1
60 - 63.99	1123 - 32R	1	1123 - 32R	1	1123 - 32R	1
64 - 67.99	1123 - 43R	1	1123 - 32R	1	1123 - 32R	1
68 - 77.99	1123 - 32R	1	1123 - 43R	1	1123 - 43R	1
78 - 84.99	1123 - 43R	1	1123 - 43R	1	1123 - 43R	1
85 - 91.99	1123 - 63R	1	1123 - 43R	1	1123 - 43R	1
92 - 98.99	1123 - 43R	1	1123 - 63R	1	1123 - 63R	1
99 - 106.99	1123 - 63R	1	1123 - 63R	1	1123 - 63R	1

- The tool diameter can be increased up to 5 mm using the plus (+) spare parts. (The expansion allowance depends on tool diameters.)
- Drill heads come with cartridge, guide pad, filler, protector, sub guide pad, and wrench, but do not include inserts.

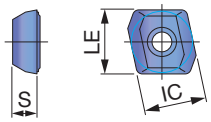
INSERT

508-05R..., 1123_**R...

Type 1123



Type 508





Chip Breaker	Designation	UC1220 (DLX2)	UC1125 (DLXT)	UC1230 (DLX3)	UC3215 (KLX2)	UC3210 (KLXT3)	UC2220 (NLX)	UC3120 (KLXT)	IC	S	R	LE
G	508-05R			●	●		●		8	3.18	-	8.362
	1123-04R	●		●	●		●		8.45	3.5	0.8	-
	1123-32R	●		●	●		●		10.3	4	0.8	-
	1123-43R	●		●	●		●		14.2	5.5	1.2	-
	1123-63R	●		●	●		●		17	7.5	1.6	-
BR1	508-05RBR1		●				●	●	8	3.18	-	8.362
	1123-04RBR1		●			●	●	●	8.45	3.5	0.4	-
	1123-32RBR1		●			●	●	●	10.3	4	0.4	-
	1123-43RBR1		●			●	●	●	14.2	5.5	0.4	-
	1123-63RBR1		●			●	●	●	17	7.5	0.8	-
B	1123-32RB				●		●		10.3	4	0.8	-
	1123-43RB				●		●		14.2	5.5	1.2	-
	1123-63RB				●		●		17	7.5	1.6	-
S	1123-04RS						●		8.45	3.5	0.8	-
	1123-32RS						●		10.3	4	0.8	-
	1123-43RS						●		14.2	5.5	1.2	-
	1123-63RS						●		17	7.5	1.6	-

● : Line up

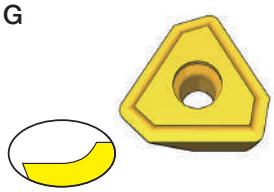
Left hand

Chip Breaker	Designation	UC1220 (DLX2)	UC1125 (DLXT)	UC1230 (DLX3)	UC3215 (KLX2)	UC3210 (KLXT3)	UC2220 (NLX)	UC3120 (KLXT)	IC	S	R	LE
G	1123-04L			●			●		8.45	3.5	0.8	-
	1123-32L			●			●		10.3	4	0.8	-
	1123-43L			●			●		14.2	5.5	1.2	-
	1123-63L			●			●		17	7.5	1.6	-
B	1123-32LB						●		10.3	4	0.8	-
	1123-43LB						●		14.2	5.5	1.2	-
	1123-63LB						●		17	7.5	1.6	-
S	1123-32LS						●		10.3	4	0.8	-
	1123-43LS						●		14.2	5.5	1.2	-

● : Line up

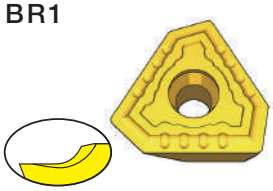
Chip breaker

G



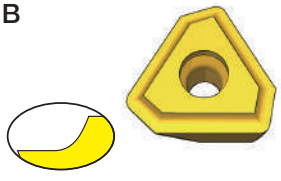
Suitable for most materials

BR1



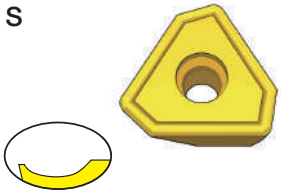
Good chip control for heat-resistant alloy

B



Good chip control for mild steel*

S



Reduced cutting force

*Mild steel: Material that tends to produce long chips

Grade

	Grade	(Previous name)	ISO area 5	10	15	20	25	30	35	40
P	UC1220	(DLX2)		■	■	■	■	■		
	UC2220	(NLX)			■	■	■	■	■	
	UC1125	(DLXT)				■	■	■		
	UC1230	(DLX3)				■	■	■	■	■
	UC3120	(KLXT)						■	■	■
M	UC2220	(NLX)		■	■	■	■	■		
	UC1230	(DLX3)			■	■	■	■	■	
	UC3120	(KLXT)							■	■
K	UC3215	(KLX2)		■	■	■				
	UC3120	(KLXT)				■	■	■		
N	UC3215	(KLX2)		■	■	■				
	UC2220	(NLX)			■	■	■			
S	UC3210	(KLXT3)	■	■	■					
	UC2220	(NLX)			■	■	■			
	UC3120	(KLXT)			■	■	■			
	UC1230	(DLX3)			■	■	■	■	■	

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials				Hardness	Cutting speed	Feed: *f*n (mm/rev) Drill dia. (mm)				
					(HB)	*V*c (m/min)	38.00 - 39.99	40.00 - 51.99	52.00 - 63.99	64.00 - 84.99	85.00 -
P	Carbon steels Casting steels High carbon steels Carbon tool steels	S10C - S25C,SS	0.10 - 0.25%C	Non-hardened	125	60 - 120	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
		S25C - S55C	0.25 - 0.25%C	Non-hardened	190	60 - 120	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
			0.25 - 0.25%C	Hardened and tempered	250	60 - 120	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
		SK	0.55 - 0.80%C	Non-hardened	220	60 - 120	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
			0.55 - 0.80%C	Hardened and tempered	300	60 - 120	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
	Low alloy steels Casting steels (alloying element < 5%)	SNC,DCr,SNCN SCM,SMn		Non-hardened	200	60 - 100	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
				Hardened and tempered	275	60 - 100	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
					300	50 - 100	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
					350	50 - 100	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
	High alloy steels Casting steel Tool steels	SNS,SKD,SKT SKH,SK		Non-hardened	200	60 - 120	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
				Hardened and tempered	325	60 - 120	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
M	Stainless steels	SUS430		Ferritic	200	60 - 110	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
		SUS410,420J		Martensite	240	60 - 110	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
		SUS304,SUS316L		Austenite	180	60 - 110	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
K	Ductile cast irons	FCD400 - FCD450		Ferritic / Pearlitic	180	60 - 100	0.08 - 0.13	0.1 - 0.15	0.13 - 0.18	0.15 - 0.2	0.18 - 0.23
		FCD500 - FCD700		Pearlitic	260	60 - 100	0.08 - 0.13	0.1 - 0.15	0.13 - 0.18	0.15 - 0.2	0.18 - 0.23
	Grey cast irons	FC100 - FC200		Low tensile strength	160	60 - 100	0.08 - 0.13	0.1 - 0.15	0.13 - 0.18	0.15 - 0.2	0.18 - 0.23
		FC250 - FC350		High tensile strength	250	60 - 100	0.08 - 0.13	0.1 - 0.15	0.13 - 0.18	0.15 - 0.2	0.18 - 0.23
	Malleable cast irons	FCMB,FCMW		Ferritic	130	60 - 100	0.08 - 0.13	0.1 - 0.15	0.13 - 0.18	0.15 - 0.2	0.18 - 0.23
		FCMWP,FCMP		Pearlitic	230	60 - 100	0.08 - 0.13	0.1 - 0.15	0.13 - 0.18	0.15 - 0.2	0.18 - 0.23
N	Aluminium alloys Forging			Non-aged	60	60 - 130	0.08 - 0.2	0.1 - 0.25	0.13 - 0.28	0.15 - 0.3	0.18 - 0.33
				Soluted, Aged	100	60 - 130	0.08 - 0.2	0.1 - 0.25	0.13 - 0.28	0.15 - 0.3	0.18 - 0.33
	Aluminium alloys Casting		≤12% Si	Non-aged	75	60 - 130	0.08 - 0.2	0.1 - 0.25	0.13 - 0.28	0.15 - 0.3	0.18 - 0.33
				Soluted, Aged	90	60 - 130	0.08 - 0.2	0.1 - 0.25	0.13 - 0.28	0.15 - 0.3	0.18 - 0.33
			>12% Si	High silicon	130	60 - 130	0.08 - 0.2	0.1 - 0.25	0.13 - 0.28	0.15 - 0.3	0.18 - 0.33
	Copper alloys		>1% Pb	Free cutting copper	110	60 - 130	0.08 - 0.2	0.1 - 0.25	0.13 - 0.28	0.15 - 0.3	0.18 - 0.33
				Brass, Red brass	90	60 - 130	0.08 - 0.2	0.1 - 0.25	0.13 - 0.28	0.15 - 0.3	0.18 - 0.33
				Electrolytic copper	100	60 - 130	0.08 - 0.2	0.1 - 0.25	0.13 - 0.28	0.15 - 0.3	0.18 - 0.33
S	Nickel-based alloys		Fe base	Non-aged	200	20 - 65	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
				Soluted, Aged	280	20 - 65	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
			Ni / Co base	Non-aged	250	20 - 65	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
				Soluted, Aged	350	20 - 65	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
				Casted	320	20 - 65	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
	Titanium alloys		α		Rm400	30 - 100	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3
			α - β		Rm1050	30 - 100	0.08 - 0.15	0.1 - 0.2	0.13 - 0.23	0.15 - 0.25	0.18 - 0.3

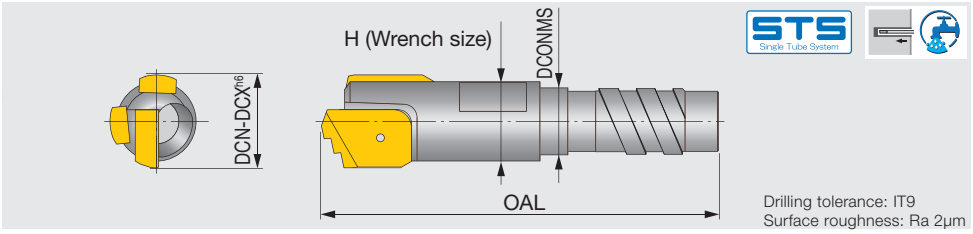
The above values should not be used as the exact recommendations. They may need modification depending on the machining conditions, materials, etc.

MBU

MBU type drill head

Brazed drill head with external single thread for single tube system (STS), tool diameter ø8 - ø14.79 mm





Drilling tolerance: IT9
Surface roughness: Ra 2µm

Designation	DCN	DCX	Drill tube		OAL	DCONMS	H
			Designation	Dia. (mm)			
MBU-0899	8	8.99	UMBB071	7.1	34	6	6
MBU-0999	9	9.99	UMBB083	8.3	34	7.2	7
MBU-1099	10	10.99	UMBB090	9	34	7.6	8
MBU-1199	11	11.99	UMBB100	10	34	8.6	9
MBU-1349	12	13.49	UMBB110	11	34	9.1	10
MBU-1449	13.5	14.79	UMBB120	12	34	10.8	11

The interface of the drill tube has a unique shape. Please be sure to use UMBB drill tube.

Grade

	Grade	(Previous name)	ISO area							
			5	10	15	20	25	30	35	40
P	1122	(PC ZAP)								
M	3112	(TF ZAP)								
K	3112	(TF ZAP)								
N	3112	(TF ZAP)								
S	3112	(TF ZAP)								

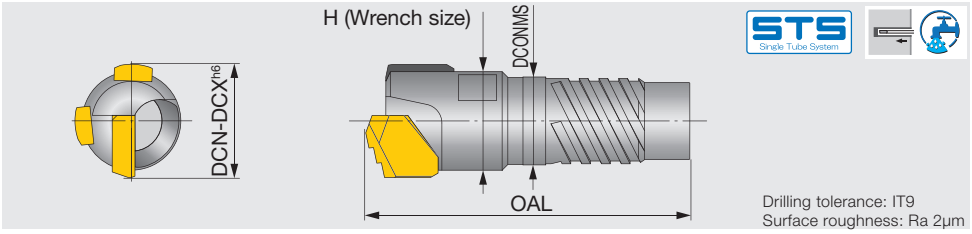
Reference pages: Standard cutting conditions → J157, Drill tube (STS) → J158

UTE

UTE type drill head

Brazed drill head with external double or quadruple thread for single tube system (STS), tool diameter ø12.6 - ø20 mm





Designation	DCN	DCX	Drill tube		OAL	DCONMS	H
			Designation	Dia. (mm)			
UTE-0094	12.6	13.6	ST0094	11	40	9.6	10
UTE-0095	13.61	14.6	ST0095	12	40	10.6	11
UTE-0096	14.61	15.59	ST0096	13	40	11.6	12
UTE-0097	15.6	16.7	ST0097	14	40	12.6	13
UTE-0098	16.71	17.7	ST0098	15	40	13.6	14
UTE-0099	17.71	18.9	ST0099	16	40	14.5	15
UTE-0000	18.91	20	ST0000	17	40	15.5	16

Grade

	Grade	(Previous name)	ISO area							
			5	10	15	20	25	30	35	40
P	1122	(UP ZAP)								
M	3112	(TF ZAP)								
K	3112	(TF ZAP)								
N	3112	(TF ZAP)								
S	3132	(TFKS ZAP)								

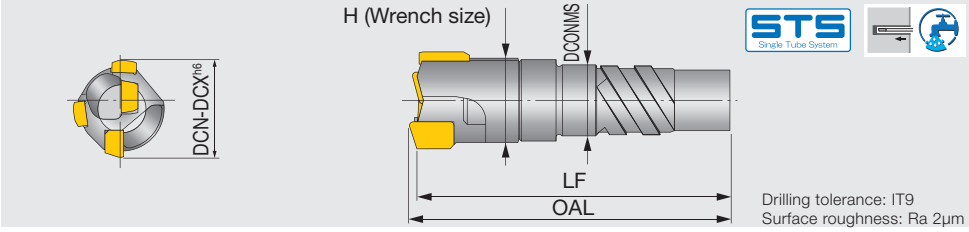
Reference pages: Standard cutting conditions → J157, Drill tube (STS) → J158

BTU

BTU type drill head (Small diameter, 2 edges)

Brazed rill head with external double thread for single tube system (STS), tool diameter ø12.6 - ø15.59 mm





Designation	DCN	DCX	Drill tube		OAL	LF	DCONMS	H
			Designation	Dia. (mm)				
BTU-00941	12.6	13.1	ST0094	11	43	41.9	9.6	10
BTU-00942	13.11	13.6	ST0094	11	43	41.9	9.6	10
BTU-00951	13.61	14.1	ST0095	12	43	41.8	10.6	11
BTU-00952	14.11	14.6	ST0095	12	43	41.8	10.6	11
BTU-00961	14.61	15.1	ST0096	13	43	41.7	11.6	12
BTU-00962	15.11	15.59	ST0096	13	43	41.7	11.6	12

Grade

	Grade	(Previous name)	ISO area							
			5	10	15	20	25	30	35	40
P	1122	(UP ZAP)								
M	2122	(N3 ZAP)								
K	1122	(UP ZAP)								
N	1122	(UP ZAP)								
S	1122	(UP ZAP)								

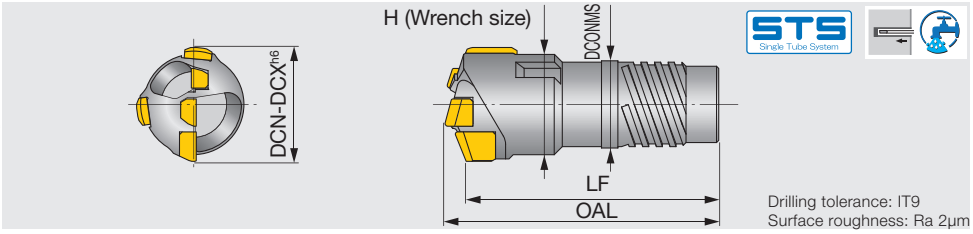
Reference pages: Standard cutting conditions → J157, Drill tube (STS) → J158

BTU

BTU type drill head (3 edges)

Brazed drill head with external quadruple thread for single tube system (STS), tool diameter ø15.6 - ø65 mm





Designation	DCN	DCX	Drill tube		OAL	LF	DCONMS	H
			Designation	Dia. (mm)				
BTU-00971	15.60	16.2	ST0097	14	43	40.3	12.6	-
BTU-00972	16.21	16.7	ST0097	14	43	40.3	12.6	14
BTU-00981	16.71	17.2	ST0098	15	43	40.3	13.6	15
BTU-00982	17.21	17.7	ST0098	15	43	40.3	13.6	15
BTU-00991	17.71	18.4	ST0099	16	47	44.2	14.5	15
BTU-00992	18.41	18.9	ST0099	16	47	44.1	14.5	-
BTU-001	18.91	19.2	ST0000	17	47	44.1	15.5	17
BTU-002	19.21	20	ST0000	17	47	44	15.5	18
BTU-011	20.01	20.9	ST00	18	52.5	49.4	16	18
BTU-012	20.91	21.8	ST00	18	52.5	49.4	16	19
BTU-021	21.81	22.9	ST01	20	56	52.8	18	20
BTU-022	22.91	24.1	ST01	20	56	52.6	18	21
BTU-031	24.11	25.2	ST02	22	57.5	54	19.5	23
BTU-032	25.21	26.4	ST02	22	57.5	54	19.5	24
BTU-041	26.41	27.5	ST03	24	57.5	53.8	21	25
BTU-042	27.51	28.7	ST03	24	57.5	53.8	21	26
BTU-051	28.71	29.8	ST04	26	63.5	59.5	23.5	27
BTU-052	29.81	31	ST04	26	63.5	59.3	23.5	28
BTU-061	31.01	32.1	ST05	28	63.5	59.4	25.5	29
BTU-062	32.11	33.3	ST05	28	63.5	59.1	25.5	30
BTU-071	33.31	34.8	ST06	30	63.5	59	28	32
BTU-072	34.81	36.2	ST06	30	63.5	58.9	28	33
BTU-081	36.21	37.3	ST07	33	73.5	68.7	30	34
BTU-082	37.31	38.4	ST07	33	73.5	68.5	30	35
BTU-083	38.41	39.6	ST07	33	73.5	68.3	30	36
BTU-091	39.61	40.6	ST08	36	73.5	68.2	33	37
BTU-092	40.61	41.8	ST08	36	73.5	68	33	38
BTU-093	41.81	43	ST08	36	73.5	67.8	33	39
BTU-101	43.01	44.3	ST09	39	75	69.5	36	41
BTU-102	44.31	45.6	ST09	39	75	69.3	36	42
BTU-103	45.61	47	ST09	39	75	69.1	36	43
BTU-111	47.01	48.5	ST10	43	75	68.8	39	44
BTU-112	48.51	50.1	ST10	43	75	68.7	39	46
BTU-113	50.11	51.7	ST10	43	75	68.5	39	47
BTU-121	51.71	53.2	ST11	47	82	75.2	43	49
BTU-122	53.21	54.7	ST11	47	82	75.2	43	50
BTU-123	54.71	56.2	ST11	47	82	75.2	43	51
BTU-131	56.21	58.4	ST12	51	84	77.4	47	54
BTU-132	58.41	60.6	ST12	51	84	76.9	47	55
BTU-133	60.61	62.8	ST12	51	84	76.8	47	57
BTU-134	62.81	65	ST12	51	84	76.5	47	59
BTU-133L	60.61	62.8	ST13	56	84	76.8	51	57
BTU-134L	62.81	65	ST13	56	84	76.5	51	59

Grade

	Grade	(Previous name)	ISO area							
			5	10	15	20	25	30	35	40
P	1122	(UP ZAP)		■	■	■				
	1132	(UX-2 ZAP)				■	■	■		
M	1132	(UX-2 ZAP)					■	■	■	
	2122	(N3 ZAP)						■	■	■
K	3132	(TFKS ZAP)			■	■	■			
N	3132	(TFKS ZAP)		■	■	■				
S	3132	(TFKS ZAP)			■	■	■			

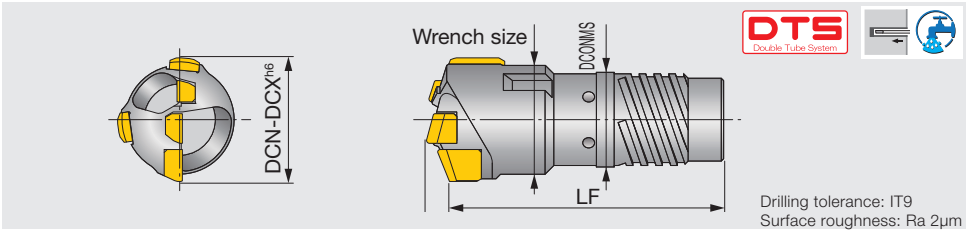
Reference pages: Standard cutting conditions → J157, Drill tube (STS) → J158

ETU

ETU type drill head

Brazed drill head for double tube system (DTS), tool diameter ø18.4 - ø65 mm





Designation	DCN	DCX	Drill tube		OAL	LF	DCONMS	H
			Designation	Dia. (mm)				
ETU-001	18.4	19.2	OT00	18	50	47.1	16	17
ETU-002	19.21	20	OT00	18	50	47	16	18
ETU-011	20.01	20.9	OT01	20	56	52.8	18	18
ETU-012	20.91	21.8	OT01	20	56	52.7	18	19
ETU-021	21.81	22.9	OT02	22	56	52.8	19.5	20
ETU-022	22.91	24.1	OT02	22	56	52.6	19.5	21
ETU-031	24.11	25.2	OT03	24	57.5	54	21	23
ETU-032	25.21	26.4	OT03	24	57.5	54	21	24
ETU-041	26.41	27.5	OT04	26	60.5	56.8	23.5	25
ETU-042	27.51	28.7	OT04	26	60.5	56.8	23.5	26
ETU-051	28.71	29.8	OT05	28	63.5	59.5	25.5	27
ETU-052	29.81	31	OT05	28	63.5	59.3	25.5	28
ETU-061	31.01	32.1	OT06	31	63.5	59.4	28	29
ETU-062	32.11	33.3	OT06	31	63.5	59.2	28	30
ETU-071	33.31	34.8	OT07	33	70.5	66	30	32
ETU-072	34.81	36.2	OT07	33	70.5	65.8	30	33
ETU-081	36.21	37.3	OT08	36	73.5	68.7	33	34
ETU-082	37.31	38.4	OT08	36	73.5	68.5	33	35
ETU-083	38.41	39.6	OT08	36	73.5	68.3	33	36
ETU-091	39.61	40.6	OT09	39	73.5	68.2	36	37
ETU-092	40.61	41.8	OT09	39	73.5	68	36	38
ETU-093	41.81	43	OT09	39	73.5	67.9	36	39
ETU-101	43.01	44.3	OT10	43	75	69.5	39	41
ETU-102	44.31	45.6	OT10	43	75	69.3	39	42
ETU-103	45.61	47	OT10	43	75	69.1	39	43
ETU-111	47.01	48.5	OT11	47	79	72.9	43	44
ETU-112	48.51	50.1	OT11	47	79	72.8	43	46
ETU-113	50.11	51.7	OT11	47	79	72.5	43	47
ETU-121	51.71	53.2	OT12	51	82	75.3	47	49
ETU-122	53.21	54.7	OT12	51	82	75.5	47	50
ETU-123	54.71	56.2	OT12	51	82	75.3	47	51
ETU-131	56.21	58.4	OT13	56	84	77.4	51	54
ETU-132	58.41	60.6	OT13	56	84	76.9	51	55
ETU-133	60.61	62.8	OT13	56	84	77	51	57
ETU-134	62.81	65	OT13	56	84	76.6	51	59

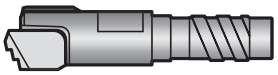
Grade

	Grade	(old description)	ISO classification							
			5	10	15	20	25	30	35	40
P	1122	(UP ZAP)		■	■	■				
	1132	(UX-2 ZAP)				■	■	■		
M	1132	(UX-2 ZAP)					■	■	■	
	2122	(N3 ZAP)						■	■	■
K	3132	(TFKS ZAP)			■	■	■			
N	3132	(TFKS ZAP)		■	■	■				
S	3132	(TFKS ZAP)			■	■	■			

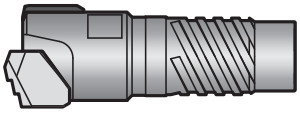
Reference pages: Standard cutting conditions → J157,
Drill tube (DTS) → J162

STANDARD CUTTING CONDITIONS

STS Single Tube System



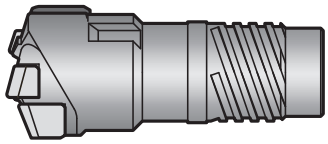
MBU



UTE

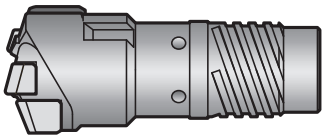


BTU (2 edges)



BTU (3 edges)

DTS Double Tube System



ETU (3 edges)

ISO	Workpiece material	JIS	Condition		Hardness	Cutting speed	Feed per revolution: *fn* (mm/rev) Drill diameter (mm)				
					(HB)	*Vc* (m/min)	*8 - 20	15.6 - 20	20.01 - 31	31.01 - 43	43.01 - 65
P	Carbon steels Cast steels High carbon steels Carbon tool steels	S10C - S25C,SS	0.1 - 0.25 %C	Non-hardened	125	70 - 130	0.05 - 0.13	0.08 - 0.15	0.1 - 0.17	0.13 - 0.2	0.16 - 0.3
		S25C - S55C	0.25 - 0.25 %C	Non-hardened	190	70 - 130	0.05 - 0.13	0.08 - 0.15	0.1 - 0.17	0.13 - 0.2	0.16 - 0.3
			0.25 - 0.25 %C	Hardened	250	70 - 130	0.05 - 0.13	0.08 - 0.15	0.1 - 0.17	0.13 - 0.2	0.16 - 0.3
		SK	0.55 - 0.80 %C	Non-hardened	220	70 - 130	0.05 - 0.13	0.08 - 0.15	0.1 - 0.17	0.13 - 0.2	0.16 - 0.3
			0.55 - 0.80 %C	Hardened	300	70 - 130	0.05 - 0.1	0.08 - 0.12	0.1 - 0.15	0.13 - 0.17	0.15 - 0.28
	Low alloy steels Cast steels (alloying element < 5%)	SNC,DCr,SNCN SCM,SMn		Non-hardened	200	70 - 110	0.05 - 0.13	0.08 - 0.15	0.1 - 0.17	0.13 - 0.2	0.16 - 0.3
				Hardened	275	60 - 110	0.05 - 0.1	0.08 - 0.12	0.1 - 0.15	0.13 - 0.17	0.15 - 0.28
					300	60 - 110	0.05 - 0.1	0.08 - 0.12	0.1 - 0.15	0.13 - 0.17	0.15 - 0.28
					350	60 - 110	0.05 - 0.1	0.08 - 0.12	0.1 - 0.15	0.13 - 0.17	0.15 - 0.28
	High alloy steels, Cast steels Tool steels	SNS,SKD,SKT SKH,SK		Non-hardened	200	70 - 130	0.05 - 0.13	0.08 - 0.15	0.1 - 0.17	0.13 - 0.2	0.16 - 0.3
				Hardened	325	70 - 130	0.05 - 0.1	0.08 - 0.12	0.1 - 0.15	0.13 - 0.17	0.15 - 0.28
M	Stainless steels	SUS430		Ferritic	200	40 - 110	0.05 - 0.13	0.08 - 0.15	0.1 - 0.28	0.13 - 0.3	0.16 - 0.35
		SUS410,420J		Martensitic	240	40 - 110	0.05 - 0.13	0.08 - 0.15	0.1 - 0.28	0.13 - 0.3	0.16 - 0.35
		SUS304,SUS316L		Austenitic	180	40 - 110	0.05 - 0.12	0.05 - 0.12	0.08 - 0.25	0.1 - 0.28	0.15 - 0.33
K	Ductile cast iron	FCD400 - FCD450		Ferritic / Pearlitic	180	50 - 110	0.05 - 0.13	0.08 - 0.15	0.1 - 0.17	0.13 - 0.2	0.16 - 0.3
		FCD500 - FCD700		Pearlitic	260	50 - 110	0.05 - 0.13	0.08 - 0.15	0.1 - 0.17	0.13 - 0.2	0.16 - 0.3
	Grey cast iron	FC100 - FC200		Low tensile strength	160	60 - 110	0.05 - 0.13	0.06 - 0.13	0.08 - 0.18	0.1 - 0.2	0.15 - 0.25
		FC250 - FC350		High tensile strength	250	60 - 110	0.05 - 0.13	0.06 - 0.13	0.08 - 0.18	0.1 - 0.2	0.15 - 0.25
	Malleable cast irons	FCMB,FCMW		Ferritic	130	70 - 110	0.05 - 0.13	0.06 - 0.13	0.08 - 0.18	0.1 - 0.2	0.15 - 0.25
		FCMWP,FCMP		Pearlitic	230	70 - 110	0.05 - 0.13	0.06 - 0.13	0.08 - 0.18	0.1 - 0.2	0.15 - 0.25
N	Aluminium alloy Wrought			Non-aged	60	65 - 130	0.05 - 0.13	0.08 - 0.15	0.1 - 0.2	0.15 - 0.25	0.16 - 0.3
				Soluted, Aged	100	65 - 130	0.05 - 0.13	0.08 - 0.15	0.1 - 0.2	0.15 - 0.25	0.16 - 0.3
	Aluminium alloy Cast		<=12% Si	Non-aged	75	65 - 130	0.05 - 0.13	0.08 - 0.15	0.1 - 0.2	0.15 - 0.25	0.16 - 0.3
				Soluted, Aged	90	65 - 130	0.05 - 0.13	0.08 - 0.15	0.1 - 0.2	0.15 - 0.25	0.16 - 0.3
			>12% Si	High silicon content	130	65 - 130	0.05 - 0.13	0.08 - 0.15	0.1 - 0.2	0.15 - 0.25	0.16 - 0.3
	Copper alloys		>1% Pb	Free-cutting copper	110	65 - 130	0.05 - 0.13	0.08 - 0.15	0.1 - 0.2	0.15 - 0.25	0.16 - 0.3
				Brass, Red brass	90	65 - 130	0.05 - 0.13	0.08 - 0.15	0.1 - 0.2	0.15 - 0.25	0.16 - 0.3
				Electrolytic copper	100	65 - 130	0.05 - 0.13	0.08 - 0.15	0.1 - 0.2	0.15 - 0.25	0.16 - 0.3
S	Heat-resistant alloy		Fe based alloys	Non-aged	200	20 - 50	0.05 - 0.12	0.06 - 0.12	0.08 - 0.15	0.12 - 0.18	0.15 - 0.25
				Soluted, Aged	280	20 - 50	0.05 - 0.12	0.06 - 0.12	0.08 - 0.15	0.12 - 0.18	0.15 - 0.25
			Ni / Co based alloys	Non-aged	250	20 - 50	0.05 - 0.12	0.06 - 0.12	0.08 - 0.15	0.12 - 0.18	0.15 - 0.25
				Soluted, Aged	350	20 - 50	0.05 - 0.12	0.06 - 0.12	0.08 - 0.15	0.12 - 0.18	0.15 - 0.25
				Cast	320	20 - 50	0.05 - 0.12	0.06 - 0.12	0.08 - 0.15	0.12 - 0.18	0.15 - 0.25
	Titanium alloys		α		Rm400	30 - 60	0.05 - 0.1	0.05 - 0.1	0.08 - 0.12	0.1 - 0.15	0.12 - 0.2
			α-β		Rm1050	30 - 60	0.05 - 0.1	0.05 - 0.1	0.08 - 0.12	0.1 - 0.15	0.12 - 0.2

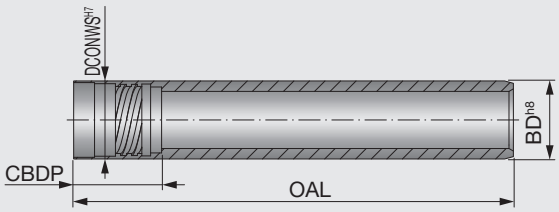
*Recommended cutting conditions for MBU and UTE.
The above values may need modification depending on the machining conditions, materials, etc.

ST

ST - for single tube system

Drill tube for single tube system (STS), internal thread type, quadruple thread (tool dia. ≥ ø15.6 mm) or double thread (tool dia. ≤ ø15.59 mm)





Designation	DCN-DCX	OAL 1600	OAL 2600	OAL Special length	BD	DCONWS	CBDP
ST0094	12.6 - 13.6	●		○	11	9.6	22
ST0095	13.61 - 14.6	●		○	12	10.6	22
ST0096	14.61 - 15.59	●		○	13	11.6	22
ST0097	15.6 - 16.7	●		○	14	12.6	21
ST0098	16.71 - 17.7	●	●	○	15	13.6	21
ST0099	17.71 - 18.9	●	●	○	16	14.5	22
ST0000	18.91 - 20	●	●	○	17	15.5	22
ST00	20.01 - 21.8	●	●	○	18	16	27.5
ST01	21.81 - 24.1		●	○	20	18	30
ST02	24.11 - 26.4		●	○	22	19.5	30
ST03	26.41 - 28.7		●	○	24	21	30
ST04	28.71 - 31		●	○	26	23.5	33
ST05	31.01 - 33.3		●	○	28	25.5	33
ST06	33.31 - 36.2		●	○	30	28	33
ST07	36.21 - 39.6		●	○	33	30	40
ST08	39.61 - 43		●	○	36	33	40
ST09	43.01 - 47		●	○	39	36	40
ST10	47.01 - 51.7		●	○	43	39	40
ST11	51.71 - 56.2		●	○	47	43	44
ST12	56.21 - 60.6		●	○	51	47	44
ST13	60.61 - 65			○	56	51	44

Designation	DCN-DCX	OAL Special length	BD	DCONWS	CBDP
ST14	65 - 66.99	○	56	52	75
ST15	67 - 72.99	○	62	58	75
ST16	73 - 79.99	○	68	63	75
ST17	80 - 86.99	○	75	70	97
ST18	87 - 99.99	○	82	77	97
ST19	100 - 111.99	○	94	89	97
ST20	112 - 123.99	○	106	101	118
ST21	124 - 135.99	○	118	113	118
ST22	136 - 147.99	○	130	125	118
ST23	148 - 159.99	○	142	137	139
ST24	160 - 171.99	○	154	149	139
ST25	172 - 183.99	○	166	161	139
ST26	184 - 195.99	○	178	173	144
ST27	196 - 207.99	○	190	185	144
ST28	208 - 219.99	○	202	197	144
ST29	220 - 231.99	○	214	208	164
ST30	232 - 243.99	○	226	220	164
ST31	244 - 255.99	○	238	232	164
ST32	256 - 267.99	○	250	244	184
ST33	268 - 279.99	○	262	256	184
ST34	280 - 291.99	○	274	268	184

Please specify the length (L) when ordering.
e.g. For ø60 mm drill diameter / 2600 mm drill tube length: ST12X2600
The lengths that are not in the above will be available upon request.

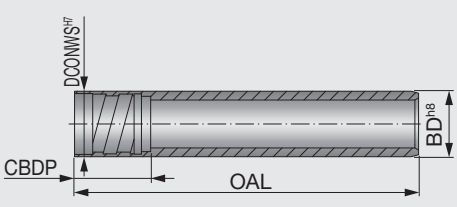
● : Line up
○ : Item to be customized

UMBB

Drill tube for UMBB

Drill tube with internal single thread for MBU drill head





Designation	DCN-DCX	OAL Special length	BD	DCONWS	CBDP
UMBB071	8 - 8.99	○	7.1	6	13.5
UMBB083	9 - 9.99	○	8.3	7.2	13.5
UMBB090	10 - 10.99	○	9	7.6	13.5
UMBB100	11 - 11.99	○	10	8.6	13.5
UMBB110	12 - 13.49	○	11	9.1	13.5
UMBB120	13.5 - 14.79	○	12	10.8	13.5

Please specify the length (L) when ordering.
e.g. For ø11 mm drill diameter / 1000 mm drill tube length: UMBB100X1000

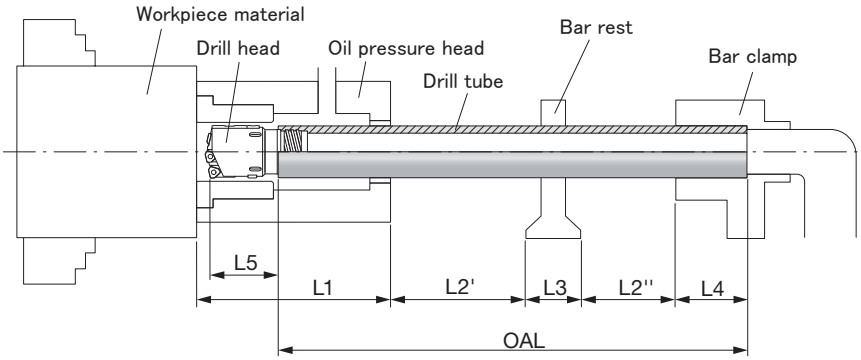
○: Item to be customized



MBU drill head
Please see the catalog of brazed deep hole drills for the details.

TUBE LENGTH FOR SPECIAL DRILLS

Drill tubes with the lengths that are not for standard items will be available upon request.
Please use the below guide to calculate the drill tube length.



L = Drill tube whole length
L1 = Oil pressure head length
L2 = Drilli ng depth (L2' + L2'')
L3 = Bar rest length
L4 = Drill tube clamp length
L5 = Length from drill tube tip and peripheral edge tip

Drill tube length OAL = L1 + L2 + L3 + L4 - L5

BTU



DCN-DCX	L5
12.6 - 17.7	20
17.71 - 19.2	23
19.21 - 21.8	22
21.81 - 24.1	23
24.11 - 28.7	24
28.71 - 33.3	27
33.31 - 36.2	26
36.21 - 40.6	29
40.61 - 43	28
43.01 - 47	30
47.01 - 51.7	29
51.71 - 56.2	32
56.21 - 58.4	34
58.41 - 65	33

FINE-BEAM



DCN-DCX	L5
25 - 28.7	40
28.71 - 33.3	42
33.31 - 36.2	47
36.21 - 39.6	50
39.61 - 43	55
43.01 - 51.7	60
51.71 - 56.2	66
56.21 - 65	71

UNIDEX



DCN-DCX	L5
38 - 43	45
43.01 - 51.7	55
51.71 - 56.2	56
56.21 - 65	66
65 - 79.99	75
80 - 111.99	83
112 - 147.99	87
148 - 183.99	86
184 - 255.99	101
256 - 291.99	106

TRI-FINE



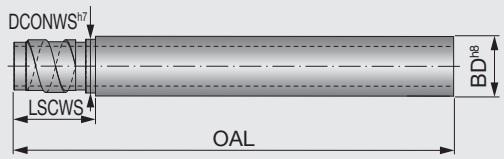
DCN-DCX	L5
16 - 16.7	34
16.71 - 17.7	34
17.71 - 18.9	34
18.91 - 20	34
20.01 - 21.8	32.5
21.81 - 21.99	33.5
22 - 24.1	35.5
24.11 - 26.4	35.5
26.41 - 28	35.5

UB

UB - for single tube system

Drill tube for single tube system (STS), external thread type, single thread





Designation	DCN-DCX	OAL Special length	BD	DCONWS	LSCWS
UB12-1	14.5 - 15	○	12	11.5	23
UB12-2	15.01 - 15.5	○	12	11.8	23
UB13-1	15.51 - 16	○	13	12.4	23
UB13-2	16.01 - 16.5	○	13	12.7	23
UB14-1	16.51 - 17.25	○	14	13.4	23
UB14-2	17.26 - 18	○	14	13.7	23
UB15	18.01 - 19	○	15	14.4	23
UB16.5	19.01 - 19.99	○	16.5	15.4	23
UB18	20 - 21.99	○	18	16.5	26
UB20	22 - 24.99	○	20	19	26
UB22	25 - 26.99	○	22	20	26
UB24	27 - 29.99	○	24	22	26
UB26	30 - 31.99	○	26	24	26
UB28	32 - 33.99	○	28	26	26
UB30	34 - 36.99	○	30	27	41
UB33	37 - 39.99	○	33	30	41
UB36	40 - 43.99	○	36	33	41
UB39	44 - 46.99	○	39	37	41
UB43	47 - 51.99	○	43	41	41
UB47	52 - 56.99	○	47	44	41
UB51	57 - 60.99	○	51	49	41

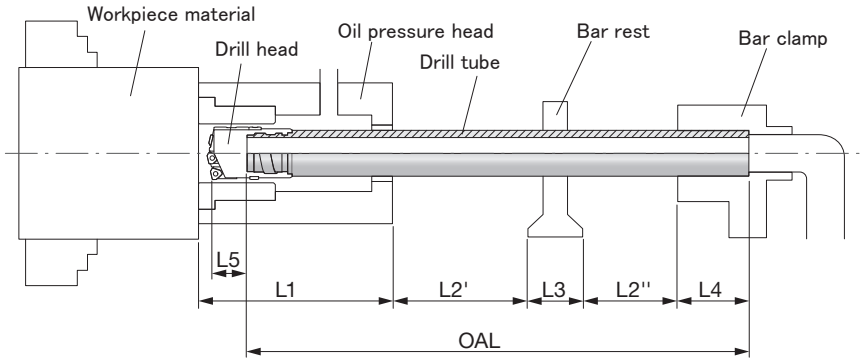
Designation	DCN-DCX	OAL Special length	BD	DCONWS	LSCWS
UB56	61 - 67.99	○	56	53	41
UB62	68 - 74.99	○	62	59	41
UB68	75 - 80.99	○	68	65	71
UB75	81 - 90.99	○	75	71	71
UB82	91 - 98.99	○	82	79	71
UB94	99 - 110.99	○	94	90	71
UB106	111 - 122.99	○	106	102	71
UB118	123 - 134.99	○	118	114	71
UB130	135 - 148.99	○	130	126	71
UB142	149 - 161.99	○	142	139	71
UB154	162 - 173.99	○	154	151	86
UB166	174 - 185.99	○	166	163	86
UB178	186 - 197.99	○	178	175	86
UB190	198 - 209.99	○	190	187	86
UB202	210 - 221.99	○	202	199	86
UB214	222 - 233.99	○	214	211	86
UB226	234 - 245.99	○	226	223	86
UB238	246 - 257.99	○	238	235	86
UB250	258 - 269.99	○	250	247	121
UB262	270 - 281.99	○	262	259	121
UB274	282 - 293.99	○	274	271	121

Please specify the length (L) when ordering.
e.g. For ø60 mm drill diameter / 2600 mm drill tube length: UB51X2600

○ : Item to be customized

TUBE LENGTH FOR SPECIAL DRILLS

Please use the below guide to calculate the drill tube length.



OAL = Drill tube whole length
L1 = Oil pressure head length
L2 = Drilli ng depth (L2' + L2'')
L3 = Bar rest length
L4 = Drill tube clamp length
L5 = Length from drill tube tip and peripheral edge tip

Drill tube length OAL = L1 + L2 + L3 + L4 - L5

FINE-BEAM



DCN-DCX	L5
25 - 29.99	45
30 - 33.99	50
34 - 36.99	50
37 - 39.99	55
40 - 43.99	60
44 - 51.99	65
52 - 56.99	70
57 - 65	75

UNIDEX



DCN-DCX	L5
38 - 43.99	40
44 - 51.99	50
52 - 56.99	60
57 - 67.99	70
68 - 161.99	80
162 - 257.99	105
258 - 293.99	90

TRI-FINE



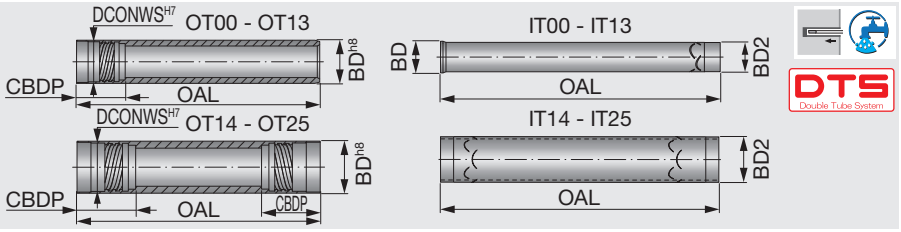
DCN-DCX	L5
16 - 16.5	31.5
16.51 - 17.25	31.5
17.26 - 18	31.5
18.01 - 19	31.5
19.01 - 19.99	31.5
20 - 21.99	33
22 - 24.99	35
25	35
25.01 - 26.99	40
27 - 28	40

OT & IT

OT & IT - for double tube system

Outer tube and inner tube for double tube system





Designation	Outer tube (OT) DCN-DCX	OAL Special length	BD	DCONWS	CBDP	Designation	Inner tube (IT) DCN-DCX	OAL Special length	BD	BD2
OT00	18.4 - 20	○	18	16	27.5	IT00	18.4 - 20	○	12	10
OT01	20.01 - 21.8	○	19.5	18	30	IT01	20.01 - 21.8	○	14	12
OT02	21.81 - 24.1	○	21.5	19.5	30	IT02	21.81 - 24.1	○	15	13
OT03	24.11 - 26.4	○	23.5	21	30	IT03	24.11 - 26.4	○	16	14
OT04	26.41 - 28.7	○	26	23.5	33	IT04	26.41 - 28.7	○	18	16
OT05	28.71 - 31	○	28	25.5	33	IT05	28.71 - 31	○	20	18
OT06	31.01 - 33.3	○	30.5	28	33	IT06	31.01 - 33.3	○	22	20
OT07	33.31 - 36.2	○	33	30	40	IT07	33.31 - 36.2	○	24	22
OT08	36.21 - 39.6	○	35.5	33	40	IT08	36.21 - 39.6	○	26	24
OT09	39.61 - 43	○	39	36	40	IT09	39.61 - 43	○	29	27
OT10	43.01 - 47	○	42.5	39	40	IT10	43.01 - 47	○	32	30
OT11	47.01 - 51.7	○	46.5	43	44	IT11	47.01 - 51.7	○	35	32
OT12	51.71 - 56.2	○	51	47	44	IT12	51.71 - 56.2	○	39	36
OT13	56.21 - 65	○	55.5	51	44	IT13	56.21 - 65	○	43	40
OT14	65 - 66.99	○	56	52	75	IT14	65 - 66.99	○	-	40
OT15	70 - 72.99	○	62	58	75	IT15	70 - 72.99	○	-	44
OT16	73 - 79.99	○	68	63	75	IT16	73 - 79.99	○	-	48
OT17	80 - 86.99	○	75	70	97	IT17	80 - 86.99	○	-	54
OT18	87 - 99.99	○	82	77	97	IT18	87 - 99.99	○	-	60
OT19	100 - 111.99	○	94	89	97	IT19	100 - 111.99	○	-	70
OT20	112 - 123.99	○	106	101	118	IT20	112 - 123.99	○	-	80
OT21	124 - 135.99	○	118	113	118	IT21	124 - 135.99	○	-	80
OT22	136 - 147.99	○	130	125	118	IT22	136 - 147.99	○	-	95
OT23	148 - 159.99	○	142	137	139	IT23	148 - 159.99	○	-	100
OT24	160 - 171.99	○	154	149	139	IT24	160 - 171.99	○	-	120
OT25	172 - 183.99	○	166	161	139	IT25	172 - 183.99	○	-	130

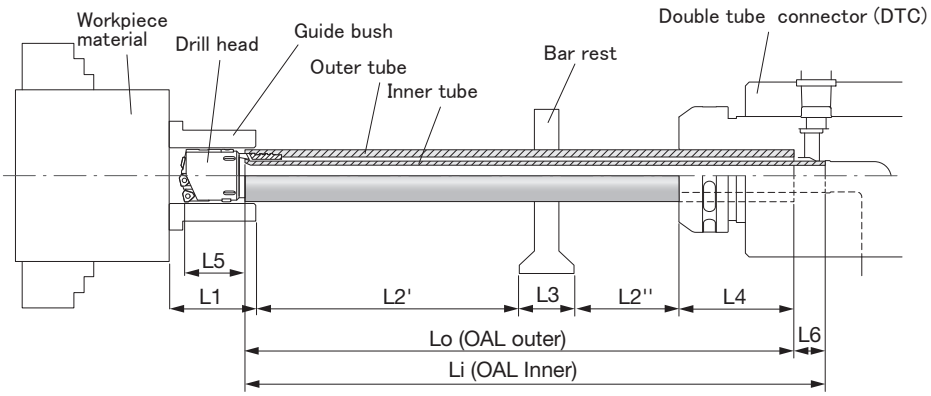
○ : Item to be customized

Please specify the length when ordering.
e.g. For ø60 mm drill diameter / 1070 mm drill outer tube length: OT13X1070
Please choose the inner tube length according to the below.

- tool diameter: ø18.40 - 65.00 mm (OT00 - OT13) ..... Inner tube length = Outer tube length + 30 mm
- tool diameter: ø65.00 - 123.99 mm (OT14 - OT20) ..... Inner tube length = Outer tube length + 190 mm
- tool diameter: ø124.00 - 183.99 mm (OT21 - OT25) ..... Inner tube length = Outer tube length + 220 mm

TUBE LENGTH FOR SPECIAL DRILLS

Please use the below guide to calculate the drill tube length.



Lo = Outer tube whole length
Li = Inner tube whole length
L1 = Guide bush length (or Pilot hole depth)
L2 = Drilling depth (L2' + L2")
L3 = Bar rest length
L4 = Length of outer tube in connector *
L5 = Length from drill tube tip and peripheral edge tip
L6 = Difference between outer tube length and inner tube length

Outer tube length Lo = L1 + L2 + L3 + L4 - L5

Inner tube length Li = Lo + L6

DTC type	L4 *	L6 **
DTC 4R type (OT00 – OT13)	120	30
DTC 5R type (OT14 – OT20)	0	190
DTC 6R type (OT21 – OT25)	0	220

(mm)

The outer tube should enter in th e guide bush or the pilot hole with at least 5 mm.

ETU



DCN-DCX	L5
18.4 - 20	20
20.01 - 24.1	23
24.11 - 28.7	24
28.71 - 33.3	27
33.31 - 36.2	26
36.21 - 40.6	29
40.61 - 43	28
43.01 - 47	30
47.01 - 51.7	29
51.71 - 56.2	32
56.21 - 58.4	34
58.41 - 65	33

FINE-BEAM



DCN-DCX	L5
25 - 26.4	40
26.41 - 31	42
31.01 - 33.3	47
33.31 - 36.2	50
36.21 - 39.6	55
39.61 - 47	60
47.01 - 51.7	66
51.71 - 65	71

UNIDEX



DCN-DCX	L5
38 - 43	45
43.01 - 47	55
47.01 - 51.7	51
51.71 - 56.2	56
56.21 - 65	66
65 - 79.99	75
80 - 111.99	83
112 - 147.99	87
148 - 183.99	86

TRI-FINE

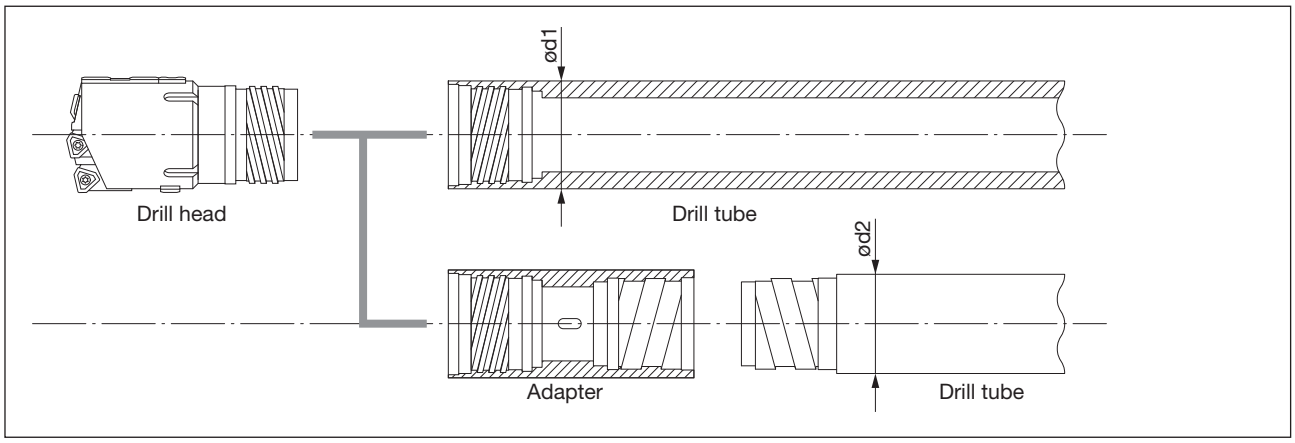


DCN-DCX	L5
18.4 - 20	31.5
20.01 - 21.8	33.5
21.81 - 21.99	33.5
22 - 24.1	35.5
24.11 - 25	35.5
25.01 - 26.4	37.5
26.41 - 28	37.5

STS Single Tube System DTS Double Tube System

CONVERSION ADAPTER

Adapter for external thread - internal thread conversion



ADPT- □□□ / □□□

- SS Single thread
- TS Double thread
- FS Quadruple thread
- ød1
- F Internal thread
- M External thread
- SS Single thread
- TS Double thread
- FS Quadruple thread
- ød2
- F Internal thread
- M External thread

ød1 : Outer diameter of the tube that is applicable for the drill head

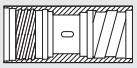
ød2 : Outer diameter of the tube that is connected with the adapter

Designation example

For the conversion from ST11 to UB47

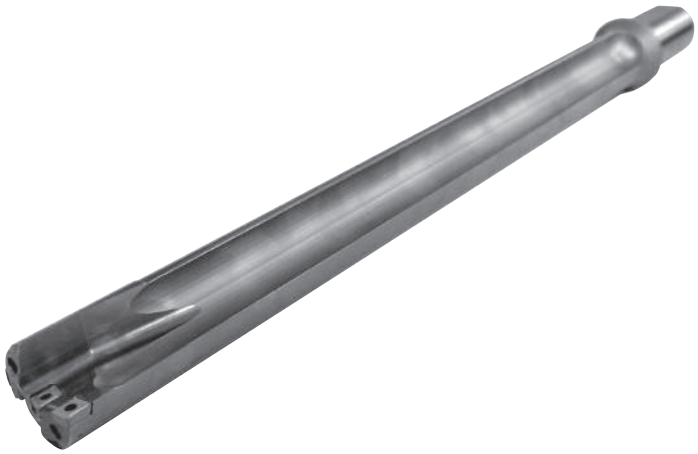
ADPT-F47FS / F47SS

↑ ST11 ↑ UB47



* The adapters to change sizes will be available upon request.

HF Drill : Indexable drill for deep hole



Economical for middle range deep hole drilling

- Tool diameter range: ø30 - ø63 mm (*)
- Drilling depth: 6xD - 14xD
- Shortened drilling time when using conventional machine

* Other diameters are available upon request.

Effective machining on conventional machines

- Recommended for use on Horizontal M/C
- Can also be used on turning machine

Good chip evacuation

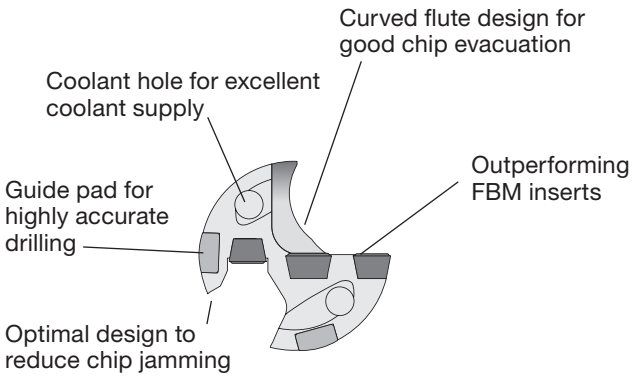
- FBM inserts enable best chip control
- Unique head design eliminates chip jamming
- Curved flute design ensures good chip evacuation

Easy to use, rigid drill body

- Direct mount inserts, no diameter adjustment necessary
- Body is made from heat treated tool steel

High quality surface finish

- Burnishing effect improves surface finish
- Possible to eliminate finish process



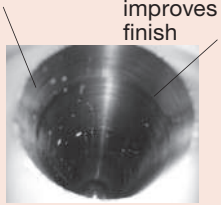
PRACTICAL EXAMPLE

Cutting conditions

Tool diameter DC:	ø30 mm
Drilling depth:	200 mm
Workpiece material:	S45C
Cutting speed *Vc*:	100 m/min
Feed *f*:	0.1 mm/rev
Machine:	BT50 M/C

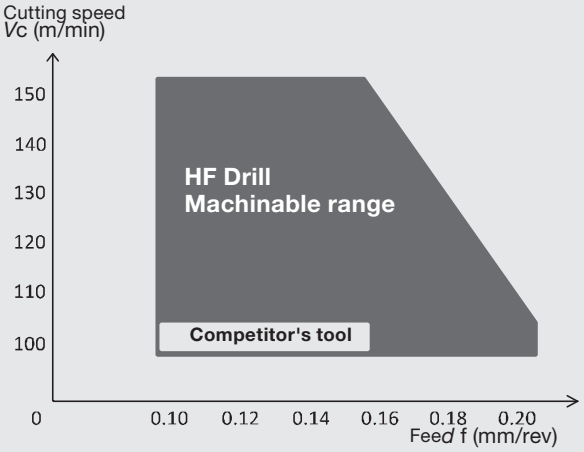
No spiral marks caused by chips

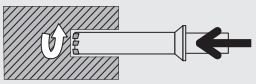
Burnishing effect by guide pads improves surface finish



BT50 M/C Machining data

Excellent chip evacuation ensures the stable drilling on M/C.





- Water-soluble coolant
- Pressure: 1.5 MPa
- Through spindle

Tool diameter DC:	ø30 mm
Drilling depth:	200 mm
Workpiece material:	S45C
Cutting speed *Vc*:	100 - 150 m/min
Feed *f*:	0.1 - 0.2 mm/rev
Machine:	BT50 Horizontal M/C (Max 11 KW)

Cautionary points in use

To start the tool, a pilot hole is required. (tolerance: + 0.1 to 0.15 mm)

Tool diameter DC (mm)	Pilot hole length H (mm)
ø30 ~ ø39	over 10
ø39.01 ~ ø45	over 12.5
ø45.01 ~ ø57	over 15
ø57.01 ~ ø63	over 17.5

- The pilot hole should ideally have a flat bottom, but generally a indexable drill is acceptable to create a pilot hole if the inner insert touches the bottom last.
- DrillForce-Meister series or TDX drills are recommended for a pilot hole drilling.



Tooling System



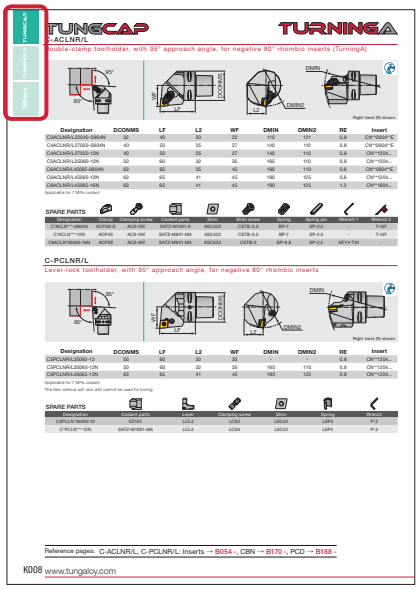
Tooling System - Content structure

Products are listed by series.
Please refer the table of contents.
Tooling items in the catalog are our standard stock items.

How to use the page

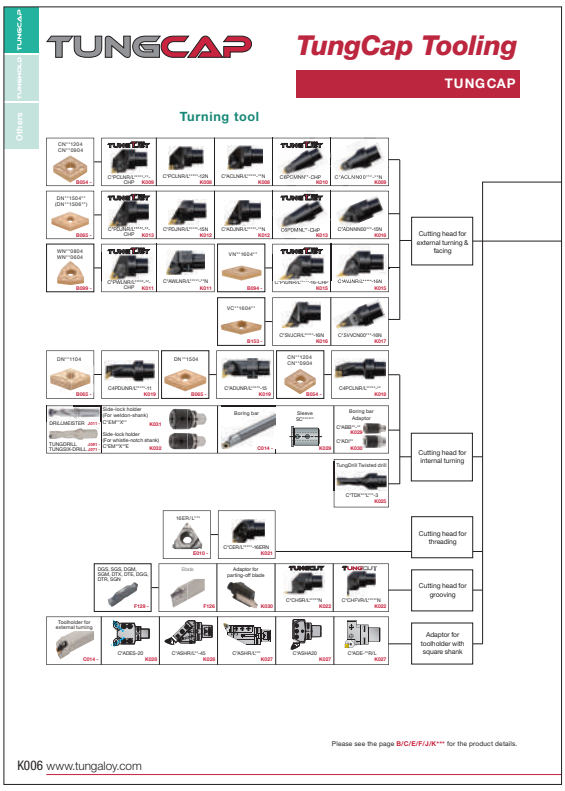
Method 1.

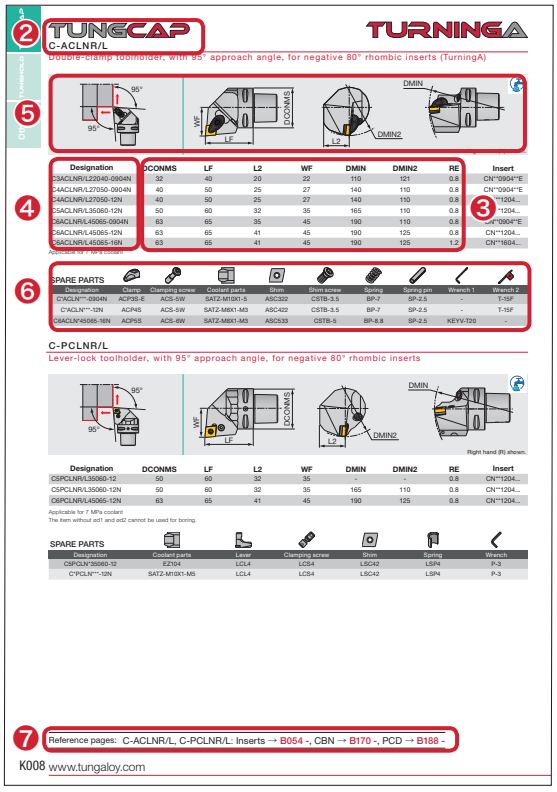
Select the series name (❶) described at the left end of each page and choose a designation you need (❹) in the dimension table (❸).



Method 2.

Select the series name on **K003** and check the details on the product page.





❶ Name of the series
❷ Series name and item
❸ Dimension
❹ Designation
❺ Dimension drawing (conforming to ISO13399)
❻ Spare parts
❼ Reference pages

When ordering

- Please specify the designation and quantity for PINZBOHR® boring system.
  e.g. Head: **AC5ACLNN00090-12** ... 1 (one head per package)
  Arbor: **BT34032100** ... 1 (one arbor per package)
  *The designation in the catalog may be described with spaces. Please remove such spaces.
  *Inserts are sold separately.
- PINZBOHR® Boring System is a product of MYFHE, S. A., in Spain.
  There are other products that are not in this catalog. We can get price quotations and order such products.
  Please see the MYFHE website: http://www.pinzbohr.com/ingles.htm

Tooling System



TUNGCAP

Quick change system with polygon PSC coupling tooling

K004 - K054



TUNGHOLD

Tooling system for holders with unique functions in wide varieties

DIN69871 - **K055**
BT MAS - **K090**
HSK A/E - **K070**
DIN2080 - **K107**

K055 - K158



Other tooling system

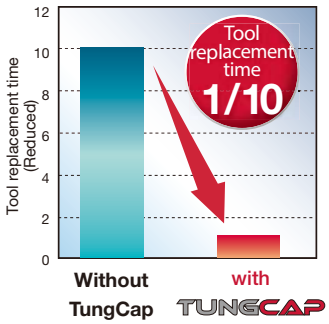
SpinJet - **K159**
SwissBore - **K166**
Cartridge - **K191**
Top borer tool - **K212**
BeamWrench - **K165**
Boring system - **K177**
Boring bar tool - **K209**

K159 - K214

TUNGCAP

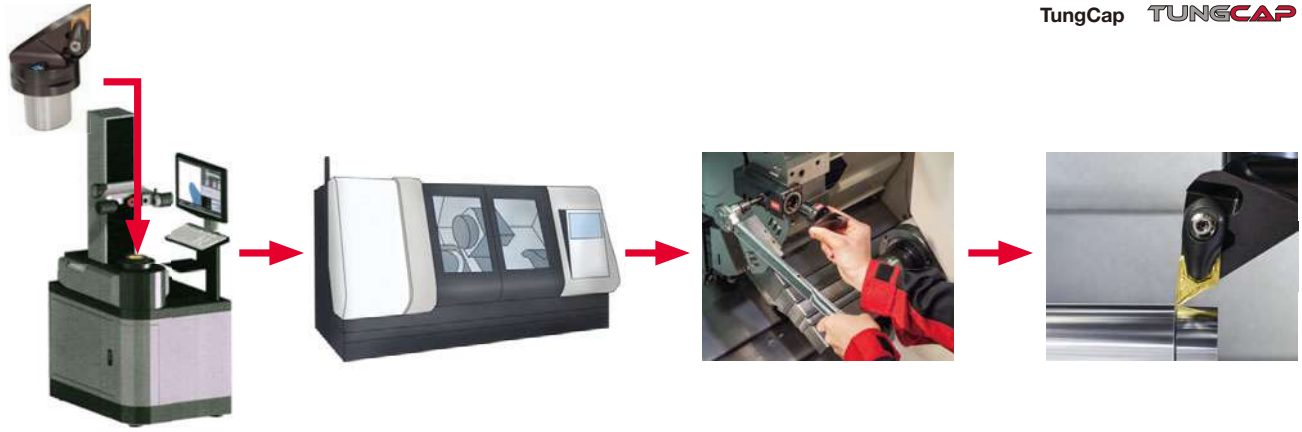


Productivity increases when used on CNC turret lathes / turning centers



Reduce downtime in your machine

- Short setup time - no tool adjustment required on the machine
- Once adjusted outside the machine, high precision



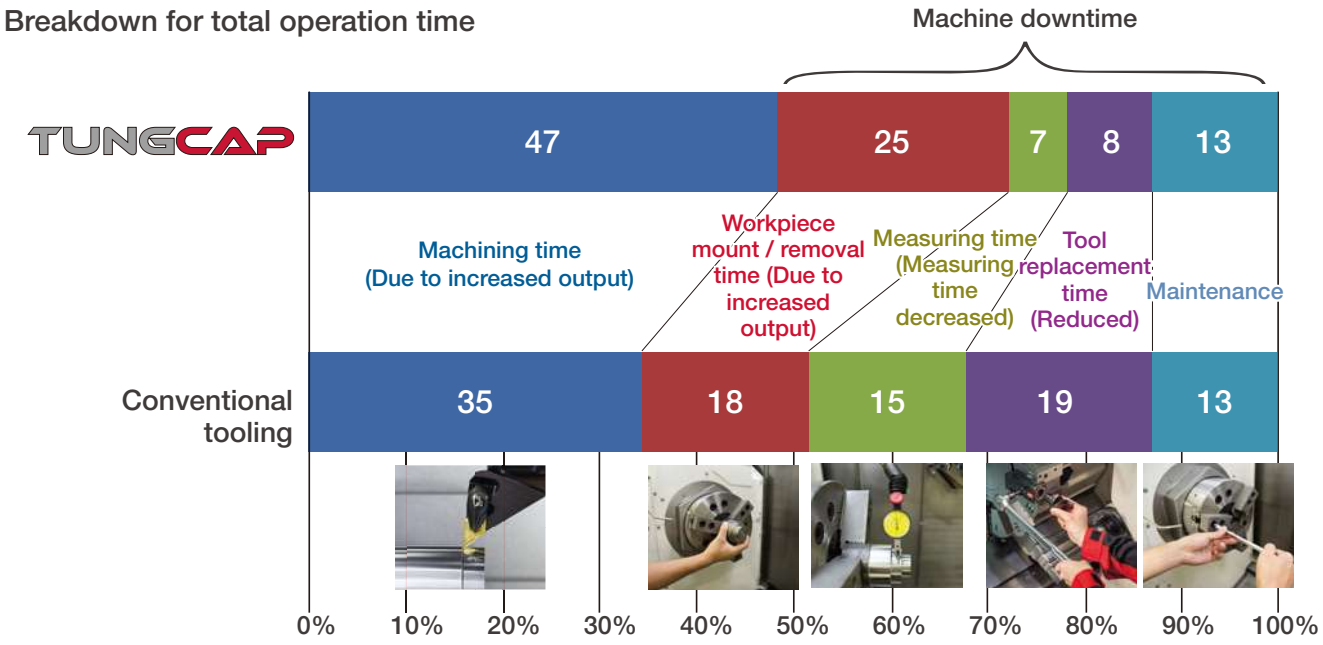
Measurement outside the machine

Input measured data

Short tool change time

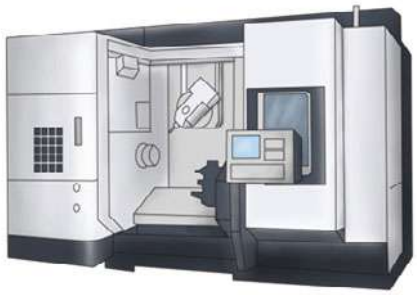
High precision in simple process

Reference pages: K006 - K054



Toolings for multi-tasking machine

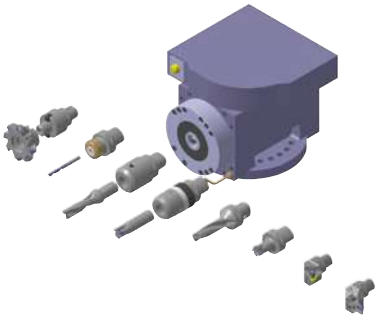
A multi-tasking machine is a combination of a turning center and a machining center, which allows a workpiece to be completed in a single machine setup.
TungCap offers a complete range of efficient tooling solutions in such a highly advanced machine-tool.



Easy tool management

Suitable for a wide range of applications

- TungCap modular system enhances tooling flexibility in a wide range of applications, without compromising other interface adapters
- Adaptors for HSK and dual-contact BT taper are also available



Ideal tooling

An optimized overhang length can be set with an extension or reduction holder



Cutting heads for a B-axis locked at 45° in multi-tasking machines

A large radial stroke is possible for B-axis
Heavy-duty machining is possible due to diverse cutting force
No interference in machining corner radii



TungCap Tooling

TUNGCAP

Turning tool



Please see the page **B/C/E/F/J/K*** ** for the product details.

System for Multi-Tasking Machine

TOOLING SYSTEM

Tool spindle



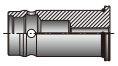
Rotating tool

Endmill holder



C*MAXIN**X***
K038

Straight collet for endmill holder



SC*******
K039



Side-lock holder (For weldon-shank)



C*EM**X**
K031



Side-lock holder (For whistle-notch shank)



C*EM**X**E
K032



ER-collet chuck holder



C*ER**X***
K033
C*ER**X***M
K034

ER-collet



ER******
K126 -



Collet chuck holder with adjusting alignment



ADJC*ER32
K034

ER-collet



ER******
K126 -



Shrink holder



C*SRKIN*X**
K040



TungDrill Twisted drill



C*TDX***L***-3
K025

Digital fine boring



K046

Extension adaptor

C*EX-***

K044

Reduction adaptor

C*-C*RE-***

K045

Arbor for face mill



C*SEM**X**C
K036



Arbor for slot mill



C*SCA**
K041



Holder for modular tool



C*ODP**X**
K037



High speed spindle



K159 -, K162

MULTICLAMPC*



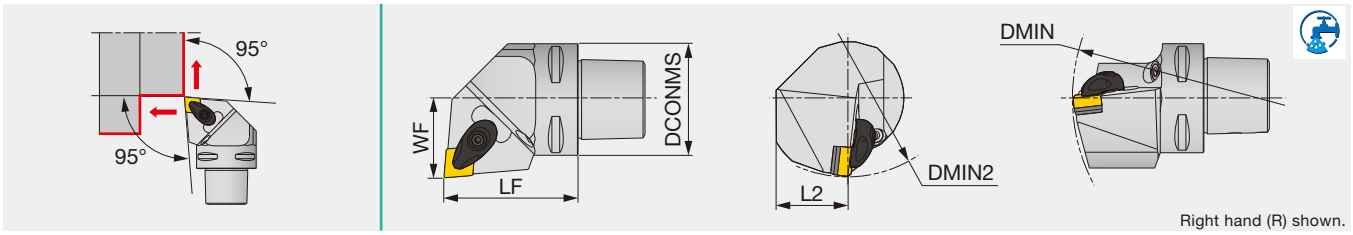
MULTICLAMPC*
K045

Please see the page B/C/E/F/J/K*** for the product details.

TUNGCAP TURNINGA

C-ACLNR/L

Double-clamp toolholder, with 95° approach angle, for negative 80° rhombic inserts (TurningA)



Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3ACLNR/L22040-0904N	32	40	20	22	110	121	0.8	CN**0904**E
C4ACLNR/L27050-0904N	40	50	25	27	140	110	0.8	CN**0904**E
C4ACLNR/L27050-12N	40	50	25	27	140	110	0.8	CN**1204...
C5ACLNR/L35060-12N	50	60	32	35	165	110	0.8	CN**1204...
C6ACLNR/L45065-0904N	63	65	35	45	190	110	0.8	CN**0904**E
C6ACLNR/L45065-12N	63	65	41	45	190	125	0.8	CN**1204...
C6ACLNR/L45065-16N	63	65	41	45	190	125	1.2	CN**1604...

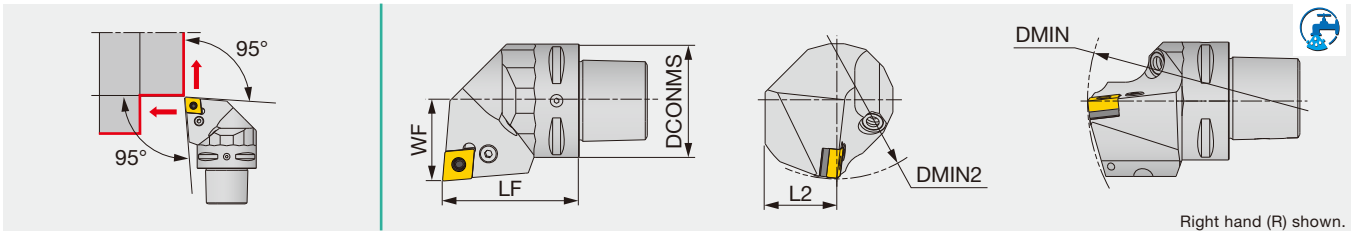
Applicable for 7 MPa coolant

SPARE PARTS

Designation	Clamp	Clamping screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench 1	Wrench 2
C*ACLN***-0904N	ACP3S-E	ACS-5W	SATZ-M10X1-5	ASC322	CSTB-3.5	BP-7	SP-2.5	-	T-15F
C*ACLN***-12N	ACP4S	ACS-5W	SATZ-M8X1-M3	ASC422	CSTB-3.5	BP-7	SP-2.5	-	T-15F
C6ACLN*45065-16N	ACP5S	ACS-6W	SATZ-M8X1-M3	ASC533	CSTB-5	BP-8.8	SP-2.5	KEYV-T20	-

C-PCLNR/L

Lever-lock toolholder, with 95° approach angle, for negative 80° rhombic inserts



Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C5PCLNR/L35060-12	50	60	32	35	-	-	0.8	CN**1204...
C5PCLNR/L35060-12N	50	60	32	35	165	110	0.8	CN**1204...
C6PCLNR/L45065-12N	63	65	41	45	190	125	0.8	CN**1204...

Applicable for 7 MPa coolant

The item without ød1 and ød2 cannot be used for boring.

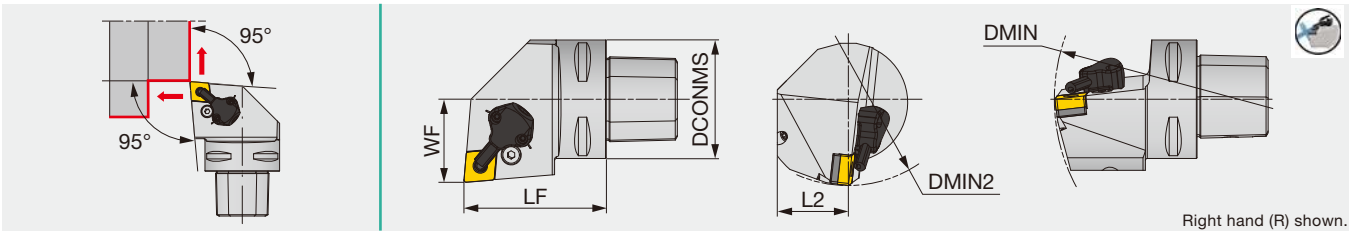
SPARE PARTS

Designation	Coolant parts	Lever	Clamping screw	Shim	Spring	Wrench
C5PCLN*35060-12	EZ104	LCL4	LCS4	LSC42	LSP4	P-3
C*PCLN***-12N	SATZ-M10X1-M5	LCL4	LCS4	LSC42	LSP4	P-3

Reference pages: C-ACLNR/L, C-PCLNR/L: Inserts → B054 -, CBN → B170 -, PCD → B188 -

C-PCLNR/L-CHP

Lever-lock toolholder, with 95° approach angle, for negative 80° rhombic inserts, with high pressure coolant capability



Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4PCLNR/L27050-0904-CHP	40	50	25	27	140	110	0.8	CN**0904...
C4PCLNR/L27050-12-CHP	40	50	25	27	140	110	0.8	CN**1204...
C5PCLNR/L35060-12-CHP	50	60	32	35	165	110	0.8	CN**1204...
C6PCLNR/L45065-0904-CHP	63	65	41	45	190	125	0.8	CN**0904...
C6PCLNR/L45065-12-CHP	63	65	41	45	190	125	0.8	CN**1204...

Applicable for 14 MPa coolant

SPARE PARTS

Designation	Shim	Clamping screw	Spring pin	Lever	Wrench
C*PCLNR/L**-12-CHP	LSC42	LCS4	LSP4	LCL4	P-3
C*PCLNR/L**0904-CHP	LSC317	LCS3	LSP3	LCL33	P-2.5

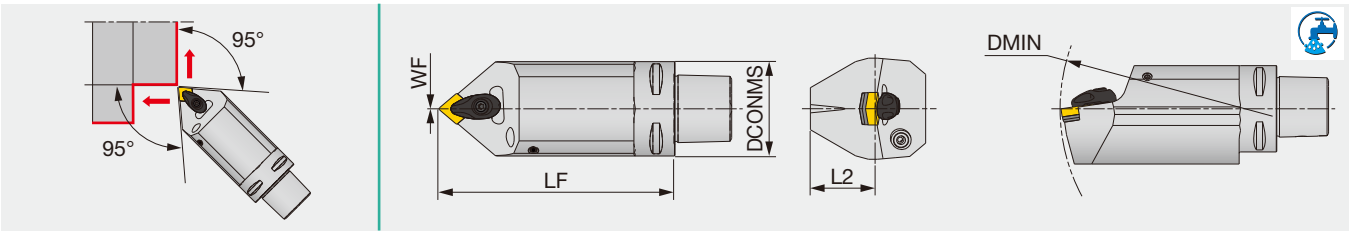
COOLANT SET

Designation	Coolant unit	Mounting screw	Wrench	O-ring
C*PCLNR/L**-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

TURNINGA

C-ACLNN

Double-clamp toolholder, with 95° approach angle, for negative 80° rhombic inserts (TurningA)



Designation	DCONMS	LF	L2	WF	DMIN	RE	Insert
C5ACLNN00090-12(1)	50	90	32	0	-	0.8	CN**1204...
C5ACLNN00090-12N(2)	50	90	32	0	165	0.8	CN**1204...
C5ACLNN00125-12(1)	50	125	32	0	-	0.8	CN**1204...
C5ACLNN00125-12N(2)	50	125	32	0	165	0.8	CN**1204...
C6ACLNN00100-12N(2)	63	100	37.5	0	190	0.8	CN**1204...
C6ACLNN00140-12N(2)	63	140	37.5	0	190	0.8	CN**1204...

The items without ød1 cannot be used for boring.
(1)Applicable for 3 MPa coolant (2)Applicable for 7 MPa coolant

SPARE PARTS

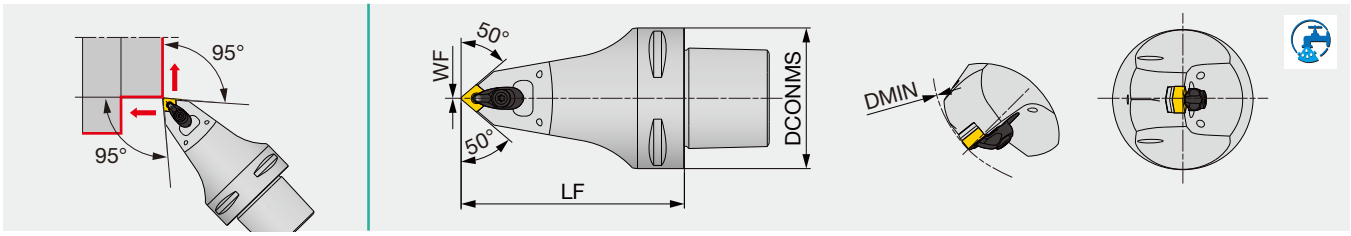
Designation	Clamp	Clamping screw	Coolant parts	Shim	Shim screw	Spring 1	Spring 2	Wrench
C5ACLNN00090-12	ACP4S	ACS-5W	EZ83	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ACLNN00090-12N	ACP4S	ACS-5W	SATZ-M8X1-M3	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ACLNN00125-12	ACP4S	ACS-5W	EZ83	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F
C*ACLNN001**-12N	ACP4S	ACS-5W	SATZ-M8X1-M3	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F

Reference pages: C-PCLNR/L-CHP, C-ACLNN: Inserts → B054 -, CBN → B170 -, PCD → B188 -

TUNGCAP TURNINGA

C-ACMNN

Double-clamp toolholder, with 50° approach angle, for negative 80° rhombic inserts



Designation	DCONMS	LF	WF	DMIN	RE	Insert
C6ACMNN00100-0904N	63	100	0	110	0.8	CN**0904**E
C6ACMNN00140-0904N	63	140	0	110	0.8	CN**0904**E
C6ACMNN00100-12N	63	100	0	110	0.8	CN**1204...
C6ACMNN00140-12N	63	140	0	110	0.8	CN**1204...

Applicable for 14 MPa coolant

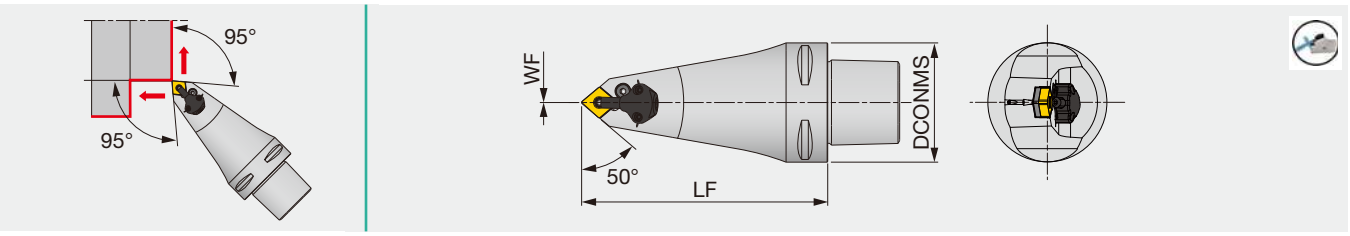
SPARE PARTS

Designation	Clamp	Clamping screw	Shim	Shim screw	Spring 1	Spring 2	Wrench
C6ACMNN001**-0904N	ACP3S-E	ACS-5W	ACS322	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ACMNN001**-12N	ACP4S	ACS-5W	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F

TUNGTURN JET

C-PCMNN-CHP

Lever-lock external turning and facing toolholder (P type)



Designation	DCONMS	LF	WF	RE	Insert
C6PCMNN00130-12-CHP	63	130	0	0.8	CN**1204...

Applicable for 14 MPa coolant

Cannot be used for boring.

SPARE PARTS

Designation	Insert	Shim	Spring pin	Lever	Clamping screw	Wrench	Coolant unit
C6PCMNN00130-12-CHP	CN**1204...	LSC42	LSP4	LCL4	LCS4	P-3	CU-CW-CHP

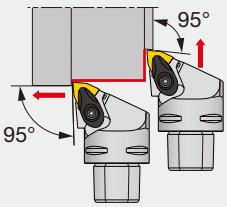
COOLANT SET

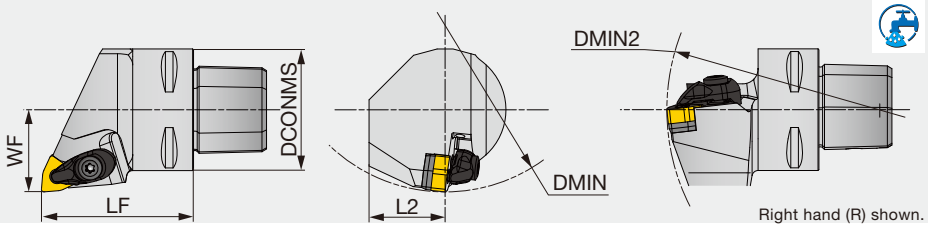
Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C6PCMNN00130-12-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

Reference pages: C-ACMNN, C-PCMNN-CHP: Inserts → B054 -, CBN → B170 -, PCD → B188 -

C-AWLNR/L

Double-clamp toolholder, with 95° approach angle, for negative 80° trigon inserts (TurningA)





Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4AWLNR/L27050-0604N	40	50	25	27	140	110	0.8	WN**0604...
C4AWLNR/L27050-08N	40	50	25	27	-	-	0.8	WN**0804...
C6AWLNR/L45065-08N	63	65	35	45	190	110	0.8	WN**0804...

Applicable for 7 MPa coolant

The items without ød1 and ød2 cannot be used for boring.

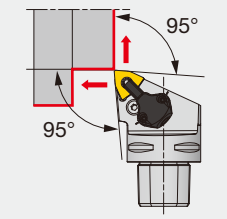
SPARE PARTS

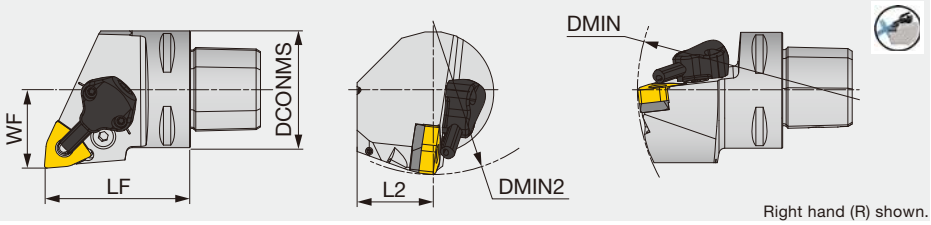
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Spring pin	Wrench
C-AWLNR/L	ACP4S	ACS-5W	ASW422	CSTB-3.5	BP-7	SP-2.5	T-15F

C-PWLNR/L-CHP

TUNGTURN JET

Lever-lock toolholder, for negative 80° trigon inserts, with high pressure coolant capability





Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4PWLNR/L27050-0604-CHP	40	50	25	27	140	110	0.8	WN**0604...
C4PWLNR/L27050-08-CHP	40	50	25	27	140	110	0.8	WN**0804...
C6PWLNR/L45065-08-CHP	63	65	41	45	190	125	0.8	WN**0804...

Applicable for 14 MPa coolant

SPARE PARTS

Designation	Shim	Clamping screw	Spring pin	Lever	Wrench
C*PWLNR/L**-08-CHP	LSW42BL	LCS4	LSP4	LCL4	P-3
C*PWLNR/L**0604-CHP	LSW312	LCS3	LSP3	LCL3	P-2.5

COOLANT SET

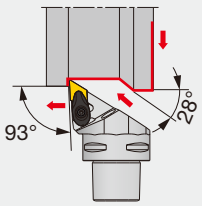
Designation	Coolant unit	Mounting screw	Wrench	O-ring
C*PWLNR/L**-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

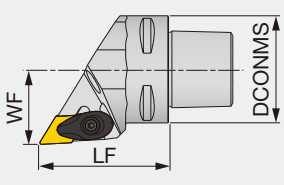
Reference pages: C-AWLNR/L, C-PWLNR/L-CHP: Inserts → B099 -, CBN → B179

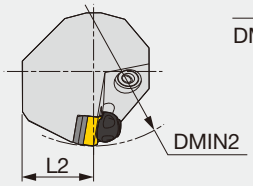
TURNINGA

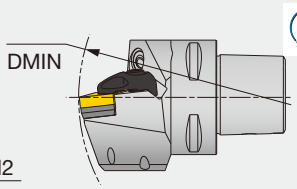
C-ADJNR/L

Double-clamp toolholder, with 93° approach angle, for negative 55° rhombic inserts (TurningA)









Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3ADJNR/L22050-1104N	32	50	20	22	121	85	0.8	DN**1104...
C4ADJNR/L27050-1104N	40	50	25	27	145	110	0.8	DN**1104...
C4ADJNR/L27050-15N	40	50	25	27	145	110	0.8	DN**15...
C5ADJNR/L35060-15N	50	60	32	35	165	110	0.8	DN**15...
C6ADJNR/L45065-1104N	63	65	35	45	190	110	0.8	DN**1104...
C6ADJNR/L45065-15N	63	65	41	45	190	110	0.8	DN**15...
C6ADJNR/L45135-15N	63	135	41	45	190	110	0.8	DN**15...

Applicable for 7 MPa coolant

SPARE PARTS

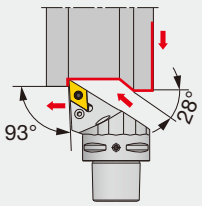
Designation	Clamp	Clamping screw	Coolant parts	Shim	Shim screw	Spring 1	Spring 2	Wrench
C4ADJN*27050-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ADJN*35060-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADJN*45065-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADJN*45135-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F

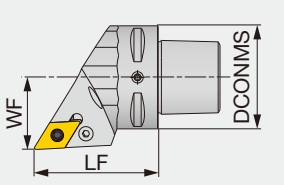
Option: ASD423 (Shim for DN**1506**)

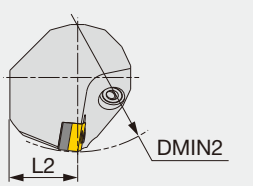
TUNGCAP

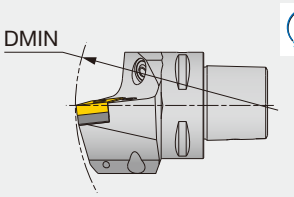
C-PDJNR/L

Lever-lock toolholder, with 93° approach angle, for negative 55° rhombic inserts









Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C5PDJNR/L35060-15N	50	60	32	35	165	110	0.8	DN**1504(06)
C6PDJNR/L45065-15N	63	65	41	45	195	95	0.8	DN**1504(06)

Applicable for 7 MPa coolant

SPARE PARTS

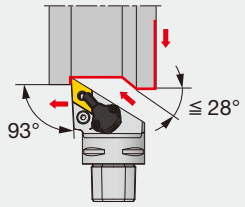
Designation	Coolant parts	Shim	Lever	Clamping screw	Spring	Wrench
C5PDJN*35060-15N	SATZ-M10X1-M5	LSD43A	LCL4	LCS4	LSP4	P-3
C6PDJN*45065-15N	SATZ-M10X1-M5	LSD43A	LCL4	LCS4	LSP4S	P-3

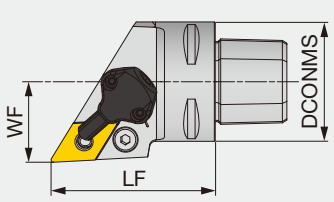
Option: LSD42A (Shim for DN**1506**), LSP4S (Spring pin for DN**1506**)

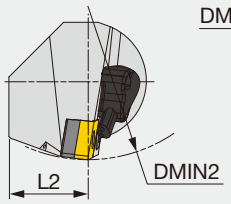
Reference pages: C-ADJNR/L, C-PDJNR/L: Inserts → B065 -, CBN → B172 -, PCD → B188 -

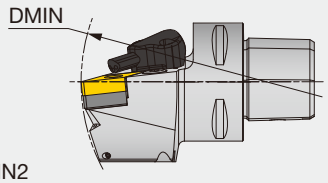
C-PDJNR/L-CHP

Lever-lock toolholder, for negative 55° rhombic inserts, with high pressure coolant capability









Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4PDJNR/L27050-1104-CHP	40	50	25	27	140	110	0.8	DN**1104...
C4PDJNR/L27050-15-CHP	40	50	25	27	140	110	0.8	DN**1504(06)...
C5PDJNR/L35060-15-CHP	50	60	32	35	165	110	0.8	DN**1504(06)...
C6PDJNR/L45065-1104-CHP	63	65	41	45	190	110	0.8	DN**1104...
C6PDJNR/L45065-15-CHP	63	65	41	45	190	110	0.8	DN**1504(06)...

Applicable for 14 MPa coolant

SPARE PARTS

Designation	Shim	Clamping screw	Spring pin	Lever	Wrench
C*PDJNR/L**-15-CHP	LSD43A	LCS4	LSP4	LCL4	P-3
C*PDJNR/L**1104-CHP	ELSD32	LCS3	LSP3	LCL33L	P-2.5

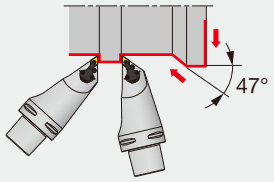
Option: LSD42A (Shim for DN**1506**), LSP4S (Spring pin for DN**1506**)

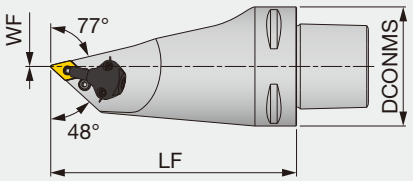
COOLANT SET

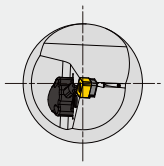
Designation	Coolant unit	Mounting screw	Wrench	O-ring
C*PDJLNR/L**-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N

C-PDMNL-CHP

Lever-lock external turning and profiling toolholder (P type)







Left hand (L) shown.

Designation	DCONMS	LF	WF	RE	Insert
C6PDMNL00130-1104-CHP	63	130	0	0.8	DN**1104...

Applicable for 14 MPa coolant

Cannot be used for boring

SPARE PARTS

Designation	Insert	Shim	Spring pin	Lever	Clamping screw	Wrench	Coolant unit
C*PDJNR/L...1104-CHP	DN**1104...	ELSD32	LSP3	LCL33L	LCS3	P-2.5	CU-D-CHP

COOLANT SET

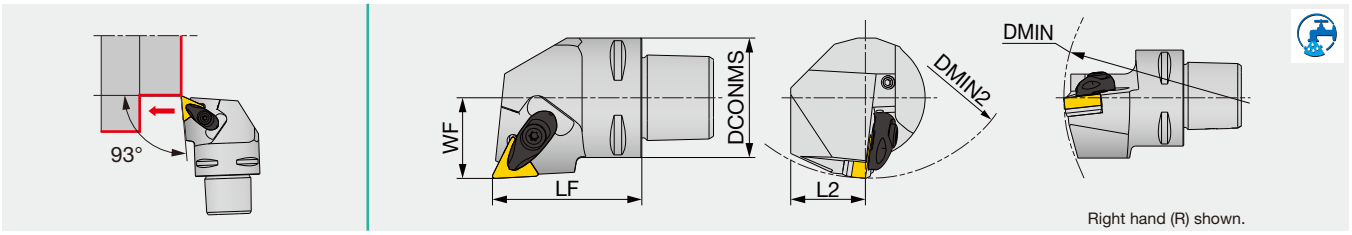
Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C6PDMNL00130-1104-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N

Reference pages: C-PDJNR/L-CHP, C-PDMNL-CHP: Inserts → B065 -, CBN → B172 -, PCD → B188 -

TUNGCAP
C-ATJNR/L

TURNINGA

Double-clamp external turning toolholder (A type)



Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4ATJNR/L27050-16N	40	50	25	27	140	110	0.8	TN**1604...

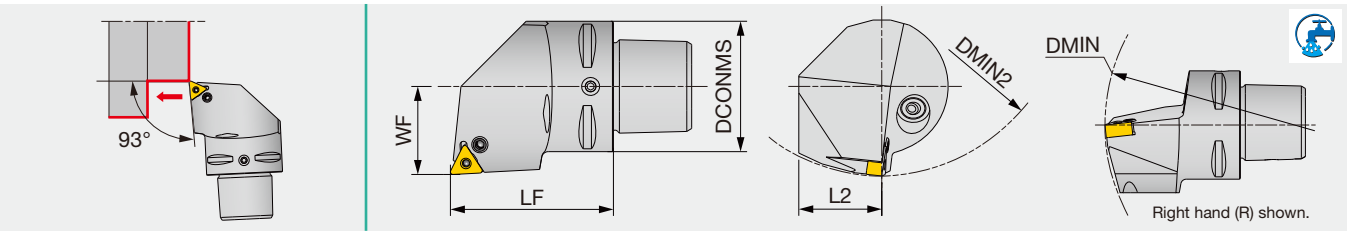
Applicable for 7 MPa coolant

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Spring pin	Wrench
C4ATJNR/L...	ACP3S	ACS-5W	AST322	CSTB-3.5	BP-7	SP-2.5	T-15F

TUNGCAP
C-PTJNR/L

Lever-lock external turning toolholder (P type)



Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4PTJNR/L27050-1104N	40	50	25	27	140	110	0.8	TN**1104**E

Applicable for 7 MPa coolant

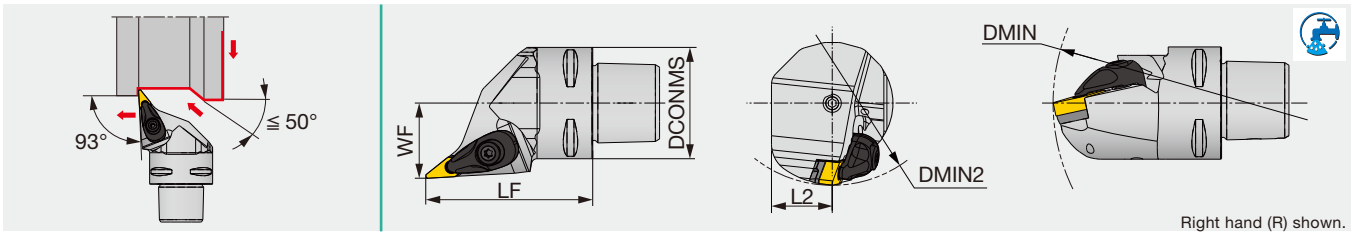
SPARE PARTS

Designation	Coolant parts	Lever	Clamping screw	Wrench
C4PTJNR/L27050-1104N	SATZ-M8X1-M3	LCL23	LCS23A	P-2.5

Reference pages
C-ATJNR/L: Inserts → B084 -, CBN → B176 -, PCD → B188 -
C-PTJNR/L: Inserts → B085 -

C-AVJNR/L

Double-clamp toolholder, with 93° approach angle. for negative 35° rhombic inserts (TurningA)



Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4AVJNR/L27060-1204N	40	60	20	27	140	55	0.8	VN**1204...
C4AVJNR/L27060-16N	40	60	25	27	140	110	0.8	VN**1604...
C6AVJNR/L45065-1204N	63	65	31.5	45	190	81	0.8	VN**1204...
C6AVJNR/L45065-16N	63	65	35	45	190	81	0.8	VN**1604...

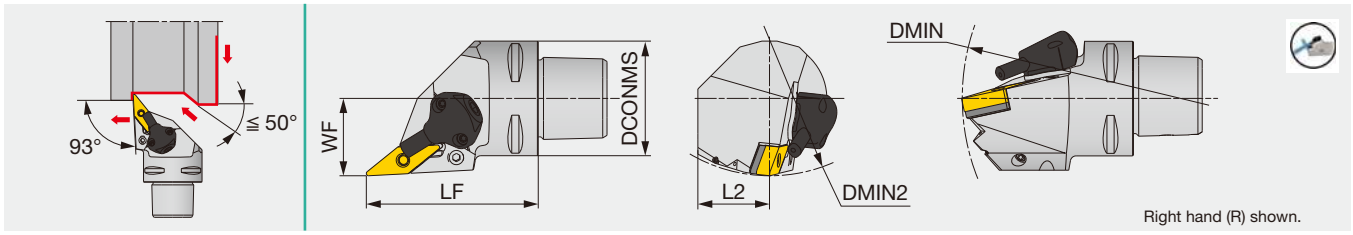
Applicable for 7 MPa coolant

SPARE PARTS

Designation	Clamp	Clamp screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench 1	Wrench 2
C4AVJNR/L...	ACP3L-E	ACS-5W	-	ASV222	CSTB-3	BP-7	SP-2.5	T-9F	T-15F
C6AVJNR/L...	ACP3L-E	ACS-5W	SATZ-M10X1-M5	ASV222	CSTB-3	BP-7	SP-2.5	T-9F	T-15F

C-PVJNR/L-CHP

Lever-lock external turning and profiling toolholder (P type)



Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4PVJNR/L27060-16-CHP	40	60	25	27	140	110	0.8	VN**1604...
C6PVJNR/L45065-16-CHP	63	65	32	45	190	81	0.8	VN**1604...

Applicable for 14 MPa coolant

SPARE PARTS

Designation	Insert	Shim	Spring pin	Lever	Clamping screw	Wrench	Coolant unit
C*PVJNR/L...16-CHP	VN**1604...	LSV317	LSP3	LCL3V	LCS3V	P-2.5	CU-V-CHP

COOLANT SET

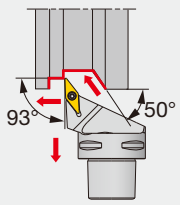
Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C*PVJNR/L...16-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N

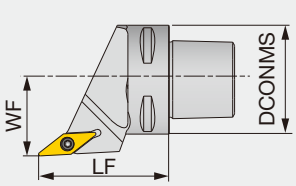
Reference pages: C-AVJNR/L, C-PVJNR/L-CHP: Inserts → B094 -, CBN → B178, PCD → B188

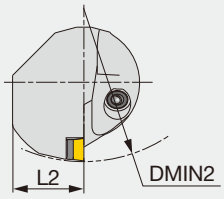
TUNGCAP

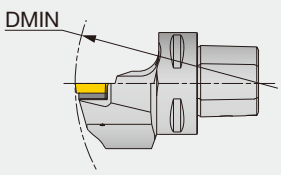
C-SVJCR/L

Screw-on toolholder, with 93° approach angle, for positive 35° rhombic inserts









Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3SVJCR/L22040-11N (2)	32	40	20	22	-	-	0.4	VC**1103...
C4SVJCR/L27050-16N (2)	40	50	25	27	140	155	0.8	VC**1604...
C5SVJCL35060-16(1)	50	60	32	35	-	-	0.8	VC**1604...
C5SVJCR/L35060-16N(2)	50	60	32	35	170	160	0.8	VC**1604...
C6SVJCR/L45065-16(1)	63	65	41	45	-	-	0.8	VC**1604...
C6SVJCR/L45065-16N(2)	63	65	41	45	170	190	0.8	VC**1604...

• The items without ød1 and ød2 cannot be used for boring
(1)Applicable for 3 MPa coolant (2)Applicable for 7 MPa coolant

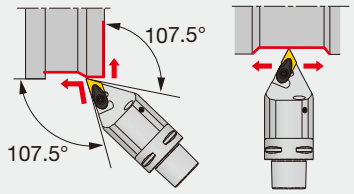
SPARE PARTS

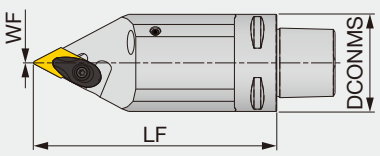
Designation	Clamping screw	Coolant parts	Shim	Shim screw	Wrench 1	Wrench 2
C5SVJC*35060-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVJC*35060-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVJC*45065-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVJC*45065-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F

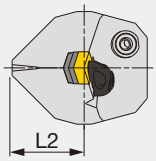
TUNGCAP TURNINGA

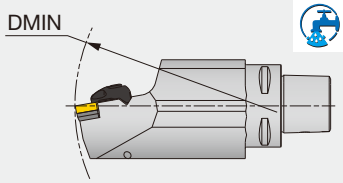
C-ADNNN

Double-clamp toolholder, with 63° approach angle, for negative 55° rhombic inserts (TurningA)









Designation	DCONMS	LF	L2	WF	DMIN	RE	Insert
C5ADNNN00090-15(1)	50	90	32	0	-	0.8	DN**1504(06)
C5ADNNN00090-15N(2)	50	90	32	0	165	0.8	DN**1504(06)
C5ADNNN00125-15(1)	50	125	32	0	-	0.8	DN**1504(06)
C5ADNNN00125-15N(2)	50	125	32	0	165	0.8	DN**1504(06)
C6ADNNN00100-15N(2)	63	100	37.5	0	190	0.8	DN**1504(06)
C6ADNNN00140-15(1)	63	140	37.5	0	-	0.8	DN**1504(06)
C6ADNNN00140-15N(2)	63	140	37.5	0	190	0.8	DN**1504(06)

• The items without ød1 cannot be used for boring
(1)Applicable for 3 MPa coolant (2)Applicable for 7 MPa coolant

SPARE PARTS

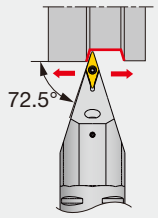
Designation	Clamp	Clamp screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench
C5ADNNN00090-15	ACP4S	ACS-5W	EZ104	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ADNNN00090-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ADNNN00125-15	ACP4S	ACS-5W	EZ104	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ADNNN00125-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADNNN00100-15	ACP4S	ACS-5W	EZ104	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADNNN00100-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADNNN00140-15	ACP4S	ACS-5W	EZ104	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADNNN00140-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F

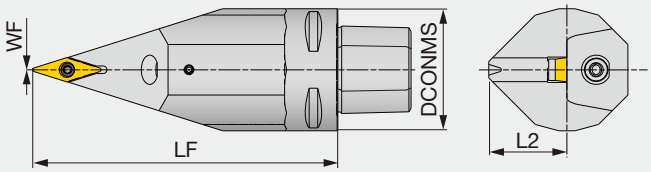
Option: ASD423 (Shim for DN**1506**)

Reference pages
C-SVJCR/L: Inserts → B153 -, CBN → B186, PCD → B190 -
C-ADNNN: Inserts → B065 -, CBN → B172 -, PCD → B188 -

C-SVVCN

Screw-on toolholder, with 72.5° approach angle, for positive 35° rhombic inserts





Designation	DCONMS	LF	L2	WF	RE	Insert
C5SVVCN00090-16(1)	50	90	32	0	0.8	VC**1604...
C5SVVCN00090-16N(2)	50	90	32	0	0.8	VC**1604...
C5SVVCN00125-16(1)	50	125	32	0	0.8	VC**1604...
C5SVVCN00125-16N(2)	50	125	32	0	0.8	VC**1604...
C6SVVCN00100-16N(2)	63	100	37.5	0	0.8	VC**1604...
C6SVVCN00140-16N(2)	63	140	37.5	0	0.8	VC**1604...

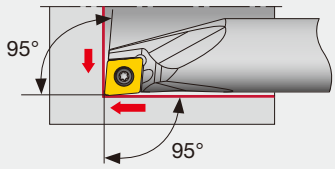
(1)Applicable for 3 MPa coolant (2)Applicable for 7 MPa coolant

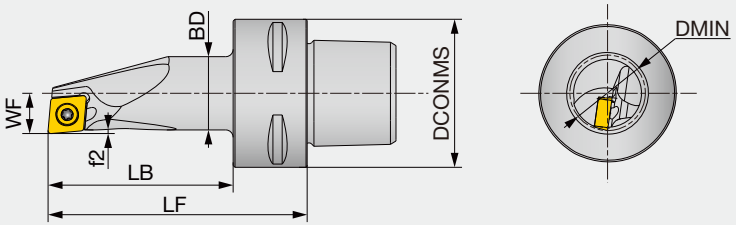
SPARE PARTS

Designation	Clamping screw	Coolant parts	Shim	Shim screw	Wrench 1	Wrench 2
C5SVVCN00090-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVVCN00090-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVVCN00125-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVVCN00125-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVVCN00100-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVVCN00100-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVVCN00140-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVVCN00140-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F

C-SCLCR

Screw-on internal turning and facing toolholder (S type)





Designation	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C3SCLCR11070-09	22	32	19.8	70	52	11	1.0	0.8	CC**09...
C4SCLCR11070-09	22	40	19.8	70	47	11	1.0	0.8	CC**09...

Applicable for 14 MPa coolant

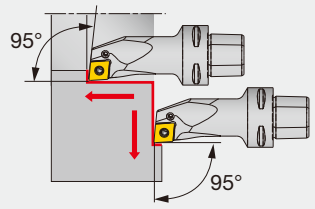
Note: Use right-hand toolholders (R) with left-hand inserts (L).

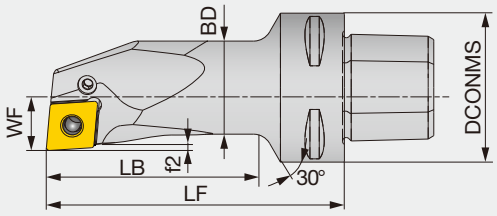
Reference pages
C-SVVCN: Inserts → B153 -, CBN → B186, PCD → B190 -
C-SCLCR: Inserts → B109 -, CBN → B180, PCD → B190 -

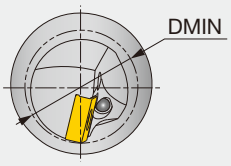
TUNGCAP

C-PCLNR/L-IN

Lever-lock boring bar, for negative 80° rhombic inserts







Right hand (R) shown.

Designation	DMIN	DCONMS	BD	LB	LF	WF	f2	RE	Insert
C3PCLNR17090-12	32	32	25	90	71	17	1.6	0.8	CN**1204...
C4PCLNR17090-0904	32	40	25	90	63	17	1.3	0.8	CN**0904**E
C4PCLNR/L17080-12	32	40	25	80	58.5	17	1.6	0.8	CN**1204...
C4PCLNR22110-0904	40	40	32	110	86.5	22	1.3	0.8	CN**0904**E
C4PCLNR27120-0904	50	40	39.5	120	100	27	1.7	0.8	CN**0904**E

Applicable for 10 MPa coolant

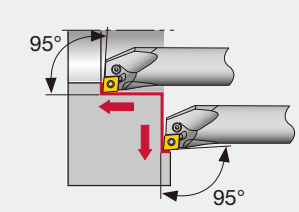
SPARE PARTS

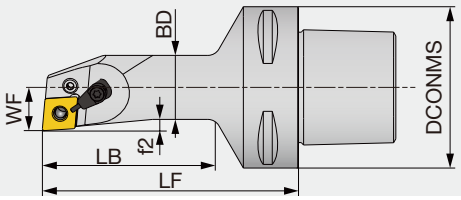
Designation	Lever	Clamping screw	Wrench
C-PCLNR/L-IN	LCL43N	LCS43	P-2.5

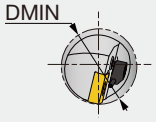
TUNGTURN JET

C-PCLNR/L-CHP

Lever-lock internal turning and facing toolholder (P type)







Right hand (R) shown.

Designation	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C6PCLNL17100-12-CHP	32	63	25	100	67.5	17	4.5	0.8	CN**1204...

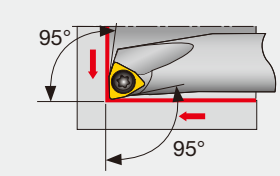
SPARE PARTS

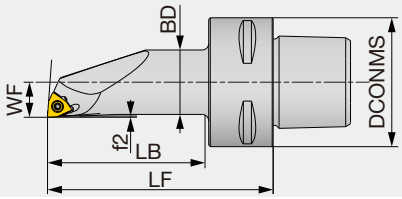
Designation	Clamping screw	Coolant unit	Wrench	Lever
C6PCLNL17100-12-CHP	LCS43	S-CU-CHP	P-2.5F	LCL43N

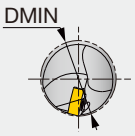
MINIFORCE TURN

C-SWLXR/L

Screw-on internal turning and facing toolholder (S type)







Right hand (R) shown.

Designation	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C4SWLXR11070-04	22	40	20	70	47	11	0.4	0.4	WXGU0403**L...

Applicable for 14 MPa coolant

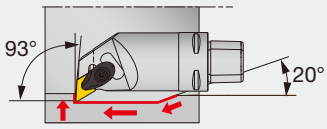
SPARE PARTS

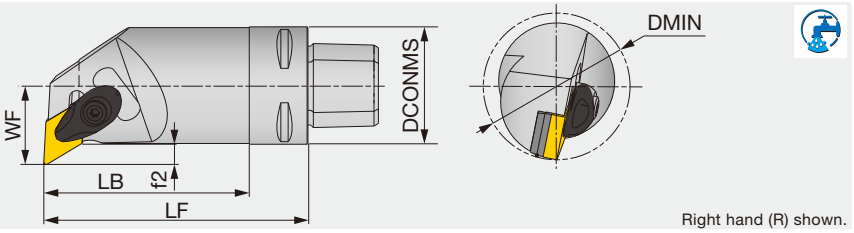
Designation	Insert	Clamping screw	Wrench
C4SWLXR	WXGU0403...	SR34-514	T-7F

Reference pages C-PCLNR/L-IN, C-PCLNR/L-CHP: Inserts → B054 -, CBN → B170 -, PCD → B188 -
C-SWLXR/L: Inserts → B158 -

C-ADUNR/L

Double-clamp boring bar, for negative 55° rhombic inserts (TurningA)





Right hand (R) shown.

Designation	DMIN	DCONMS	LF	LB	WF	f2	RE	Insert
C4ADUNR20070-15	38	40	70	50	20	5	0.8	DN**1504...
C4ADUNR27090-15	50	40	90	-	27	7	0.8	DN**1504...

Applicable for 10 MPa coolant

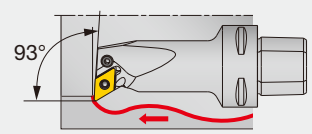
SPARE PARTS

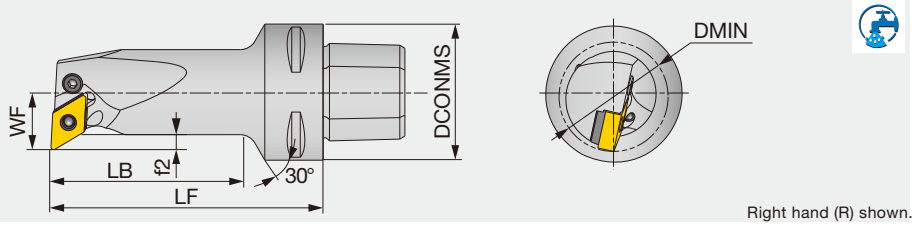
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Spring pin	Wrench
C-ADUNR/L	ACP4S	ACS-5W	ASD423(04)	CSTB-3.5	BP-7	SP-2.5	T-15F

Option: ASD423 (Shim for DN**1506**)

C-PDUNR/L

Lever-lock boring bar, for negative 55° rhombic inserts





Right hand (R) shown.

Designation	DMIN	DCONMS	LF	LB	WF	f2	RE	Insert
C4PDUNR/L17080-11	32	40	80	58.5	17	4.4	0.8	DN**1104...

Applicable for 10 MPa coolant

SPARE PARTS

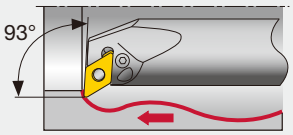
Designation	Lever	Clamping screw	Shim	Spring	Wrench
C4PDUNR17080-11	LCL33L	LCS3	ELSD317BR	LSP3	P-2.5
C4PDUNL17080-11	LCL33L	LCS3	ELSD317BL	LSP3	P-2.5

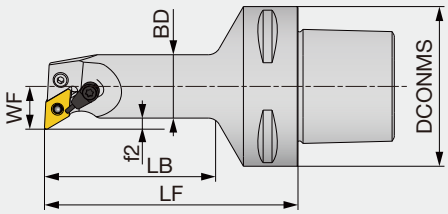
Reference pages
C-ADUNR/L: Inserts → B065 -, CBN → B172 -, PCD → B188 -
C-PDUNR/L: Inserts → B066 -

TUNGCAP
C-PDUNR/L

TUNGTURN JET

Lever-lock internal turning and profiling toolholder (P type)







Right hand (R) shown.

Designation	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C6PDUNL17100-1104-CHP	32	63	25	100	67.5	17	4.5	0.8	DN**1104...

Applicable for 14 MPa coolant

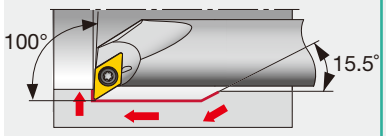
SPARE PARTS

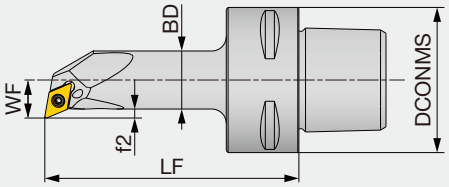
Designation	Shim	Clamping screw	Coolant unit	Wrench	Spring pin	Lever
C6PDUNL17100-1104-CHP	ELSD317BL	LCS43	S-CU-CHP	P-2.5	LSP3	LCL33L

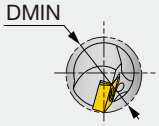
TUNGCAP
C-SDXXR

MINIFORCE TURN

Screw-on internal turning and facing toolholder (S type)







Right hand (R) shown.

Designation	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C3SDXXR11065-07	20	32	16	65	45	10.6	2.5	0.4	DXGU0703**L...
C3SDXXR13080-07	24	32	20	80	62	12.6	2.5	0.4	DXGU0703**L...
C4SDXXR11070-07	20	40	16	70	46	10.6	2.5	0.4	DXGU0703**L...
C4SDXXR13080-07	24	40	20	80	58	12.6	2.5	0.4	DXGU0703**L...

Applicable for 14 MPa coolant

Note: Use right-hand toolholders (R) with left-hand inserts (L).

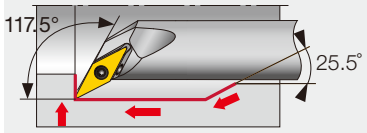
SPARE PARTS

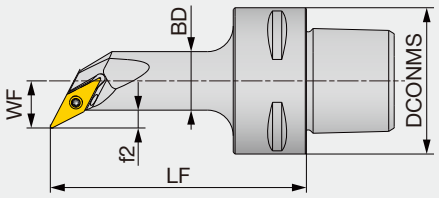
Designation	Insert	Clamping screw	Wrench
C*DXXXR	DXGU0703...	SR34-514	T-7F

Reference pages C-PDUNR/L: Inserts → B055 -
C-SDXXR: Inserts → B127

C-SVQBR/L

Screw-on internal turning and facing toolholder (S type)







Right hand (R) shown.

Designation	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C3SVQBR13065-11	21.5	32	16	65	45	13	4.9	0.4	VB**11...
C3SVQBR15080-11	25.5	32	20	80	59	15	4.9	0.4	VB**11...
C3SVQBR18090-16	30.5	32	25	90	71	17.5	4.9	0.8	VB**16...
C4SVQBR13070-11	21.5	40	16	70	43	13	4.9	0.4	VB**11...
C4SVQBR15080-11	25.5	40	20	80	52	15	4.9	0.4	VB**11...
C4SVQBR18095-16	30.5	40	25	95	68	17.5	4.9	0.8	VB**16...

Applicable for 14 MPa coolant

SPARE PARTS FOR S TYPE

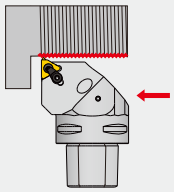


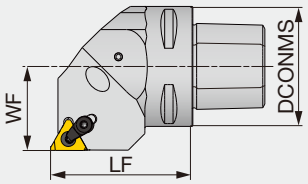


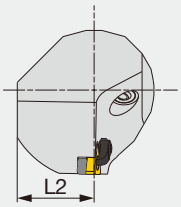
Designation	Insert	Clamping screw	Wrench
C*SVQBR-11	VB**1103...	CSTB-2.5	T-6F
C*SVQBR-16	VB**1604...	CSTB-3.5	T-15F

C-CER/L

External threading toolholder, alternative clamping of screw-on or clamp-on (TungThread)







Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	Insert
C3CER/L22040-16ERN(2)	32	40	20	22	16ER/L
C4CER/L27050-16ERN(2)	40	50	25	27	16ER/L...
C5CEL35060-16ER(1)	50	60	32	35	16ER/L...
C5CER/L35060-16ERN(2)	50	60	32	35	16ER/L...
C6CEL45065-16ER(1)	63	65	41	45	16ER/L...
C6CER/L45065-16ERN(2)	63	65	41	45	16ER/L...

(1)Applicable for 3 MPa coolant (2)Applicable for 7 MPa coolant

SPARE PARTS















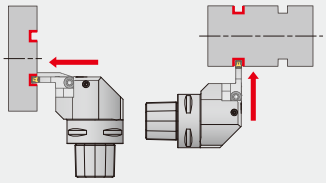
Designation	Shim	Shim screw	Clamp screw	Clamping screw	Wrench 1	Wrench 2	Coolant parts
C*CER/L*****-16ER...	A16-1DT	DTS5-3.5	CSTB-3.5ST	CSP16	T-15F	P-3.5	(1) EZ104
C*CER/L*****-16ER...	A16-1DT	DTS5-3.5	CSTB-3.5ST	CSP16	T-15F	P-3.5	(2) SATZ-M10X1-M5

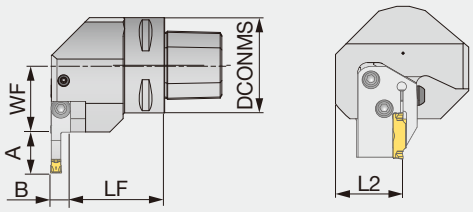
Reference pages
C-SVQBR/L: Inserts → B150 -, CBN → B186
C-CER/L: Inserts → E010 -

TUNGCAP C-CHFVR/L

TUNGCUT

Shank for CAER/L and CAFR/L blades (TungCut)





Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	A	B
C3CHFVR/L22040N	32	32.5	35	22	*Table:	*Table:
C4CHFVR/L27050N	40	42.5	36	27	*Table:	*Table:
C5CHFVR/L35060N	50	49.5	36	35	*Table:	*Table:
C6CHFVR/L45065N	63	54.5	41	45	*Table:	*Table:

Applicable for 7 MPa coolant
See the table below for the offset dimensions.

SPARE PARTS

Designation	Coolant parts1	Coolant parts2	Clamping screw	Wrench
C5CHFV*35060N	SATZ-M10X1-M5	-	CSHB-6-A	P-4
C6CHFV*45065	CNZ125	PNZ5	CSHB-6-A	P-4
C6CHFV*45065N	SATZ-M10X1-M5	-	CSHB-6-A	P-4

Combination of blade and toolholder

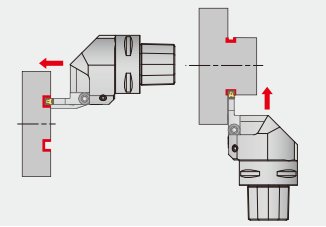
holder	blade			
	CAER...	CAEL...	CAFR...	CAFL...
C*CHFVR...	–	●	●	–
C*CHFVL...	●	–	–	●

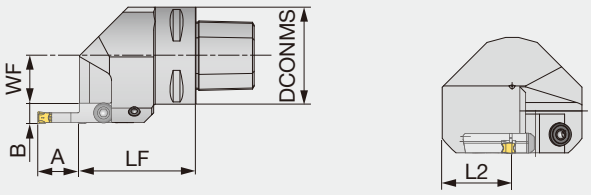
I: Corresponding

TUNGCAP C-CHSR/L

TUNGCUT

Shank for CAER/L and CAFR/L blades (TungCut)





Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	A	B
C3CHSR/L22050N	32	50	35	11.5	*Table:	*Table:
C4CHSR/L27050N	40	50	36	16.5	*Table:	*Table:
C5CHSR/L35060N	50	60	36	24.5	*Table:	*Table:
C6CHSR/L45065N	63	65	41	34.5	*Table:	*Table:

Applicable for 7 MPa coolant
See the table below for the offset dimensions.

SPARE PARTS

Designation	Coolant parts1	Coolant parts2	Clamping screw	Wrench
C4CHS*27050N	SATZ-M8X1-M3	-	CSHB-6-A	P-4
C5CHS*35060	CNZ125	PNZ5	CSHB-6-A	P-4
C*CHS**506*N	SATZ-M10X1-M5	-	CSHB-6-A	P-4

Combination of blade and toolholder

holder	blade			
	CAER...	CAEL...	CAFR...	CAFL...
C*CHSR...	●	–	–	●
C*CHSL...	–	●	●	–

I: Corresponding

*Table: Off set dimensions for blade

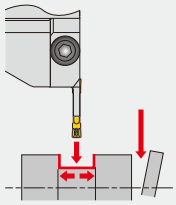
Application	blade	A	B
For external grooving	CAER/L-3T16	16	10.4
	CAER/L-4T16	16	10.5
	CAER/L-5T20	20	10.5
	CAER/L-6T20	20	10.5
For face grooving	CAFR/L-3T12-*	12	10.4
	CAFR/L-4T16-*	16	10.5
	CAFR/L-5T20-*	20	10.5
	CAFR/L-6T20-*	25	10.5

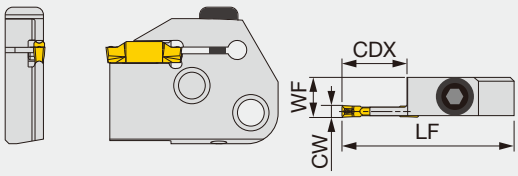
TUNGCAP

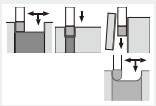
TUNGCUT

CAER/L

Blade for external grooving and turning







Insert
DGS, SGS, DGM, SGM, DTX, DTE, DGG, DTR, SGN, DTM

Right hand (R) shown.

Designation	CW	Seat size	CDX	LF	WF	Shank
CAER/L-3T16	3	3	16	45	10.4	C*CHSR/L, C*CHFVL/R
CAER/L-4T16	4	4	16	45	10.5	C*CHSR/L, C*CHFVL/R
CAER/L-5T20	5	5	20	49	10.5	C*CHSR/L, C*CHFVL/R
CAER/L-6T20	6	6	20	49	10.5	C*CHSR/L, C*CHFVL/R

SPARE PARTS





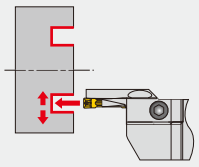
Designation	Clamping screw	Wrench
CAER/L	BHM6-20-A	P-4

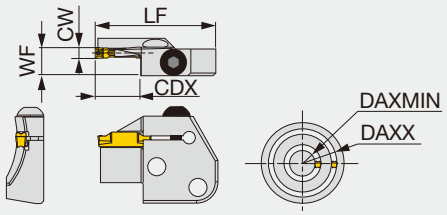
TUNGCAP

TUNGCUT

CAFR/L

Blade for face grooving and turning







Insert
CAFR/L-3T12-040055:DTF
Seat size 3(2)-6:DTF(3), DTE, DGG, DTX, DGS, DGM, DTR, DTM
Shank
CHFVR/L, CHSR/L

Right hand (R) shown.

Designation	CW	DAXMIN	DAXX	Seat size	CDX	LF	WF (1)
CAFR/L-3T12-040055	3	40	55	3	12	45	10.4
CAFR/L-3T12-055075	3	55	75	3	12	45	10.4
CAFR/L-3T12-075100	3	75	100	3	12	45	10.4
CAFR/L-3T12-100140	3	100	140	3	12	45	10.4
CAFR/L-3T12-140200	3	140	200	3	12	45	10.4
CAFR/L-4T16-050070	4	50	70	4	16	45	10.5
CAFR/L-4T16-070100	4	70	100	4	16	45	10.5
CAFR/L-4T16-100150	4	100	150	4	16	45	10.5
CAFR/L-4T16-150250	4	150	250	4	16	45	10.5
CAFR/L-5T20-055080	5	55	80	5	20	49	10.5
CAFR/L-5T20-080120	5	80	120	5	20	49	10.5
CAFR/L-5T20-120180	5	120	180	5	20	49	10.5
CAFR/L-5T20-180300	5	180	300	5	20	49	10.5
CAFR/L-5T20-300000	5	300	∞	5	20	49	10.5
CAFR/L-6T25-060090	6	60	90	6	25	55	10.5
CAFR/L-6T25-090150	6	90	150	6	25	55	10.5
CAFR/L-6T25-150250	6	150	250	6	25	55	10.5
CAFR/L-6T25-250400	6	250	400	6	25	55	10.5

When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert.
(1) WF is calculated with the groove width CW in the above table.
(2) Not applicable to CAFR/L-3T12-040055
(3) Seat sizes of DTF are only 3 and 4.

SPARE PARTS





Designation	Clamping screw	Wrench
CAFR/L...	BHM6-20-A	P-4

Minimum machining diameter in face grooving with each insert

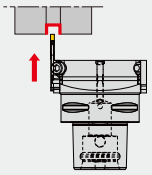
Insert	øDm	Note
DTE 3 / DGS 3 / DGM 3	ø92	When the machining diameter is smaller than øDm, please use DTF or DTX.
DTE 4 / DGS 4 / DGM 4	ø42	
DTE 5 / DGS 5 / DGM 5	ø64	
DTE 6 / DGS 6 / DGM 6	ø61	

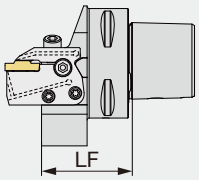
Reference pages: CAER/L: Inserts → F021 - CAFR/L: Inserts → F129 -

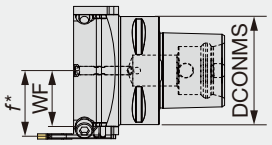
TUNGCAP C-CHSN-CHP

TUNGCUT

Adapter for blades with high pressure coolant capability (TungCap)







f* = Shank(WF) + Blade(WF)

Designation	DCONMS	LF	WF	blade
C4CHSN21047-CHP	40	46.5	21	CAER/L...-CHP
C5CHSN26047-CHP	50	47	26	CAER/L...-CHP
C6CHSN33050-CHP	63	50	32.5	CAER/L...-CHP

•When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert

SPARE PARTS

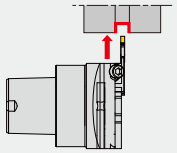
Designation	Clamping screw1	Clamping screw2	Clamping screw3	Wrench 1	Wrench 2	O-ring
C*CHSN...-CHP	SRM5-04451	SRM6X12DIN6912	SRM6X20-XT	T-20/5	HW5.0	OR5X1N

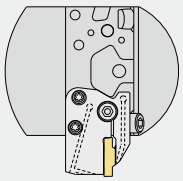
Please see the page L041 for the cautions in mounting/dismounting blades and inserts.

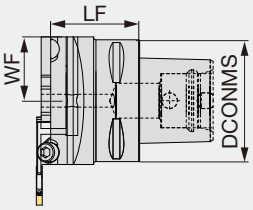
TUNGCAP C-CHFVN-CHP

TUNGCUT

Adapter for blades with high pressure coolant capability (TungCap)







Designation	DCONMS	LF	WF	blade
C4CHFVN26046-CHP	40	46	26	CAER/L...-CHP
C5CHFVN26046-CHP	50	46	26	CAER/L...-CHP
C6CHFVN33046-CHP	63	46	33	CAER/L...-CHP

• When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert

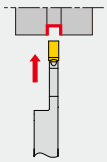
SPARE PARTS

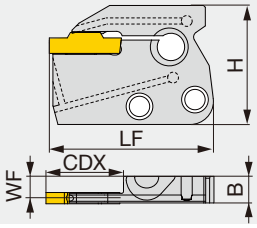
Designation	Clamping screw1	Clamping screw2	Clamping screw3	Wrench 1	Wrench 2	O-ring
C*CHFVN...-CHP	SRM5-04451	SRM6X12DIN6912	SRM6X20-XT	T-20/5	HW5.0	OR5X1N

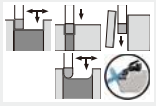
TUNGCAP CAER/L-CHP

TUNGCUT

Modular-type external grooving and parting blade, with high pressure coolant capability







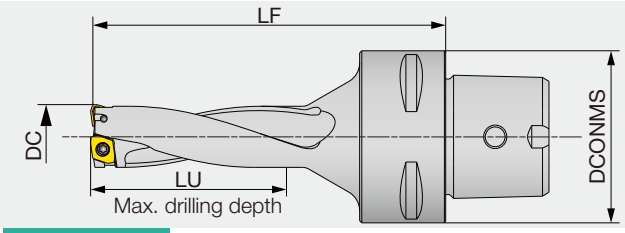
Insert
DGS,SGS,DGM, SGM,DTX,DTE, DGG,DTR,SGN, DTM, DGL

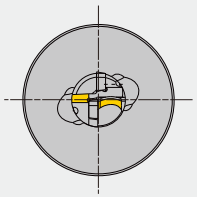
Right hand (R) shown.

Designation	CW	Seat size	CDX	WF	H	LF	B
CAER/L-3T20-CHP	3	3	20	6	33	45.5	7.2
CAER/L-4T20-CHP	4	4	20	5.7	33	45.5	7.2

• When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert

Reference pages: CAER/L-CHP: Inserts → F021 -





Designation	DC	DCONMS	LF	LU	Max. offset(radial)	Insert
C4TDX150L082-3	15	40	82	45.5	0.9	XPMT050204R-D*
C4TDX200L101-3	20	40	101	60.5	0.5	XPMT06X308R-D*
C4TDX250L125-3	25	40	125	75.6	0.4	XPMT07H308R-D*
C4TDX300L139-3	30	40	139	90.7	0.7	XPMT08T308R-D*
C6TDX200L101-3	20	63	101	60.5	0.5	XPMT06X308R-D*
C6TDX250L121-3	25	63	121	75.6	0.4	XPMT07H308R-D*
C6TDX300L139-3	30	63	139	90.7	0.7	XPMT08T308R-D*
C6TDX350L159-3	35	63	159	106.1	1.8	XPMT110412R-D*
C6TDX400L177-3	40	63	177	121.1	0.5	XPMT110412R-D*

Applicable for 14 MPa coolant

SPARE PARTS




Designation	Clamping screw	Wrench
C4TDX150L082-3	CSTB-2L040	T-6D
C4TDX200L101-3	CSTB-2.2R	T-7D
C4TDX250L125-3	CSTB-2.5	T-8D
C4TDX300L139-3	CSTB-3	T-9D
C6TDX200L101-3	CSTB-2.2R	T-7D
C6TDX250L121-3	CSTB-2.5	T-8D
C6TDX300L139-3	CSTB-3	T-9D
C6TDX350L159-3	CSTB-4	T-15D
C6TDX400L177-3	CSTB-4	T-15D

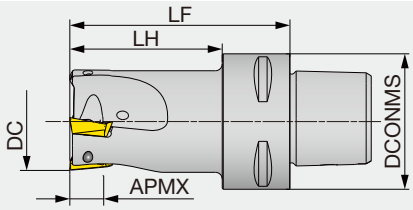
Reference pages: C-TDX: Inserts → J086

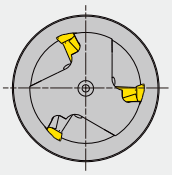
TUNGCAP

TUNG-TRI

TungCap C-EPA

Square shoulder milling





Designation	DC	APMX	DCONMS	CICT	LF	LH	Air hole	Insert
C4EPA10M032R03L065	32	10	40	3	65	45	with	TOMT1004...
C4EPA10M035R03L065	35	10	40	3	65	45	with	TOMT1004...
C6EPA15M040R03L080	40	15	63	3	80	58	with	TOMT1506...
C6EPA15M040R03L080	63	15	63	3	80	58	with	TOMT1506...

Applicable for 14 MPa coolant

SPARE PARTS

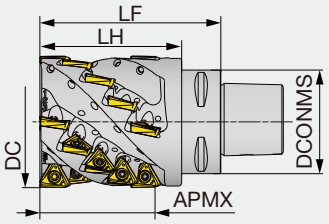
Designation	Clamping screw	Torx bit Grip	Grip
C4EPA10M0**R03L065	SR14-562/S	BLDT10/S7	SW6-SD
C6EPA15M040R03L080	TS45120I	BT20S	H-TB2W

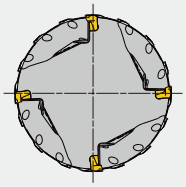
TUNGCAP

TUNG-TRI

TungCap C-TLA

Square shoulder milling (for large depth of cut)





Designation	DC	APMX	DCONMS	ZEFP	CICT	LF	LH	Air hole	Insert
C6TLA15M063R03L100	63	55	63	12	3	100	78	with	TOMT1506...
C6TLA15M080R04L110	80	70	63	20	4	110	86.2	with	TOMT1506...

Applicable for 14 MPa coolant

SPARE PARTS

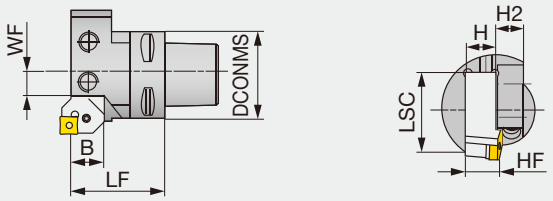
Designation	Clamping screw	Torx bit Grip	Grip
C6TLA15M0**R0*L1**	TS45120I	BT20S	H-TB2W

Reference pages: C-EPA, C-TLA: Inserts → H129

TUNGCAP

C-ADER/L

Adapter for square shank toolholders



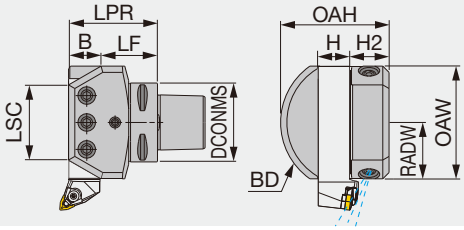
Left hand (L) shown

Designation	DCONMS	WF	LF	B	HF	H2	H	LSC
C3ADE-16R/L	32	17	45	16	16	26	16	45
C4ADE-20R/L	40	8	49.2	20	20	26	20	57
C5ADE-20R/L	50	8	55.2	20	20	20	20	57

Regular shank should be shortened.
Applicable for 10 MPa coolant

C-ASHA

Adapter for square shank toolholders



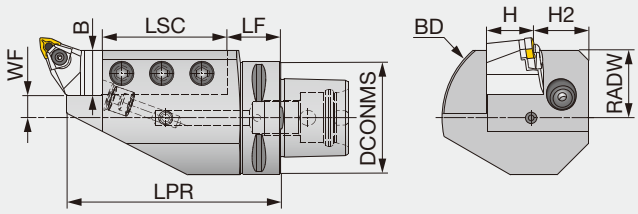
Designation	DCONMS	H	B	LPR	LSC	LF	RADW	OAW	H2	OAH	BD
C5ASHA20	50	20	20	58	46	38	38	76	31.5	76.5	90
C6ASHA20	63	20	20	60	46	40	38	76	31.5	76.5	90
C6ASHA25	63	25	25	71	61	46	45	90	31.6	86.5	110

Applicable for 10 MPa coolant

TUNGCAP

C-ASHR/L

Adapter for square shank toolholders



Left hand (L) shown

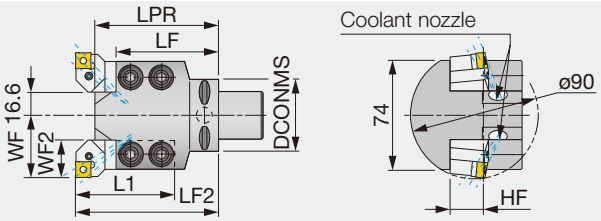
Designation	DCONMS	LPR	LSC	LF	WF	H	B	H2	RADW	BD
C5ASHR/L201	50	98	63.5	24.5	10	20	20	33	30	90
C6ASHR251-J	63	120	82	38	-	25	25	31.5	29.5	90
C6ASHL251	63	120	70	30	13	25	25	32	38	100
C8ASHR/L32-1	80	140	90	40	8	32	32	32	40	110

Regular shank should be shortened.
Applicable for 10 MPa coolant

TUNGCAP

C-ADES

Adapter for square shank toolholders

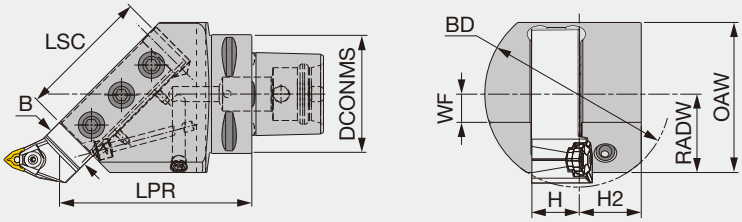


Designation	DCONMS	WF	LF2	LPR	LF	HF	WF2	L1
C4ADES-20	40	41.6	98	85	71	20	25	67
C5ADES-20	50	41.6	98	85	71	20	25	67

Regular shank should be shortened.
Applicable for 10 MPa coolant

C-ASHR/L-45

Adapter for square shank toolholders (with 45° slanted)



Right hand (R) shown

Designation	DCONMS	H	B	LSC	LPR	H2	RADW	OAW	WF	BD
C5ASHR/L20-45	50	20	20	-	96.3	26	36	67.5	15	72
C6ASHR/L20-45	63	20	20	70	98.3	26	36	67.5	15	72
C6ASHR/L25-45	63	25	25	70	101.3	33	41.6	79.6	15	100

Regular shank should be shortened.
Applicable for 10 MPa coolant

C-ABB

Adapter for boring bars

Fig. 1

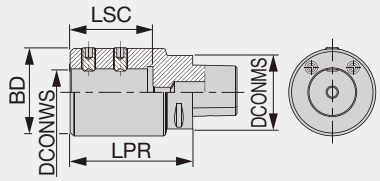


Fig. 2

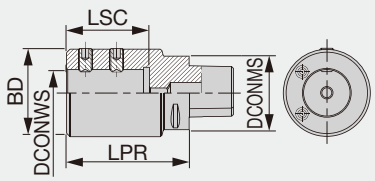
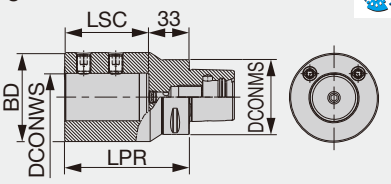


Fig. 3



Designation	DCONMS	DCONWS	BD	LPR	LSC	Fig.
C4ABB-25-60	40	25	63	100	60	2
C5ABB-25-60	50	25	63	100	60	2
C6ABB-25-60C*	63	25	63	95	60	1
C6ABB-40-70C*	63	40	75	105	71	3
C8ABB25-60	80	25	63	100	60	2
C8ABB40-72	80	40	75	105	71	2

Use the appropriate outlet screw according to the tool setup.
Applicable for 7 MPa coolant

SPARE PARTS

Designation	Clamp screw		Coolant outlet screw for internal supply	Coolant outlet screw for external supply
	Used on A-type sleeves	Used on B-type sleeves		
C…ABB-25-60/C	SRM10X20DIN915	SRM10X12DIN1835-B	SRM10X6DIN913	SRM6X8DIN913
C6ABB-40-70/C	SRM12X20DIN915	SRM12X16DIN1835-B	SRM10X6DIN913	SRM6X8DIN913
C8ABB25-60	SRM10X20DIN915	SRM10X12DIN1835-B	SRM10X6DIN913	-
C8ABB40-72	SRM12X20DIN915	SRM12X16DIN1835-B	SRM10X6DIN913	-

SC

Sleeve for C-ABB adapter

Fig. A

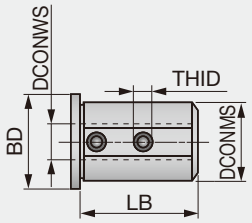
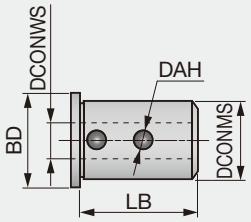


Fig. B

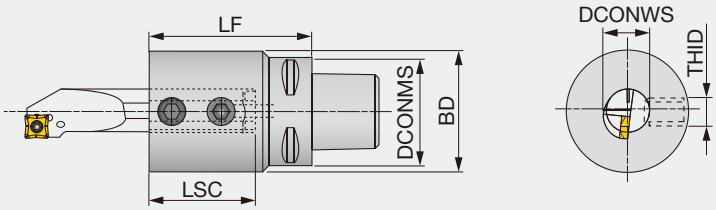


Designation	DCONMS	DCONWS	BD	LB	THID	DAH	Fig.
SC25T6A	25	6	31	56	M6	-	A
SC25T8A	25	8	31	56	M8	-	A
SC25T10A	25	10	31	56	M8	-	A
SC25T12A	25	12	31	56	M8	-	A
SC25T16B	25	16	31	56	-	12	B
SC25T20B	25	20	31	56	-	12	B
SC40T6A	40	6	46	58	M6	-	A
SC40T8A	40	8	46	58	M6	-	A
SC40T10A	40	10	46	58	M8	-	A
SC40T12A	40	12	46	58	M8	-	A
SC40T16B	40	16	46	58	-	15	B
SC40T20B	40	20	46	58	-	15	B
SC40T25B	40	25	46	58	-	15	B
SC40T32B	40	32	46	58	-	15	B

TUNGCAP

C-ADI

Adapter for boring bars

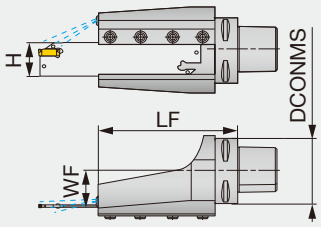


Designation	DCONMS	LF	LSC	DCONWS	BD	THID
C3ADI10	32	50	20	10	36	M6
C3ADI12	32	50	21.5	12	36	M8
C3ADI16	32	50	29.5	16	36	M8
C4ADI10	40	50	20	10	36	M6
C4ADI12	40	50	24	12	36	M8
C4ADI16	40	50	32	16	36	M8
C4ADI20	40	60	35	20	36	M10
C4ADI25	40	70	45	25	54	M12
C5ADI10	50	60	26	10	36	M6
C5ADI12	50	60	26	12	36	M8
C5ADI16	50	60	32	16	36	M8
C5ADI20	50	60	40	20	36	M10
C5ADI25	50	70	50	25	54	M12
C5ADI32	50	100	76	32	68	M12
C6ADI12	63	65	36	12	36	M8
C6ADI16	63	65	36	16	36	M8
C6ADI20	63	65	40	20	36	M10
C6ADI25	63	76	51	25	54	M12
C6ADI32	63	100	76	32	68	M12
C6ADI40	63	100	76	40	98	M12
C6ADI50	63	115	86	50	98	M12
C8ADI12	80	70	36	12	36	M8
C8ADI16	80	70	36	16	36	M8
C8ADI20	80	70	40	20	36	M10
C8ADI25	80	80	51	25	54	M12
C8ADI32	80	110	86	32	68	M12
C8ADI40	80	115	86	40	98	M12
C8ADI50	80	115	86	50	98	M12

Applicable for 7 MPa coolant

C-TBK-R/L

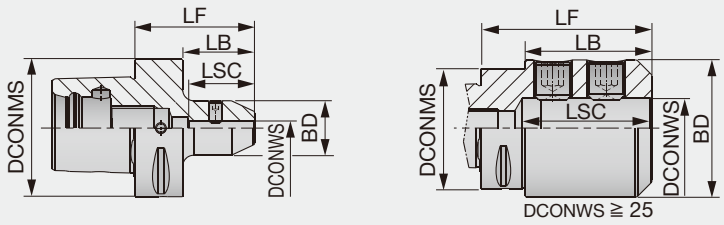
Adapter for parting blades



Designation	DCONMS	WF	LF	H
C6TBK-32R/L	63	32	138	32

Applicable for 3 MPa coolant

Side-lock holder for weldon endmills (DIN1835 Form B)



Designation	DCONMS	DCONWS	BD	LF	LB	LSC
C3EM6X45	32	6	25	45	30	29
C3EM8X45	32	8	28	45	25	35
C3EM10X50	32	10	35	50	30	39
C3EM12X55	32	12	42	55	35	43
C4EM06X50	40	6	25	50	30	29
C4EM08X50	40	8	28	50	30	35
C4EM10X50	40	10	35	50	30	39
C4EM12X55	40	12	42	55	35	43
C4EM14X55	40	14	44	55	35	43
C4EM16X60	40	16	48	60	40	47
C5EM06X50	50	6	25	50	30	29
C5EM08X50	50	8	28	50	30	35
C5EM10X55	50	10	35	55	35	39
C5EM12X60	50	12	42	60	40	43
C5EM14X60	50	14	44	60	40	43
C5EM16X60	50	16	48	60	40	47
C5EM18X60	50	18	50	60	40	47
C5EM20X60	50	20	52	60	40	49
C5EM25X85	50	25	65	85	65	64
C6EM6X55	63	6	25	55	33	29
C6EM8X55	63	8	28	55	33	35

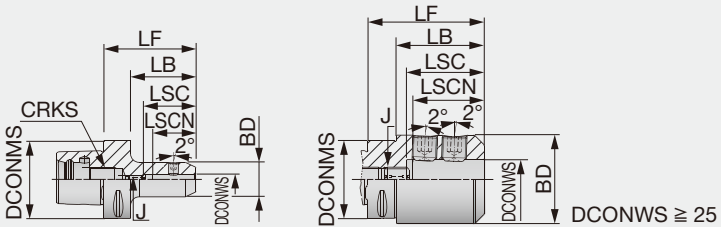
Designation	DCONMS	DCONWS	BD	LF	LB	LSC
C6EM10X60	63	10	35	60	38	39
C6EM12X60	63	12	42	60	38	43
C6EM14X60	63	14	44	60	38	43
C6EM16X65	63	16	48	65	43	47
C6EM18X65	63	18	50	65	43	47
C6EM20X65	63	20	52	65	43	49
C6EM25X80	63	25	65	80	58	68
C6EM32X90	63	32	72	90	68	68
C6EM40X100	63	40	90	100	78	78
C8EM06X70	80	6	25	70	40	30
C8EM08X70	80	8	28	70	40	35
C8EM10X70	80	10	35	70	40	39
C8EM12X70	80	12	42	70	40	43
C8EM14X70	80	14	44	70	40	43
C8EM16X70	80	16	48	70	40	47
C8EM18X70	80	18	50	70	40	47
C8EM20X70	80	20	52	70	40	49
C8EM25X90	80	25	65	90	60	68
C8EM32X95	80	32	72	95	65	68
C8EM40X110	80	40	90	110	80	68
C8EM50X120	80	50	98	120	90	90

Applicable for 7 MPa coolant

TUNGCAP

C-EM-E

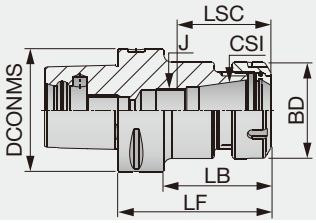
Side-lock holder for drills (DIN1835 Form E whistle notch)



Designation	DCONMS	DCONWS	BD	LF	LSCN	LSC	LB	J	CRKS
C3EM06X70E	32	6	25	70	30	35	50	5	M14
C3EM12X75E	32	12	42	75	44	49	55	10	M14
C4EM06X70E	40	6	25	70	30	35	50	M5	M14
C4EM08X70E	40	8	28	70	35	43	50	M6	M14
C4EM10X70E	40	10	35	70	39	45	50	M8	M14
C4EM12X75E	40	12	42	75	44	49	55	M10	M14
C4EM14X75E	40	14	44	75	44	49	55	M10	M14
C5EM10X70E	50	10	35	70	39	45	50	M8	M16
C5EM12X75E	50	12	42	75	44	49	55	M10	M16
C5EM14X75E	50	14	44	75	44	49	55	M10	M16
C5EM16X80E	50	16	48	80	47	52	60	M12	M16
C5EM18X80E	50	18	50	80	47	52	60	M12	M16
C5EM20X85E	50	20	52	85	49	55	65	M16	M16
C6EM06X75E	63	6	25	75	30	36	53	M5	M20
C6EM08X75E	63	8	28	75	35	43	53	M6	M20
C6EM10X75E	63	10	35	75	39	46	53	M8	M20
C6EM12X80E	63	12	42	80	44	49	58	M10	M20
C6EM14X80E	63	14	44	80	44	49	58	M10	M20
C6EM16X85E	63	16	48	85	47	52	63	M12	M20
C6EM18X85E	63	18	50	85	47	52	63	M12	M20
C6EM20X85E	63	20	52	85	49	55	63	M16	M20
C6EM25X90E	63	25	65	90	54	60	68	M20	M20
C6EM32X95E	63	32	72	95	58	63	73	M20	M20
C8EM08X65E	80	8	28	65	35	43	35	M6	M20
C8EM10X65E	80	10	35	65	39	46	35	M8	M20
C8EM12X70E	80	12	42	70	44	49	40	M10	M20
C8EM14X70E	80	14	44	70	44	49	40	M10	M20
C8EM16X75E	80	16	48	75	47	52	45	M12	M20
C8EM18X75E	80	18	50	75	47	52	45	M12	M20
C8EM20X80E	80	20	52	80	49	57	50	M16	M20
C8EM25X90E	80	25	65	90	54	60	60	M20	M20
C8EM32X95E	80	32	72	95	58	64	65	M20	M20

Applicable for 7 MPa coolant

ER collet chuck holder (DIN6499)



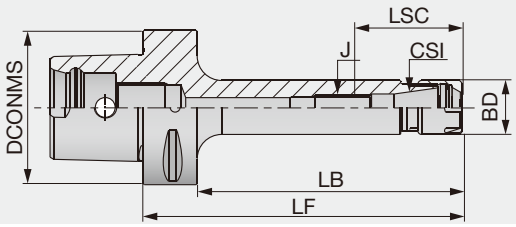
Designation	Range min	Range Max.	DCONMS	CSI	BD	LF	LB	J	LSC
C3ER16X45	1	10	32	ER16	28	45	25	-	39
C3ER20X45	1	13	32	ER20	34	45	30	-	39.8
C4ER16X70	1	10	40	ER16	28	70	50	M10	41.6
C4ER20X35*	1	13	40	ER20	34	35	27	-	39.8
C4ER20X52	1	13	40	ER20	34	52	32	-	39.1
C4ER25X38*	1	16	40	ER25	42	38	30	-	43.3
C4ER25X52	1	16	40	ER25	42	52	32	-	40.8
C4ER32X54	2	20	40	ER32	50	54	34	-	46.7
C5ER16X100	1	10	50	ER16	28	100	80	M10	61.6
C5ER16X130	1	10	50	ER16	28	130	110	M10	71.6
C5ER20X055	1	13	50	ER20	34	55	35	-	39.3
C5ER20X100	1	13	50	ER20	34	100	80	M12	52.5
C5ER20X130	1	13	50	ER20	34	130	110	M12	52.5
C5ER25X055	1	16	50	ER25	42	55	35	-	40.5
C5ER25X100	1	16	50	ER25	42	100	80	M16	65
C5ER32X057	2	20	50	ER32	50	57	36	-	47.2
C5ER32X100	2	20	50	ER32	50	100	36	M22X1.5	59.4
C6ER16X100	1	10	63	ER16	28	100	78	M10	61.6
C6ER16X130	1	10	63	ER16	28	130	108	M10	71.6
C6ER16X160	1	10	63	ER16	28	160	138	M10	71.6
C6ER20X060	1	13	63	ER20	34	60	38	-	39.5

Designation	Range min	Range Max.	DCONMS	CSI	BD	LF	LB	J	LSC
C6ER20X100	1	13	63	ER20	34	100	78	M12	52.5
C6ER20X130	1	13	63	ER20	34	130	108	M12	52.5
C6ER20X160	1	13	63	ER20	34	160	138	M12	52.5
C6ER25X060	1	16	63	ER25	42	60	38	-	40.4
C6ER25X100	1	16	63	ER25	42	100	78	M16	65
C6ER25X130	1	16	63	ER25	42	130	108	M16	73
C6ER25X160	1	16	63	ER25	42	160	138	M16	73
C6ER32X060	2	20	63	ER32	50	60	36	-	47.8
C6ER32X100	2	20	63	ER32	50	100	78	M22X1.5	59.4
C6ER32X130	2	20	63	ER32	50	130	108	M22X1.5	69.4
C6ER32X160	2	20	63	ER32	50	160	138	M22X1.5	69.4
C6ER40X065	3	26	63	ER40	63	65	37	-	55
C6ER40X100	3	26	63	ER40	63	100	78	M28X1.5	60
C6ER40X130	3	26	63	ER40	63	130	108	M28X1.5	70
C8ER32X70	2	20	80	ER32	50	70	40	-	47.8
C8ER32X100	2	20	80	ER32	50	100	70	M22x1.5	60.4
C8ER32X160	2	20	80	ER32	50	160	130	M22x1.5	65.4
C8ER40X70	3	26	80	ER40	63	70	40	-	54.8
C8ER40X100	3	26	80	ER40	63	100	70	M28x1.5	60
C8ER40X160	3	26	80	ER40	63	160	130	M28x1.5	71

Without V grooves, for manual use only.
Applicable for 10 MPa coolant

Option: Wrench for ER collet

TUNGCAP
C-ER-M
ER Mini collet chuck holder (DIN6499)

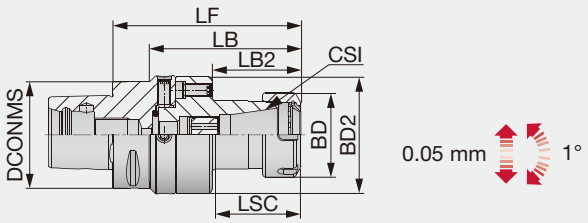


Designation	Range min	Range max	DCONMS	CSI	BD	LF	LB	J	LSC
C4ER16X70M	0.5	10	40	ER16	22	70	50	M10	41
C5ER16X100M	0.5	10	50	ER16	22	100	80	M10	46
C5ER16X130M	0.5	10	50	ER16	22	130	110	M10	46
C6ER16X100M	0.5	10	63	ER16	22	100	78	M10	46
C6ER16X130M	0.5	10	63	ER16	22	130	108	M10	46
C6ER16X160M	0.5	10	63	ER16	22	160	138	M10	46

Applicable for 10 MPa coolant

Option: Wrench for ER collet

TUNGCAP
ADJ C-ER
ER collet chuck with center alignment



Designation	DCONMS	CSI	Range min	Range max	BD2	BD	LF	LB	LB2	LSC
ADJC5ER32	50	ER32	2	20	70	50	115	95	52.5	57
ADJC6ER32	63	ER32	2	20	70	50	111.5	89.5	52.5	57

Applicable for 10 MPa coolant

Option: Wrench for ER collet

WRENCH-ER / ER DIN 6499

Fig. 1

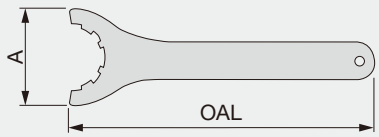


Fig. 2

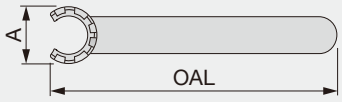
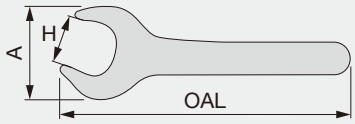


Fig. 3



Designation	A	H	OAL	Fig.
WRENCHER11MINI	16.8	-	95	2
WRENCHER11	32	17	95	3
WRENCHER16MINI	22.5	-	117	2
WRENCHER16	42.8	25	143	3
WRENCHER20MINI	28	-	128	2
WRENCHER20	53.5	30	172	3
WRENCHER25MINI	29	-	120	2
WRENCHER25	70	-	207	1
WRENCHER32	78	-	255	1
WRENCHER40	95	-	285	1
WRENCHER50	110	-	350	1
WRENCHER20SHORTRING22	48	22	260	3
WRENCHER32SHORT	75	36	303	3
WRENCHER40SHORT	94	46	378	3

PRESET ER-JET (Preset screw)

Fig. 1

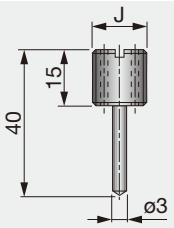
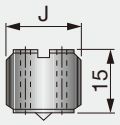
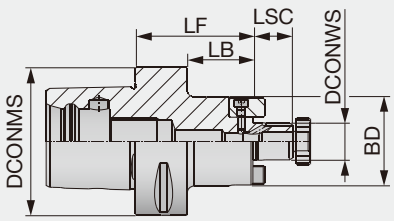


Fig. 2



Designation	J	Fig.
PRESETER-JET8X1	M8X1.0	2
PRESETER-JET8X1.25	M8X1.25	2
PRESETER-JET10X1.5	M10X1.5	2
PRESETER-JET12X1	M12X1.0	2
PRESETER-JET12X1.75L	M12X1.75	1
PRESETER-JET12X1.75	M12X1.75	2
PRESETER-JET14X1	M14X1.0	2
PRESETER-JET16X2	M16X2	2
PRESETER-JET16X2L	M16X2	1
PRESETER-JET18X1	M18X1.0	2
PRESETER-JET18X1.5	M18X1.5	2
PRESETER-JET18X1.5L	M18X1.5	1
PRESETER-JET22X1.5	M22X1.5	2
PRESETER-JET22X1.5L	M22X1.5	1
PRESETER-JET28X1.5	M28X1.5	2

TUNGCAP
C-SEM
Shell mill holder with coolant nozzle



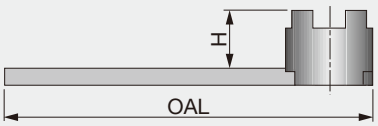
Designation	DCONMS	DCONWS	BD	LF	LSC	LB	Width of key	Height of key
C4SEM16X32C	40	16	38	32	12	17	8	5
C4SEM16X55C	40	16	38	55	35	17	8	5
C4SEM22X40C	40	22	47	40	20	19	10	5.4
C4SEM22X55C	40	22	47	55	35	19	10	5.4
C5SEM16X35C	50	16	38	35	17	15	8	5
C5SEM16X70C	50	16	38	70	17	50	8	5
C5SEM22X35C	50	22	47	35	19	15	10	5.4
C5SEM22X70C	50	22	47	70	19	50	10	5.4
C5SEM25.4X37C	50	25.4	55	37	22	-	9.525	4.6
C5SEM27X40C	50	27	58	40	21	20	12	6.3
C5SEM31.75X60C	50	31.75	64	60	30	-	12.7	6
C5SEM32X40C	50	32	63	40	24	20	14	7
C6SEM16X50C	63	16	38	50	17	28	8	5
C6SEM16X100C	63	16	38	100	17	78	8	5
C6SEM22X50C	63	22	47	50	19	28	10	5.4
C6SEM22X100C	63	22	47	100	19	78	10	5.4
C6SEM25.4X37C	63	25.4	55	37	22	15	9.525	4.6
C6SEM27X60C	63	27	58	60	21	38	12	6.3

Designation	DCONMS	DCONWS	BD	LF	LSC	LB	Width of key	Height of key
C6SEM27X100C	63	27	58	100	21	78	12	6.3
C6SEM31.75X60C	63	31.75	64	60	30	-	12.7	6
C6SEM32X60C	63	32	66	60	24	38	14	7
C6SEM38.1X60C	63	38.1	78	60	34	-	15.875	8
C6SEM40X60C	63	40	82	60	27	38	16	8
C8SEM16X50C	80	16	38	50	20	17	8	5
C8SEM16X100C	80	16	38	100	70	17	8	5
C8SEM22X50C	80	22	47	50	20	19	10	5.4
C8SEM22X100C	80	22	47	100	70	19	10	5.4
C8SEM25.4X50C	80	25.4	50	50	22	20	9.525	4.6
C8SEM27X50C	80	27	58	50	20	21	12	6.3
C8SEM27X100C	80	27	58	100	70	21	12	6.3
C8SEM31.75X50C	80	31.75	60	50	30	20	12.7	7
C8SEM32X50C	80	32	66	50	20	24	14	7
C8SEM32X100C	80	32	66	100	70	24	14	7
C8SEM38.1X50C	80	38.1	80	50	34	-	15.875	8
C8SEM40X60C	80	40	82	60	30	27	16	8

Applicable for 7 MPa coolant

Option: Wrench for lock screw

WRENCH SEMC / DIN6368

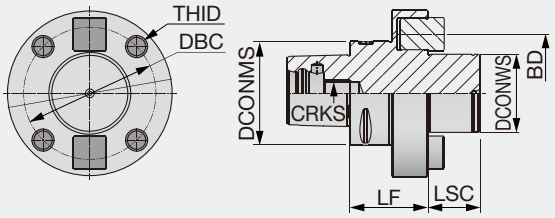


Designation	Inner diameter of cutter body	Screw size	H	OAL
WRENCHM8SEMC16	16	M8	20	180
WRENCHM10SEMC22	22	M10	25	200
WRENCHM12SEMC27	25.4 / 27	M12	32	225
WRENCHM16SEMC32	31.75 / 32	M16	36	250
WRENCHM20SEMC40	38.1 / 40	M20	40	280
WRENCHM24SEMC50	50	M24	50	315

TUNGCAP

C-FM

Arbor for face mill

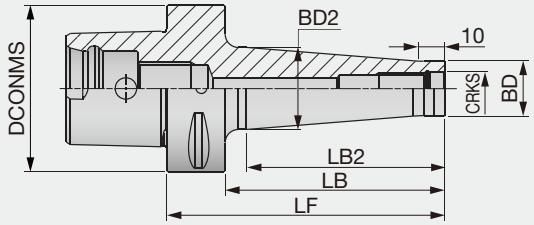


Designation	DCONMS	DCONWS	LSC	LF	BD	DBC	THID	CRKS	Width of key	Height of key
C8FM60X60	80	60	40	60	128	101.6	M16	M20	25.4	12.4

TUNGCAP TUNGFLEX

C-ODP

Screw-clamp holder for modular heads (TungFlex)



Designation	CRKS	DCONMS	BD	BD2	LF	LB	LB2
C4ODP10X53	M10	40	18	23	53	33	23
C4ODP12X53	M12	40	21	26	53	33	23
C4ODP16X53	M16	40	29	34	53	33	23
C5ODP10X53	M10	50	18	19.5	53	33	25
C5ODP10X103	M10	50	18	28	103	83	75
C5ODP12X53	M12	50	21	23.5	53	33	25
C5ODP12X103	M12	50	21	31	103	83	75
C5ODP16X53	M16	50	29	34	53	33	25
C5ODP16X103	M16	50	29	36	103	83	75
C6ODP10X55	M10	63	18	19.5	55	33	25
C6ODP10X105	M10	63	18	28	105	83	75
C6ODP10X130	M10	63	18	32	130	108	100
C6ODP12X55	M12	63	21	23.5	55	33	25
C6ODP12X105	M12	63	21	31	105	83	75
C6ODP12X130	M12	63	21	36	130	108	100
C6ODP16X55	M16	63	29	34	55	33	25
C6ODP16X105	M16	63	29	34	105	83	75
C6ODP16X130	M16	63	29	41	130	108	100

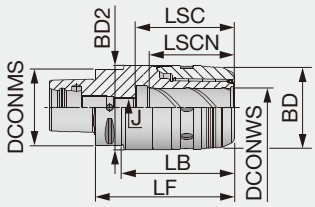
Applicable for 10 MPa coolant

TUNGCAP

TUNGMAX

C-TUNGMAX

Power chuck holder



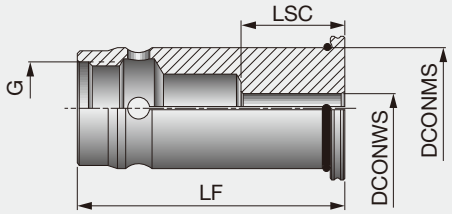
Designation	DCONMS	Range	DCONWS	BD	BD2	LF	LB	LSCN	LSC	J
C5MAXIN20X100	50	6-20	20	51	53	95.5	75	55	67	M16
C6MAXIN20X95	63	6-20	20	51	53	95	73	55	67	M16
C6MAXIN32X115	63	6-32	32	69	70	115	93	70	82	M16
C8MAXIN20X95	80	6-20	20	51	53	95	65	55	67	M16
C8MAXIN32X115	80	6-32	32	69	70	115	85	70	82	M16

Applicable for 10 MPa coolant

Option : Wrench for TungMax collet

SC-SEAL

SC sealed straight collet (TungMax)

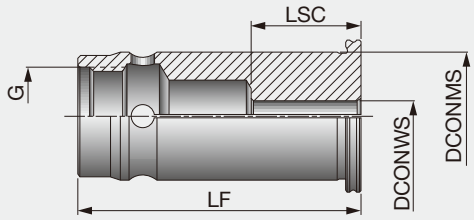


Designation	DCONWS	DCONMS	LF	LSC	G
SC20SEAL6	6	20	60	28	M16
SC20SEAL8	8	20	60	28	M16
SC20SEAL10	10	20	60	35	M16
SC20SEAL12	12	20	60	40	M16
SC20SEAL14	14	20	60	40	M16
SC20SEAL15	15	20	60	40	M16
SC20SEAL16	16	20	60	39	M16
SC32SEAL6	6	32	72	28	M24x1.5
SC32SEAL8	8	32	72	28	M24x1.5
SC32SEAL10	10	32	72	35	M24x1.5
SC32SEAL12	12	32	72	40	M24x1.5
SC32SEAL14	14	32	72	40	M24x1.5
SC32SEAL15	15	32	72	40	M24x1.5
SC32SEAL16	16	32	72	44	M24x1.5
SC32SEAL18	18	32	72	44	M24x1.5
SC32SEAL19	19	32	72	44	M24x1.5
SC32SEAL20	20	32	72	46	M24x1.5
SC32SEAL24	24	32	72	46	M24x1.5
SC32SEAL25	25	32	72	51	M24x1.5

Applicable for 10 MPa coolant

SC-SPR

SC straight collet



Designation	DCONWS	DCONMS	LF	LSC	G
SC20SPR6	6	20	60	28	M16
SC20SPR8	8	20	60	28	M16
SC20SPR10	10	20	60	35	M16
SC20SPR12	12	20	60	40	M16
SC20SPR14	14	20	60	40	M16
SC20SPR15	15	20	60	40	M16
SC20SPR16	16	20	60	39	M16
SC32SPR6	6	32	72	28	M24x1.5
SC32SPR8	8	32	72	28	M24x1.5
SC32SPR10	10	32	72	35	M24x1.5
SC32SPR12	12	32	72	40	M24x1.5
SC32SPR14	14	32	72	40	M24x1.5
SC32SPR15	15	32	72	40	M24x1.5
SC32SPR16	16	32	72	44	M24x1.5
SC32SPR18	18	32	72	44	M24x1.5
SC32SPR19	19	32	72	44	M24x1.5
SC32SPR20	20	32	72	46	M24x1.5
SC32SPR24	84	32	72	45	M24x1.5
SC32SPR25	25	32	72	51	M24x1.5

PRESET SC CAP

Preset screw for SC collets

Fig. 1

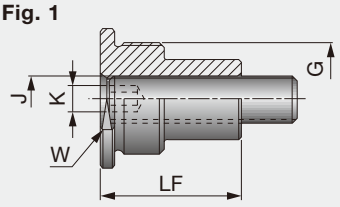
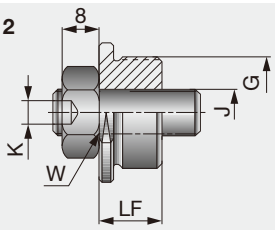
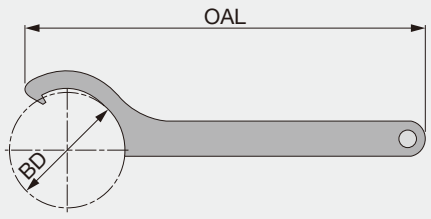


Fig. 2



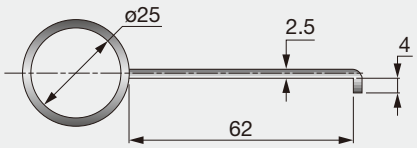
Designation	LF	W	J	G	Range	Key	Collet size	Fig.
PRESETSCCAP8X1.25L	28	16	M8x25	M16	6-8	4	SC20	1
PRESETSCCAP8X1.25	15	16	M8x25	M16	10-16	4	SC20	2
PRESETSCCAP10X1.5L	30	27	M10x30	M24x1.5	6-14	5	SC32	1
PRESETSCCAP10X1.5	13.5	27	M10x30	M24x1.5	16-25	5	SC32	2

Wrench



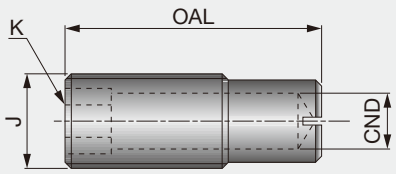
Designation	BD	OAL
WRENCHMAXIN20HOOK	26	205
WRENCHMAXIN32HOOK	68	240

SC collet extracting hook



Designation
EXTRACTORSCCOLLETS

Preset screw

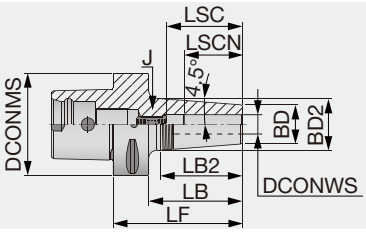


Designation	J	OAL	CND	K
PRESETMAXIN16X30	M16	30	8	8
PRESETMAXIN16X44	M16	44	8	8
PRESETMAXIN20X55	M20	55	12	12

TUNGCAP TUNGSHRINK

C-SRKIN

Shrink holder

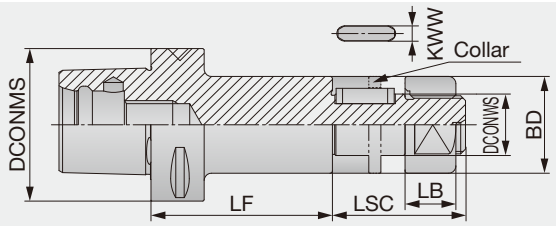


Designation	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J
C4SRKIN6X75	40	6	21	27	75	55	38.1	25	36	M5
C4SRKIN8X75	40	8	21	27	75	55	38.1	25	36	M6
C4SRKIN10X75	40	10	24	32	75	55	50.8	31	42	M8
C4SRKIN12X75	40	12	24	32	75	55	50.8	36	47	M10
C4SRKIN14X80	40	14	27	34	80	60	44.5	36	47	M10
C4SRKIN16X80	40	16	27	34	80	60	44.5	39	50	M12
C4SRKIN18X80	40	18	33	42	80	60	57.2	39	50	M12
C4SRKIN20X85	40	20	33	42	85	65	57.2	41	52	M16
C5SRKIN6X75	50	6	21	27	75	55	38.1	25	36	M5
C5SRKIN8X75	50	8	21	27	75	55	38.1	25	36	M6
C5SRKIN10X75	50	10	24	32	75	55	51.3	31	42	M8
C5SRKIN12X75	50	12	24	32	75	55	51.3	36	47	M10
C5SRKIN14X80	50	14	27	34	80	60	44.5	36	47	M10
C5SRKIN16X80	50	16	27	34	80	60	44.5	39	50	M12
C5SRKIN18X80	50	18	33	42	80	60	57.2	39	50	M12
C5SRKIN20X85	50	20	33	42	85	65	57.2	41	52	M16
C5SRKIN25X90	50	25	44	53	90	70	57.2	47	58	M16
C6SRKIN6X80	63	6	21	27	80	58	38.1	25	36	M5
C6SRKIN8X80	63	8	21	27	80	58	38.1	25	36	M6
C6SRKIN10X80	63	10	24	32	80	58	50.8	31	42	M8
C6SRKIN12X80	63	12	24	32	80	58	50.8	36	47	M10
C6SRKIN14X85	63	14	27	34	85	63	44.5	36	47	M10
C6SRKIN16X85	63	16	27	34	85	63	44.5	39	50	M12
C6SRKIN18X85	63	18	33	42	85	63	57.2	39	50	M12
C6SRKIN20X85	63	20	33	42	85	63	57.2	41	52	M16
C6SRKIN25X90	63	25	44	53	90	68	57.2	47	58	M16
C6SRKIN32X95	63	32	44	53	95	73	57.2	47	58	M16

Applicable for 10 MPa coolant

C-SCA

Slot milling holder

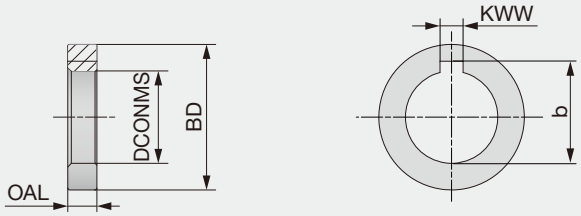


Designation	DCONMS	DCONWS	LF	BD	LSC	LB	Width of key KWM	Height of key
C6SCA25.4-075	63	25.4	75	40	55	21	6.35	2.38
C6SCA31.75-075	63	31.75	75	46	60	26	7.92	3.17
C8SCA25.4-090	80	25.4	90	40	55	21	6.35	2.38
C8SCA31.75-090	80	31.75	90	46	60	26	7.92	3.17

Collars for slot mills are not included

SCA

Collar for slot milling holders

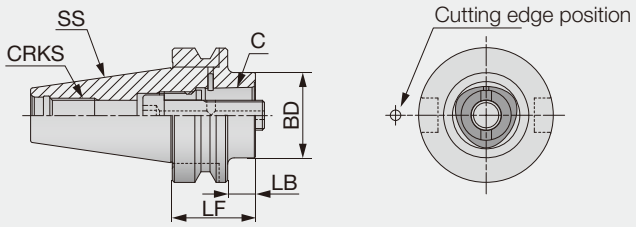


Designation	BD	DCONMS	b	KWW	OAL
SCA25.4-02	40	25.4	28.1	6.35	3, 5, 7, 8, 10, 12, 14
SCA31.75-02	46	31.75	35.2	7.92	3, 5, 7, 8, 10, 12, 14

TUNGCAP

BT-FC

Basic holder for BT shank with dual contact



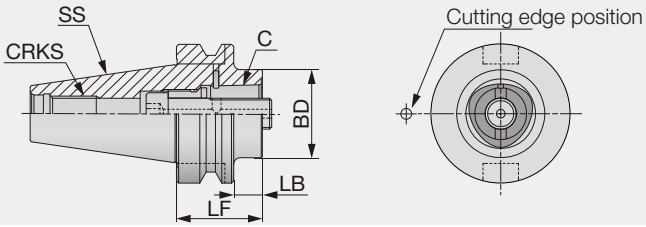
Designation	C	SS	BD	LF	LB	CRKS	Nm(1)	Wrench size
BT40FC-C4-040	C4	40	40	40	13	M16	55	8
BT40FC-C5-050	C5	40	50	50	23	M16	95	10
BT40FC-C6-075	C6	40	63	75	48	M16	170	10
BT50FC-C4-040	C4	50	40	40	2	M24	55	8
BT50FC-C4-070	C4	50	40	70	32	M24	55	8
BT50FC-C5-040	C5	50	50	40	2	M24	95	10
BT50FC-C5-080	C5	50	50	80	42	M24	95	10
BT50FC-C6-050	C6	50	63	50	12	M24	170	14
BT50FC-C6-100	C6	50	63	100	62	M24	170	14
BT50FC-C8-070	C8	50	80	70	32	M24	170	14
BT50FC-C8-120	C8	50	80	120	82	M24	170	14

Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

BT-FC-T

Basic holder for BT shank with dual contact (for turning on multi task machines)



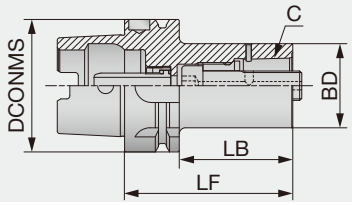
Designation	C	SS	BD	LF	LB	CRKS	Nm(1)	Wrench size
BT40FC-C4-040T	C4	40	40	40	13	M16	55	8
BT40FC-C5-050T	C5	40	50	50	23	M16	95	10
BT50FC-C6-050T	C6	50	63	50	12	M24	170	14
BT50FC-C8-070T	C8	50	80	70	32	M24	170	14

Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

HSK-A-C/-T

Basic holder for HSK shank



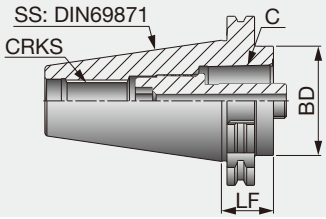
Designation	DCONMS	C	BD	LF	LB	Nm(1)	Wrench size
HSK63A-C4-080T	63	C4	40	80	54	55	8
HSK63A-C5-090T	63	C5	50	90	64	95	10
HSK63A-C6-110T	63	C6	63	110	74	170	14
HSK100A-C6-110	100	C6	63	110	81	170	14
HSK100A-C8-120	100	C8	80	120	91	170	14

Applicable for 7 MPa coolant
Option: Cooling tube wrench

(1) Recommended clamping torque (N·m)

C-ADSKA

Basic holder for DIN69871 Form AD/ADB tapered shank



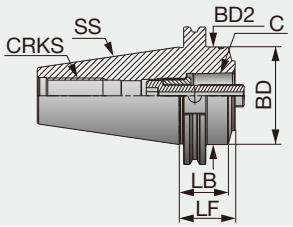
Designation	C	SS	BD	LF	CRKS	Nm(1)	Wrench size
C4ADSKA40X30	C4	40	40	30	M16	55	8
C5ADSKA40X30	C5	40	50	30	M16	95	10
C5ADSKA50X30ADB	C5	50	50	30	M24	95	10
C6ADSKA50X30	C6	50	63	30	M24	170	14
C8ADSKA50X70ADB	C8	50	80	70	M24	170	14

Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

C-ADCAT

Basic holder for caterpillar AD/ADB tapered shank



Designation	C	SS	BD	BD2	LF	LB	CRKS	Nm(1)	Wrench size
C4ADCATI40X40ADB	C4	40	40	44.5	40	35	5/8-11	55	8
C5ADCATI40X90ADB	C5	40	50	45.2	90	35	5/8-11	95	10
C5ADCATI50X40ADB	C5	50	50	69.9	40	35	1-8	95	10
C6ADCATI50X50	C6	50	63	69.85	50	37	1-8	170	14
C8ADCATI50X100ADB	C8	50	80	70.1	100	35	1-8	170	14

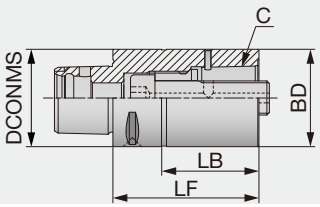
Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

TUNGCAP

C-EX

Extension adapter



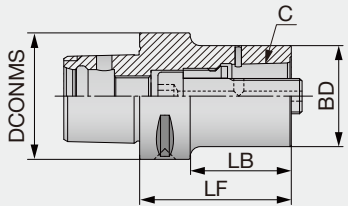
Designation	C	DCONMS	BD	LF	LB	Nm(1)	Wrench size
C4EX-060	C4	40	40	60	80	65	8
C4EX-080	C4	40	40	80	60	65	8
C5EX-080	C5	50	50	80	60	95	10
C5EX-100	C5	50	50	100	80	95	10
C6EX-100	C6	63	63	100	78	170	14
C6EX-140	C6	63	63	140	118	170	14
C8EX-100	C8	80	80	100	70	170	14
C8EX-160	C8	80	80	160	130	170	14

Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

C-RE

Reduction adapter



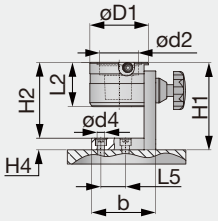
Designation	C	DCONMS	BD	LF	LB	Nm(1)	Wrench size
C5-C4RE-060	C4	50	40	60	40	55	8
C5-C4RE-080	C4	50	40	80	60	55	8
C6-C4RE-080	C4	63	40	80	58	55	8
C6-C5RE-080	C5	63	50	80	58	95	10
C6-C5RE-120	C5	63	50	120	98	95	10
C8-C4RE-070	C4	80	40	70	40	55	8
C8-C5RE-080	C5	80	50	80	50	95	10
C8-C6RE-080	C6	80	63	80	50	170	14
C8-C6RE-120	C6	80	63	120	90	170	14

Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

MULTI CLAMP (TungCap)

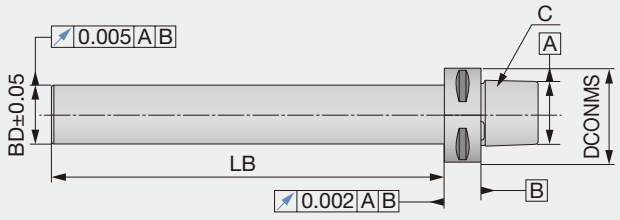
Multi-clamp fixture for TungCap



Designation	CSI	ød2	øD1	L2	H1	H2	H4	b	L5	ød4
MULTICLAMPC3	C3	32	70	64	128	109	19	104	40	12.5
MULTICLAMPC4	C4	40.4	78	67	137.5	118.5	19	104	40	12.5
MULTICLAMPC5	C5	50	85	72	142	123	19	104	40	12.5
MULTICLAMPC6	C6	63	95	72	142	123	19	104	40	12.5
MULTICLAMPC8	C8	80	130	90	178	159	19	144	85	12.5

TungCap Test bar

Test bar



Designation	C	DCONMS	BD	LB
C3-TB-160	C3	32	25	160
C4-TB-160	C4	40	25	160
C5-TB-160	C5	50	30	180
C6-TB-220	C6	63	35	220
C8-TB-250	C8	80	40	250

TUNGCAP

SWISS TOOLS

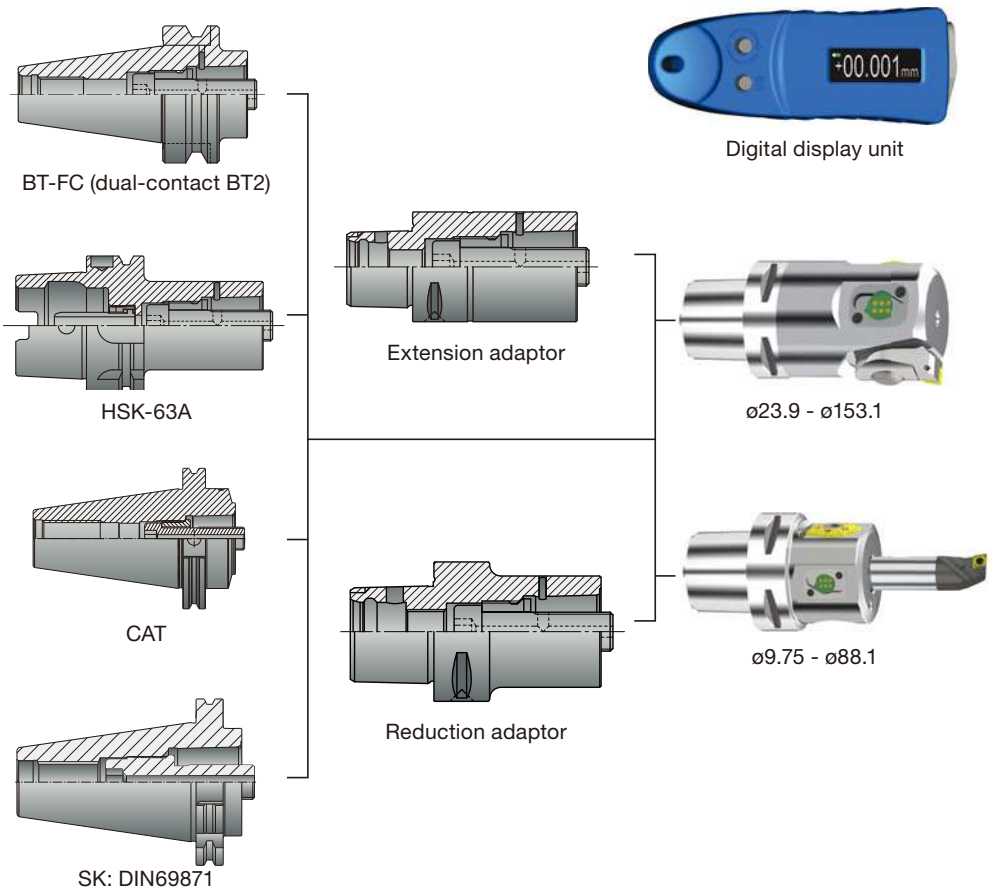
Fine boring heads with digital display





Fine boring head system makes **micron adjustment easy and simple in the machine**

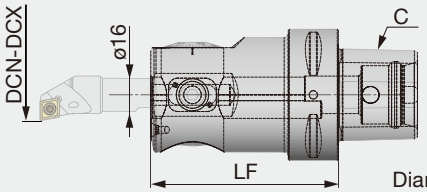
- Easy but accurate adjustment: 1 µm accuracy is possible on the machine
- Digital display: the display unit is docked on the boring head for micron adjustment
- Economy: One digital unit can be used with all fine boring heads
- Internal coolant for smooth chip control
- Also available with TungCap connection, allowing it for use in multi-tasking machines



Reference pages: K047 - K054

TungCap FBHO-DE

Fine boring head for digital display ø9.75 mm - ø88.1 mm



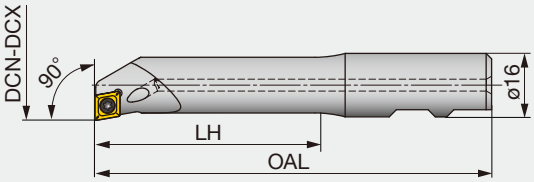
Diameter adjustment range 2.7mm

Designation	C	DCN	DCX	LF	Boring bar
BT4-FBHO-DE-1690	BT40	9.75	88.1	90	254.0**.006... / 256...
HA6-FBHO-DE-1695	HSK-A63	9.75	88.1	95	254.0**.006... / 256...
PSC63-FBHO-DE-1690	C6	9.75	88.1	90	254.0**.006... / 256...
PSC50-FBHO-DE-1670	C5	9.75	88.1	70	254.0**.006... / 256...
PSC40-FBHO-DE-1665	C4	9.75	88.1	65	254.0**.006... / 256...

Applicable for 7 MPa coolant

TungCap 254.0**.006.**

Boring bar



Designation	DCN	DCX	LH	OAL	Insert
254.010.006.075	9.75	15.1	30	75	CC**06 02...
254.015.006.090	14.75	20.1	51	90	CC**06 02...
254.020.006.105	19.75	25.1	72	105	CC**06 02...
254.025.006.115	24.75	30.1	82	115	CC**06 02...

Applicable for 7 MPa coolant

SPARE PARTS



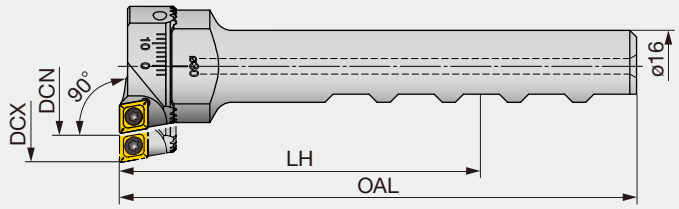

Designation	Clamping screw	Wrench
254.0**.006.**	CSTB-2.5S	T-8F

Reference pages: 254.0**.006.**: Inserts → B109 -

TUNGCAP

TungCap 256.0**.0**.115

Boring bar



designation(Shank)	designation(Insert holder)	DCN	DCX	LH	OAL	Insert
256.030.048.115	256.030.006.012	29.75	48.1	85	115	CC**06 02...
256.048.088.115	256.048.006.014	47.75	88.1	85	115	CC**06 02...

Applicable for 7 MPa coolant

SPARE PARTS




Designation	Clamping screw	Wrench
256.0**.006.0**	CSTB-2.5S	T-8F

Reference pages: 256.0**.0**.115: Inserts → B109 -

TungCap FBHS-DE

Fine boring head for digital display ø23.9 mm - ø153.1 mm

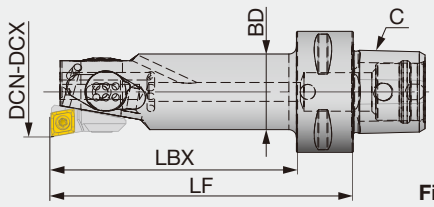


Fig. 1

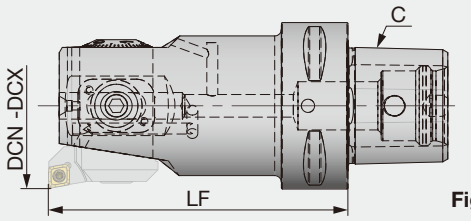


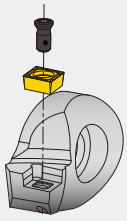
Fig. 2

Designation	C	DCN	DCX	LF	LBX	BD	Fig.	Insert holder
PSC32-FBHS-DE-24	C3	23.9	31.1	80	65	20	1	314.011.024.006/007
PSC32-FBHS-DE-24	C3	29.9	37.1	80	65	20	1	314.011.030.006/007
PSC32-FBHS-DE-31	C3	30.9	40.1	90	75	25	1	314.013.031.006/007
PSC32-FBHS-DE-31	C3	37.5	47.1	90	75	25	1	314.013.038.006/007
PSC40-FBHS-DE-40	C4	39.9	51.1	90	70	32	1	314.017.040.006/007
PSC40-FBHS-DE-40	C4	47.5	59.1	90	70	32	1	314.017.048.006/007
PSC50-FBHS-DE-51	C5	50.9	67.1	90	-	-	2	314.022.051.006/007
PSC50-FBHS-DE-51	C5	64.9	81.1	90	-	-	2	314.022.065.006/007
PSC50-FBHS-DE-67	C5	66.9	87.1	100	-	-	2	314.030.067.009/011
PSC50-FBHS-DE-67	C5	84.9	105.1	100	-	-	2	314.030.085.009/011
PSC63-FBHS-DE-87	C6	86.9	116.1	120	-	-	2	314.030.067.009/011
PSC63-FBHS-DE-87	C6	104.9	134.1	120	-	-	2	314.030.085.009/011
PSC63-FBHS-DE-116	C6	115.9	153.1	150	-	-	2	314.030.067.009/011
PSC63-FBHS-DE-116	C6	133.9	171.1	150	-	-	2	314.030.085.009/011

Insert holders are sold separately.
Applicable for 7 MPa coolant

TungCap 314.0**.0**.0**

Insert holder of fine boring head for digital display ø23.9 mm - ø153.1 mm



designation(Insert holder)	Insert
314.011.024.006	CC**0602...
314.013.031.006	CC**0602...
314.017.040.006	CC**0602...
314.022.051.006	CC**0602...
314.030.067.009	CC**08T3..

SPARE PARTS





Designation	Clamping screw	Wrench
314.0**.0**.0**	CSTB-2.5S	T-8F

TungCap GH1-DA

Digital display unit



Designation
GH1-DA2.BG0.077

Nomenclature for clamping units

Clamping units

Clamping units for non-rotating and rotating tools, designed for turret lathes

- Clamping units for standard square and round shanks
- Clamping units for PSC Bolt-on clamp interface
- Clamping units for Vertical Disc Interface (VDI DIN69880)



Standard interface



PBI



VDI (DIN69880)

Clamping units

	For external (Tool setting direction cross X)	For internal (Tool setting direction straight Z)
Turning clamping unit	C*-DTO-*C-***-R/L	C*-DTI-*C-****-R/L
		
Driven clamping unit	C*-DDC-*C-****	C*-DDS-*C-****
		

Nomenclature for clamping units

Nomenclature for static clamping unit

C4 - DT I - IC - ABC401 - R

① ② ③ ④ ⑤ ⑥ ⑦

① PSC size	② Device	③ Motion	④ Application	⑤ Coolant	⑥ Unit number	⑦ Hand
C3	D	T Static (turning tool)	O External	IC Internal	Manufacture's symbol	R Right
C4			I for internal turning	OC External		L Left
C5			S Others			
C6						
C8						

Nomenclature for driven clamping unit

C5 - DDC - OC - ABC501

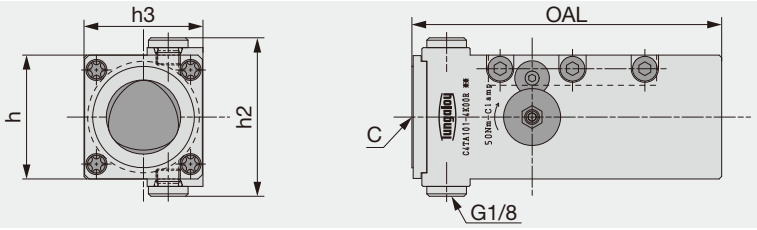
① ② ③ ④ ⑤ ⑥

① PSC size	② Device	③ Motion	④ Application	⑤ Coolant	⑥ Unit number
C3	D	D Driven (rotating tool)	S Straight: Z	OC External	Manufacture's symbol
C4			C Cross: X	WC Internal / External	
C5			X Others		
C6					
C8					

C-DTOSR/L

Manual clamping unit, square shank





Designation	C	Turret size h	h3	h2	OAL	Torque
C3-DTOS4038R/L	C3	40	38	62	95	35
C4-DTOS5048R/L	C4	50	48	64	125	50
C5-DTOS6464R/L	C5	60	64	68	145	70

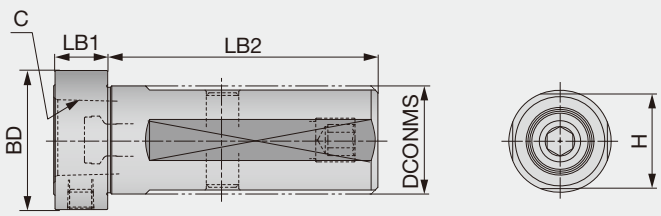
Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

C-DTIR

Manual clamping unit, round shank





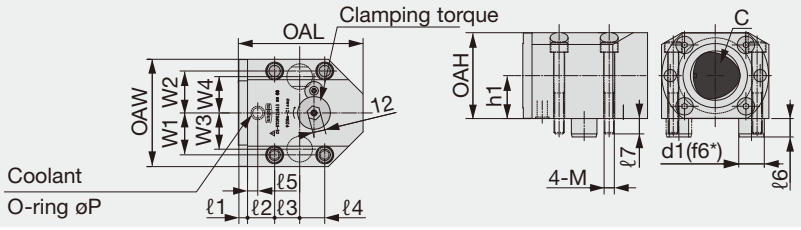
Designation	C	DCONMS	BD	H	LB2	LB1	Torque
C3-DTIR-08018-D32	C3	32	41.5	30	80	18	35
C4-DTIR-10020-D40	C4	40	51.5	37	100	20	50
C4-DTIR-12020-D50	C4	50	51.5	47	120	20	50
C5-DTIR-12024-D50	C5	50	61.5	47	120	24	70

Applicable for 7 MPa coolant

(1) Recommended clamping torque (N·m)

C-DTOFR/L

Manual clamping unit, fixed type



Designation	C	OAH	h1	OAL	OAW	W1	W2	W3	W4	ℓ1	ℓ2	ℓ3	ℓ4	ℓ5	ℓ6	ℓ7	d1(f6*)	P	M	Torque
C5-DTOFR/L32048	C5	64	32	100	92	35		31		8	19	21		7	11	15	20	P8	M10	70
C6-DTOFR/L42060	C6	84	42	122	105	41		35.5		9	26.5	24.5		10	18	15	25	P10	M10	90
C8-DTOFR/L50088	C8	100	50	146	133	55		46		12	33	43		13	19	20	32	P11	M12	130

Applicable for 7 MPa coolant *f*6 tolerance *d*20 & 25 = -0.022 / -0.033, *d*32 = -0.025 / -0.041

(1)Recommended clamping torque (N·m)

Clamping units & tools for CNC lathes

Selection for External turning

Fig. 1

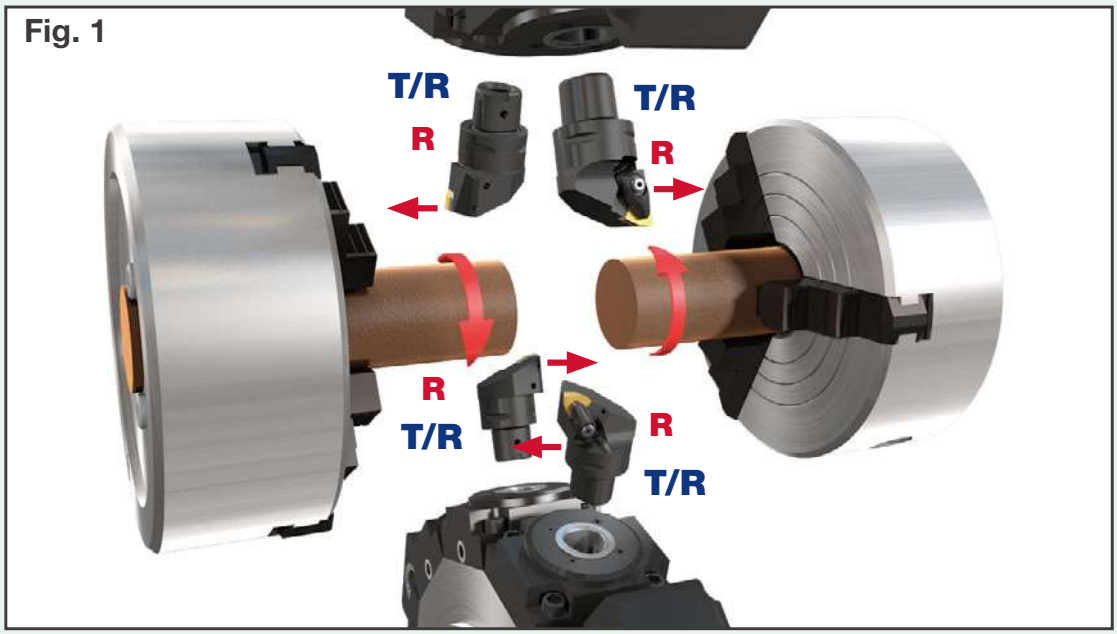
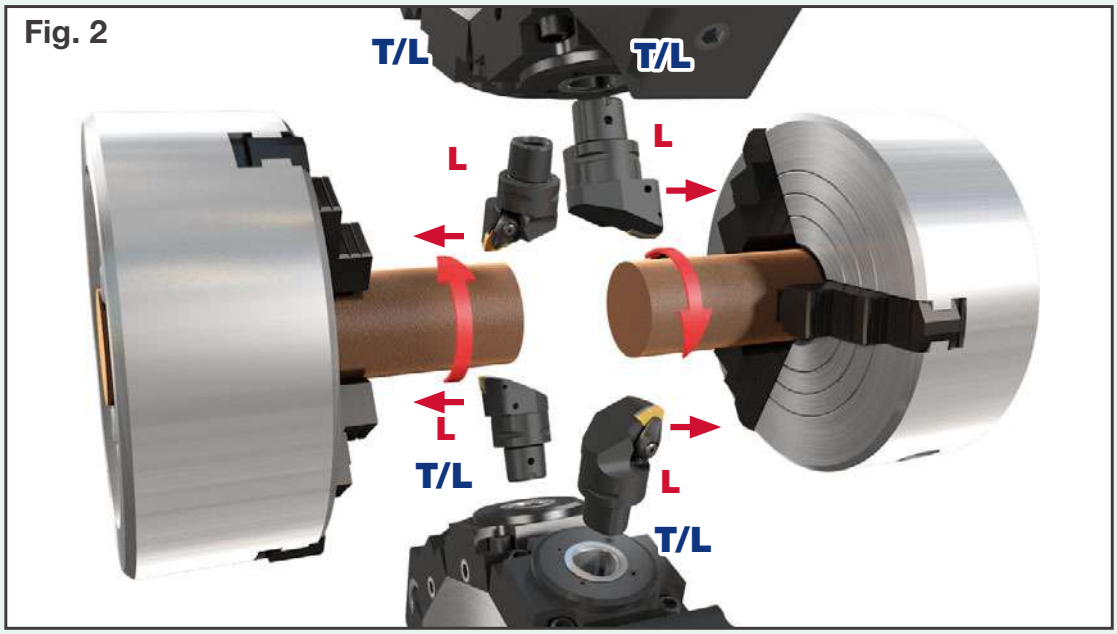


Fig. 2



R: Right hand cutting tool L: Left hand cutting tool
T/R: Right hand clamping unit T/L: Left hand clamping unit

Clamping units & tools for CNC lathes

Selection for Internal turning

Fig. 1

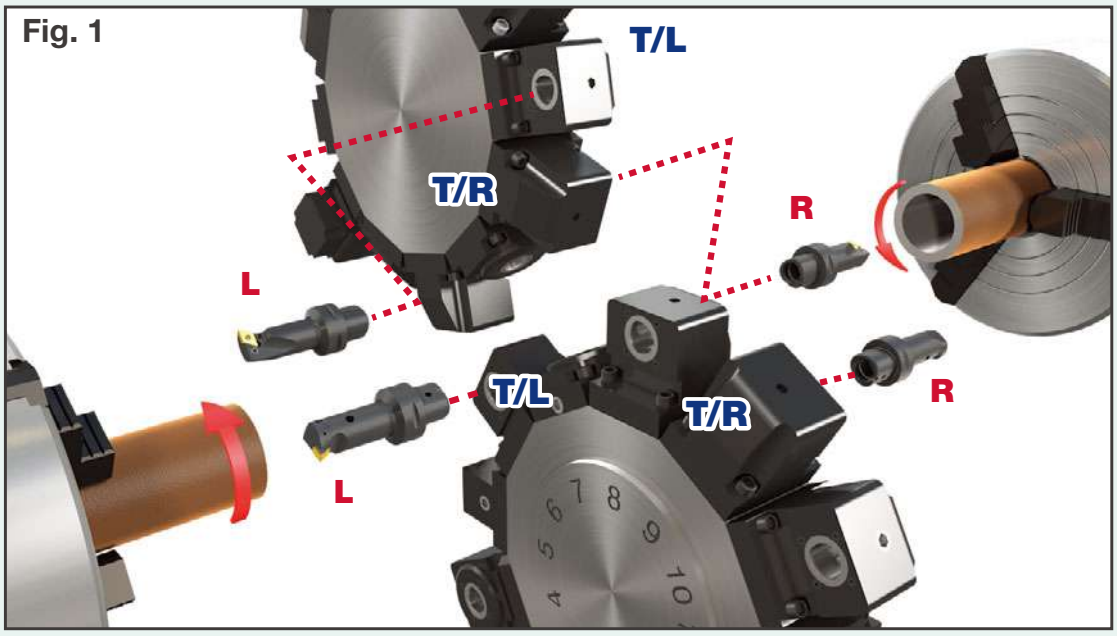
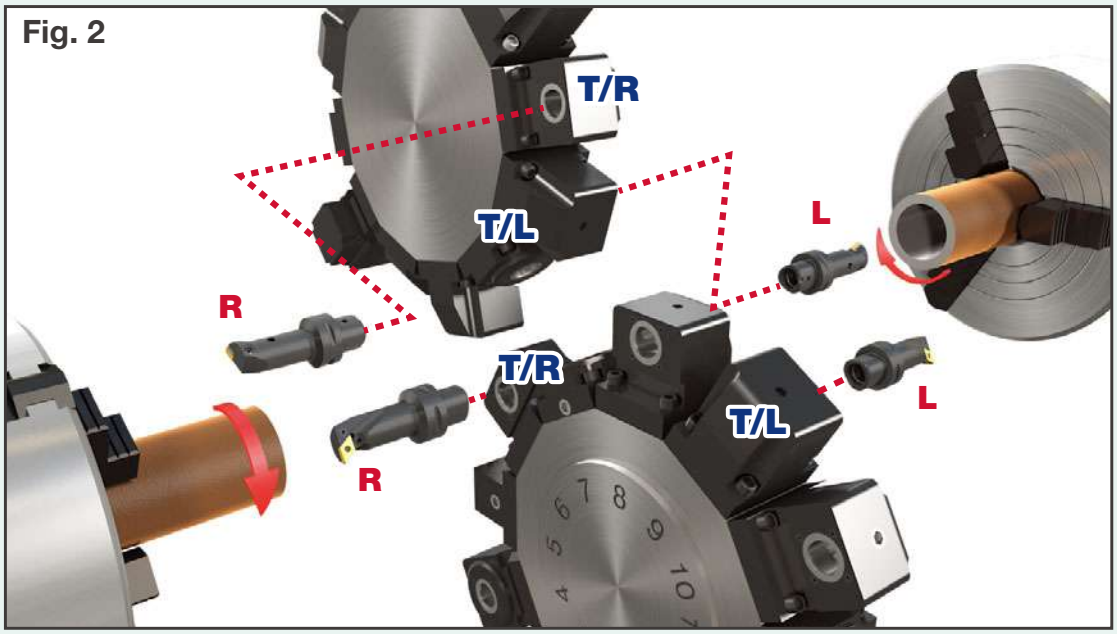


Fig. 2



R: Right hand cutting tool L: Left hand cutting tool
T/R: Right hand clamping unit T/L: Left hand clamping unit

Clamping torque

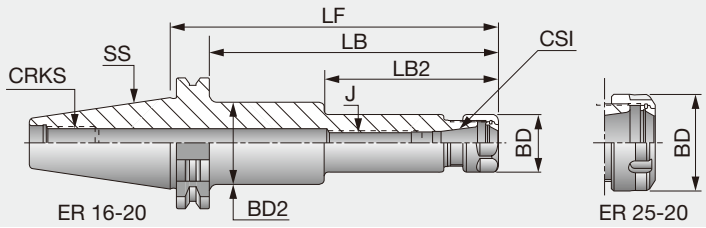


PSC size	Tightening torque recommendation (N · m)	Clamping force (Min. KN)	Torque wrench size	
			Static tool unit	Driven tool unit
C3	35	16	8	6
C4	50	21	10	8
C5	70	27	12	10
C6	90	30	12	12
C8	130	37	12	12

TUNGHOLD

DIN69871-ER

ER collet chuck holder (DIN69871)



Designation	SS	CSI	Range	LF	LB	LB2	BD	BD2	J	CRKS
DIN6987130ER16X63 (1)	30	ER16	0.5-10	63	43.9	28	28	-	M10	M12
DIN6987140ER16X63	40	ER16	0.5-10	63	43.9	-	28	-	M12	M16
DIN6987140ER16X63B	40	ER16	0.5-10	63	43.9	-	28	-	M12	M16
DIN6987140ER16X100	40	ER16	0.5-10	100	80.9	-	28	-	M12	M16
DIN6987140ER16X160	40	ER16	0.5-10	160	140.9	85	28	40	M12	M16
DIN6987140ER16X160B	40	ER16	0.5-10	160	140.9	85	28	40	M12	M16
DIN6987140ER20X63	40	ER20	1-13	63	43.9	-	34	-	M12	M16
DIN6987140ER20X63B	40	ER20	1-13	63	43.9	-	34	-	M12	M16
DIN6987140ER20X100	40	ER20	1-13	100	80.9	-	34	-	M12	M16
DIN6987140ER20X100B	40	ER20	1-13	100	80.9	-	34	-	M12	M16
DIN6987140ER20X160	40	ER20	1-13	160	140.9	91	34	44	M12	M16
DIN6987150ER16X100 (1)	50	ER16	0.5-10	100	80.9	-	28	-	M12	M24
DIN6987150ER16X100B	50	ER16	0.5-10	100	80.9	-	28	-	M12	M24
DIN6987150ER16X160 (1)	50	ER16	0.5-10	160	140.9	85	28	40	M12	M24
DIN6987150ER16X200 (1)	50	ER16	0.5-10	200	180.9	110	28	40	M10	M24
DIN6987150ER20X100 (1)	50	ER20	1-13	100	80.9	-	34	-	M12	M24
DIN6987150ER20X100B	50	ER20	1-13	100	80.9	-	34	-	M12	M24
DIN6987150ER20X160 (1)	50	ER20	1-13	160	140.9	86	34	45	M12	M24
DIN6987130ER32X65 (1)	30	ER32	2-20	65	45.9	32	50	40.4	M18x1.5	M12
DIN6987140ER25X65	40	ER25	1-16	65	45.9	28	42	32.4	M16x2	M16
DIN6987140ER25X65B	40	ER25	1-16	65	45.9	28	42	32.4	M16X2	M16
DIN6987140ER25X100	40	ER25	1-16	100	80.9	-	42	-	M16x2	M16
DIN6987140ER25X150	40	ER25	1-16	150	130.9	-	42	-	M16x2	M16
DIN6987140ER25X150B	40	ER25	1-16	150	130.9	-	42	-	M16X2	M16
DIN6987140ER32X65	40	ER32	2-20	65	45.9	32	50	40.4	M22x1.5	M16
DIN6987140ER32X100	40	ER32	2-20	100	80.9	35	50	49	M22x1.5	M16
DIN6987140ER32X150	40	ER32	2-20	150	130.9	35	50	49	M22x1.5	M16
DIN6987140ER40X70	40	ER40	3-26	70	50.9	32	63	50.4	M28x1.5	M16
DIN6987140ER40X70B	40	ER40	3-26	70	50.9	32	63	50.4	M28X1.5	M16
DIN6987140ER40X100	40	ER40	3-26	100	80.9	32	63	50.4	M28x1.5	M16
DIN6987140ER40X100B	40	ER40	3-26	100	80.9	32	63	50.4	M28X1.5	M16
DIN6987150ER25X100 (1)	50	ER25	1-16	100	80.9	-	42	-	M16x2	M24
DIN6987150ER25X100B	50	ER25	1-16	100	80.9	-	42	-	M16X2	M24
DIN6987150ER25X150 (1)	50	ER25	1-16	150	130.9	80.9	42	50	M16x2	M24
DIN6987150ER25X150B	50	ER25	1-16	150	130.9	80.9	42	50	M16X2	M24
DIN6987150ER25X200 (1)	50	ER25	1-16	200	180.9	85	42	55	M16x2	M24
DIN6987150ER32X100 (1)	50	ER32	2-20	100	80.9	-	50	-	M22x1.5	M24
DIN6987150ER32X150 (1)	50	ER32	2-20	150	130.9	-	50	-	M22x1.5	M24
DIN6987150ER32X150B	50	ER32	2-20	150	130.9	-	50	-	M22X1.5	M24
DIN6987150ER32X200 (1)	50	ER32	2-20	200	180.9	-	50	-	M22x1.5	M24
DIN6987150ER40X100 (1)	50	ER40	3-26	100	80.9	-	63	-	M28x1.5	M24
DIN6987150ER40X100B	50	ER40	3-26	100	80.9	-	63	-	M28X1.5	M24
DIN6987150ER40X150 (1)	50	ER40	3-26	150	130.9	-	63	-	M28x1.5	M24
DIN6987150ER40X200 (1)	50	ER40	3-26	200	180.9	-	63	-	M28x1.5	M24
DIN6987150ER40X200B	50	ER40	3-26	200	180.9	-	63	-	M28X1.5	M24
DIN6987150ER50X100 (1)	50	ER50	10-34	100	80.9	-	78	-	M36x1.5	M24
DIN6987150ER50X100B	50	ER50	10-34	100	80.9	-	78	-	M36X1.5	M24
DIN6987150ER50X150 (1)	50	ER50	10-34	150	130.9	-	78	-	M36x1.5	M24

• Applicable for 10 MPa coolant •Add B at the end of the designation for the item with coolant through the flange.
(1) Balanced to G6.3 max.n: 12,000 min-1

Option: Wrench for ER collet

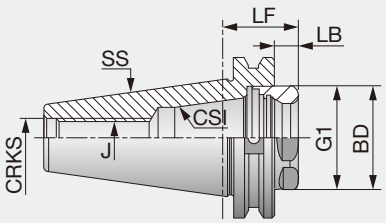
Reference pages


ER collet K125 | Nut K150 | Wrench K152 | Preset screw K153 | Pull stud K148

TUNGBALANCE

DIN69871-ER-SHORT

ER collet chuck holder, short type (DIN69871) (TungShort)



Designation	SS	CSI	Range	LF	LB	BD	J	CRKS	G1
DIN6987140ER32SHORT	40	ER32	2-20	25.1	6	40	M16	M16	M40x1.5
DIN6987150ER32SHORT	50	ER32	2-20	28.6	9.5	40	M22x1.5	M24	M40x1.5
DIN6987150ER40SHORT	50	ER40	3-26	28.6	9.5	50	M28x1.5	M24	M50x1.5

- Applicable for 10 MPa coolant
- Add B at the end of the designation for the item with coolant through the flange.

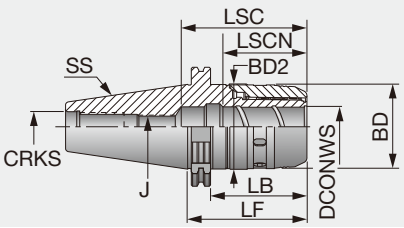
Option: Wrench for ER collet

Reference pages

ER collet K125 | Nut K150 | Wrench K152 | Preset screw K153 | Pull stud K148

DIN69871-TUNGMAX

Power chuck holder (DIN69871) (TungMax)



Designation	SS	DCONWS	Range	LF	LB	LSCN	LSC	BD	BD2	J	CRKS
DIN6987140MAXIN20X95	40	20	6-20	95	76	56	69	51	53	M16	M16
DIN6987150MAXIN20X105 (1)	50	20	6-20	105	86	56	69	51	53	M16	M24
DIN6987150MAXIN32X100 (1)	50	32	6-32	100	81	70	84	69	70	M20x2	M24
DIN6987150MAXIN32X135 (1)	50	32	6-32	135	116	71	85	69	70	M20x2	M24

• Applicable for 10 MPa coolant
• Add B at the end of the designation for the item with coolant through the flange.
(1) Balanced to G6.3 max.n: 8,000 min-1

Option: Clamping wrench

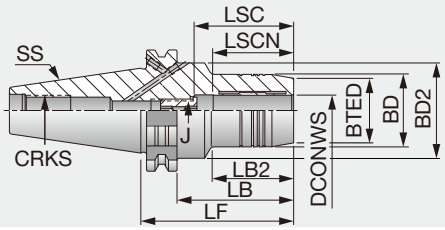
Reference pages

Straight collet K135
Pull stud K148
Wrench K152

TUNGHYDRO

DIN69871-HYDRO

Hydraulic endmill chuck holder (DIN69871) (TungHydro)



Designation	SS	DCONWS	BTED	BD	BD2	LF	LB	LB2	LSCN	LSC	J	CRKS
DIN6987130HYDRO6X60	30	6	23	26	45	60	41	25	27	37	M5	M12
DIN6987130HYDRO16X90	30	16	34	38	45	90	71	43	42	52	M12x1	M12
DIN6987130HYDRO20X90	30	20	38	42	42	90	71	-	42	52	M12x1	M12
DIN6987140HYDRO6X68	40	6	23	26	50	68	49	33	27	37	M5	M16
DIN6987140HYDRO8X68	40	8	25	28	50	68	49	33	27	37	M6	M16
DIN6987140HYDRO10X72	40	10	27	30	50	72	53	37	32	42	M8x1	M16
DIN6987140HYDRO12X77	40	12	29	32	50	77	58	42	37	47	M10x1	M16
DIN6987140HYDRO14X77	40	14	30	34	50	77	58	42	37	47	M10x1	M16
DIN6987140HYDRO16X80	40	16	34	38	50	80	61	43	42	52	M12x1	M16
DIN6987140HYDRO18X80	40	18	36	40	50	80	61	43	42	52	M12x1	M16
DIN6987140HYDRO20X82	40	20	38	42	50	82	63	47	42	52	M12x1	M16
DIN6987140HYDRO25X117	40	25	46	50	63	117	98	51	48	58	M16x1	M16
DIN6987140HYDRO32X117	40	32	56	60	63	117	98	56	52	62	M16x1	M16
DIN6987150HYDRO6X68	50	6	23	26	80	68	49	33	27	37	M5	M24
DIN6987150HYDRO8X68	50	8	25	28	80	68	49	33	27	37	M6	M24
DIN6987150HYDRO10X72	50	10	27	30	80	72	53	37	32	42	M8x1	M24
DIN6987150HYDRO12X77	50	12	29	32	80	77	58	42	37	47	M10x1	M24
DIN6987150HYDRO14X77	50	14	30	34	80	77	58	42	37	47	M10x1	M24
DIN6987150HYDRO16X80	50	16	34	38	80	80	61	45	42	52	M12x1	M24
DIN6987150HYDRO18X80	50	18	36	40	80	80	61	45	42	52	M12x1	M24
DIN6987150HYDRO20X82	50	20	38	42	80	82	63	47	42	52	M16x1	M24
DIN6987150HYDRO25X87	50	25	46	50	80	87	68	52	48	58	M16x1	M24
DIN6987150HYDRO32X91	50	32	56	60	80	91	72	56	54	64	M16x1	M24
DIN6987140HYDRO20X64.5 (1)	40	20	40	49.5	-	64.5	45	-	42	52	M16x1	M16
DIN6987150HYDRO32X81 (1)	50	32	56	72	-	81	62	-	54	64	M16x1	M24

- Applicable for 10 MPa coolant
- Clamping wrench (WRENCH HYDRO HEX 4) is sold separately.
- Reduction sleeves are available for d = 12, 20, 25, and 32mm (sold separately). Chucking force will reduce when using a reduction sleeve.

(1) Holders for heavy duty

Reference pages


Straight collet
K138

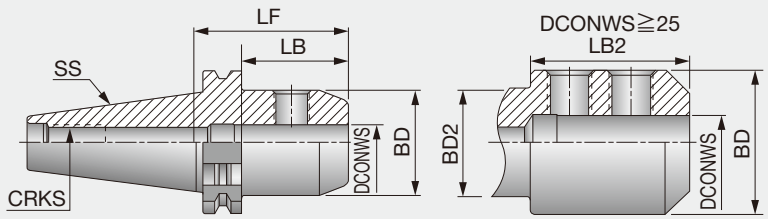

Pull stud
K148


Wrench
K152

TUNGHOLD

DIN69871-EM

Side lock holder for weldon endmills (DIN69871)



Designation	SS	DCONWS	BD	BD2	LF	LB	LB2	CRKS
DIN6987130EM6X50	30	6	26	-	50	30.9	-	M12
DIN6987130EM8X50	30	8	28	-	50	30.9	-	M12
DIN6987130EM10X50	30	10	35	-	50	30.9	-	M12
DIN6987130EM16X63	30	16	48	44.9	63	43.9	28	M12
DIN6987130EM18X72	30	18	50	44.9	72	52.9	37	M12
DIN6987130EM20X72	30	20	52	44	72	52.9	37	M12
DIN6987140EM6X50	40	6	25	-	50	30.9	-	M16
DIN6987140EM8X50	40	8	28	-	50	30.9	-	M16
DIN6987140EM10X50	40	10	35	-	50	30.9	-	M16
DIN6987140EM12X50	40	12	42	-	50	30.9	-	M16
DIN6987140EM14X63	40	14	44	-	63	43.9	-	M16
DIN6987140EM16X63	40	16	48	-	63	43.9	-	M16
DIN6987140EM18X63	40	18	50	49	63	43.9	28.5	M16
DIN6987140EM20X63	40	20	52	49	63	43.9	28.5	M16
DIN6987140EM20X63B	40	20	52	49	63	43.9	28.5	M16
DIN6987140EM25X100	40	25	65	49	100	80.9	65	M16
DIN6987140EM25X100B	40	25	65	49	100	80.9	65	M16
DIN6987140EM32X100	40	32	71	49	100	80.9	65	M16
DIN6987150EM6X63	50	6	25	-	63	43.9	-	M24
DIN6987150EM8X63	50	8	28	-	63	43.9	-	M24
DIN6987150EM8X63B	50	8	28	-	63	43.9	-	M24
DIN6987150EM10X63	50	10	35	-	63	43.9	-	M24
DIN6987150EM12X63	50	12	42	-	63	43.9	-	M24
DIN6987150EM14X63	50	14	44	-	63	43.9	-	M24
DIN6987150EM16X63	50	16	48	-	63	43.9	-	M24
DIN6987150EM18X63	50	18	50	-	63	43.9	-	M24
DIN6987150EM20X63	50	20	52	-	63	43.9	-	M24
DIN6987150EM25X80	50	25	65	-	80	60.9	-	M24
DIN6987150EM25X80B	50	25	65	-	80	60.9	-	M24
DIN6987150EM32X100	50	32	72	-	100	80.9	-	M24
DIN6987150EM32X100B	50	32	72	-	100	80.9	-	M24
DIN6987150EM40X100	50	40	90	79.9	100	80.9	43	M24
DIN6987150EM50X125	50	50	98	79.9	125	105.9	90	M24
DIN6987140EM10X45 (1)	40	10	35	-	45	25.9	-	M16
DIN6987140EM12X45 (1)	40	12	42	-	45	25.9	-	M16
DIN6987140EM14X45 (1)	40	14	44	-	45	25.9	-	M16
DIN6987140EM14X45B (1)	40	14	44	-	45	25.9	-	M16
DIN6987140EM16X45 (1)	40	16	48	-	45	25.9	-	M16
DIN6987140EM18X45 (1)	40	18	49	-	45	25.9	-	M16
DIN6987140EM20X45 (1)	40	20	49	-	45	25.9	-	M16
DIN6987140EM25X45 (1)	40	25	49	-	45	25.9	-	M16

- Applicable for 10 MPa coolant
- Add B at the end of the designation for the item with coolant through the flange.

(1) Short endmill holder

Reference pages

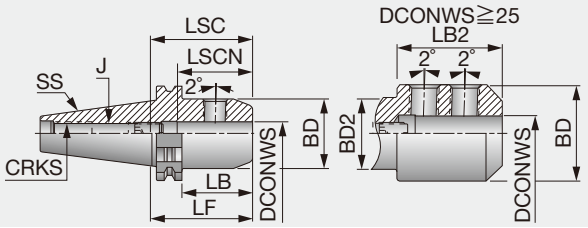

Clamping screw
K155


Pull stud
K148

TUNGHOLD

DIN69871-EM E

Side lock holder for whistle notch (DIN69871)



Designation	SS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J(1)	CRKS	Wrench
DIN6987140EM8X50E	40	8	28	-	50	30.9	-	35	45	M6	M16	3
DIN6987140EM10X50E	40	10	35	-	50	30.9	-	39	49	M8	M16	4
DIN6987140EM12X50E	40	12	42	-	50	30.9	-	44	54	M10	M16	5
DIN6987140EM16X63E	40	16	48	-	63	43.9	-	47	57	M12	M16	6
DIN6987140EM18X63E	40	18	50	49	63	43.9	28.5	47	57	M12	M16	6
DIN6987140EM20X63E	40	20	52	49	63	43.9	29	49	59	M16	M16	8
DIN6987140EM25X100E	40	25	65	49	100	80.9	65	54	64	M20X1.5	M16	10
DIN6987140EM32X100E	40	32	72	49	100	80.9	65	58	68	M20X1.5	M16	10
DIN6987150EM10X63E	50	10	35	-	63	43.9	-	39	49	M8	M24	4
DIN6987150EM12X63E	50	12	42	-	63	43.9	-	44	54	M10	M24	5
DIN6987150EM14X63E	50	14	44	-	63	43.9	-	44	54	M10	M24	5
DIN6987150EM16X63E	50	16	48	-	63	43.9	-	47	57	M12	M24	6
DIN6987150EM20X63E	50	20	52	-	63	43.9	-	49	49	M16	M24	8
DIN6987150EM20X63EB	50	20	52	-	63	43.9	-	49	49	M16	M24	8
DIN6987150EM25X80E	50	25	65	-	80	60.9	-	54	64	M20X1.5	M24	10
DIN6987150EM32X100E	50	32	72	-	100	80.9	-	58	68	M20X1.5	M24	10
DIN6987150EM40X100E	50	40	90	79.9	100	80.9	43	68	78	M20X1.5	M24	10

• Applicable for 10 MPa coolant
• Add B at the end of the designation for the item with coolant through the flange.
(1) Preset screw has an internal coolant hole.

Reference pages

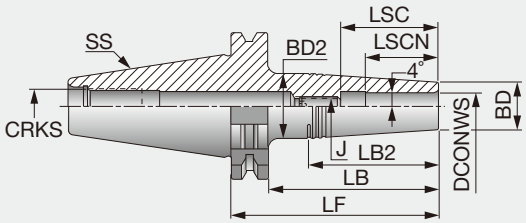

Clamping screw
K155


Pull stud
K148

TUNGSHRINK

DIN69871-SRK

Thermal shrinking holder for carbide shank (DIN69871) (TungShrink)



Designation	SS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	CRKS	Wrench
DIN6987140SRK3X50	40	3	10	15	69.1	50	35.55	10	16	M6	M16	3
DIN6987140SRK3X85	40	3	10	19	104.1	85	64.15	10	16	M6	M16	3
DIN6987140SRK4X50	40	4	10	15	69.1	50	35.55	12	18	M6	M16	3
DIN6987140SRK4X85	40	4	10	19	104.1	85	64.15	12	18	M6	M16	3
DIN6987140SRK5X50	40	5	10	15	69.1	50	35.55	15	21	M6	M16	3
DIN6987140SRK5X85	40	5	10	19	104.1	85	64.15	12	18	M6	M16	3
DIN6987140SRK6X50	40	6	11	16	69.1	50	35.55	18	24	M8	M16	4
DIN6987140SRK6X85	40	6	11	20	104.1	85	64.1	18	24	M8	M16	4
DIN6987140SRK8X50	40	8	14	20	69.1	50	42.5	25	31	M10	M16	5
DIN6987140SRK8X85	40	8	14	23	104.1	85	63.95	25	31	M10	M16	5
DIN6987140SRK10X50	40	10	16	22	69.1	50	42.4	30	36	M12	M16	6
DIN6987140SRK10X85	40	10	16	24.5	104.1	85	60.28	30	36	M12	M16	6
DIN6987140SRK12X50	40	12	20	26	69.1	50	42.3	32	42	M10	M16	5
DIN6987140SRK12X85	40	12	20	28	104.1	85	56.6	32	42	M10	M16	5

- Applicable for 10 MPa coolant
- Please use an induction heating unit for SRKIN holder.

(1) Balanced to G2.5 max.n: 20,000 min-1

Reference pages


Pull stud K148


Induction heating unit K144

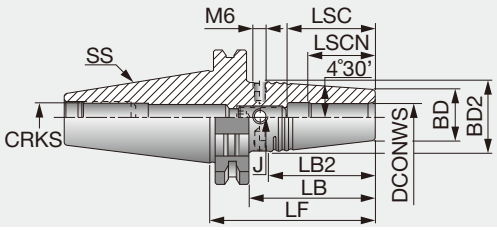

Heating unit K144


Preset screw K155

TUNGSHRINK

DIN69871-SRKIN

Thermal shrinking holder for carbide and HSS shanks (DIN69871) (TungShrink)



Designation	SS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	CRKS	Wrench
DIN6987140SRKIN6X80	40	6	21	27	80	60.9	38	25	36	M5	M16	2.5
DIN6987140SRKIN8X80	40	8	21	27	80	60.9	38	25	36	M6	M16	3
DIN6987140SRKIN10X80	40	10	24	32	80	60.9	50.5	31	42	M8	M16	4
DIN6987140SRKIN12X80	40	12	24	32	80	60.9	50.5	31	47	M10	M16	5
DIN6987140SRKIN14X80	40	14	27	34	80	60.9	44.2	36	47	M10	M16	5
DIN6987140SRKIN16X80	40	16	27	34	80	60.9	44.2	39	50	M12	M16	6
DIN6987140SRKIN18X80	40	18	33	42	80	60.9	57	39	50	M12	M16	6
DIN6987140SRKIN20X80	40	20	33	42	80	60.9	57	41	52	M16	M16	8
DIN6987140SRKIN25X100	40	25	44	53	100	80.9	57	47	58	M16	M16	8
DIN6987150SRKIN6X80 (1)	50	6	21	27	80	60.9	38	25	36	M5	M24	2.5
DIN6987150SRKIN8X80 (1)	50	8	21	27	80	60.9	38	25	36	M6	M24	3
DIN6987150SRKIN10X80 (1)	50	10	24	32	80	60.9	51	31	42	M8	M24	4
DIN6987150SRKIN12X80 (1)	50	12	24	32	80	60.9	51	36	47	M10	M24	5
DIN6987150SRKIN14X80 (1)	50	14	27	34	80	60.9	44.5	36	47	M10	M24	5
DIN6987150SRKIN16X80 (1)	50	16	27	34	80	60.9	44.5	39	50	M12	M24	6
DIN6987150SRKIN18X80 (1)	50	18	33	42	80	60.9	57	39	50	M12	M24	6
DIN6987150SRKIN20X80 (1)	50	20	33	42	80	60.9	57	41	52	M16	M24	8
DIN6987150SRKIN25X100 (1)	50	25	44	53	100	80.9	57	47	58	M16	M24	8
DIN6987150SRKIN32X100 (1)	50	32	44	53	100	80.9	57	47	58	M16	M24	8

- Applicable for 10 MPa coolant
- Please use an induction heating unit for SRKIN holder

(1) Balanced to G2.5 max.n: 20,000 min-1

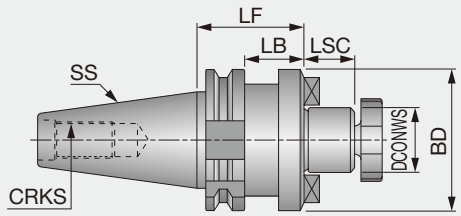
Reference pages

Pull stud K148
Induction heating unit K144
Heating unit K144
Preset screw K155

TUNGHOLD

DIN69871-SEM

Shell mill holder (DIN69871)



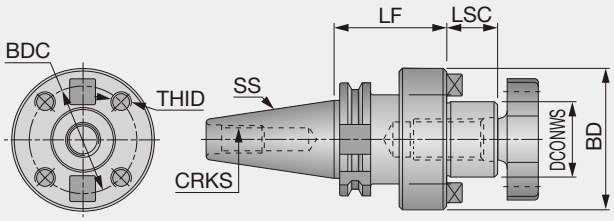
Designation	SS	DCONWS	LSC	BD	LF	LB	CRKS
DIN6987130SEM16X35	30	16	17	38	35	15.9	M12
DIN6987130SEM22X50	30	22	19	47	50	30.9	M12
DIN6987130SEM27X50	30	27	21	58	50	30.9	M12
DIN6987140SEM16X35	40	16	17	38	35	15.9	M16
DIN6987140SEM22X35	40	22	19	47	35	15.9	M16
DIN6987140SEM27X60	40	27	21	58	60	40.9	M16
DIN6987140SEM32X60	40	32	24	66	60	40.9	M16
DIN6987140SEM40X60	40	40	27	82	60	40.9	M16
DIN6987150SEM16X35	50	16	17	38	35	15.9	M24
DIN6987150SEM22X35	50	22	19	47	35	15.9	M24
DIN6987150SEM22X50X200	50	22	19	50	200	180.9	M24
DIN6987150SEM27X35	50	27	21	58	35	15.9	M24
DIN6987150SEM32X35	50	32	24	66	35	15.9	M24
DIN6987150SEM32X78X370	50	32	24	78	370	350.9	M24
DIN6987150SEM40X50	50	40	27	82	50	30.9	M24
DIN6987150SEM50X60	50	50	30	95	60	40.9	M24

Option: Wrench for center bolt

TUNGHOLD

DIN69871-FM

Face mill holder (DIN69871)



Designation	SS	DCONWS	LSC	BD	LF	BDC	THID	CRKS
DIN6987140FM40	40	40	27	88	60	66.7	M12	M16
DIN6987150FM40	50	40	27	88	70	66.7	M12	M24
DIN6987150FM60	50	60	40	128	70	101.6	M16	M24

Reference pages


Pull stud K148

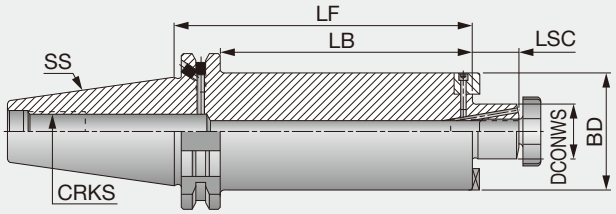

Clamping screw K154


Wrench K156

TUNGHOLD

DIN69871-SEM

Shell mill holder with coolant hole, long type (DIN69871)



Designation	SS	DCONWS	LSC	BD	LF	LB	CRKS
DIN6987150SEM22X48X200C	50	22	19	48	200	181	M24
DIN6987150SEM22X61X300C	50	22	19	61	300	281	M24
DIN6987150SEM27X61X300C	50	27	21	61	300	281	M24
DIN6987150SEM32X78X370C	50	32	24	78	370	351	M24

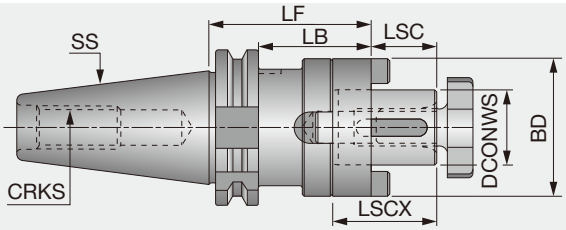
• Applicable for 10 MPa coolant
• When being used as a flange-through type, the plug screw must be removed from the flange with a 2-mm hex key.

Option: Wrench for center bolt

TUNGHOLD

DIN69871-SEMC

Combination holder for slot mill and shell mill (DIN69871)



Designation	SS	DCONWS	LSC	BD	LF	LB	LSCX	CRKS
DIN6987130SEMC16X50	30	16	17	32	50	30.9	27	M12
DIN6987130SEMC22X50	30	22	19	40	50	30.9	31	M12
DIN6987140SEMC16X55	40	16	17	32	55	35.9	27	M16
DIN6987140SEMC16X100	40	16	17	32	100	80.9	27	M16
DIN6987140SEMC22X55	40	22	19	40	55	35.9	31	M16
DIN6987140SEMC22X100	40	22	19	40	100	80.9	31	M16
DIN6987140SEMC27X55	40	27	21	48	55	35.9	33	M16
DIN6987140SEMC27X100	40	27	21	48	100	80.9	33	M16
DIN6987140SEMC32X60	40	32	24	58	60	45.9	38	M16
DIN6987140SEMC32X100	40	32	24	58	100	80.9	38	M16
DIN6987140SEMC40X60	40	40	27	70	60	40.9	41	M16
DIN6987150SEMC16X55	50	16	17	32	55	35.9	27	M24
DIN6987150SEMC16X100	50	16	17	32	100	80.9	27	M24
DIN6987150SEMC22X55	50	22	19	40	55	35.9	31	M24
DIN6987150SEMC22X100	50	22	19	40	100	80.9	31	M24
DIN6987150SEMC27X55	50	27	21	48	55	35.9	33	M24
DIN6987150SEMC27X100	50	27	21	48	100	80.9	33	M24
DIN6987150SEMC32X55	50	32	24	58	55	35.9	38	M24
DIN6987150SEMC32X100	50	32	24	58	100	80.9	38	M24
DIN6987150SEMC40X55	50	40	27	70	55	35.9	41	M24
DIN6987150SEMC40X100	50	40	27	70	100	80.9	41	M24
DIN6987150SEMC50X70	50	50	30	90	70	50.9	46	M24

Option: Wrench for center bolt

Reference pages

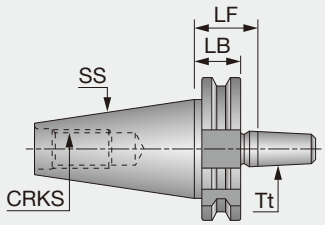


K148 K154 K156

TUNGHOLD

DIN69871-DC

Jacobs taper holder (DIN69871)

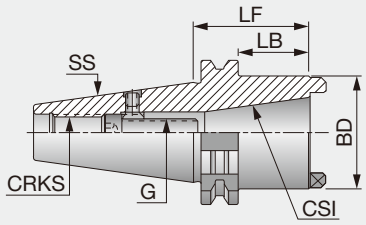


Designation	SS	Tt	LF	LB	CRKS
DIN6987140DCB12X26	40	B12	26	19.1	M16
DIN6987140DCB16X26	40	B16	26	19.1	M16
DIN6987140DCB18X26	40	B18	26	19.1	M16
DIN6987150DCB16X26	50	B16	26	19.1	M24
DIN6987150DCB18X26	50	B18	26	19.1	M24

TUNGHOLD

DIN69871 AD

Conversion adapter (DIN69871)



Designation	SS	CSI	LF	BD	LB	G	CRKS
DIN6987140ADDIN208030	40	DIN2080 30	50	50	30.9	M12	M16
DIN6987150ADBT/SK40	50	BT/SK 40	70	66	50.9	M16	M24

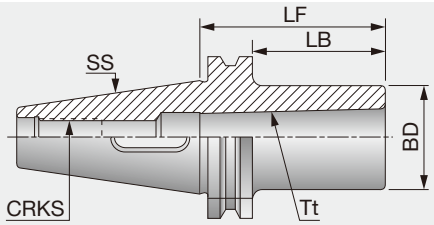
Reference pages



Pull stud
K148

TUNGHOLD
DIN69871-MT

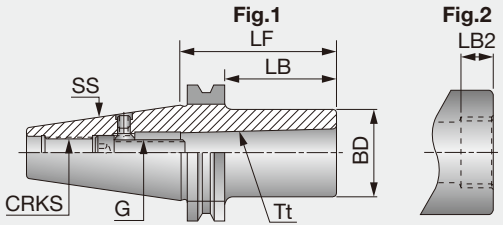
Morse taper holder (DIN69871)



Designation	SS	Tt	LF	BD	LB	CRKS
DIN6987140MT1X50	40	MT1	50	25	30.9	M16
DIN6987140MT2X50	40	MT2	50	32	30.9	M16
DIN6987140MT3X70	40	MT3	70	40	50.9	M16
DIN6987140MT4X95	40	MT4	95	48	75.9	M16
DIN6987150MT1X45	50	MT1	45	25	25.9	M24
DIN6987150MT2X60	50	MT2	60	32	40.9	M24
DIN6987150MT3X65	50	MT3	65	40	45.9	M24
DIN6987150MT4X95	50	MT4	95	48	75.9	M24
DIN6987150MT5X105	50	MT5	105	63	85.9	M24

TUNGHOLD
DIN69871-MT DRW

Morse taper holder with draw bar (DIN69871)



Designation	SS	Tt	LF	BD	LB	LB2	G	CRKS	Fig.
DIN6987140MT1DRW	40	MT1	50	25	30.9	-	M6	M16	1
DIN6987140MT2DRW	40	MT2	50	32	30.9	-	M10	M16	1
DIN6987140MT3DRW	40	MT3	70	40	50.9	-	M12	M16	1
DIN6987140MT4DRW (1)	40	MT4	95	63	75.9	15	M16	M16	2
DIN6987150MT1DRW	50	MT1	45	25	25.9	-	M6	M24	1
DIN6987150MT2DRW	50	MT2	60	32	40.9	-	M10	M24	1
DIN6987150MT3DRW	50	MT3	65	40	45.9	-	M12	M24	1
DIN6987150MT4DRW (1)	50	MT4	70	63	50.9	15	M16	M24	2
DIN6987150MT5DRW (1)	50	MT5	100	78	80.9	18	M20	M24	2

(1) DIN 2201.

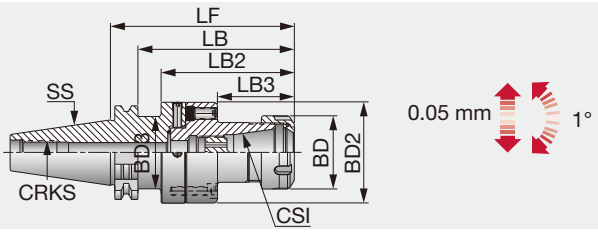
Reference pages



Pull stud
K148

ADJ DIN69871-ER collet

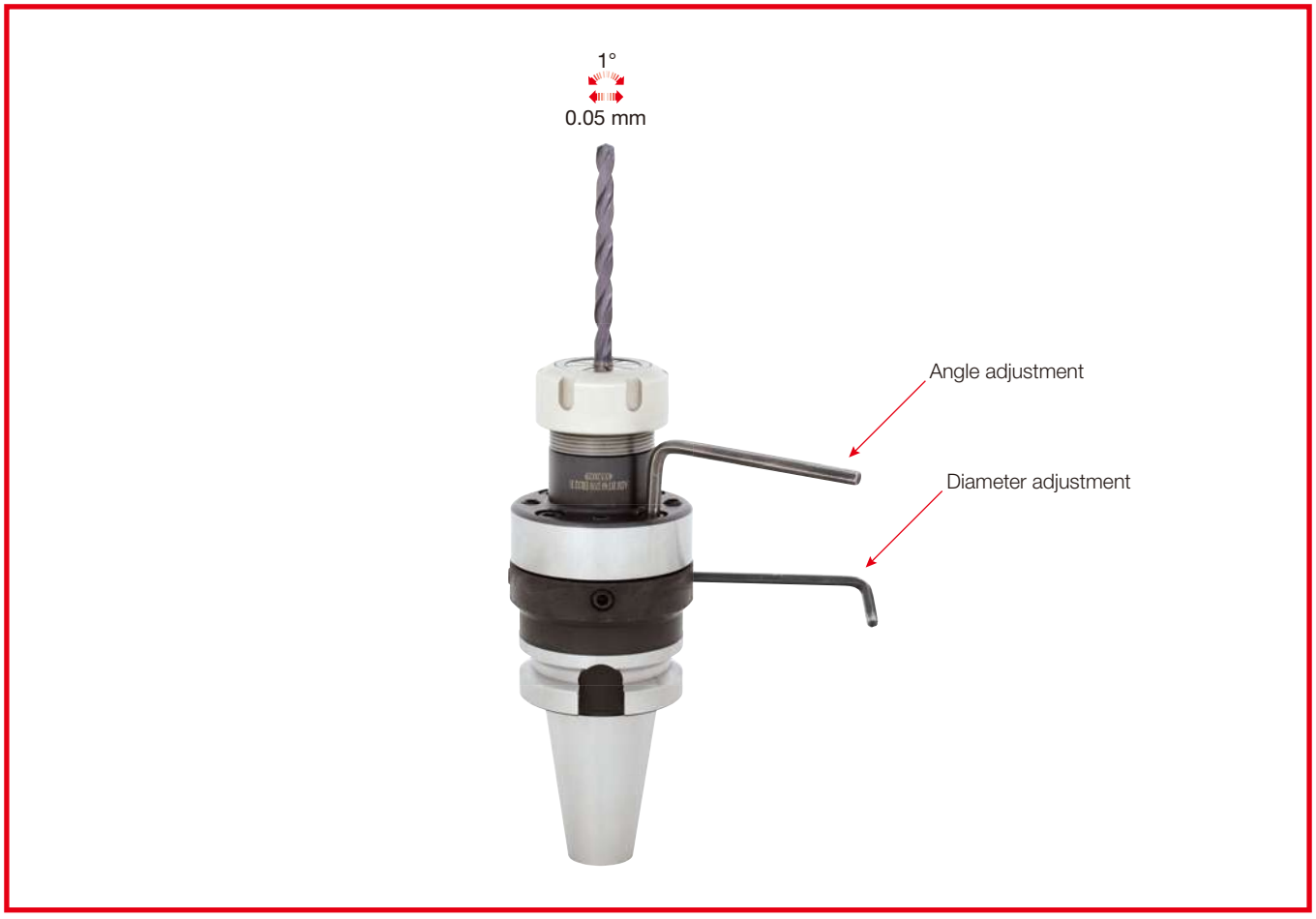
ER collet chuck holder with center alignment (DIN69871)



Designation	SS	CSI	Range	LF	LB	LB2	LB3	BD	BD2	BD3	CRKS
ADJDIN6987140D70ER32	40	ER32	2-20	124.5	105.4	89.5	52.5	50	70	46	M16
ADJDIN6987150D70ER32	50	ER32	2-20	124.5	105.4	-	52.5	50	70	-	M24

• Applicable for 10 MPa coolant

Option: Wrench for ER collet



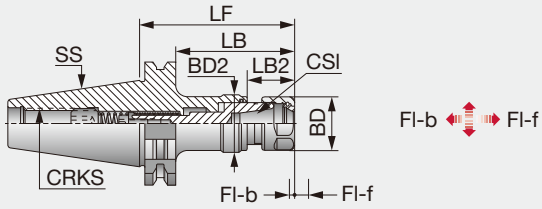
Reference pages

ER collet K125
Nut K151
Wrench K152
Preset screw K153
Pull stud K148

TUNGGTI

GTI-DIN69871-ER

Tapping holder (DIN69871) (TungGTI)



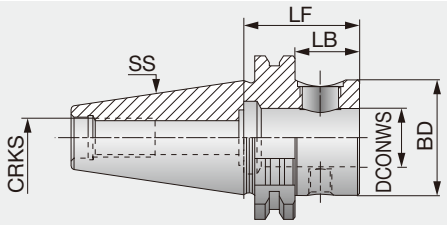
Designation	SS	CSI	Tap min	Tap max	Range	LF	LB	LB2	BD	BD2	Fl-f	Fl-b	CRKS
GTIDIN6987140ER16	40	ER16	M3	M10	0.5-10	81.2	62.1	24.6	28	29.5	8	3	M16
GTIDIN6987150ER16	50	ER16	M3	M10	0.5-10	106.8	87.7	24.6	28	29.5	8	3	M24
GTIDIN6987140ER32	40	ER32	M6	M20	2-20	112.6	93.5	33	50	56.5	9	4	M16
GTIDIN6987150ER32	50	ER32	M6	M20	2-20	115.3	96.2	33	50	56.5	9	4	M24
GTIDIN6987140ER40	40	ER40	M6	M28	3-26	130.6	111.5	51	63	56.5	9	4	M16
GTIDIN6987150ER40	50	ER40	M6	M28	3-26	133.3	114.2	51	63	56.5	9	4	M24

Option: Wrench for ER collet

TUNGFIT

DIN69871-CF

Quick change holder (DIN69871) (TungFit)



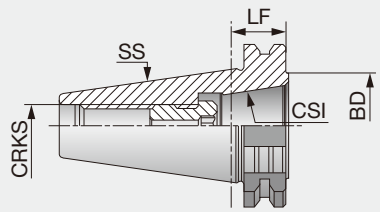
Designation	SS	DCONWS	BD	LF	LB	CRKS
DIN6987140CF4-S	40	25	44.5	44.1	25	M16
DIN6987140CF4-L	40	25	44.5	100	80.9	M16
DIN6987150CF4-S	50	25	44.5	44.1	25	M24
DIN6987150CF4-SB	50	25	44.5	44.1	25	M24
DIN6987150CF4-L	50	25	44.5	100	80.9	M24
DIN6987150CF4-LB	50	25	44.5	100	80.9	M24

- Applicable for 10 MPa coolant
- Clamping torque: 58.8 N·m Add B at the end of the designation for the item with coolant through the flange.

TUNGCLICK

DIN69871-ER-CLICK

Quick change holder (DIN69871) (TungClick)



Designation	SS	CSI	BD	LF	CRKS
DIN6987140ER32CLICK-IN	40	ER32	41	20.1	M16

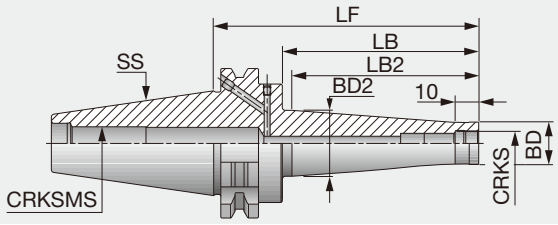
- Applicable for 10 MPa coolant
- Clamping torque: 235 N·m

Reference pages

ER collet K125 | Nut K151 | Wrench K152 | Preset screw K153 | Pull stud K148

TUNGFLEX
DIN69871-ODP

Screw-clamp holder for modular heads (DIN69871) (TungFlex)



Designation	SS	CRKS	BD	BD2	LF	LB	LB2	CRKSMS
DIN6987140ODP6X58	40	M6	9.8	13	58	38.9	32	M16
DIN6987140ODP6X98	40	M6	9.8	23	98	78.9	74	M16
DIN6987140ODP8X58	40	M8	13.1	15	58	38.9	32	M16
DIN6987140ODP8X98	40	M8	13.1	23	98	78.9	74	M16
DIN6987140ODP10X58	40	M10	18	20	58	38.9	32	M16
DIN6987140ODP10X98	40	M10	18	28	98	78.9	74	M16
DIN6987140ODP12X58	40	M12	21	24	58	38.9	34	M16
DIN6987140ODP12X98	40	M12	21	31	98	78.9	75	M16
DIN6987140ODP16X58	40	M16	29	28.6	58	38.9	33	M16
DIN6987140ODP16X98	40	M16	29	34	98	78.9	75	M16
DIN6987150ODP12X78 (1)	50	M12	23	30	78	58.9	50	M24
DIN6987150ODP12X128 (1)	50	M12	23	40	128	108.9	100	M24
DIN6987150ODP12X178 (1)	50	M12	23	40	178	158.9	150	M24
DIN6987150ODP12X228 (1)	50	M12	23	46	228	208.9	200	M24
DIN6987150ODP16X78 (1)	50	M16	29	34	78	58.9	50	M24
DIN6987150ODP16X128 (1)	50	M16	29	40	128	108.9	100	M24
DIN6987150ODP16X178 (1)	50	M16	29	55	178	158.9	150	M24
DIN6987150ODP16X228 (1)	50	M16	29	55	228	208.9	200	M24

• Applicable for 10 MPa coolant
(1) Balanced to G6.3 max.n: 12,000 min-1

Reference pages

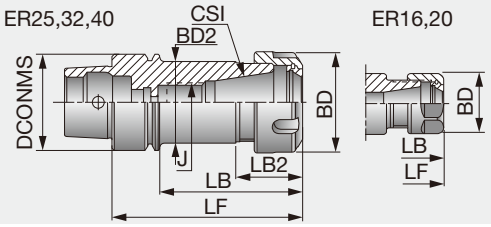


Pull stud
K148

TUNGHOLD

HSK E-ER

ER collet chuck holder (HSK-E)



Designation	DCONMS	CSI	Range	LF	LB	LB2	BD	BD2	J
HSKE32ER16X60	32	ER16	0.5-10	60	40	21.5	28	22.4	-
HSKE32ER20X60	32	ER20	1-13	6	40	26	34	25.4	-
HSKE32ER25X65	32	ER25	1-16	65	45	30	42	25.8	-
HSKE40ER16X60	40	ER16	0.5-10	60	40	-	28	-	-
HSKE40ER16X80	40	ER16	0.5-10	80	60	-	28	-	M10
HSKE40ER20X80	40	ER20	1-13	80	60	-	34	-	M12
HSKE40ER25X80	40	ER25	1-16	80	60	28	42	34	M18X1.5
HSKE40ER32X80	40	ER32	2-20	80	60	31	50	40.1	M22X1.5
HSKE50ER16X100 (1)	50	ER16	0.5-10	100	74	-	28	-	M10
HSKE50ER16X100M (1)(3)	50	ER16	0.5-10	100	74	-	22	-	M10
HSKE50ER16X80 (1)	50	ER16	0.5-10	80	54	-	28	-	M10
HSKE50ER20X80 (1)	50	ER20	1-13	80	54	-	34	-	M10
HSKE50ER25X80 (1)	50	ER25	1-16	80	54	28	42	32.4	-
HSKE50ER32X80 (1)	50	ER32	2-20	80	54	31	50	40.4	-
HSKE50ER32X100 (1)	50	ER32	2-20	100	74	31	50	40.4	M22X1.5
HSKE63ER16X80 (2)	63	ER16	0.5-10	80	54	-	28	-	M10
HSKE63ER16X100 (2)	63	ER16	0.5-10	100	74	-	28	-	M10
HSKE63ER20X75 (2)	63	ER20	1-13	75	49	-	34	-	-
HSKE63ER32X80 (2)	63	ER32	2-20	80	54	31	50	40.4	-
HSKE63ER32X100 (2)	63	ER32	2-20	100	75	-	50	-	M22X1.5

- Applicable for 10 MPa coolant
- Equipped with nut ER 16 MINI

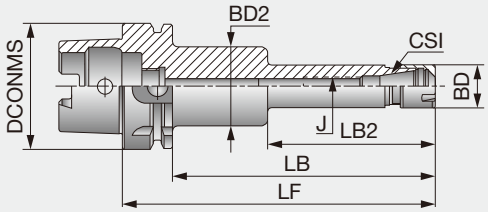
(1) Balanced to G2.5 max.n: 35,000 min-1
(2) Balanced to G2.5 max.n: 35,000 min-1
(3) Balanced to G2.5 max.n: 30,000 min-1

Option: Wrench for ER collet

Reference pages

ER collet K125
Nut K151
Preset screw K153
Wrench K152, K157
Cooling tube K156

ER Mini collet chuck holder (HSK-A)



Designation	DCONMS	CSI	Range	LF	LB	LB2	BD	BD2	J
HSKA63ER16X100M	63	ER16	0.5-10	100	74	-	22	-	M10
HSKA63ER16X120M	63	ER16	0.5-10	120	94	78	22	40	M10
HSKA63ER16X160M	63	ER16	0.5-10	160	134	85	22	40	M10
HSKA63ER20X100M	63	ER20	1-13	100	74	-	28	-	M12
HSKA63ER20X120M	63	ER20	1-13	120	94	-	28	-	M12
HSKA63ER20X160M	63	ER20	1-13	160	134	85	28	45	M12
HSKA100ER16X100M (1)	100	ER16	0.5-10	100	71	-	22	-	M10
HSKA100ER16X160M (1)	100	ER16	0.5-10	160	131	85	22	40	M10
HSKA100ER20X100M (1)	100	ER20	1-13	100	71	-	28	-	M12
HSKA100ER20X160M (1)	100	ER20	1-13	160	131	85	28	45	M12

• Applicable for 10 MPa coolant
(1) Balanced to G6.3 max.n: 12,000 min-1

Option: Wrench for ER collet

Reference pages

ER collet K125
Nut K151
Preset screw K153
Wrench K152, K157
Cooling tube K156

TUNGHOLD

HSK A-ER

ER collet chuck holder (HSK-A)

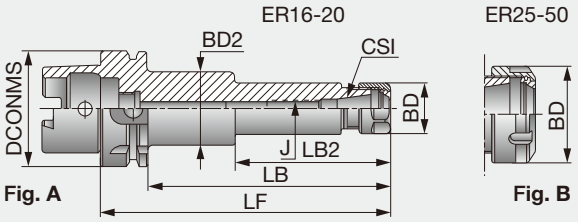


Fig. A Fig. B

Designation	DCONMS	CSI	Range	LF	LB	LB2	BD	BD2	J	Fig.
HSKA40ER16X60	40	ER16	0.5-10	60	40	-	28	-	M10	A
HSKA40ER16X80	40	ER16	0.5-10	80	60	-	28	-	M10	A
HSKA50ER20X100	50	ER20	1-13	100	74	-	34	-	M12	A
HSKA63ER16X100	63	ER16	0.5-10	100	74	-	28	-	M10	A
HSKA63ER16X120	63	ER16	0.5-10	120	94	-	28	-	M10	A
HSKA63ER16X160	63	ER16	0.5-10	160	134	85.6	28	40	M10	A
HSKA63ER20X100	63	ER20	1-13	100	74	-	34	-	M12	A
HSKA63ER20X120	63	ER20	1-13	120	94	-	34	-	M12	A
HSKA63ER20X160	63	ER20	1-13	160	134	85.0	34	45	M12	A
HSKA100ER16X100 (1)	100	ER16	0.5-10	100	71	-	28	-	M10	A
HSKA100ER16X160 (1)	100	ER16	0.5-10	160	131	85	28	40	M10	A
HSKA100ER20X100 (1)	100	ER20	1-13	100	71	-	34	-	M12	A
HSKA100ER20X160 (1)	100	ER20	1-13	160	131	85	34	45	M12	A
HSKA40ER25X80	40	ER25	1-16	80	60	28	42	32.4	M18x1.5	B
HSKA40ER25X100	40	ER25	1-16	100	80	28	42	32.4	M16	B
HSKA40ER32X100	40	ER32	2-20	100	80	31	50	40.4	M22x1.5	B
HSKA63ER25X80	63	ER25	1-16	80	54	-	42	-	M16	B
HSKA63ER25X100	63	ER25	1-16	100	74	-	42	-	M16	B
HSKA63ER25X120	63	ER25	1-16	120	94	-	42	-	M16	B
HSKA63ER25X160	63	ER25	1-16	160	134	-	42	-	M16	B
HSKA63ER32X80	63	ER32	2-20	80	54	31	50	40.4	M22x1.5	B
HSKA63ER32X100	63	ER32	2-20	100	74	-	50	-	M22x1.5	B
HSKA63ER32X120	63	ER32	2-20	120	94	-	50	-	M22x1.5	B
HSKA63ER32X140	63	ER32	2-20	140	114	-	50	-	M22x1.5	B
HSKA63ER32X160	63	ER32	2-20	160	134	-	50	-	M22x1.5	B
HSKA63ER40X80	63	ER40	3-26	80	54	34	63	50.4	-	B
HSKA63ER40X100	63	ER40	3-26	100	74	34	63	50.4	M28x1.5	B
HSKA63ER40X120	63	ER40	3-26	120	94	34	63	50.4	M28x1.5	B
HSKA100ER25X100	100	ER25	1-16	100	71	-	42	-	M16	B
HSKA100ER25X120	100	ER25	1-16	120	91	-	42	-	M16	B
HSKA100ER25X160	100	ER25	1-16	160	134	-	42	-	M16	B
HSKA100ER32X100	100	ER32	2-20	100	71	-	50	-	M22x1.5	B
HSKA100ER32X120	100	ER32	2-20	120	91	-	50	-	M22x1.5	B
HSKA100ER32X160	100	ER32	2-20	160	131	-	50	-	M22x1.5	B
HSKA100ER40X100	100	ER40	3-26	100	71	-	63	-	M28x1.5	B
HSKA100ER40X120	100	ER40	3-26	120	91	-	63	-	M28x1.5	B
HSKA100ER40X160	100	ER40	3-26	160	131	-	63	-	M28x1.5	B
HSKA100ER50X100	100	ER50	10-34	100	71	-	78	-	-	B

• Applicable for 10 MPa coolant
(1) Balanced to G6.3 max.n: 12,000 min-1

Option: Wrench for ER collet

Reference pages

ER collet K125 | Nut K151 | Preset screw K153 | Wrench K152, K157 | Cooling tube K156

ER collet chuck holder (HSK-FM)

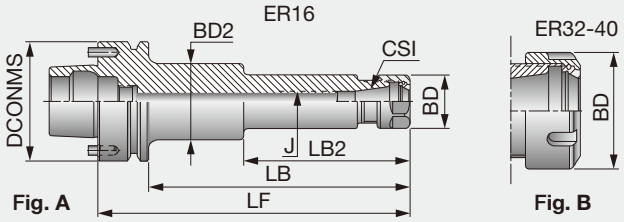


Fig. A Fig. B

Designation	DCONMS	CSI	Range	LF	LB	LB2	BD	BD2	J	Fig.
HSKFM63ER16X80	63	ER16	0.5-10	80	54	-	28	-	M10	A
HSKFM63ER16X100	63	ER16	0.5-10	100	74	-	28	-	M10	A
HSKFM63ER16X120	63	ER16	0.5-10	120	94	-	28	-	M10	A
HSKFM63ER16X160	63	ER16	0.5-10	160	134	85.6	28	40	M10	A
HSKFM63ER32X80	63	ER32	2-20	80	54	-	50	-	-	B
HSKFM63ER32X100	63	ER32	2-20	100	74	-	50	-	M22x1.5	B
HSKFM63ER40X80	63	ER40	3-26	80	54	32	63	50	-	B
HSKFM63ER40X100	63	ER40	3-26	100	74	32	63	50	M28x1.5	B

- Applicable for 10 MPa coolant
- The driving pins can be removed, turning the toolholder into a standard HSK F63 type.

Option: Wrench for ER collet

Reference pages

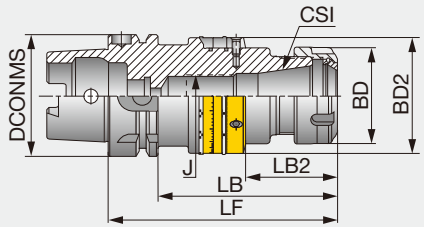


K125 K151 K153 K152, K157 K156

TUNGBALANCE

HSK A-ER BIN

ER collet chuck holder with adjustable dynamic balance (HSK-A) (TungBalance)



Designation	DCONMS	CSI	Range	LF	LB	LB2	BD	BD2	J
HSKA63ER16X100BIN	63	ER16	0.5-10	100	74	45	28	44	M10
HSKA63ER16X160BIN	63	ER16	0.5-10	160	134	75	28	44	M10
HSKA63ER20X160BIN	63	ER20	1-13	160	134	86.1	34	44	M12
HSKA63ER25X100BIN	63	ER25	1-16	100	74	45.2	42	44	M16
HSKA63ER25X160BIN	63	ER25	1-16	160	134	86.2	42	44	M16
HSKA63ER32X120BIN	63	ER32	2-20	120	94	48	50	60	M22x1.5

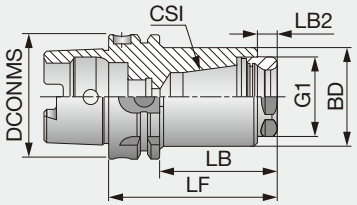
• Applicable for 10 MPa coolant
(1) Balanced to G2.5 max.n: 20,000 min-1

Option: Wrench for ER collet

TUNGSHORT

HSK A-SHORT

ER collet chuck holder, short type (HSK-A) (TungShort)



Designation	DCONMS	CSI	Range	LF	LB	LB2	BD	G1
HSKA63ER32SHORT	63	ER32	2-20	84.5	56.1	9.5	50	M40x1.5
HSKA100ER32SHORT	100	ER32	2-20	89.5	60.5	9.5	50	M40x1.5
HSKA100ER40SHORT	100	ER40	3-26	104.5	75.5	9.5	70	M50x1.5

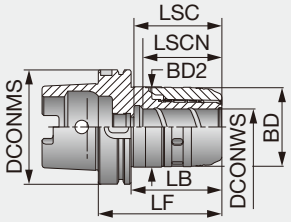
• Applicable for 10 MPa coolant
• Balanced to G6.3 max.n: 8,000 min-1

Option: Wrench for ER collet

TUNGMAX

HSK A-TUNGMAX

Power chuck holder (HSK-A) (TungMax)



Designation	DCONMS	DCONWS	Range	LF	LB	LSCN	LSC	BD	BD2
HSKA63MAXIN20X95	63	20	6-20	95	69	56	66	51	53
HSKA63MAXIN32X113	63	32	6-32	113	87	70	85	69	70
HSKA100MAXIN20X115 (1)	100	20	6-20	115	86	56	69	51	53
HSKA100MAXIN32X135 (1)	100	32	6-32	135	106	71	87	69	70

• Applicable for 10 MPa coolant (1) Balanced to G6.3 max.n: 8,000 min-1

Option: Wrench for TungMax collet

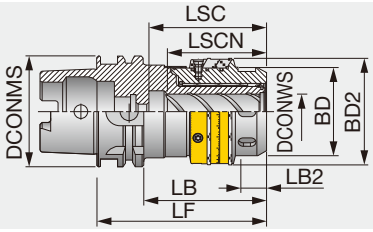
Reference pages

ER collet K125 | Nut K151 | Preset screw K153 | Wrench K152, K157 | Cooling tube K156 | Straight collet K135

TUNGBALANCE

HSK A-TUNGMAX BIN

Power chuck holder with adjustable dynamic balance (HSK-A) (TungMax)



Designation	DCONMS	DCONWS	Range	LF	LB	LB2	LSCN	LSC	BD	BD2
HSKA63MAXIN20X95BIN (1)	63	20	6-20	95	69	17.5	56	66	51	61
HSKA63MAXIN32X113BIN (1)	63	32	6-32	113	87	24.9	70	85	69	80

• Applicable for 10 MPa coolant

Option: Wrench for TungMax collet

(1) Chucks with taper size HSK A63 can be balanced by the balancing ring up to G2.5 at 20,000 min-1.
(2) Chucks with taper size HSK A100 can be balanced by the balancing ring up to G2.5 at 18,000 min-1.

Reference pages


Straight collet K135

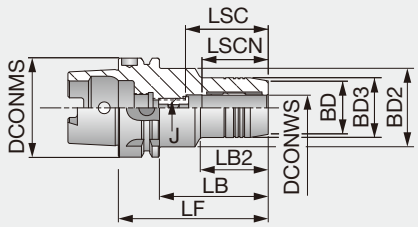

Cooling tube K156


Wrench K152, K157

TUNGHYDRO

HSK A-HYDRO

Hydraulic endmill chuck holder (HSK-A) (TungHydro)



Designation	DCONMS	DCONWS	BD3	BD	BD2	LF	LB	LB2	LSCN	LSC	J
HSKA50HYDRO6X80	50	6	26	23	42	80	54	35	27	37	M5
HSKA50HYDRO8X80	50	8	28	25	42	80	54	36	27	37	M6
HSKA50HYDRO16X95	50	16	38	34	42	95	69	52	42	52	M12x1
HSKA50HYDRO20X100	50	20	42	38	42	100	74	74	42	52	M16x1
HSKA63HYDRO6X80	63	6	26	23	50	80	54	33	27	37	M5
HSKA63HYDRO8X80	63	8	28	25	50	80	54	33	27	37	M6
HSKA63HYDRO10X85	63	10	30	27	50	85	59	39	32	42	M8x1
HSKA63HYDRO12X90	63	12	32	29	50	90	64	44	37	47	M10x1
HSKA63HYDRO14X90	63	14	34	30	50	90	64	46	37	47	M10x1
HSKA63HYDRO16X95	63	16	38	34	50	95	69	52	42	52	M12x1
HSKA63HYDRO18X95	63	18	40	36	50	95	69	52	42	52	M12x1
HSKA63HYDRO20X100	63	20	42	38	50	100	74	58	42	52	M16x1
HSKA63HYDRO25X120	63	25	50	46	50	120	94	94	48	58	M16x1
HSKA63HYDRO32X125	63	32	60	56	53	125	99	83	52	62	M16x1
HSKA80HYDRO6X85	80	6	26	23	50	85	59	37	27	37	M5
HSKA80HYDRO14X95	80	14	34	30	50	95	69	47	37	47	M10x1
HSKA80HYDRO16X100	80	16	38	34	50	100	74	52	42	52	M12x1
HSKA80HYDRO18X100	80	18	40	36	50	100	74	52	42	52	M12x1
HSKA80HYDRO20X105	80	20	42	38	50	105	79	52	42	52	M16x1
HSKA80HYDRO25X115	80	25	50	46	50	115	89	58	48	58	M16x1
HSKA100HYDRO6X85	100	6	26	23	63	85	56	29	27	37	M5
HSKA100HYDRO8X85	100	8	28	25	63	85	56	29	27	37	M6
HSKA100HYDRO10X90	100	10	30	27	63	90	61	35	32	42	M8x1
HSKA100HYDRO12X95	100	12	32	29	63	95	66	40	37	47	M10x1
HSKA100HYDRO14X95	100	14	34	30	63	95	66	42	37	47	M10x1
HSKA100HYDRO16X100	100	16	38	34	63	100	71	47	42	52	M12x1
HSKA100HYDRO18X100	100	18	40	36	63	100	71	48	42	52	M12x1
HSKA100HYDRO20X105	100	20	42	38	63	105	76	54	42	52	M16x1
HSKA100HYDRO25X115	100	25	50	46	63	115	86	51	48	58	M16x1
HSKA100HYDRO32X120	100	32	60	56	63	120	91	59	52	62	M16x1

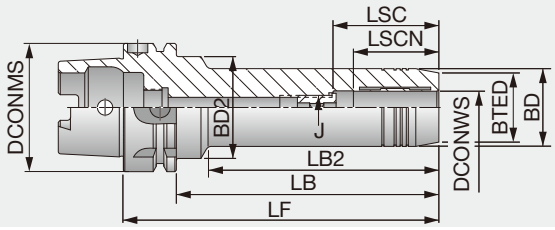
- Applicable for 10 MPa coolant
- Reduction sleeves are available for d = 12, 20, 25, and 32mm.
- Chucking force will reduce when using a reduction sleeve.

Option: Clamping wrench

Reference pages

Straight collet K138
Cooling tube K156
Wrench K157

Hydraulic endmill chuck holder, long type (HSK-A) (TungHydro)



Designation	DCONMS	DCONWS	BD	BTED	BD2	LF	LB	LB2	LSCN	LSC	J
HSKA63HYDRO6X150	63	6	26	23	50	150	124	103	27	37	M5
HSKA63HYDRO6X200	63	6	26	23	50	200	174	153	27	37	M5
HSKA63HYDRO8X150	63	8	28	25	50	150	124	104	27	37	M6
HSKA63HYDRO10X150	63	10	30	27	50	150	124	104	32	42	M8x1
HSKA63HYDRO10X200	63	10	30	27	50	200	174	154	32	42	M8x1
HSKA63HYDRO12X150	63	12	32	29	50	150	124	105	37	47	M10x1
HSKA63HYDRO12X200	63	12	32	29	50	200	174	155	37	47	M10x1
HSKA63HYDRO14X150	63	14	34	30	50	150	124	105	37	47	M10x1
HSKA63HYDRO16X150	63	16	38	34	50	150	124	106.5	42	52	M12x1
HSKA63HYDRO16X200	63	16	38	34	50	200	174	156.5	42	52	M12x1
HSKA63HYDRO20X150	63	20	42	38	50	150	124	108	42	52	M12x1
HSKA63HYDRO20X200	63	20	42	38	50	200	174	158	42	52	M12x1
HSKA63HYDRO25X150	63	25	50	46	50	150	124	-	48	58	M16x1
HSKA63HYDRO25X200	63	25	50	46	50	200	174	-	48	58	M16x1
HSKA100HYDRO6X150	100	6	26	23	50	150	124	94	27	37	M6
HSKA100HYDRO6X200	100	6	26	23	50	200	174	144	27	37	M6
HSKA100HYDRO8X150	100	8	28	25	50	150	124	94.5	27	37	M6
HSKA100HYDRO8X200	100	8	28	25	50	200	174	144.5	27	37	M6
HSKA100HYDRO10X150	100	10	30	27	50	150	124	95	32	42	M8x1
HSKA100HYDRO10X200	100	10	30	27	50	200	174	145	32	42	M8x1
HSKA100HYDRO12X150	100	12	32	29	50	150	124	95.5	37	47	M10x1
HSKA100HYDRO12X200	100	12	32	29	50	200	174	145.5	37	47	M10x1
HSKA100HYDRO14X150	100	14	34	30	50	150	124	97	37	47	M10x1
HSKA100HYDRO14X200	100	14	34	30	50	200	174	147	37	47	M10x1
HSKA100HYDRO16X150	100	16	38	34	50	150	124	97.5	42	52	M12x1
HSKA100HYDRO16X200	100	16	38	34	50	200	174	147.5	42	52	M12x1
HSKA100HYDRO18X150	100	18	40	36	50	150	124	98	42	52	M12x1
HSKA100HYDRO18X200	100	18	40	36	50	200	174	148	42	52	M12x1
HSKA100HYDRO20X150	100	20	42	38	50	150	124	99	42	52	M12x1
HSKA100HYDRO20X200	100	20	42	38	50	200	174	149	42	52	M12x1
HSKA100HYDRO25X200	100	25	50	46	50	200	174	-	48	58	M16x1
HSKA100HYDRO32X200	100	32	60	56	60	200	174	-	52	62	M16x1

- Applicable for 10 MPa coolant
- Reduction sleeves are available for d = 12, 20, 25, and 32mm.
- Chucking force will reduce when using a reduction sleeve.

Option: Clamping wrench

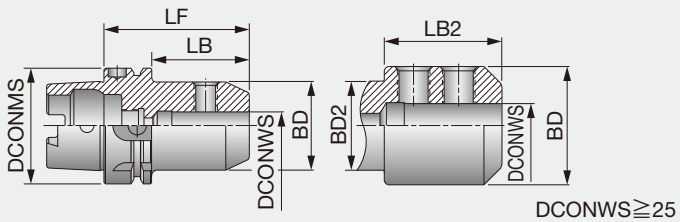
Reference pages

Straight collet K138
Cooling tube K156
Wrench K157

TUNGHOLD

HSK A-EM

Side lock holder for weldon endmills (HSK-A)



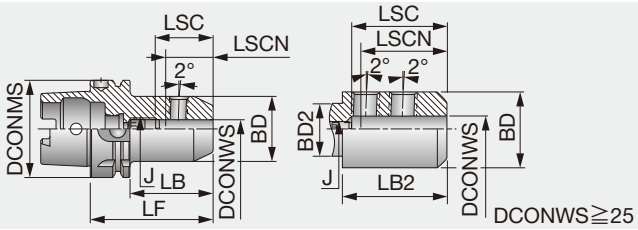
Designation	DCONMS	DCONWS	BD	BD2	LF	LB	LB2
HSKA63EM6X65	63	6	25	-	65	39	-
HSKA63EM8X65	63	8	28	-	65	39	-
HSKA63EM10X65	63	10	35	-	65	39	-
HSKA63EM12X80	63	12	42	-	80	54	-
HSKA63EM14X80	63	14	44	-	80	54	-
HSKA63EM16X80	63	16	48	-	80	54	-
HSKA63EM18X80	63	18	50	-	80	54	-
HSKA63EM20X80	63	20	52	-	80	54	-
HSKA63EM25X110	63	25	65	52	110	84	65.5
HSKA63EM32X110	63	32	72	52	110	84	65.5
HSKA100EM6X80	100	6	25	-	80	51	-
HSKA100EM8X80	100	8	28	-	80	51	-
HSKA100EM10X80	100	10	35	-	80	51	-
HSKA100EM12X80	100	12	42	-	80	51	-
HSKA100EM14X80	100	14	44	-	80	51	-
HSKA100EM16X100	100	16	48	-	100	71	-
HSKA100EM18X100	100	18	50	-	100	71	-
HSKA100EM20X100	100	20	52	-	100	71	-
HSKA100EM25X100	100	25	65	-	100	71	-
HSKA100EM32X100	100	32	72	-	100	71	-

• Applicable for 7 MPa coolant

Reference pages

Wrench K157
Cooling tube K156
Clamping screw K155

Side lock holder for whistle notch (HSK-A)



Designation	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench
HSKA63EM6X80E	63	6	25	-	80	54	-	32	40	M5	2
HSKA63EM8X80E	63	8	28	-	80	54	-	35	40	M6	3
HSKA63EM10X80E	63	10	35	-	80	54	-	39	44	M8	4
HSKA63EM12X90E	63	12	42	-	90	64	-	44	49	M10	5
HSKA63EM14X90E	63	14	44	-	90	64	-	44	49	M10	5
HSKA63EM16X100E	63	16	48	-	100	74	-	47	52	M12	6
HSKA63EM18X100E	63	18	50	-	100	74	-	47	55	M12	6
HSKA63EM20X100E	63	20	52	-	100	74	-	49	54	M16	8
HSKA63EM25X110E	63	25	65	52	110	84	65.5	54	61	M16	8
HSKA63EM32X110E	63	32	72	52	110	84	65.5	58	63	M20X1.5	10
HSKA100EM8X90E	100	8	28	-	90	61	-	35	40	M6	3
HSKA100EM12X100E	100	12	42	-	100	71	-	44	54	M10	5
HSKA100EM14X100E	100	14	44	-	100	71	-	44	54	M10	5
HSKA100EM16X100E	100	16	48	-	100	71	-	47	52	M12	6
HSKA100EM18X100E	100	18	50	-	100	71	-	47	52	M12	6
HSKA100EM20X110E	100	20	52	-	110	81	-	49	54	M16	8
HSKA100EM25X120E	100	25	65	-	120	91	-	54	61	M20X1.5	10
HSKA100EM32X120E	100	32	72	-	120	91	-	58	63	M20X1.5	10

• Applicable for 7 MPa coolant
The adjustment screw has an internal coolant hole.

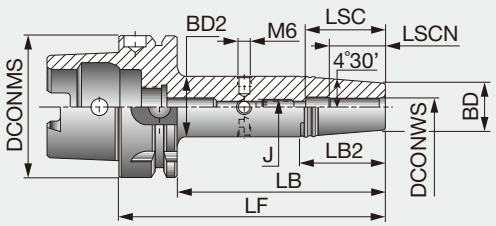
Reference pages

Wrench K157
Cooling tube K156
Clamping screw K155

TUNGSHRINK

HSK A-SRKIN

Thermal shrinking holder for carbide and HSS shanks (HSK-A) (TungShrink)



Designation	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench
HSKA63SRKIN6X80	63	6	21	27	80	54	38	25	36	M5	2.5
HSKA63SRKIN6X120	63	6	21	27	120	94	38	25	36	M5	2.5
HSKA63SRKIN6X160	63	6	21	27	160	134	38	25	36	M5	2.5
HSKA63SRKIN8X80	63	8	21	27	80	54	38	25	36	M6	3
HSKA63SRKIN8X120	63	8	21	27	120	94	38	25	36	M6	3
HSKA63SRKIN8X160	63	8	21	27	160	134	38	25	36	M6	3
HSKA63SRKIN10X85	63	10	24	32	85	59	51	31	42	M8	4
HSKA63SRKIN10X120	63	10	24	32	120	94	51	31	42	M8	4
HSKA63SRKIN10X160	63	10	24	32	160	134	51	31	42	M8	4
HSKA63SRKIN12X90	63	12	24	32	90	64	51	36	42	M8	4
HSKA63SRKIN12X120	63	12	24	32	120	94	51	36	47	M10	5
HSKA63SRKIN12X160	63	12	24	32	160	134	51	36	47	M10	5
HSKA63SRKIN14X90	63	14	27	34	90	64	45	36	47	M10	5
HSKA63SRKIN14X120	63	14	27	34	120	94	45	36	47	M10	5
HSKA63SRKIN14X160	63	14	27	34	160	134	45	36	47	M10	5
HSKA63SRKIN16X75	63	16	27	34	75	49	-	39	50	-	-
HSKA63SRKIN16X95	63	16	27	34	95	69	44	39	50	M12	6
HSKA63SRKIN16X120	63	16	27	34	120	94	44	39	50	M12	6
HSKA63SRKIN16X160	63	16	27	34	160	134	44	39	50	M12	6
HSKA63SRKIN18X95	63	18	33	42	95	69	57	39	50	M12	6
HSKA63SRKIN18X120	63	18	33	42	120	94	57	39	50	M12	6
HSKA63SRKIN18X160	63	18	33	42	160	134	57	39	50	M12	6
HSKA63SRKIN20X75	63	20	33	41	75	49	-	41	50	-	-
HSKA63SRKIN20X100	63	20	33	42	100	74	57	41	52	M16	8
HSKA63SRKIN20X120	63	20	33	42	120	94	57	41	52	M16	8
HSKA63SRKIN20X160	63	20	33	42	160	134	57	41	52	M16	8
HSKA63SRKIN25X85	63	25	44	53	85	59	-	47	58	-	-
HSKA63SRKIN25X115	63	25	44	53	115	89	55	47	58	M16	8
HSKA63SRKIN32X85	63	32	44	53	85	59	-	47	58	-	-
HSKA63SRKIN32X120	63	32	44	53	120	94	55	47	58	M16	8
HSKA100SRKIN6X85	100	6	21	27	85	56	38	25	36	M5	2.5
HSKA100SRKIN6X120	100	6	21	27	120	91	38	25	36	M5	2.5
HSKA100SRKIN6X160	100	6	21	27	160	131	38	25	36	M6	3
HSKA100SRKIN8X85	100	8	21	27	85	56	38	25	36	M6	3
HSKA100SRKIN8X120	100	8	21	27	120	91	38	25	36	M6	3
HSKA100SRKIN8X160	100	8	21	27	160	131	38	25	36	M6	3
HSKA100SRKIN10X90	100	10	24	32	90	61	51	31	42	M8	4
HSKA100SRKIN10X120	100	10	24	32	120	91	51	31	42	M8	4
HSKA100SRKIN10X160	100	10	24	32	160	131	51	31	42	M8	4
HSKA100SRKIN12X95	100	12	24	32	95	66	51	36	47	M10	5
HSKA100SRKIN12X120	100	12	24	32	120	91	51	36	47	M10	5
HSKA100SRKIN12X160	100	12	24	32	160	131	51	36	47	M10	5
HSKA100SRKIN14X95	100	14	27	34	95	66	45	36	47	M10	5
HSKA100SRKIN14X120	100	14	27	34	120	91	45	36	47	M10	5
HSKA100SRKIN14X160	100	14	27	34	160	131	45	36	47	M10	5
HSKA100SRKIN16X100	100	16	27	34	100	71	45	39	50	M12	6
HSKA100SRKIN16X120	100	16	27	34	120	91	45	39	50	M12	6
HSKA100SRKIN16X160	100	16	27	34	160	131	45	39	50	M12	6
HSKA100SRKIN18X100	100	18	33	42	100	71	57	39	50	M12	6
HSKA100SRKIN18X160	100	18	33	42	160	131	57	39	50	M12	6
HSKA100SRKIN20X105	100	20	33	42	105	76	57	41	52	M16	8
HSKA100SRKIN20X160	100	20	33	42	160	131	57	41	52	M16	8
HSKA100SRKIN25X115	100	25	44	53	115	86	57	47	58	M16	8
HSKA100SRKIN32X120	100	32	44	53	120	91	57	47	58	M16	8

- When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).
- Please use an induction heating unit for SRKIN holder
- Applicable for 10 MPa coolant

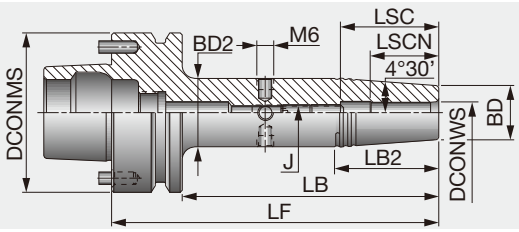
Reference pages

Induction heating unit K144
Heating unit K144
Preset screw K155
Wrench K157
Cooling tube K156

TUNGSHRINK

HSK FM-SRKIN

Thermal shrinking holder for carbide and HSS shanks (DIN69871) (TungShrink)



Designation	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench
HSKFM63SRKIN8X80	63	8	21	27	80	54	38	25	36	M6	3
HSKFM63SRKIN12X90	63	12	24	32	90	64	50.5	36	47	M10	5
HSKFM63SRKIN14X90	63	14	27	34	90	64	44.5	36	47	M10	5
HSKFM63SRKIN18X95	63	18	33	42	95	69	57	39	50	M12	6
HSKFM63SRKIN20X100	63	20	33	42	100	74	57	41	52	M16	8
HSKFM63SRKIN25X115	63	25	44	52.7	115	89	55	47	58	M16	8

- When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately)
- Please use an induction heating unit for SRKIN holder
- The driving pins can be removed, turning the toolholder into a standard HSK F63 type.
- Applicable for 10 MPa coolant

Reference pages


Induction heating unit K144


Heating unit K144


Preset screw K155

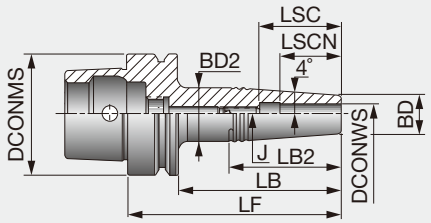

Wrench K157


Cooling tube K156

TUNGSHRINK

HSK E-SRK

Thermal shrinking holder for carbide shank (HSK-E) (TungShrink)



Designation	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench
HSKE32SRK3X45	32	3	10	13	65	45	30	10	16	M4	2
HSKE32SRK4X45	32	4	10	15	65	45	35	12	18	M4	2
HSKE32SRK5X45	32	5	10	15	65	45	35	15	25	M4	2
HSKE32SRK6X45	32	6	11	16	65	45	35	18	28	M4	2
HSKE32SRK8X45	32	8	14	20	65	45	42	25	35	M4	2
HSKE32SRK10X45	32	10	16	22	65	45	42	30	40	M4	2
HSKE32SRK12X45	32	12	20	25	65	45	35.6	32	40	M4	2
HSKE40SRK3X45	40	3	10	13	65	45	30	10	16	M5	2.5
HSKE40SRK3X80	40	3	10	19	100	80	64	10	16	M5	2.5
HSKE40SRK4X45	40	4	10	15	65	45	35	12	18	M5	2.5
HSKE40SRK4X80	40	4	10	19	100	80	64	12	18	M5	2.5
HSKE40SRK5X45	40	5	10	15	65	45	35	15	25	M4	2
HSKE40SRK5X80	40	5	10	19	100	80	64	15	25	M4	2
HSKE40SRK6X45	40	6	11	16	65	45	35	18	28	M5	2.5
HSKE40SRK6X80	40	6	11	20	100	80	64	18	28	M5	2.5
HSKE40SRK8X45	40	8	14	20	65	45	42	25	35	M5	2.5
HSKE40SRK8X80	40	8	14	23	100	80	64	25	35	M6	3
HSKE40SRK10X45	40	10	16	22	65	45	42	30	40	M5	2.5
HSKE40SRK10X80	40	10	16	24.5	100	80	60	30	40	M8	4
HSKE40SRK12X45	40	12	20	26	65	45	42	32	42	M5	2.5
HSKE40SRK12X80	40	12	20	28	100	80	56	32	42	M10	5
HSKE50SRK3X45 (1)	50	3	10	15	71	45	36	10	16	M5	2.5
HSKE50SRK3X80 (1)	50	3	10	19	106	80	64	10	16	M5	2.5
HSKE50SRK4X45 (1)	50	4	10	15	71	45	36	12	18	M5	2.5
HSKE50SRK4X80 (1)	50	4	10	19	106	80	64	12	18	M5	2.5
HSKE50SRK6X45 (1)	50	6	11	16	71	45	36	18	28	M5	2.5
HSKE50SRK6X80 (1)	50	6	11	20	106	80	64	18	28	M5	2.5
HSKE50SRK8X45 (1)	50	8	14	20	71	45	43	25	35	M6	3
HSKE50SRK8X80 (1)	50	8	14	23	106	80	64	25	35	M6	3
HSKE50SRK10X45 (1)	50	10	16	22	71	45	42	30	37	M6	3
HSKE50SRK10X80 (1)	50	10	16	24.5	106	80	60	30	40	M8	4
HSKE50SRK12X45 (1)	50	12	20	26	71	45	42	32	39	M6	3

(1) Balanced to G2.5 max.n: 35,000 min-1

• When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately). • Applicable for 10 MPa coolant

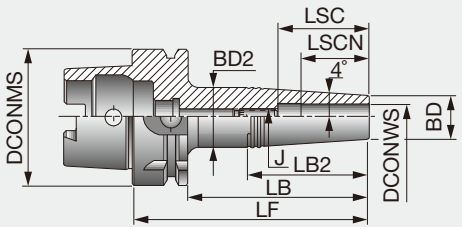
Reference pages

Induction heating unit K144
Heating unit K144
Preset screw K155
Wrench K157
Cooling tube K156

TUNGSHRINK

HSK A-SRK

Thermal shrinking holder for carbide shank (HSK-A) (TungShrink)



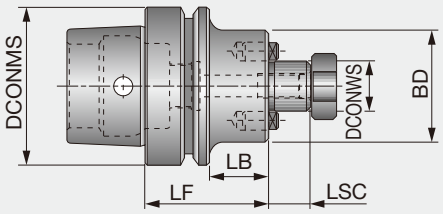
Designation	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench
HSKA63SRK3X50	63	3	10	17	76	50	-	10	16	M6	3
HSKA63SRK3X85	63	3	10	21	111	85	79	10	16	M6	3
HSKA63SRK4X50	63	4	10	17	76	50	-	12	18	M6	3
HSKA63SRK4X85	63	4	10	21	111	85	79	12	18	M6	3
HSKA63SRK5X50	63	5	10	17	76	50	-	15	21	M6	3
HSKA63SRK5X85	63	5	10	21	111	85	79	15	21	M6	3
HSKA63SRK6X50	63	6	11	18	76	50	-	18	24	M8	4
HSKA63SRK6X85	63	6	11	22	111	85	79	18	24	M8	4
HSKA63SRK8X50	63	8	14	20	76	50	43	25	36	M6	3
HSKA63SRK8X85	63	8	14	23	111	85	64	25	36	M6	3
HSKA63SRK10X50	63	10	16	23	76	50	-	30	41	M8	4
HSKA63SRK10X85	63	10	16	26	111	85	72	30	41	M8	4
HSKA63SRK12X50	63	12	20	27	76	50	-	32	43	M8	4
HSKA63SRK12X85	63	12	20	30	111	85	72	32	43	M8	4

- Applicable for 10 MPa coolant
- When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).

TUNGHOLD

HSK E-SEM

Shell mill holder (HSK-E)



Designation	DCONMS	DCONWS	LSC	BD	LF	LB
HSKE50SEM22X60	50	22	19	47	60	34
HSKE63SEM16X50	63	16	17	38	50	24
HSKE40SEM3/4X2.000	40	19.05	17	45	50.8	30.8
HSKE63SEM1X2.375	63	25.4	17	52.8	60.3	34.3

- Applicable for 7 MPa coolant
- When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).

Option: Wrench for center bolt

Reference pages


Induction heating unit K144


Heating unit K144

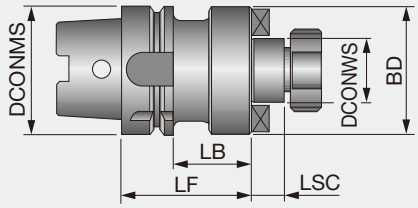

Preset screw K155


Clamping screw K154


Wrench K156, K157


Cooling tube K156

TUNGHOLD
HSK A-SEM
Shell mill holder (HSK-A)

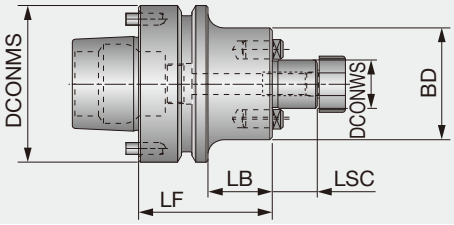


Designation	DCONMS	DCONWS	LSC	BD	LF	LB
HSKA63SEM16X50	63	16	24	38	50	17
HSKA63SEM22X50	63	22	24	47	50	19
HSKA63SEM27X60	63	27	34	58	60	21
HSKA63SEM32X60	63	32	34	66	60	24
HSKA63SEM40X60	63	40	34	82	60	27
HSKA100SEM22X50 (1)	100	22	21	47	50	19
HSKA100SEM27X50 (1)	100	27	21	58	50	21
HSKA100SEM32X50 (1)	100	32	21	66	50	24
HSKA100SEM40X60 (1)	100	40	31	82	60	27
HSKA100SEM50X70 (1)	100	50	41	95	70	30

• Applicable for 7 MPa coolant (1) Balanced to G6.3 max.n: 12,00^{0} ^{mi}n-1
• When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately)

Option: Wrench for lock screw

TUNGHOLD
HSK FM-SEM
Shell mill holder (HSK-FM)



Designation	DCONMS	DCONWS	LSC	BD	LF	LB
HSKFM63SEM22X60	63	22	19	47	60	34
HSKFM63SEM32X60	63	32	24	66	60	34
HSKFM63SEM3/4X3.00	63	19.05	17	45	76.2	50.2
HSKFM63SEM3/4X4.50	63	19.05	17	45	114.3	88.3
HSKFM63SEM1X2.375	63	25.4	17	52.8	60.3	34.3

• Applicable for 7 MPa coolant
• The specification is based on HSK63F type. • This item improves torque transmission with two drive pins.
• When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).

Option: Wrench for lock screw

Reference pages


Clamping screw
K154


Wrench
K156

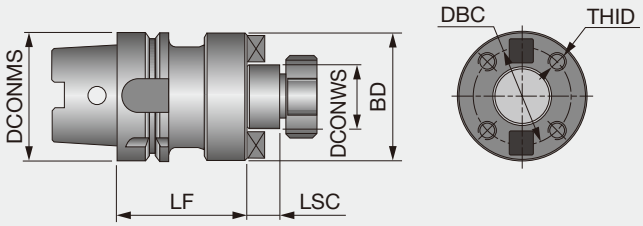

Wrench
K157


Cooling tube
K156

TUNGHOLD

HSK A-FM

Face mill holder (HSK-A)



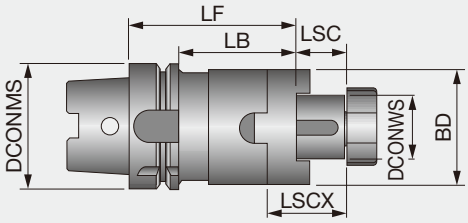
Designation	DCONMS	DCONWS	LSC	BD	LF	DBC	THID
HSKA100FM60X70	100	60	40	128	70	101.6	M16

Option: Wrench for lock screw

TUNGHOLD

HSK A-SEMC

Combination holder for slot mill and shell mill (HSK-A)



Designation	DCONMS	DCONWS	LSC	BD	LF	LB	LSCX
HSKA63SEMC16X60	63	16	17	32	60	34	21
HSKA63SEMC22X60	63	22	19	40	60	34	31
HSKA63SEMC27X60	63	27	21	48	60	34	33
HSKA63SEMC32X60	63	32	24	58	60	34	38
HSKA63SEMC40X70	63	40	27	70	70	44	41
HSKA100SEMC16X60	100	16	17	32	60	31	27
HSKA100SEMC22X60	100	22	19	40	60	31	31
HSKA100SEMC27X60	100	27	21	48	60	31	33
HSKA100SEMC32X60	100	32	24	58	60	31	38
HSKA100SEMC40X70	100	40	27	70	70	41	41
HSKA100SEMC50X80	100	50	30	90	80	51	46

• Applicable for 7 MPa coolant

Option: Wrench for lock screw

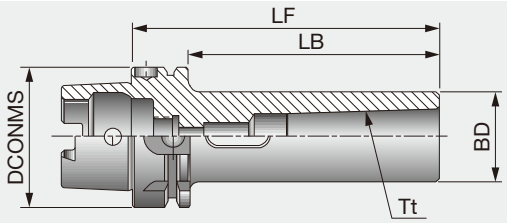
Reference pages

Clamping screw K154
Wrench K156
Wrench K157
Cooling tube K156

TUNGHOLD

HSK A-MT

Morse taper holder (HSK-A)

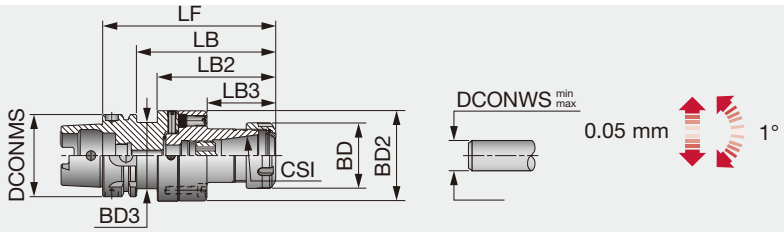


Designation	DCONMS	Tt	LF	BD	LB
HSKA63MT1X110	63	MT1	110	25	84
HSKA63MT2X120	63	MT2	120	32	94
HSKA63MT3X140	63	MT3	140	40	114
HSKA63MT4X160	63	MT4	160	48	134
HSKA100MT1X110	100	MT1	110	25	81
HSKA100MT2X120	100	MT2	120	32	91
HSKA100MT3X150	100	MT3	150	40	121
HSKA100MT4X170	100	MT4	170	48	141
HSKA100MT5X200	100	MT5	200	63	171

TUNGHOLD

ADJ HSK A-ER

ER collet chuck holder with center alignment (HSK-A)



Designation	DCONMS	CSI	Range	LF	LB	LB2	LB3	BD	BD2	BD3
ADJHSKA63D70ER32	63	ER32	2-20	134.5	108.5	82.5	52.5	50	70	46
ADJHSKA100D70ER32	100	ER32	2-20	129.5	108.5	-	52.5	50	70	-

• Applicable for 10 MPa coolant

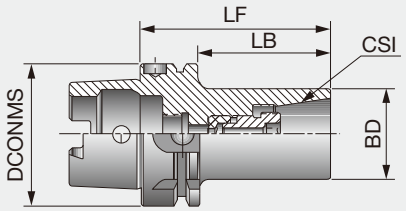
Option: Wrench for ER collet

Reference pages

ER collet K125
Nut K151
Preset screw K153
Wrench K152, K157
Cooling tube K156

TUNGCLICK
HSK A-CLICKIN

Quick change holder (HSK-A) (TungClick)

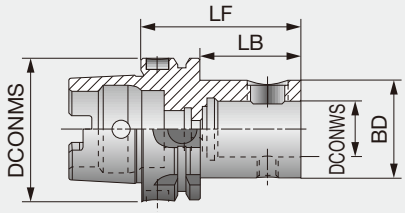


Designation	DCONMS	CSI	BD	LF	LB
HSKA63ER32CLICK-IN	63	32SRF	41	85	59

• Applicable for 10 MPa coolant • Clamping torque: 235 N·m

TUNGFIT
HSK A-CF

Quick change holder (HSK-A) (TungFit)



Designation	DCONMS	DCONWS	BD	LF	LB
HSKA63CF4-S	63	25	44.5	70	44
HSKA80CF4-S	80	25	44.5	73	47
HSKA100CF4-S	100	25	44.5	76	47

• Applicable for 7 MPa coolant • Clamping torque: 58.8 N·m

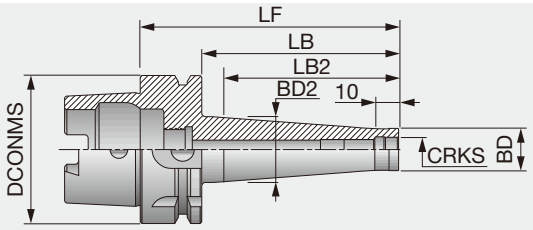
Reference pages

Wrench K157

Cooling tube K156

TUNGFLEX
HSK A-ODP

Screw-clamp holder for modular heads (HSK-A) (TungFlex)

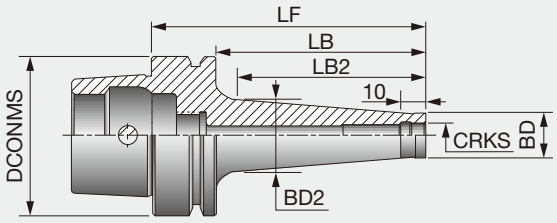


Designation	DCONMS	CRKS	BD	BD2	LF	LB	LB2
HSKA63ODP6X59	63	M6	9.7	10	59	33	25
HSKA63ODP6X109	63	M6	9.8	23	109	83	75
HSKA63ODP8X59	63	M8	13.1	15	59	33	25
HSKA63ODP8X109	63	M8	13.1	23	109	83	75
HSKA63ODP10X59	63	M10	18	20	59	33	25
HSKA63ODP10X109	63	M10	18	28	109	83	75
HSKA63ODP12X59	63	M12	21	24	59	33	25
HSKA63ODP12X109	63	M12	21	31	109	83	75
HSKA63ODP16X59	63	M16	29	34	59	33	25
HSKA63ODP16X109	63	M16	29	34	109	83	75
HSKA100ODP12X87 (1)	100	M12	23	30	87	58	50
HSKA100ODP12X137 (1)	100	M12	23	30	137	108	100
HSKA100ODP12X187 (1)	100	M12	23	40	187	158	150
HSKA100ODP12X237 (1)	100	M12	23	46	237	208	200
HSKA100ODP16X87 (1)	100	M16	29	31.5	87	58	50
HSKA100ODP16X137 (1)	100	M16	29	41.5	137	108	100
HSKA100ODP16X187 (1)	100	M16	29	55	187	158	150
HSKA100ODP16X237 (1)	100	M16	29	55	237	208	200

• Applicable for 10 MPa coolant
(1) Balanced to G6.5 max.n:12,000 min-1

TUNGFLEX
HSK E-ODP

Screw-clamp holder for modular heads (HSK-E) (TungFlex)



Designation	DCONMS	CRKS	BD	BD2	LF	LB	LB2
HSKE40ODP10X53	40	M10	18	20	53	33	25
HSKE40ODP10X103	40	M10	18	28	103	83	75
HSKE40ODP12X53	40	M12	21	24	53	33	25
HSKE40ODP12X103	40	M12	21	31	103	83	75
HSKE50ODP10X59 (1)	50	M10	18	20	59	33	25
HSKE50ODP10X109 (1)	50	M10	18	28	109	83	75
HSKE50ODP12X59 (1)	50	M12	21	24	59	33	25
HSKE50ODP16X59 (1)	50	M16	29	34	59	33	25
HSKE50ODP16X109 (1)	50	M16	29	34	109	83	75
HSKE63ODP10X59 (2)	63	M10	18	20	59	33	25
HSKE63ODP10X109 (2)	63	M10	18	28	109	83	75
HSKE63ODP12X59 (2)	63	M12	21	24	59	33	25
HSKE63ODP12X109 (2)	63	M12	21	31	109	83	75

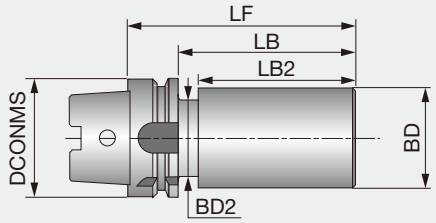
• Applicable for 10 MPa coolant
(1) Balanced to G2.5 max.n: 35,000 min-1. (2)Balanced to G2.5 max.n: 30,000 min-1.

Reference pages

Wrench K157
Cooling tube K156

HSK Blanks

Blank for holders (HSK)



Designation	DCONMS	BD	BD2	LF	LB	LB2
HSKA63B16MN100	63	63	52.8	100	74	55.5
HSKA63B16MN200	63	63	52.8	200	174	155.5
HSKA100B16MN100	100	102	85	100	71	54.8
HSKA100B16MN200	100	102	85	200	171	154.8

- Material: Case hardened alloy steel
- Shank hardness: 58 HRC minimum
- Nose hardness: 35-37 HRC

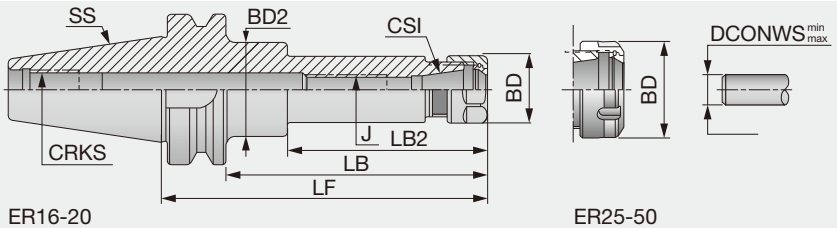
Reference pages

Wrench K157
Cooling tube K156

TUNGHOLD

BT-ER collet chuck

ER collet chuck holder (BT)



Designation	SS	CSI	Range	LF	LB	LB2	BD	BD2	J	CRKS
BT30ER16X70 (1)	30	ER16	0.5-10	70	48	-	28	-	M10	M12
BT30ER20X70 (1)	30	ER20	1-13	70	48	-	34	-	M12	M12
BT40ER11X100M (2)	40	ER11	0.5-7	100	73	-	16	-	M6	M16
BT40ER16X70	40	ER16	0.5-10	70	43	-	28	-	M12	M16
BT40ER16X100	40	ER16	0.5-10	100	73	-	28	-	M12	M16
BT40ER16X150	40	ER16	0.5-10	150	123	86	28	40	M12	M16
BT40ER16X200	40	ER16	0.5-10	200	173	110	28	40	M10	M16
BT40ER20X70	40	ER20	1-13	70	43	-	34	-	M12	M16
BT40ER20X100	40	ER20	1-13	100	73	-	34	-	M12	M16
BT40ER20X120	40	ER20	1-13	120	93	-	34	-	M12	M16
BT40ER20X150	40	ER20	1-13	150	123	-	34	-	M12	M16
BT50ER16X100 (1)	50	ER16	0.5-10	100	62	-	28	-	M12	M24
BT50ER16X125 (1)	50	ER16	0.5-10	125	87	-	28	-	M12	M24
BT50ER16X125B (1)	50	ER16	0.5-10	125	87	-	28	-	M12	M24
BT50ER16X150 (1)	50	ER16	0.5-10	150	112	-	28	-	M12	M24
BT50ER16X200 (1)	50	ER16	0.5-10	200	162	85	28	40	M10	M24
BT50ER20X100 (1)	50	ER20	1-13	100	62	-	34	-	M12	M24
BT50ER20X125 (1)	50	ER20	1-13	125	87	-	34	-	M12	M24
BT50ER20X150 (1)	50	ER20	1-13	150	112	-	34	-	M12	M24
BT50ER20X200 (1)	50	ER20	1-13	200	162	85	34	50	M12	M24
BT30ER25X60 (1)	30	ER25	1-16	60	38	-	42	-	M16	M12
BT30ER32X60 (1)	30	ER32	2-20	60	38	-	50	-	M18x1.5	M12
BT30ER32X75	30	ER32	2-20	75	38	-	50	-	M18X1.5	M12
BT40ER25X60	40	ER25	1-16	60	33	-	42	-	M16	M16
BT40ER25X100	40	ER25	1-16	100	73	-	42	-	M16	M16
BT40ER25X150	40	ER25	1-16	150	123	-	42	-	M16	M16
BT40ER32X60	40	ER32	2-20	60	33	-	50	-	M22X1.5	M16
BT40ER32X100	40	ER32	2-20	100	73	-	50	-	M22X1.5	M16
BT40ER32X120	40	ER32	2-20	120	93	-	50	-	M22X1.5	M16
BT40ER32X150	40	ER32	2-20	150	123	-	50	-	M22X1.5	M16
BT40ER40X80	40	ER40	3-26	80	53	-	63	-	M28X1.5	M16
BT40ER40X80B	40	ER40	3-26	80	53	-	63	-	M28X1.5	M16
BT40ER40X100	40	ER40	3-26	100	73	-	63	-	M28X1.5	M16
BT40ER40X150	40	ER40	3-26	150	123	-	63	-	M28X1.5	M16
BT40ER50X90	40	ER50	10-34	90	63	-	78	-	M28X1.5	M16
BT50ER25X100 (1)	50	ER25	1-16	100	62	-	42	-	M16	M24
BT50ER25X150 (1)	50	ER25	1-16	150	112	-	42	-	M16	M24
BT50ER25X200 (1)	50	ER25	1-16	200	162	87	42	55	M16	M24
BT50ER32X100 (1)	50	ER32	2-20	100	62	-	50	-	M22X1.5	M24
BT50ER32X125 (1)	50	ER32	2-20	125	87	-	34	-	M22X1.5	M24
BT50ER32X150 (1)	50	ER32	2-20	150	112	-	50	-	M22X1.5	M24
BT50ER32X200 (1)	50	ER32	2-20	200	162	88	50	63	M22X1.5	M24
BT50ER32X200B (1)	50	ER32	2-20	200	162	88	50	63	M22X1.5	M24
BT50ER40X100 (1)	50	ER40	3-26	100	62	-	63	-	M28X1.5	M24
BT50ER40X150 (1)	50	ER40	3-26	150	112	-	63	-	M28X1.5	M24
BT50ER40X200 (1)	50	ER40	3-26	200	162	-	63	-	M28X1.5	M24
BT50ER50X100 (1)	50	ER50	10-34	100	62	-	78	-	M36X1.5	M24
BT50ER50X150 (1)	50	ER50	10-34	150	112	-	78	-	M36X1.5	M24

• Add B at the end of the designation for the item with coolant through the flange. Option: Wrench for ER collet
(1) Balanced to G6.3 max.n:12,000 min-1. (2) ER11 MINI collet chuck specification

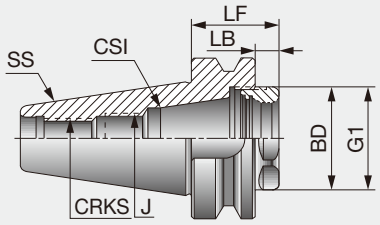
Reference pages

ER collet K125 | Nut K151 | Wrench K152 | Preset screw K153 | Pull stud K148

TUNGSHORT

BT-ER collet

ER collet chuck holder, short type (BT)



Designation	SS	CSI	Range	LF	LB	BD	J	CRKS	G1
BT30ER20SHORT	30	ER20	1-13	27.2	5.2	25	M12	M12	M25x1.5
BT40ER32SHORT	40	ER32	2-20	36.5	9.5	40	M12	M16	M40x1.5
BT40ER40SHORT	40	ER40	3-26	46.5	9.5	50	M16	M16	M50x1.5
BT50ER32SHORT	50	ER32	2-20	47.5	9.5	40	M22x1.5	M24	M40x1.5
BT50ER32SHORTB	50	ER32	2-20	47.5	9.5	40	M22X1.5	M24	M40X1.5
BT50ER40SHORT	50	ER40	3-26	47.5	9.5	50	M28x1.5	M24	M50x1.5

- Applicable for 10 MPa coolant
- Add B at the end of the designation for the item with coolant through the flange.

Option: Wrench for ER collet

Reference pages


ER collet K125


Nut K151

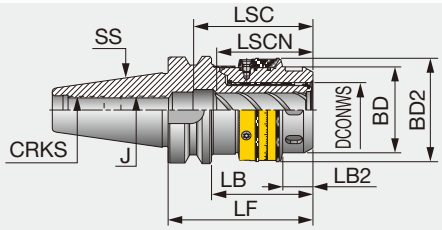

Wrench K152


Preset screw K153


Pull stud K148

TUNGMAX
BT-TUNGMAX BIN

Power chuck holder with adjustable dynamic balance (BT) (TungMax)

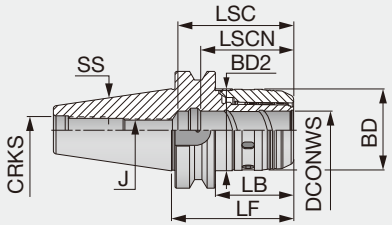


Designation	SS	DCONWS	Range	BD	BD2	LF	LB	LB2	LSCN	LSC	J	CRKS
BT50MAXIN20X105BIN (2)	50	20	6-20	51	61	105	67	18	56	69	M16	M24

• Applicable for 10 MPa coolant Option: Wrench for TungMax collet
(1) Chucks with taper size 40 c^{a}n b^{e} balanced by the balancing ring up to G2.5 at 20,000 min-1.
(2) Chucks with taper size 50 c^{a}n b^{e} balanced by the balancing ring up to G2.5 at 18,000 min-1.

TUNGMAX
BT-TUNGMAX

Power chuck holder (BT) (TungMax)



Designation	SS	DCONWS	Range	LF	LB	BD	BD2	LSCN	LSC	J	CRKS
BT40MAXIN20X85	40	20	6-20	85	58	51	53	56	68	M16	M16
BT40MAXIN32X108	40	32	6-32	108	81	69	70	70	83	M16	M16
BT50MAXIN20X105 (1)	50	20	6-20	105	67	51	53	56	69	M16	M24
BT50MAXIN32X106 (1)	50	32	6-32	106	68	69	70	69	83	M20x2	M24
BT50MAXIN32X135 (1)	50	32	6-32	135	97	69	70	69	84	M20x2	M24

• Applicable for 10 MPa coolant Option: Wrench for TungMax collet
• Add B at the end of the designation for the item with coolant through the flange
(1) Balanced to G6.3 max.n: 8,000 min-1

Reference pages


Straight collet
K135

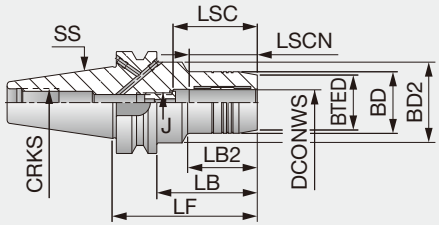

Pull stud
K148


Wrench
K152

TUNGHYDRO

BT-HYDRO

Hydraulic endmill chuck holder (BT) (TungHydro)



Designation	SS	DCONWS	BTED	BD	BD2	LF	LB	LB2	LSCN	LSC	J	CRKS
BT30HYDRO6X60	30	6	23	26	50	60	38	43	27	37	M5	M12
BT30HYDRO8X64	30	8	25	28	50	64	42	43.5	27	37	M6	M12
BT30HYDRO10X64	30	10	27	30	50	64	42	44	32	42	M8x1	M12
BT30HYDRO12X72	30	12	29	32	50	72	50	44.5	37	47	M10x1	M12
BT30HYDRO14X70	30	14	30	34	50	70	48	47.5	37	47	M10x1	M12
BT30HYDRO16X90	30	16	34	38	50	90	68	47.5	42	52	M12x1	M12
BT30HYDRO18X90	30	18	36	40	50	90	68	47.5	42	52	M12x1	M12
BT30HYDRO20X90	30	20	38	42	50	90	68	47.5	42	52	M12x1	M12
BT40HYDRO6X90	40	6	23	26	50	90	63	43	27	37	M5	M16
BT40HYDRO8X90	40	8	25	28	50	90	63	43.5	27	37	M6	M16
BT40HYDRO10X90	40	10	27	30	50	90	63	44	32	42	M8x1	M16
BT40HYDRO12X90	40	12	29	32	50	90	63	44.5	37	47	M10x1	M16
BT40HYDRO14X90	40	14	30	34	50	90	63	47.5	37	47	M10x1	M16
BT40HYDRO16X90	40	16	34	38	50	90	63	47.5	42	52	M12x1	M16
BT40HYDRO18X90	40	18	36	40	50	90	63	47.5	42	52	M12x1	M16
BT40HYDRO20X90	40	20	38	42	50	90	63	47.5	42	52	M12X1	M16
BT40HYDRO25X90	40	25	46	50	63	90	51	51	48	58	M12x1	M16
BT40HYDRO32X110	40	32	56	60	60	110	81.5	81.5	52	62	M16x1	M16
BT50HYDRO6X110	50	6	23	26	80	110	72	43	27	37	M5	M24
BT50HYDRO8X100	50	8	25	28	80	110	72	43.5	27	37	M6	M24
BT50HYDRO10X110	50	10	27	30	80	110	72	44	32	42	M8x1	M24
BT50HYDRO12X110	50	12	29	32	80	110	72	42	37	47	M10x1	M24
BT50HYDRO14X110	50	14	30	34	80	110	72	42	37	47	M10x1	M24
BT50HYDRO16X110	50	16	34	38	80	110	72	45	42	52	M12x1	M24
BT50HYDRO18X110	50	18	36	40	80	110	72	45	42	52	M12x1	M24
BT50HYDRO20X110	50	20	38	42	80	110	72	47.5	42	52	M12x1	M24
BT50HYDRO25X110	50	25	46	50	80	110	72	47.5	48	58	M12x1	M24
BT50HYDRO32X110	50	32	56	60	80	110	72	47.5	54	64	M12x1	M24

- Applicable for 10 MPa coolant
- Reduction sleeves are available for d = 12, 20, 25, and 32mm.
- Chucking force will reduce when using a reduction sleeve.

Option: Wrench for collet

Reference pages

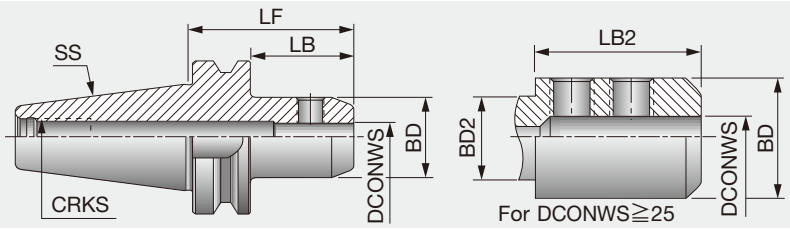

Straight collet
K138


Pull stud
K148

TUNGHOLD

BT-EM

Side lock holder for weldon endmills (BT)



Designation	SS	DCONWS	BD	BD2	LF	LB	LB2	CRKS
BT40EM10X45	40	10	35	-	45	18	-	M16
BT40EM12X45	40	12	42	-	45	18	-	M16
BT40EM14X45	40	14	44	-	45	18	-	M16
BT40EM16X45	40	16	48	-	45	18	-	M16
BT40EM20X45	40	20	52	-	45	18	-	M16
BT40EM25X45	40	25	63	-	45	-	-	M16
BT30EM6X50	30	6	25	-	50	28	-	M12
BT30EM8X60	30	8	28	-	60	38	-	M12
BT30EM10X60	30	10	35	-	60	38	-	M12
BT30EM12X60	30	12	42	-	60	38	-	M12
BT30EM14X60	30	14	44	-	60	38	-	M12
BT30EM16X60	30	16	48	44.4	60	38	37	M12
BT30EM18X60	30	18	50	44.4	60	38	28	M12
BT30EM20X80	30	20	52	44.4	80	53	43	M12
BT40EM6X50	40	6	25	-	50	23	-	M16
BT40EM6X50B	40	6	25	-	50	23	-	M16
BT40EM8X50	40	8	28	-	50	23	-	M16
BT40EM10X65	40	10	35	-	65	38	-	M16
BT40EM12X65	40	12	42	-	65	38	-	M16
BT40EM14X65	40	14	44	-	65	38	-	M16
BT40EM16X65	40	16	48	-	65	38	-	M16
BT40EM18X65	40	18	50	-	65	38	-	M16
BT40EM20X75	40	20	52	-	75	48	-	M16
BT40EM20X75B	40	20	52	-	75	48	-	M16
BT40EM25X105	40	25	65	61	105	78	68	M16
BT40EM32X110	40	32	71	61	110	83	73	M16
BT50EM6X70	50	6	25	-	70	32	-	M24
BT50EM8X70	50	8	28	-	70	32	-	M24
BT50EM10X70	50	10	35	-	70	32	-	M24
BT50EM12X100	50	12	42	-	100	62	-	M24
BT50EM14X100	50	14	44	-	100	62	-	M24
BT50EM16X100	50	16	48	-	100	62	-	M24
BT50EM18X100	50	18	50	-	100	62	-	M24
BT50EM20X100	50	20	52	-	100	62	-	M24
BT50EM25X115	50	25	65	-	115	77	-	M24
BT50EM32X115	50	32	72	-	115	77	-	M24
BT50EM40X115	50	40	90	-	115	77	-	M24
BT50EM50X125	50	50	98	-	125	87	-	M24

- Applicable for 10 MPa coolant
- Add B at the end of the designation for the item with coolant through the flange.

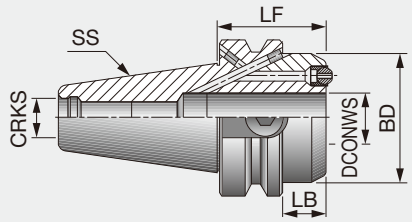
Reference pages


Pull stud
K148


Clamping screw
K155

TUNGHOLD
BT-EM C

Side lock holder for weldon endmills, with coolant nozzle (BT)

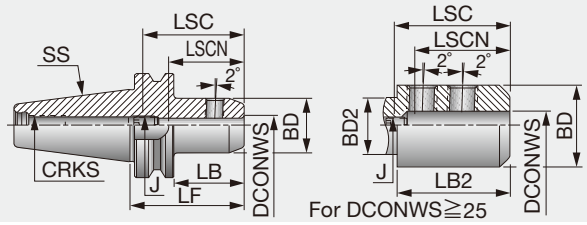


Designation	SS	DCONWS	LF	LB	BD	CRKS
BT40EM12X45C	40	12	45	18	42	M16
BT40EM16X45C	40	16	45	18	48	M16
BT40EM20X45C	40	20	45	18	52	M16

• Applicable for 10 MPa coolant

TUNGHOLD
BT-EM E

Side lock holder for whistle notch (BT)



Designation	SS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J (1)	CRKS	Wrench
BT40EM8X50E	40	8	28	-	50	23	-	35	45	M6	M16	3
BT40EM8X50EB	40	8	28	-	50	23	-	35	45	M6	M16	3
BT40EM12X65E	40	12	42	-	65	38	-	44	54	M10	M16	5
BT40EM14X65EB	40	14	44	-	65	38	-	44	54	M10	M16	5
BT40EM16X65E	40	16	48	-	65	38	-	47	57	M12	M16	6
BT40EM18X65E	40	18	50	-	65	38	-	47	57	M12	M16	6
BT40EM20X75E	40	20	52	-	75	48	-	49	59	M16	M16	8
BT40EM25X105E	40	25	65	61	105	78	68	54	64	M20X1.5	M16	10
BT40EM32X110E	40	32	71	61	110	83	73	58	68	M20X1.5	M16	10
BT50EM6X70E	50	6	25	-	70	32	-	35	45	M5	M24	2.5
BT50EM8X70E	50	8	28	-	70	32	-	35	45	M6	M24	3
BT50EM12X100E	50	12	42	-	100	62	-	44	54	M10	M24	5
BT50EM14X100E	50	14	44	-	100	62	-	44	54	M10	M24	5
BT50EM18X100E	50	18	50	-	100	62	-	47	57	M12	M24	6
BT50EM20X100E	50	20	52	-	100	62	-	49	59	M16	M24	8
BT50EM25X115E	50	25	65	-	115	77	-	54	64	M20X1.5	M24	10
BT50EM32X115E	50	32	72	-	115	77	-	58	68	M20X1.5	M24	10
BT50EM40X115E	50	40	90	-	115	77	-	68	78	M20X1.5	M24	10
BT50EM50X125E	50	50	98	-	125	67	-	78	88	M20X1.5	M24	10

• Applicable for 10 MPa coolant
• Add B at the end of the designation for the item with coolant through the flange. (1) Preset screw has an internal coolant hole.

Reference pages

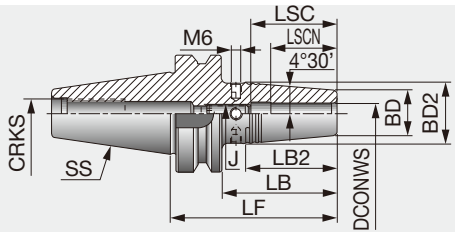

Pull stud K148


Clamping screw K155

TUNGSHRINK

BT-SRKIN

Thermal shrinking holder for carbide and HSS shanks (BT) (TungShrink)



Designation	SS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	CRKS	Wrench
BT40SRKIN6X90	40	6	27	21	90	63	38	25	36	M5	M16	2.5
BT40SRKIN8X90	40	8	27	21	90	63	38	25	36	M6	M16	3
BT40SRKIN10X90	40	10	32	24	90	63	50	31	42	M8	M16	4
BT40SRKIN12X90	40	12	32	24	90	63	50	36	47	M10	M16	5
BT40SRKIN16X90	40	16	34	27	90	63	44	39	50	M12	M16	6
BT40SRKIN18X90	40	18	42	33	90	63	57	39	50	M12	M16	6
BT40SRKIN20X90	40	20	42	33	90	63	57	41	52	M16	M16	8
BT40SRKIN25X110	40	25	53	44	110	83	57	47	58	M16	M16	8
BT50SRKIN6X100 (1)	50	6	26	21	100	62	32	25	36	M5	M24	2.5
BT50SRKIN8X100 (1)	50	8	27	21	100	62	38	25	36	M6	M24	3
BT50SRKIN10X100 (1)	50	10	32	24	100	62	51	31	42	M8	M24	4
BT50SRKIN12X100 (1)	50	12	32	24	100	62	51	36	47	M10	M24	5
BT50SRKIN14X100 (1)	50	14	34	27	100	62	44	36	47	M10	M24	5
BT50SRKIN16X100 (1)	50	16	34	27	100	62	44	39	50	M12	M24	6
BT50SRKIN18X100 (1)	50	18	42	33	100	62	57	39	50	M12	M24	6
BT50SRKIN20X100 (1)	50	20	42	33	100	62	57	41	52	M16	M24	8
BT50SRKIN25X120 (1)	50	25	53	44	120	82	57	47	58	M16	M24	8
BT50SRKIN32X120 (1)	50	32	53	44	120	82	57	47	58	M16	M24	8

- Applicable for 10 MPa coolant
- Please use an induction heating unit for SRKIN holder. (1) Balanced to G2·5 max.n: 20,000 min-1

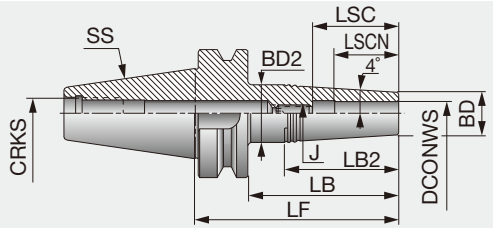
Reference pages

Pull stud K148
Induction heating unit K144
Heating unit K144
Preset screw K155

TUNGSHRINK

BT-SRK

Thermal shrinking holder for carbide shank (BT) (TungShrink)



Designation	SS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	CRKS	Wrench
BT40SRK3X50	40	3	10	15	77	50	35.5	10	16	M6	M16	3
BT40SRK3X85	40	3	10	19	112	85	64.1	10	16	M6	M16	3
BT40SRK4X50	40	4	10	15	77	50	35.5	12	18	M6	M16	3
BT40SRK4X85	40	4	10	19	112	85	64.1	12	18	M6	M16	3
BT40SRK5X50	40	5	10	15	77	50	35.5	15	21	M6	M16	3
BT40SRK5X85	40	5	10	19	112	85	64.1	15	21	M6	M16	3
BT40SRK6X50	40	6	11	16	77	50	35.5	18	24	M8	M16	4
BT40SRK6X85	40	6	11	20	112	85	64.1	18	24	M8	M16	4
BT40SRK8X50	40	8	14	20	77	50	42.5	25	31	M10	M16	5
BT40SRK8X85	40	8	14	23	112	85	63.9	25	31	M10	M16	5
BT40SRK10X50	40	10	16	22	77	50	42.4	30	36	M12	M16	6
BT40SRK10X85	40	10	16	25	112	85	60.2	30	36	M12	M16	6
BT40SRK12X50	40	12	20	26	77	50	42.3	32	42	M10	M16	5
BT40SRK12X85	40	12	20	28	112	85	56.6	32	42	M10	M16	5

• Applicable for 10 MPa coolant

Reference pages


Pull stud K148


Induction heating unit K144

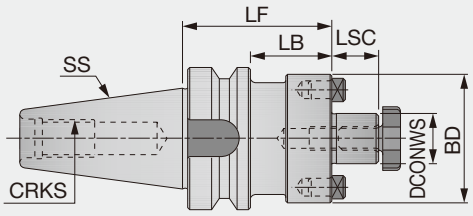

Heating unit K144


Preset screw K155

TUNGHOLD

BT-SEM

Shell mill holder (BT)



Designation	SS	DCONWS	LSC	BD	LF	LB	CRKS
BT30SEM16X50 (1)	30	16	17	38	50	28	M12
BT30SEM22X50 (1)	30	22	19	47	50	28	M12
BT30SEM27X50 (1)	30	27	21	58	50	18	M12
BT40SEM16X60 (1)	40	16	17	38	60	33	M16
BT40SEM16X120 (1)	40	16	17	38	120	93	M16
BT40SEM22X60 (1)	40	22	19	47	60	33	M16
BT40SEM22X120 (1)	40	22	19	47	120	93	M16
BT40SEM25.4X45V1 (1)	40	25.4	22	50	45	18	M16
BT40SEM27X45 (1)	40	27	21	58	45	18	M16
BT40SEM27X105 (1)	40	27	21	58	105	78	M16
BT40SEM32X60 (1)	40	32	24	65	60	23	M16
BT40SEM32X75 (1)	40	32	24	65	75	36	M16
BT40SEM40X60 (1)	40	40	27	82	60	23	M16
BT40SEM40X75 (1)	40	40	27	82	75	38	M16
BT50SEM16X75 (1)	50	16	17	38	75	37	M24
BT50SEM16X120 (1)	50	16	17	38	120	82	M24
BT50SEM22X50X220	50	22	19	50	220	182	M24
BT50SEM22X64X320	50	22	19	64	320	282	M24
BT50SEM22X75 (1)	50	22	19	47	75	37	M24
BT50SEM22X120 (1)	50	22	19	47	120	82	M24
BT50SEM27X60 (1)	50	27	21	58	60	22	M24
BT50SEM27X105 (1)	50	27	21	58	105	67	M24
BT50SEM32X48 (1)	50	32	24	66	48	10	M24
BT50SEM32X75 (1)	50	32	24	66	75	37	M24
BT50SEM40X48 (1)	50	40	27	82	48	10	M24
BT50SEM40X75 (1)	50	40	27	82	75	37	M24
BT50SEM50.8X75V1 (1)	50	50.8	36	100	75	37	M24

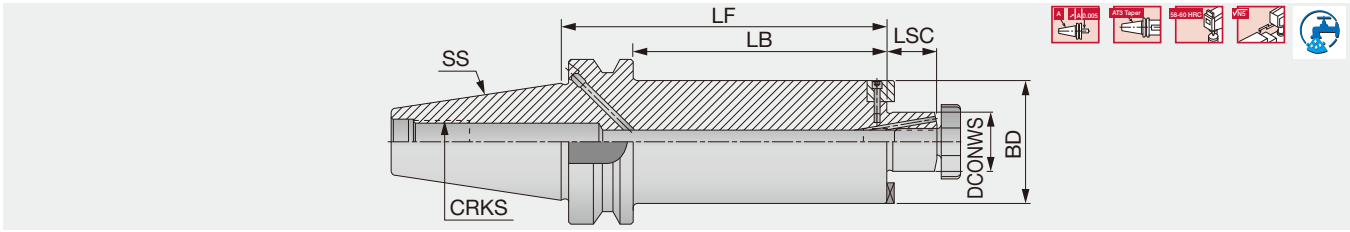
(1) Can be used for internal coolant supply with the TMBA-**H or CM****H clamping screw.

Option: Wrench for lock screw

Reference pages

Pull stud K148
Clamping screw K154
Wrench K156

TUNGHOLD
BT-SEM-C
Shell mill holder with coolant hole, long type (BT)

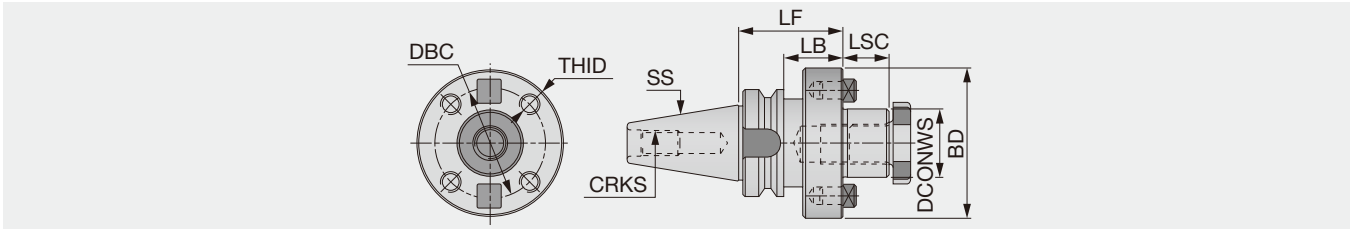


Designation	SS	DCONWS	BD	LF	LB	LSC	CRKS
BT40SEM16X60C	40	16	38	60	33	17	M16
BT40SEM16X100C	40	16	38	100	73	17	M16
BT40SEM22X60C	40	22	47	60	33	19	M16
BT40SEM22X100C	40	22	47	100	73	19	M16
BT40SEM27X100C	40	27	58	100	73	21	M16
BT40SEM32X60C	40	32	66	60	33	24	M16
BT50SEM16X75C	50	16	38	75	37	17	M24
BT50SEM16X100C	50	16	38	100	62	17	M24
BT50SEM22X75C	50	22	47	75	37	19	M24
BT50SEM22X48X220C	50	22	48	220	182	19	M24
BT50SEM22X61X320C	50	22	61	320	282	19	M24
BT50SEM25.4X60C	50	25.4	50.4	60	22	22	M24
BT50SEM27X60C	50	27	58	60	22	21	M24
BT50SEM27X100C	50	27	58	100	62	21	M24
BT50SEM27X61X320C	50	27	61	320	282	21	M24
BT50SEM32X75C	50	32	66	75	37	24	M24
BT50SEM32X100C	50	32	66	100	62	24	M24
BT50SEM32X78X390C	50	32	78	390	352	24	M24

- Applicable for 10 MPa coolant
- When being used as a flange-through type, the plug screw must be removed from the flange with a 2-mm hex key.

Option: Wrench for lock screw

TUNGHOLD
BT-FM
Face mill holder (BT)



Designation	SS	DCONWS	LSC	LF	LB	BD	DBC	THID	CRKS
BT40FM40	40	40	27	60	22	88	66.7	M12	M16
BT50FM40	50	40	27	50	12	88	66.7	M12	M24
BT50FM60	50	60	38	88	40	128	101.6	M16	M24

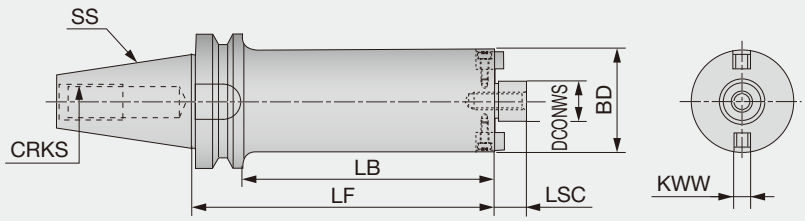
Option: Wrench for lock screw

Reference pages

Pull stud K148
Clamping screw K154
Wrench K156

BT50-FM

Shell mill holder, long type (BT)



Designation	SS	DCONWS	BD	LSC	LF	LB	CRKS	KWW	WT(kg)
BT50-FMC22-138-47	50	22	47	18	138	100	M24	10	5.2
BT50-FMC22-188-47	50	22	47	18	188	150	M24	10	5.9
BT50-FMC22-243-47	50	22	47	18	243	205	M24	10	6.5
BT50-FMC22-293-47	50	22	47	18	293	255	M24	10	7.2
BT50-FMC22-178-59	50	22	59	18	178	140	M24	10	6.8
BT50-FMC22-238-59	50	22	59	18	238	200	M24	10	8
BT50-FMC22-308-59	50	22	59	18	308	270	M24	10	9.5
BT50-FMC22-373-59	50	22	59	18	373	335	M24	10	10.9
BT50-FMA31.75-215-76	50	31.75	76	30	215	177	M24	12.7	10
BT50-FMA31.75-295-76	50	31.75	76	30	295	257	M24	12.7	12.9
BT50-FMA31.75-375-76	50	31.75	76	30	375	337	M24	12.7	15.8
BT50-FMA31.75-275-96	50	31.75	96	30	275	237	M24	12.7	16.8
BT50-FMA31.75-375-96	50	31.75	96	30	375	337	M24	12.7	23

Option: Wrench for collet

Reference pages

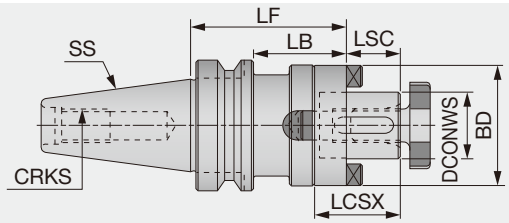


K148 K154 K156

TUNGHOLD

BT-SEMC

Combination holder for slot mill and shell mill (BT)



Designation	SS	DCONWS	LSC	BD	LF	LB	LCSX	CRKS
BT40SEMC16X50	40	16	17	32	50	23	27	M16
BT40SEMC16X100	40	16	17	32	100	73	27	M16
BT40SEMC22X53	40	22	19	40	53	26	31	M16
BT40SEMC22X100	40	22	19	40	100	73	31	M16
BT40SEMC27X55	40	27	21	48	55	28	33	M16
BT40SEMC27X100	40	27	21	48	100	73	33	M16
BT40SEMC32X60	40	32	24	58	60	33	38	M16
BT40SEMC32X100	40	32	24	58	100	73	38	M16
BT40SEMC40X80	40	40	27	70	80	53	41	M16
BT50SEMC16X100	50	16	17	32	100	62	27	M24
BT50SEMC16X150	50	16	17	32	150	112	27	M24
BT50SEMC22X68	50	22	19	40	68	30	31	M24
BT50SEMC22X100	50	22	19	40	100	62	31	M24
BT50SEMC22X150	50	22	19	40	150	112	31	M24
BT50SEMC27X78	50	27	21	48	78	40	33	M24
BT50SEMC27X100	50	27	21	48	100	62	33	M24
BT50SEMC27X150	50	27	21	48	150	112	33	M24
BT50SEMC32X78	50	32	24	58	78	40	38	M24
BT50SEMC32X100	50	32	24	58	100	62	38	M24
BT50SEMC32X150	50	32	24	58	150	112	38	M24
BT50SEMC40X78	50	40	27	70	78	40	41	M24
BT50SEMC40X100	50	40	27	70	100	62	41	M24
BT50SEMC40X150	50	40	27	70	150	112	41	M24
BT50SEMC50X79	50	50	30	90	79	41	46	M24
BT50SEMC50X150	50	50	30	90	150	112	46	M24

Option: Wrench for lock screw

Reference pages


Pull stud K148

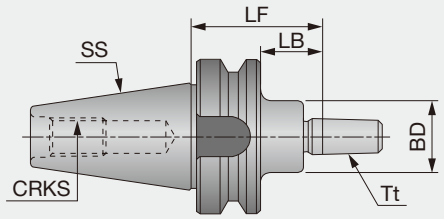

Clamping screw K154


Wrench K156

TUNGHOLD

BT-DC

Jacobs taper holder (BT)

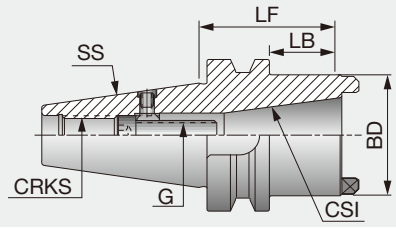


Designation	SS	Tt	LF	BD	LB	CRKS
BT30DCB12X30	30	B12	30	-	8	M12
BT40DCB12X45	40	B12	45	24	18	M16
BT40DCB12X90	40	B12	90	24	63	M16
BT40DCB16X45	40	B16	45	30	18	M16
BT40DCB16X90	40	B16	90	30	63	M16
BT40DCB18X90	40	B18	90	30	63	M16
BT50DCB12X45	50	B12	45	-	6.7	M24
BT50DCB16X45	50	B16	45	-	7	M24
BT50DCB16X105	50	B16	105	50	67	M24
BT50DCB18X45	50	B18	45	-	7	M24
BT50DCB18X105	50	B18	105	30	67	M24

TUNGHOLD

BT-AD

Conversion adapter (BT)



Designation	SS	CSI	LF	BD	LB	G	CRKS
BT50ADBT/SK40	50	DIN69871/A, BT MAS - 403	75	37	66	M16	M24
BT50AD40	50	DIN2080	70	32	63	M16	M24

Reference pages

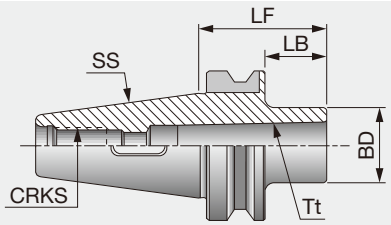


Pull stud
K148

TUNGHOLD

BT-MT

Morse taper holder (BT)

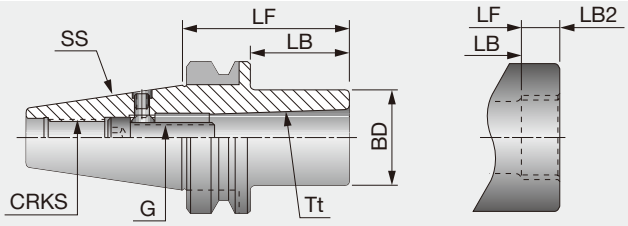


Designation	SS	Tt	LF	LB	BD	CRKS
BT30MT1X45	30	MT1	45	23	25	M12
BT30MT2X60	30	MT2	60	38	32	M12
BT40MT1X45	40	MT1	45	18	25	M16
BT40MT1X120	40	MT1	120	93	25	M16
BT40MT2X60	40	MT2	60	33	32	M16
BT40MT2X120	40	MT2	120	93	32	M16
BT40MT3X75	40	MT3	75	48	40	M16
BT40MT3X139	40	MT3	139	112	40	M16
BT40MT4X95	40	MT4	95	68	50	M16
BT50MT1X45	50	MT1	45	7	25	M24
BT50MT1X120	50	MT1	120	82	25	M24
BT50MT1X180	50	MT1	180	142	25	M24
BT50MT2X45	50	MT2	45	7	32	M24
BT50MT2X135	50	MT2	135	97	32	M24
BT50MT2X180	50	MT2	180	142	32	M24
BT50MT3X45	50	MT3	45	7	40	M24
BT50MT3X150	50	MT3	150	112	40	M24
BT50MT3X180	50	MT3	180	142	40	M24
BT50MT4X75	50	MT4	75	37	50	M24
BT50MT4X180	50	MT4	180	142	50	M24
BT50MT5X105	50	MT5	105	67	70	M24

TUNGHOLD

BT-MT DRW

Morse taper holder with draw bar (BT)



Designation	SS	Tt	LF	LB	LB2	BD	G	CRKS
BT40MT1DRW	40	MT1	50	23	-	25	M6	M16
BT40MT2DRW	40	MT2	50	23	-	32	M10	M16
BT40MT3DRW	40	MT3	70	43	-	40	M12	M16
BT40MT4DRW (1)	40	MT4	95	68	15	63	M16	M16
BT50MT1DRW	50	MT1	45	7	-	25	M6	M24
BT50MT2DRW	50	MT2	60	22	-	32	M10	M24
BT50MT3DRW	50	MT3	65	27	-	40	M12	M24
BT50MT4DRW (1)	50	MT4	70	32	15	63	M16	M24
BT50MT5DRW (1)	50	MT5	100	62	18	78	M20	M24

(1) DIN2201

Reference pages

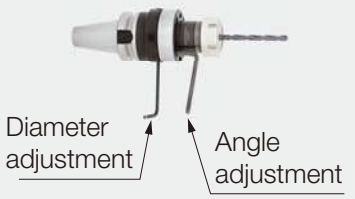


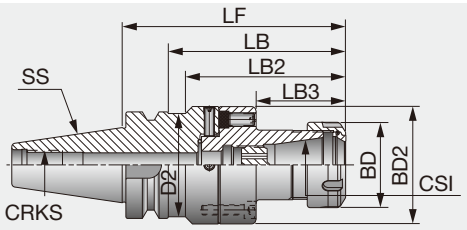
Pull stud
K148

TUNGFINE

ADJ BT-ER

ER collet chuck holder with center alignment (BT)







Designation	SS	CSI	Range	LF	LB	LB2	LB3	BD	BD2	BD3	CRKS
ADJBT40D70ER32	40	ER32	2-20	129.5	52.5	102.5	92	50	70	62.5	M16
ADJBT50D70ER32	50	ER32	2-20	144.5	52.5	106.5	-	50	70	-	M24

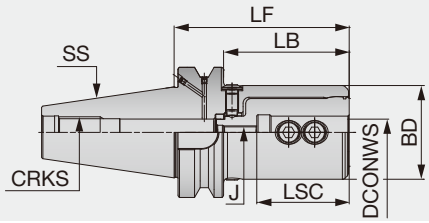
• Applicable for 10 MPa coolant

Option: Wrench for ER collet

TUNGBORE

TUNGBORE-BT

Adjustable drilling diameter holder (BT) (TungBore)



Designation	SS	DCONWS	BD	LF	LB	LSC	J	CRKS
TUNGBORE-BT50EM20ADB	50	20	72	134.5	96.5	71	M10	M24
TUNGBORE-BT50EM25ADB	50	25	72	134.5	96.5	71	M10	M24
TUNGBORE-BT50EM32ADB	50	32	72	134.5	96.5	71	M10	M24
TUNGBORE-BT50EM40ADB	50	40	72	134.5	96.5	71	M10	M24

• Applicable for 10 MPa coolant
• Coolant through spindle and flange

Reference pages

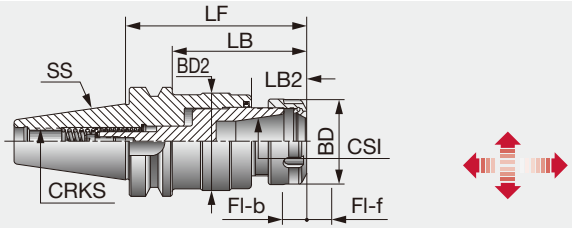


K125 K151 K152 K153 K148

TUNGGTI

GTI-BT

Tapping holder (BT) (TungGTI)



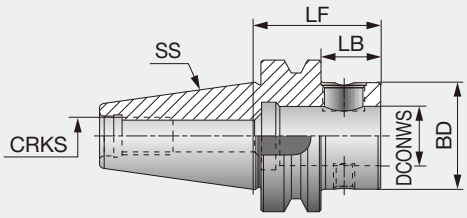
Designation	SS	CSI	Tap min	Tap max	Range	LF	LB	LB2	BD	BD2	Fl-f	Fl-b	CRKS
GTIBT40ER16	40	ER16	M3	M10	0.5-10	84.2	52.7	24.6	28	29.5	8	3	M16
GTIBT40ER32	40	ER32	M6	M20	2-20	106.8	79.8	33	50	56.5	9	4	M16
GTIBT40ER40	40	ER40	M6	M28	3-26	124.8	97.8	51	63	56.5	9	4	M16
GTIBT50ER16	50	ER16	M3	M10	0.5-10	106.8	68.8	24.6	28	29.5	8	3	M24
GTIBT50ER32	50	ER32	M6	M20	2-20	115.2	77.2	33	50	56.5	9	4	M24
GTIBT50ER40	50	ER40	M6	M28	3-26	133.2	95.2	51	63	56.5	9	4	M24

Option: Wrench for ER collet

TUNGFIT

BT-CF

Quick change holder (BT) (TungFit)



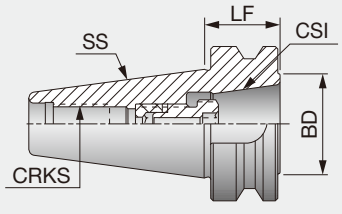
Designation	SS	LF	LB	BD	DCONWS	CRKS
BT40CF4-L	40	110	83	44.5	25	M16
BT40CF4-S	40	52	25	44.5	25	M16
BT50CF4-L	50	115	77	44.5	25	M24
BT50CF4-S	50	63	25	44.5	25	M24

- Applicable for 10 MPa coolant
- Clamping torque: 58.8 N·m

TUNGCLICK

BT-CLICKIN

Quick change holder (BT) (TungClick)



Designation	SS	CSI	BD	LF	CRKS
BT40ER32CLICK-IN	40	32SRF	41	28	M16
BT50ER32CLICK-IN	50	32SRF	41	39	M24

- Applicable for 10 MPa coolant
- Recommend clamping torque: 2.3 N·m

Reference pages


ER collet K125


Nut K151

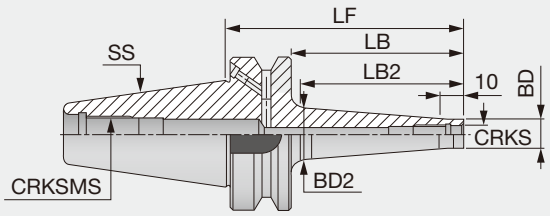

Wrench K152


Preset screw K153


Pull stud K148

TUNGFLEX
BT-ODP

Screw-clamp holder for modular heads (BT) (TungFlex)



Designation	SS	CRKS	BD	BD2	LF	LB	LB2	CRKSMS
BT40ODP6X66	40	M6	9.8	13	66	39	30	M16
BT40ODP6X106	40	M6	9.8	23	106	79	70	M16
BT40ODP8X66	40	M8	13	15	66	39	30	M16
BT40ODP8X106	40	M8	13	23	106	79	70	M16
BT40ODP10X66	40	M10	18	20	66	39	30	M16
BT40ODP10X106	40	M10	18	28	106	79	70	M16
BT40ODP12X66	40	M12	21	24	66	39	30	M16
BT40ODP12X106	40	M12	21	31	106	79	70	M16
BT40ODP16X66	40	M16	29	28.6	66	39	-	M16
BT40ODP16X106	40	M16	29	34	106	79	70	M16
BT50ODP12X94	50	M12	23	30	94	56	50	M24
BT50ODP12X144 (1)	50	M12	23	40	144	106	100	M24
BT50ODP12X194 (1)	50	M12	23	40	194	156	150	M24
BT50ODP16X94 (1)	50	M16	29	34	94	56	50	M24
BT50ODP16X144 (1)	50	M16	29	40	144	106	100	M24
BT50ODP16X194 (1)	50	M16	29	55	194	156	150	M24
BT50ODP16X244 (1)	50	M16	29	60	244	206	200	M24

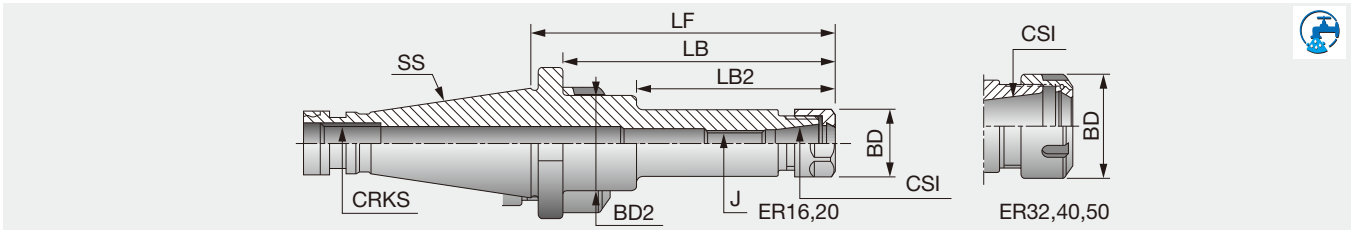
• Applicable for 10 MPa coolant
(1) Balanced to G6.3 max.n: 12,000 min-1

Reference pages



Pull stud
K148

ER collet chuck holder (DIN2080)



Designation	SS	CSI	Range	LF	LB	LB2	BD	BD2	J	CRKS
DIN208030ER16X75	30	ER16	0.5-10	75	65.4	-	28	-	M10	M12
DIN208030ER32X55	30	ER32	2-20	55	45.4	-	50	-	M18X1.5	M12
DIN208030ER40X83	30	ER40	3-26	83	69.4	-	63	-	M22X1.5	M12
DIN208040ER16X63	40	ER16	0.5-10	63	51.4	-	28	-	M12	M16
DIN208040ER16X100	40	ER16	0.5-10	100	88.4	-	28	-	M12	M16
DIN208040ER25X50	40	ER25	1-16	50	38.4	-	42	-	M16X1.5	M16
DIN208040ER32X50	40	ER32	2-20	50	38.4	-	50	-	M22X1.5	M16
DIN208040ER40X55	40	ER40	3-26	55	43.4	-	63	-	M22X1.5	M16
DIN208040ER20X63	40	ER20	1-13	63	51.4	-	34	-	M12	M16
DIN208040ER20X100	40	ER20	1-13	100	88.4	-	34	-	M12	M16
DIN208050ER20X100	50	ER20	1-13	100	84.8	-	34	-	M16	M24
DIN208050ER20X160	50	ER20	1-13	160	144.8	-	34	-	M12	M24
DIN208050ER40X58	50	ER40	3-26	58	42.8	-	63	-	M28X1.5	M24
DIN208050ER50X63	50	ER50	10-34	63	47.8	-	78	-	M36X1.5	M24

• Applicable for 10 MPa coolant

Option: Wrench for ER collet

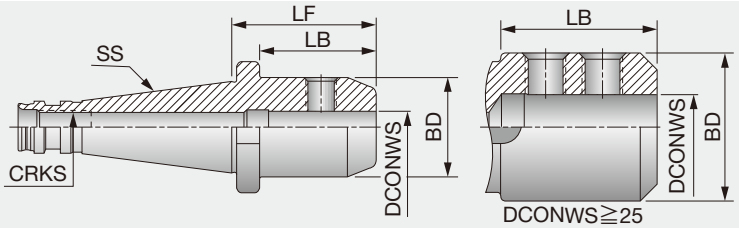
Reference pages

ER collet K125 | Nut K151 | Wrench K152 | Preset screw K153 | Pull stud K148

TUNGHOLD

DIN2080-EM

Side lock holder for weldon endmills (DIN2080)



Designation	SS	DCONWS	BD	LF	LB	CRKS
DIN208030EM6X40	30	6	25	40	30.4	M12
DIN208030EM8X40	30	8	28	40	30.4	M12
DIN208030EM10X40	30	10	35	40	30.4	M12
DIN208030EM20X63	30	20	52	63	53.4	M12
DIN208040EM8X50	40	8	28	50	38.4	M16
DIN208040EM10X50	40	10	35	50	38.4	M16
DIN208040EM12X50	40	12	42	50	38.4	M16
DIN208040EM16X63	40	16	48	63	51.4	M16
DIN208040EM20X63	40	20	52	63	51.4	M16
DIN208040EM25X80	40	25	65	80	68.4	M16
DIN208040EM32X80	40	32	71	80	68.4	M16
DIN208050EM8X63	50	8	28	63	47.8	M24
DIN208050EM10X63	50	10	35	63	47.8	M24
DIN208050EM12X63	50	12	42	63	47.8	M24
DIN208050EM16X63	50	16	48	63	47.8	M24
DIN208050EM20X63	50	20	52	63	47.8	M24
DIN208050EM25X80	50	25	65	80	64.8	M24
DIN208050EM32X80	50	32	72	80	64.8	M24
DIN208050EM40X90	50	40	90	90	74.8	M24
DIN208050EM50X100	50	50	100	100	84.8	M24

• Applicable for 10 MPa coolant

Reference pages

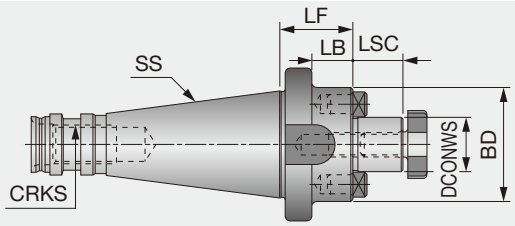

Pull stud
K150


Clamping screw
K155

TUNGHOLD

DIN2080-SEM

Shell mill holder (DIN2080)



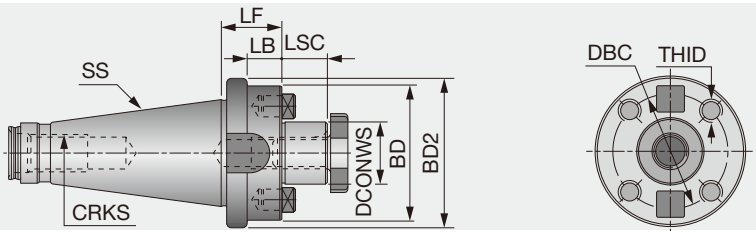
Designation	SS	DCONWS	LSC	BD	LF	LB	CRKS
DIN208030SEM16X28	30	16	17	38	28	18.4	M12
DIN208030SEM22X28	30	22	19	47	28	18.4	M12
DIN208030SEM27X32	30	27	21	58	32	22.4	M12
DIN208040SEM16X28	40	16	17	38	28	16.4	M16
DIN208040SEM22X27	40	22	19	47	27	15.4	M16
DIN208040SEM27X26	40	27	21	58	26	14.4	M16
DIN208040SEM32X23	40	32	24	66	23	11.4	M16
DIN208040SEM40X34	40	40	27	82	34	22.4	M16
DIN208050SEM16X38	50	16	17	38	38	22.8	M24
DIN208050SEM22X38	50	22	19	47	38	22.8	M24
DIN208050SEM27X38	50	27	21	58	38	22.8	M24
DIN208050SEM32X36	50	32	24	66	36	20.8	M24
DIN208050SEM40X40	50	40	27	82	40	24.8	M24

Option: Wrench for lock screw

TUNGHOLD

DIN2080-FM

Face mill holder (DIN2080)



Designation	SS	DCONWS	LSC	BD	BD2	LB	LF	THID	DBC	CRKS
DIN208050FM40	50	40	27	97.5	88	20.8	36	M12	66.7	M24
DIN208050FM60	50	60	40	128	-	-	35.8	M16	101.6	M24

Option: Wrench for lock screw

Reference pages


Pull stud K148

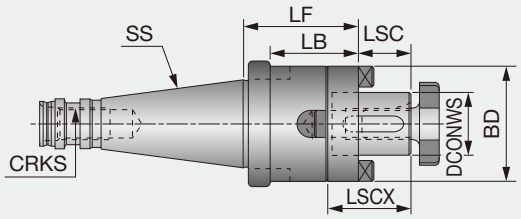

Clamping screw K154


Wrench K156

TUNGHOLD

DIN2080-SEMC

Combination holder for slot mill and shell mill (DIN2080)



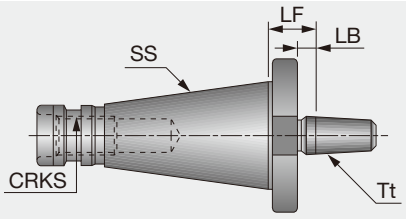
Designation	SS	DCONWS	LSC	BD	LF	LB	LSCX	CRKS
DIN208030SEMC16X35	30	16	17	32	35	25.4	27	M12
DIN208030SEMC22X35	30	22	19	40	35	25.4	31	M12
DIN208030SEMC27X35	30	27	21	48	35	25.4	33	M12
DIN208030SEMC32X50	30	32	24	58	50	40.4	38	M12
DIN208040SEMC22X52	40	22	19	40	52	40.4	31	M16
DIN208040SEMC27X52	40	27	21	48	52	40.4	33	M16
DIN208040SEMC32X52	40	32	24	58	52	40.4	38	M16
DIN208040SEMC40X52	40	40	27	70	52	40.4	41	M16
DIN208050SEMC16X55	50	16	17	32	55	39.8	27	M24
DIN208050SEMC22X55	50	22	19	40	55	39.8	31	M24
DIN208050SEMC27X55	50	27	21	48	55	39.8	33	M24
DIN208050SEMC32X55	50	32	24	58	55	39.8	38	M24
DIN208050SEMC40X55	50	40	27	70	55	39.8	41	M24
DIN208050SEMC50X55	50	50	30	90	55	39.8	46	M24

Option: Wrench for lock screw

TUNGHOLD

DIN2080-DC

Jacobs taper holder (DIN2080)



Designation	SS	Tt	LF	LB	CRKS
DIN208030DCB16X20	30	B16	20	5.4	M12
DIN208040DCB16X22	40	B16	22	10.4	M16
DIN208050DCB18X25	50	B18	25	9.8	M24

Reference pages

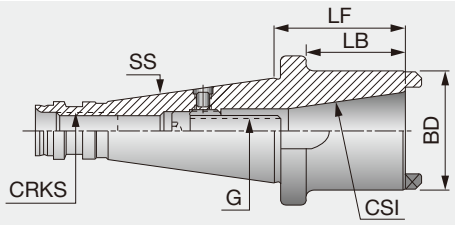

Pull stud
K148


Clamping screw
K154


Wrench
K156

TUNGHOLD
DIN2080 AD

Conversion adapter (DIN2080)



Designation	SS	CSI	LF	BD	LB	G	CRKS
DIN208050AD40	50	DIN2080	50	63	34.8	M16	M24

TUNGHOLD
DIN2080-MT DRW

Morse taper holder with draw bar (DIN2080)

Fig.1

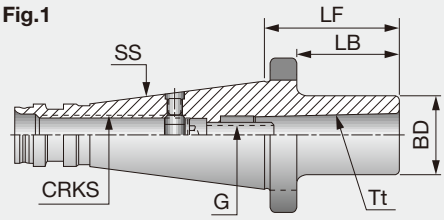
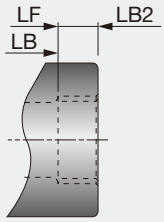


Fig. 2(1)



Designation	SS	Tt	LF	BD	LB	LB2	G	CRKS	Fig.
DIN208040MT1DRW	40	MT1	50	25	38.4	-	M6	M16	1
DIN208040MT2DRW	40	MT2	50	32	38.4	-	M10	M16	1
DIN208040MT4DRW	40	MT4	95	63	-	15	M16	M16	2
DIN208050MT1DRW	50	MT1	60	25	44.8	-	M6	M24	1
DIN208050MT2DRW	50	MT2	60	32	44.8	-	M10	M24	1
DIN208050MT3DRW	50	MT3	65	40	49.8	-	M12	M24	1
DIN208050MT4DRW	50	MT4	65	63	49.8	15	M16	M24	2
DIN208050MT5DRW	50	MT5	100	78	84.4	18	M20	M24	2

(1) DIN2201

Reference pages



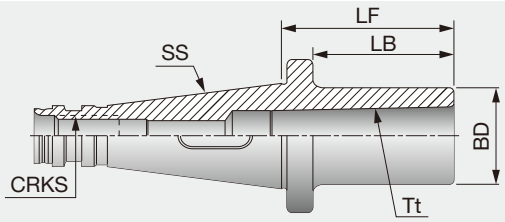
Pull stud

K148

TUNGHOLD

DIN2080-MT

Morse taper holder (DIN2080)

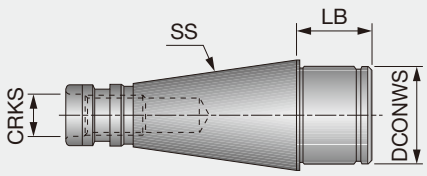


Designation	SS	Tt	LF	BD	LB	CRKS
DIN208040MT1X50	40	MT1	50	25	38.4	M16
DIN208040MT2X50	40	MT2	50	32	38.4	M16
DIN208040MT3X65	40	MT3	65	40	53.4	M16
DIN208040MT4X95	40	MT4	95	48	83.4	M16
DIN208050MT1X45	50	MT1	45	25	29.8	M24
DIN208050MT2X60	50	MT2	60	32	44.8	M24
DIN208050MT3X65	50	MT3	65	40	49.8	M24
DIN208050MT4X70	50	MT4	70	48	54.8	M24
DIN208050MT5X105	50	MT5	105	63.5	89.2	M24

TUNGHOLD

DIN2080-CP

Center plug (DIN2080)



Designation	SS	DCONWS	LB	CRKS
DIN208040CP40	40	40	29	M16
DIN208050CP60	50	60	39	M24

Reference pages

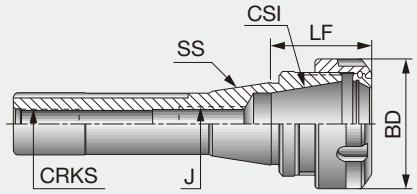


Pull stud

K148

TUNGHOLD
R-8 ER

ER collet chuck holder (R-8 Bridgeport)



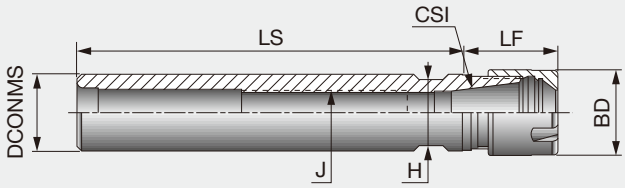
Designation	SS	CSI	Range	LF	BD	J	CRKS
R-8ER16X38	R-8	ER16	0.5-10	38	28	M10	7/16-20
R-8ER32X40	R-8	ER32	2-20	40	50	M12	7/16-20
R-8ER40X72	R-8	ER40	3-26	72	63	M12	7/16-20

• Applicable for10 MPa coolant

Option: Wrench for ER collet

TUNGHOLD
ST-ER-M

ER Mini collet chuck holder (straight shank)



Designation	DCONMS	CSI	Range	LS	LF	J	BD	H
ST12X80ER11M	12	ER11	0.5-7	80	26.5	-	16	11
ST16X50ER11MF	16	ER11	0.5-7	50	18.5	M8	16	13
ST16X100ER11M	16	ER11	0.5-7	100	18.5	M8	16	13
ST16X150ER11M	16	ER11	0.5-7	150	18.5	M8	16	13
ST12X80ER16M	12	ER16	0.5-10	80	36.5	-	22	17
ST20X100ER16M	20	ER16	0.5-10	100	25	M12	22	17
ST20X150ER16M	20	ER16	0.5-10	150	25	M12	22	17
ST20X100ER20M	20	ER20	1-13	100	40	M12	28	21
ST20X150ER20M	20	ER20	1-13	150	40	M12	28	21

• Applicable for 10 MPa coolant
• F indicates a flat on the shank.

Option: Wrench for ER collet

Reference pages


ER collet K125


Nut K151

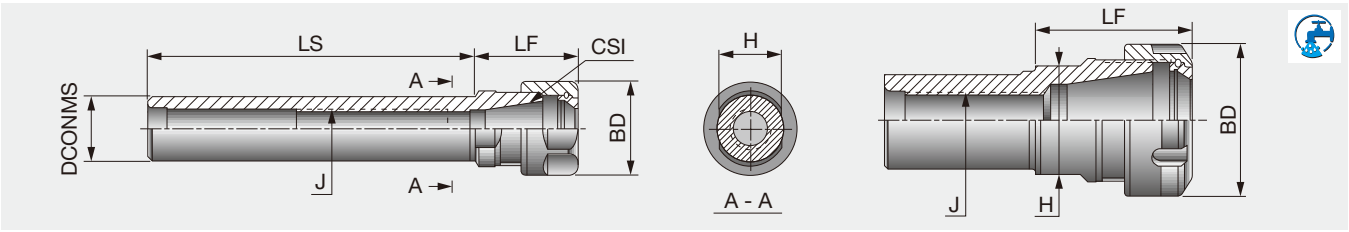

Wrench K152


Preset screw K153

TUNGHOLD

ST-ER

ER collet chuck holder (Straight shank)



Designation	DCONMS	CSI	Range	LS	LF	J	BD	H
ST16X50ER11F	16	ER11	0.5-7	50	18.5	M8	19	13
ST20X50ER11F	20	ER11	0.5-7	50	18.5	M10	19	17
ST20X100ER11	20	ER11	0.5-7	100	18.5	M10	19	17
ST20X150ER11	20	ER11	0.5-7	150	18.5	M10	19	17
ST20X50ER16F	20	ER16	0.5-10	50	32.3	M12	28	19
ST20X100ER16	20	ER16	0.5-10	100	30	M12	28	19
ST20X150ER16	20	ER16	0.5-10	150	30	M12	28	19
ST20X50ER20F	20	ER20	1-13	50	42.5	M12	34	22
ST25X100ER20	25	ER20	1-13	100	36	M16	34	22
ST25X150ER20	25	ER20	1-13	150	36	M16	34	22
ST20X50ER25F	20	ER25	1-16	50	46	M12	42	28
ST20X100ER25	20	ER25	1-16	100	46	M12	42	28
ST20X50ER32F	20	ER32	2-20	50	54	M12	50	36
ST20X100ER32	20	ER32	2-20	100	54	M12	50	36
ST25X50ER25F	25	ER25	1-16	50	46	M16	42	28
ST25X100ER25	25	ER25	1-16	100	46	M16	42	28
ST25X50ER32F	25	ER32	2-20	50	52	M16x2	50	36
ST25X50ER40F	25	ER40	3-26	50	60	M16x2	63	45
ST30X50ER32F	30	ER32	2-20	50	52	M18x1.5	50	36
ST30X50ER40F	30	ER40	3-26	50	60	M18x1.5	63	45
ST32X50ER32F	32	ER32	2-20	50	52	M18x1.5	50	36
ST32X150ER32	32	ER32	2-20	150	52	M18x1.5	50	36
ST32X50ER40F	32	ER40	3-26	50	60	M18x1.5	63	45
ST40X75ER32F	40	ER32	2-20	75	46	M22x1.5	50	44
ST40X75ER40F	40	ER40	3-26	75	55	M22x1.5	63	45
ST50X80ER40F	50	ER40	3-26	80	60	M28x1.5	63	54
ST50X80ER50F	50	ER50	10-34	80	77	M36x1.5	78	58

- Applicable for 10 MPa coolant
- F indicates a flat on the shank.

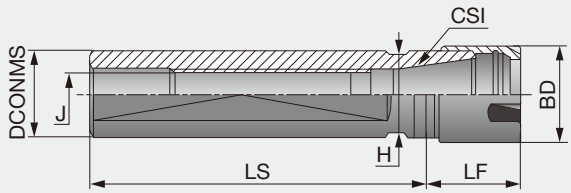
Option: Wrench for ER collet

Reference pages

ER collet K125 | Nut K151 | Wrench K152 | Preset screw K153

TUNGHOLD
ST-ER-MF

ER Mini collet chuck holder, with flat, for Swiss machines



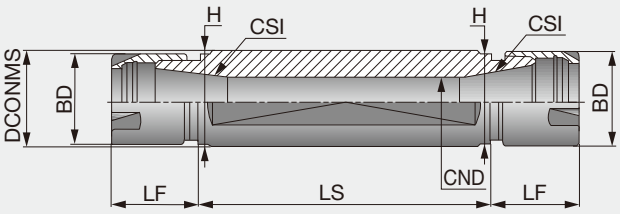
Designation	DCONMS	CSI	Range	LS	LF	J	BD	H	Machine
ST16X35ER16MF	16	ER16	0.5-10	35	36	M8X1	22	17	Tsugami
ST16X38ER11MF	16	ER11	0.5-7	38	18.5	M8X1	16	14	Tsugami
ST16X140ER11MF	16	ER11	0.5-7	140	18.5	M8X1	16	14	-
ST20X70ER16MF	20	ER16	0.5-10	70	26	M12X1	22	17	Tsugami, Citizen
ST20X120ER16MF	20	ER16	0.5-10	120	26	M12X1	22	17	Tsugami, Citizen
ST20X140ER16MF	20	ER16	0.5-10	140	26	M12X1	22	17	Tsugami, Citizen
ST22X38ER16MF	22	ER16	0.5-10	38	26	M12X1	22	19	Star
ST22X70ER16MF	22	ER16	0.5-10	70	26	M12X1	22	19	Star
ST22X70ER25MF	22	ER25	0.5-16	70	47	M12X1	35	27	Star
ST22X80ER20MF	22	ER20	1-13	80	39	M12X1	28	21	Star
ST22X100ER16MF	22	ER16	1-16	100	28	M12X1	22	19	Star
ST25X65ER16MF	25	ER16	0.5-10	65	28	M12X1	22	22	Citizen
ST25X75ER25MF	25	ER25	1-16	75	48	M14X1	35	27	Manurhin
ST25X100ER20MF	25	ER20	1-13	100	28	M14X1	28	22	Tornos
ST25X145ER25MF	25	ER25	1-16	145	36	M14X1	35	27	Tornos
ST25X154ER20MF	25	ER20	1-13	154	28	M14X1	28	22	Tornos
ST32X70ER25MF	32	ER25	1-16	70	30	M18X1	35	27	Schuette

• Applicable for 10 MPa coolant

Option: Wrench for ER collet

TUNGHOLD
ST-ER-MF-D

ER Mini collet chuck holder, double end type



Designation	DCONMS	CSI	Range	LS	LF	BD	CND	H	Machine
ST16X50ER11MFD	16	ER11	0.5-7	50	18.5	16	7.5	14	-
ST20X30ER11MFD	20	ER11	0.5-7	30	18.5	16	7.5	17	Tsugami
ST20X50ER11MFD	20	ER11	0.5-7	50	18.5	16	7.5	17	Tsugami
ST20X55ER16MFD	20	ER16	0.5-10	55	25	22	10.5	17	Tsugami
ST22X55ER16MFD	22	ER16	0.5-10	55	28	22	10.5	19	Star
ST22X75ER16MFD	22	ER16	0.5-10	75	28	22	10.5	19	Star
ST25X62ER16MFD	25	ER16	0.5-10	62	28	22	10.5	22	-
ST32X55ER20MFD	32	ER20	1-13	55	28	28	13.5	27	Star
ST32X75ER20MFD	32	ER20	1-13	75	28	28	13.5	27	Star

• Applicable for 10 MPa coolant

Option: Wrench for ER collet

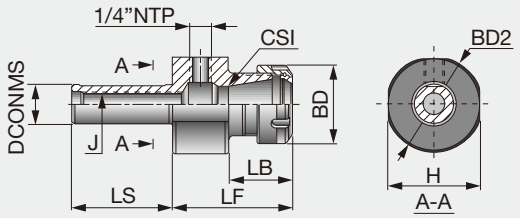
Reference pages

ER collet K125
Nut K151
Wrench K152
Preset screw K153

TUNGHOLD

ST-ER-S

ER collet chuck holder, with the capability of internal coolant supply



Designation	DCONMS	CSI	Range	LS	LF	LB	J	BD	BD2	H
ST20X65ER20S	20	ER20	1-13	65	63	31	M12	34	40	34
ST20X65ER25S	20	ER25	1-16	65	72	32	M12	42	54	51
ST20X65ER32S	20	ER32	2-20	65	77	41	M12	50	63	59
ST25X65ER32S	25	ER32	2-20	65	77	41	M16	50	63	59
ST32X65ER32S	32	ER32	2-20	65	77	41	M18x1.5	50	63	59
ST40X75ER32S	40	ER32	2-20	75	77	41	M22x1.5	50	63	59

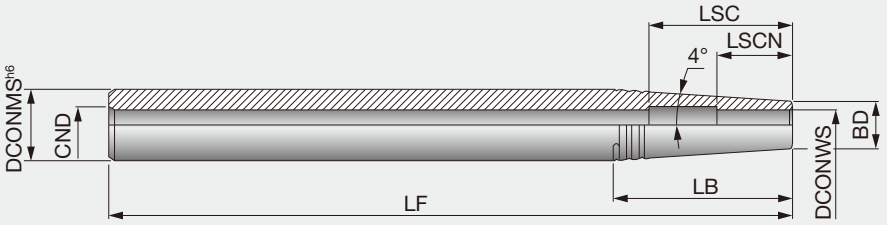
• Applicable for 10 MPa coolant

Option: Wrench for ER collet

TUNGSHRINK

ST-SRK

Thermal shrinking holder for carbide shank (straight shank) (TungShrink)



Designation	DCONMS	DCONWS	BD	CND	LF	LB	LSCN	LSC
ST12X160SRK3	12	3	10	4	160	14.3	10	-
ST12X160SRK4	12	4	10	4	160	14.3	12	27
ST16X160SRK3	16	3	10	6	160	43	10	-
ST16X160SRK4	16	4	10	6	160	43	12	-
ST16X160SRK5	16	5	10	6	160	43	15	-
ST16X160SRK6	16	6	11	6	160	35.5	18	35
ST20X200SRK5	20	5	10	6	200	71.5	15	-
ST20X200SRK6	20	6	11	6	200	64.5	18	40
ST20X200SRK8	20	8	14	6	200	43	25	40
ST25X200SRK6	25	6	11	8	200	100	18	35
ST25X200SRK8	25	8	14	8	200	78.6	25	40
ST25X200SRK10	25	10	16	8	200	64.3	30	50
ST25X200SRK12	25	12	20	8	200	35.7	32	52

• Applicable for 10 MPa coolant

Option: Wrench for ER collet

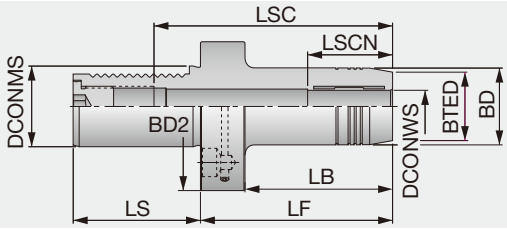
Reference pages

ER collet K125
Nut K151
Wrench K152
Preset screw K153

TUNGHYDRO

DIN69880-HYDRO

Hydraulic chuck holder (DIN69880)



Unit (mm)

Designation	DCONMS	BTED	BD	BD2	DCONWS	LS	LF	LB	LSCN	LSC
DIN69880 30 HYDRO 20X89	20	38	42	68	30	55	89	73	48	85
DIN69880 30 HYDRO 25X100	25	46	50	68	30	55	100	78	54	85
DIN69880 40 HYDRO 20X95	20	38	42	83	40	63	95	73	48	130
DIN69880 40 HYDRO 25X95	25	46	50	83	40	63	95	73	54	130
DIN69880 40 HYDRO 32X95	32	56	60	83	40	63	95	78	58	90

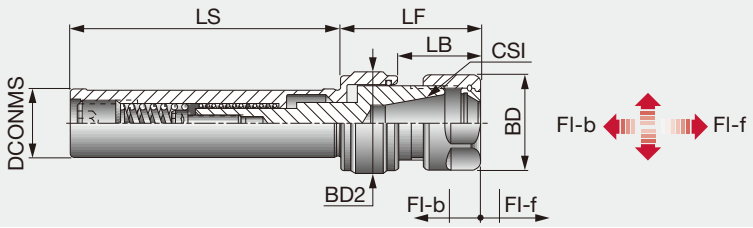
• Applicable for 10 MPa coolant
Available are reduction sleeves for 12, 20, 25 and 32 mm bore diameters.
Chucking forces will significantly reduce if reduction sleeves are used (ordered separately).

Option: Wrench for TungHydro collet

TUNGGTI

GTI-ER-ST

Tapping holder (straight shank) (TungGTI)

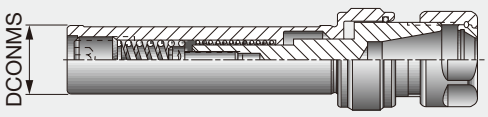


Designation	DCONMS	CSI	Tap min	Tap max	Range	BD	BD2	LB	LF	LS	Fl-f	Fl-b
GTIER11ST16X150M	16	ER11	M2	M7	0.5-7	16	-	19	-	150	6	3
GTIER16ST20X80	20	ER16	M3	M10	0.5-10	28	29.5	24.6	41.6	80	8	3
GTIER20ST20X80	20	ER20	M4	M14	1-13	34	33.5	28	49	80	8	3
GTIER25ST25X80	25	ER25	M5	M16	1-16	42	40.5	32	53	80	9	4
GTIER32ST25X80	25	ER32	M6	M20	1-16	50	56.5	32	77.2	80	9	4
GTIER40ST32X80	32	ER40	M6	M27	2-20	63	56.5	51	95.2	80	9	4

Option: Wrench for ER collet

KIT GTI-ER-ST

ER tapping holder and spring collets (straight shank)





Designation	Collet size	DCONMS	Qty	Range
KITGTIER11ST16X1504M	ER11	16	4	3,4,5,6
KITGTIER16ST20X804	ER16	20	4	4,5,6,7
KITGTIER20ST20X804	ER20	20	4	5,6,7,8
KITGTIER25ST25X805	ER25	25	5	6,7,9,11,12
KITGTIER32ST25X806	ER32	25	6	6,7,9,11,12,16
KITGTIER40ST32X806	ER40	32	6	9,11,14,16,18,20

Includes GTI collets and wrench

Reference pages

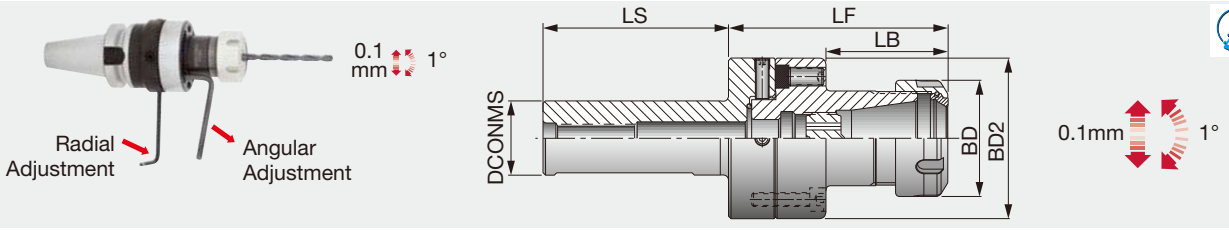

ER collet K125


Nut K151


Wrench K152


Preset screw K153

TUNGFINE
ADJ ST-ER
ER collet chuck holder with center alignment

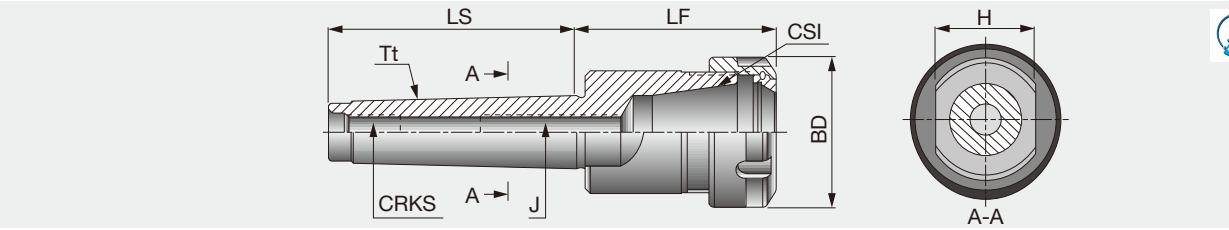


Designation	Range	LF	LB	LS	BD	BD2	DCONMS
ADJST25D70ER32	2-20	94.5	52.5	80	50	70	25
ADJST32D70ER32	2-20	94.5	52.5	80	50	70	32

• Applicable for 10 MPa coolant

Option: Wrench for ER collet

TUNGHOLD
MT-ER
ER collet chuck holder with Morse taper

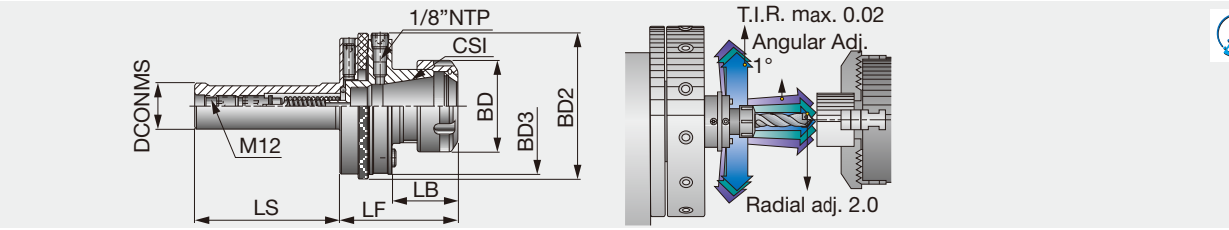


Designation	Tt	CSI	Range	LF	LS	BD	J	CRKS	H
MT2ER20X48.5	MT 2	ER20	1-13	48.5	64	34	M10	M10	22
MT2ER25X52	MT 2	ER25	1-16	52	64	42	M10	M10	28
MT3ER32X69	MT 3	ER32	2-20	69	81	50	M12	M12	24
MT3ER40X79	MT 3	ER40	3-26	79	81	63	M12	M12	24
MT4ER32X61	MT 4	ER32	2-20	60.5	102.5	50	M16	M16	32
MT4ER40X82	MT 4	ER40	3-26	81.5	102.5	63	M16	M16	32
MT4ER50X108	MT 4	ER50	10-34	107.5	102.5	78	M16	M16	32
MT5ER40X82	MT 5	ER40	3-26	82	129.5	63	M28x1.5	M20	45
MT5ER50X85	MT 5	ER50	10-34	85	129.5	78	M28x1.5	M20	45

• Applicable for 3 MPa coolant

Option: Wrench for ER collet

TUNGGYRO
GYRO ST-ER TungGYRO
Collet chuck holder with center alignment, for lathes (TungGyro)



Designation	DCONMS	CSI	Range	LF	LB	LS	BD	BD3	BD2
GYROST20ER20	20	ER20	1-13	58.8	28.5	80	34	57	63
GYROST20ER25	20	ER25	1-16	58.8	28.5	80	34	57	63
GYROST25ER25	25	ER25	1-16	65.65	35.5	80	42	74	79
GYROST25ER32	25	ER32	2-20	66.65	36.5	80	50	74	79
GYROST32ER32	32	ER32	2-20	66.65	36.5	80	50	74	79
GYROST40ER32	40	ER32	2-20	66.65	36.5	80	50	74	79

• Applicable for 3 MPa coolant

Option: Wrench for ER collet

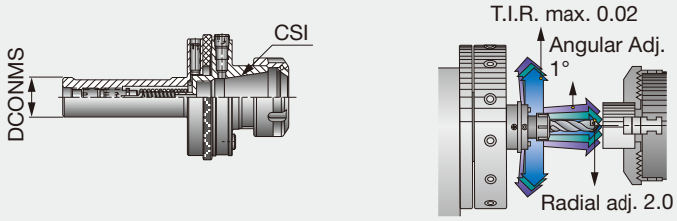
For the alignment, first-time users should purchase a TungGyro kit which includes a test bar and a bushing.

Reference pages

ER collet K125 | Nut K151 | Wrench K152 | Preset screw K153

TUNGGYRO
KIT GYRO-ST-ER

Kit for holders with center alignment (straight shank) (TungGyro)



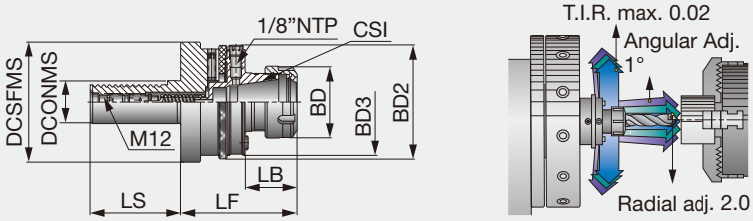
Designation	DCONMS	CSI	Range
KITGYROST20ER20	20	ER20	1-13
KITGYROST20ER25	20	ER25	1-16
KITGYROST25ER25	25	ER25	1-16
KITGYROST25ER32	25	ER32	2-20
KITGYROST32ER32	32	ER32	2-20
KITGYROST40ER32	40	ER32	2-20

• Applicable for 3 MPa coolant
Kit includes TungGyro holder, test bar, and bushing.

Option: Wrench for ER collet

TUNGGYRO
GYRO DIN69880-ER

Collet chuck holder with center alignment, for lathes (TungGyro)



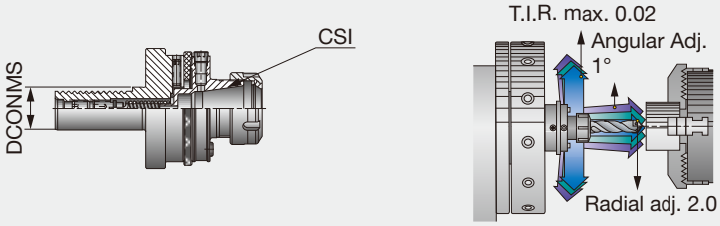
Designation	DCONMS	CSI	Range	LF	LB	LS	BD	BD3	BD2	DCSFMS
GYRODIN6988030ER25	30	ER25	1-16	80.65	35.5	55	42	74	79	68
GYRODIN6988030ER32	30	ER32	2-20	81.65	36.5	55	50	74	79	68
GYRODIN6988040ER32	40	ER32	2-20	81.65	36.5	63	50	74	79	83.2
GYRODIN6988050ER32	50	ER32	2-20	81.65	36.5	78	50	74	79	98

• Applicable for 3 MPa coolant
For the alignment, first-time users should purchase a TungGyro kit which includes a test bar and a bushing.

Option: Wrench for ER collet

TUNGGYRO
KIT GYRO-DIN69880-ER

Kit for holders with center alignment (DIN69880) (TungGyro)



Designation	DCONMS	CSI	Range
KITGYRO30D69880ER25	30	ER25	1-16
KITGYRO30D69880ER32	30	ER32	2-20
KITGYRO40D69880ER32	40	ER32	2-20
KITGYRO50D69880ER32	50	ER32	2-20

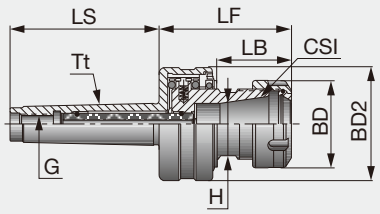
• Applicable for 3 MPa coolant
Kit includes TungGyro holder, test bar, and bushing.

Option: Wrench for ER collet

Reference pages

ER collet K125 | Nut K151 | Wrench K152 | Preset screw K153

TUNGGFI
GFI-MT-ER
Floating reamer collet chuck

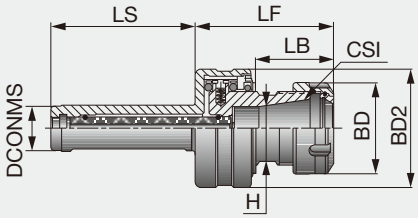


Designation	Tt	CSI	Range	LS	LF	LB	BD	BD2	Radial float	H	G
GFIMT2ER20	MT 2	ER20	1-13	64	60.5	34.5	34	50	1	22	M10
GFIMT3ER32	MT 3	ER32	2-20	81	81.9	45.9	50	65	1.6	36	M12

• Applicable for 3 MPa coolant
Maximum 2000 $^{min-1}$

Option: Wrench for ER collet

TUNGGFI
GFI-ST-ER
Floating reamer collet chuck



Designation	DCONMS	CSI	Range	LS	LF	LB	BD	BD2	Radial float	H
GFIST20ER20	20	ER20	1-13	65	55.5	34.5	34	50	1	22
GFIST25ER32	25	ER32	2-20	80	76.9	45.9	50	65	1.6	36

• Applicable for 3 MPa coolant
Maximum 2000 $^{min-1}$

Option: Wrench for ER collet

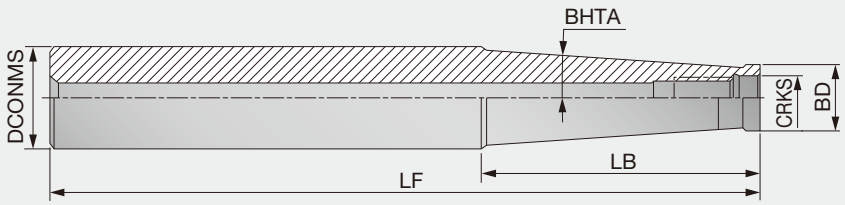
Reference pages

ER collet K125
Nut K151
Wrench K152
Preset screw K153

TUNGFLEX

S M TungFlex-straight shank

Screw-clamp holder for modular heads (straight shank) (TungFlex)



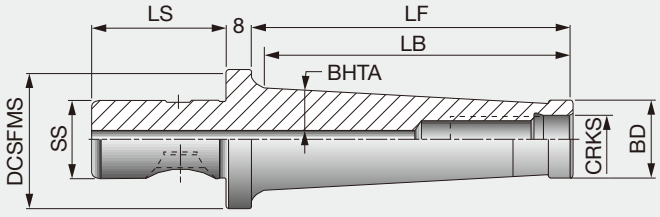
Designation	DCONMS	BD	LF	LB	BHTA	CRKS
SM06-L60C10	10	9.7	60	20	0°	M6
SM06-L105-C12	12	9.7	105	60	1.2°	M6
SM06-L125-C16	16	9.7	125	60	3.3°	M6
SM08-L73C16	16	13	73	25	0°	M8
SM08-L128-C16	16	13	128	80	0.9°	M8
SM08-L170-C20	20	13	170	66.8	3.3°	M8
SM10-L80C20	20	18	80	30	0°	M10
SM10-L130-C20	20	18	130	80	0.6°	M10
SM10-L200-C25	25	19	200	57.2	3.3°	M10
SM12-L86-C25	25	21	86	30	5.1°	M12
SM12-L200-C32	32	21	200	78	4.4°	M12
SM16-L95-C32	32	29	95	35	1.7°	M16
SM16-L230-C32	32	29	230	50	1.8°	M16

• Applicable for 10 MPa coolant
A coolant hole with all types of shanks

TUNGFIT TUNGFLEX

S M-CF4 TungFit adaptor

TungFlex - TungFit conversion adapter



Designation	BD	LF	LB	BHTA	SS	DCSFMS	LS	CRKS
SM12-L85/3.30-CF4	21	93	81.3	4.4°	CF4	44	42	M12
SM16-L130/5.11-CF4	29	138	126.8	2.6°	CF4	44	42	M16
SM12-L140/5.50-CF4	21	148	139.1	4.4°	CF4	44	42	M12
SM16-L170/6.70-CF4	29	178	168.6	2°	CF4	44	42	M16

• Applicable for 10 MPa coolant

TUNGFLEX
CAB M-M
Reducer and extension (TungFlex)

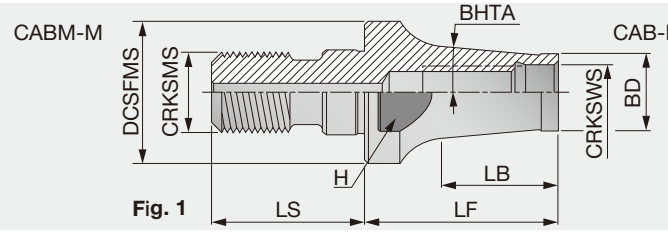


Fig. 1

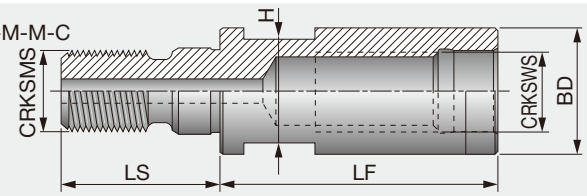
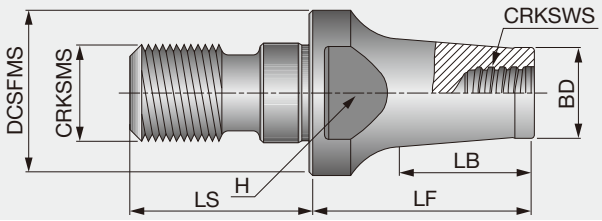


Fig. 2

Designation	CRKSMS	BHTA	BD	LF	LB	DCSFMS	LS	H	CRKSWS	Fig.
CABM06M08	M8	5.7°	9.7	30	24.8	13	17.5	9.5	M6	1
CABM08M08-C (1)	M8	0°	13	30	-	-	17.5	9.6	M8	2
CABM08M10	M10	5.2°	13	40	33.4	18	20	15	M8	1
CABM10M10-C (1)	M10	0°	18	35	-	-	20	15	M10	2
CABM10M12	M12	2.5°	18	45	36.4	21	22	17	M10	1
CABM12M12-C (1)	M12	0°	21	40	-	-	22	17	M12	2
CABM12M16	M16	6.3°	21	50	42.5	29	25	25	M12	1
CABM16M16-C (1)	M16	0°	29	40	-	-	25	25	M16	2

• Applicable for 10 MPa coolant
(1) With coolant hole

TUNGFLEX
VAD**-M...
TungFlex - TungMeister connection adapter



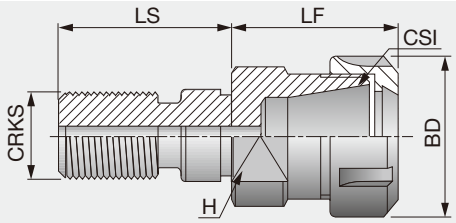
CRKS = TungMeister connection screw size

Designation	BD	DCSFMS	LF	LS	LB	CRKSWS	CRKSMS	H
VAD130L016S08-S-M8	11.7	13	16	17.5	6	S08	M8	11
VAD130L025S08-S-M8	11.7	13	25	17.5	20	S08	M8	11
VAD180L020S08-S-M10	11.7	18	20	20	12	S08	M10	13
VAD180L025S08-S-M10	11.7	18	25	20	15	S08	M10	11
VAD210L020S08-S-M12	11.7	21	20	20	10	S08	M12	12.75
VAD210L025S08-S-M12	11.7	21	25	20	13	S08	M12	12.75

Wrenches are sold separately.
Do not apply lubricant to the threaded connection.

TUNGFLEX
CDP-ER-M

ER collet chuck holder (TungFlex)



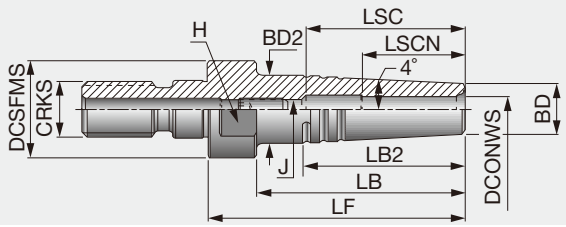
Designation	CRKS	CSI	Range	LF	LS	BD	H
CDPER11M10M	M10	ER11	0.5-7	27	20	16	15
CDPER16M10M	M10	ER16	0.5-10	38.1	20	22	17
CDPER11M12M	M12	ER11	0.5-7	27	22	16	17
CDPER16M12M	M12	ER16	0.5-10	37.1	22	22	17
CDPER16M16	M16	ER16	0.5-10	36.6	25	28	25
CDPER20M16	M16	ER20	1-13	45.5	25	34	25
CDPER25M16	M16	ER25	1-16	44.5	25	42	28

• Applicable for 10 MPa coolant

Option: Wrench for ER collet

TUNGFLEX
CDP-M-SRK

Thermal shrinking holder for carbide shank (TungFlex)



Designation	CRKS	DCSFMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	H	Wrench
CDPM10SRK3X40	M10	18	3	10	14	40	31.5	28.4	10	16	M4	15	2
CDPM10SRK4X40	M10	18	4	10	14	40	31.5	28.4	12	19	M4	15	2
CDPM10SRK5X40	M10	18	5	10	14	40	31.5	28.4	15	25	M4	15	2
CDPM12SRK3X45	M12	21	3	10	14	45	36.5	28.8	10	16	M5	18	2.5
CDPM12SRK4X45	M12	21	4	10	14	45	36.5	28.8	12	18	M5	18	2.5
CDPM12SRK5X45	M12	21	5	10	14	45	36.5	28.8	15	25	M5	18	2.5
CDPM12SRK6X45	M12	21	6	11	15	45	36.5	28.4	18	28	M5	18	2.5
CDPM12SRK8X45	M12	21	8	14	18	45	36.5	28.8	25	35	M5	18	2.5
CDPM12SRK10X45	M12	21	10	16	21	45	-	35.6	30	40	M5	18	2.5
CDPM12SRK12X45	M12	21	12	20	25	45	-	36.0	32	42	M5	18	2.5

• Applicable for 10 MPa coolant

Reference pages


ER collet K125


Nut K151


Wrench K152

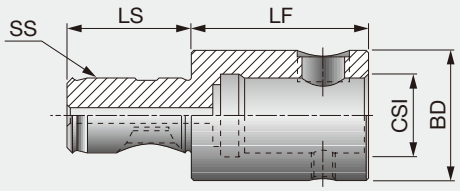

Preset screw K153


IND shrinkin unit K144


Shrinkin unit K144


Preset screw K155

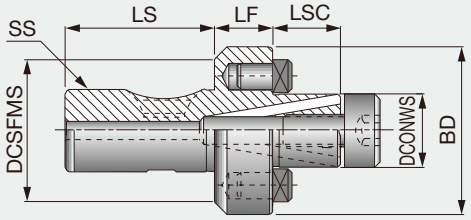
TUNGFIT
EX-CF
Extension adapter (TungFit)



Designation	SS	LS	LF	CSI	BD
EXCF4-S	CF4	42	60	CF4	44
EXCF4-L	CF4	42	100	CF4	44

• Applicable for 10 MPa coolant
Tightening torque: 58.8 N·m.

TUNGFIT
SEM-CF
Shell mill adapter (TungFit)

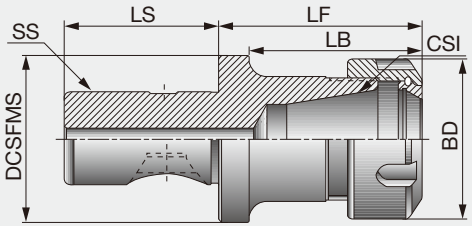


Designation	SS	DCONWS	DCSFMS	BD	LF	LSC	LS
SEM22CF4C	CF4	22	44	47	16	19	42

• Applicable for 10 MPa coolant
Tightening torque: 58.8 N·m.

Option: Wrench for Lock Screw

TUNGFIT
ER-CF
ER collet chuck adapter (TungFit)



Designation	SS	CSI	Range	LF	LB	LS	BD	DCSFMS
ER11CF4-S	CF4	ER11	0.5-7	55	47	42	19	44
ER16CF4-L	CF4	ER16	0.5-10	100	92	42	28	44
ER16CF4-S	CF4	ER16	0.5-10	55	47	42	28	44
ER20CF4-S	CF4	ER20	1-13	55	92	42	34	44
ER25CF4-S	CF4	ER25	1-16	55	47	42	42	44
ER32CF4-L	CF4	ER32	2-20	100	92	42	50	44
ER32CF4-S	CF4	ER32	2-20	55	47	42	50	44

• Applicable for 10 MPa coolant
Tightening torque: 58.8 N·m.

Option: Wrench for Lock Screw

Reference pages

ER collet K125
Nut K151
Wrench K152

Shanks

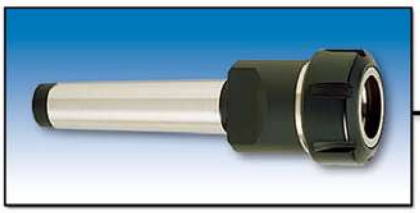
BT MAS-403



ST Straight Shank



MT Morse Taper

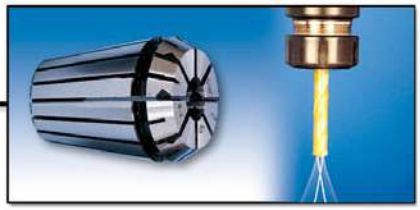


Collet Options

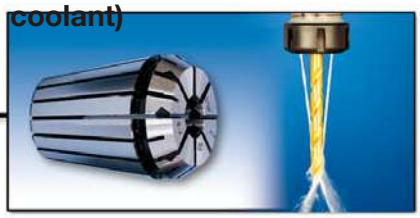
ER Spring Collet



ER-SEAL
(ER SEAL Collet for Internal coolant)



ER-SEAL JET2
(ER SEAL Collet for External coolant)



ER-SHRINK
(ER Collet with SHRINK Holder)



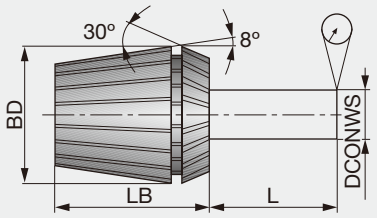
ER GTI
(ER Collet with Tapping Holder)



ER-ODP
(ER Collet with Indexable Modular System)



TUNGHOLD
ER collet



Designation	BD	LB	L	DCONWS	T.I.R. Precision Standard type	T.I.R. Precision AA ultra precision type
ER-11	11.5	18	6	1-1.6	0.01	0.005
ER-16	17	27	10	1.6-3	0.01	0.005
ER-20	21	31	16	3-6	0.01	0.005
ER-25	26	35	25	6-10	0.01	0.005
ER-32	33	40	40	10-18	0.01	0.005
ER-40	41	46	50	18-26	0.01	0.005
ER-50	52	60	60	26-34	0.01	-

ER 50 DIN6499

ER - Coolit Sealed Collet

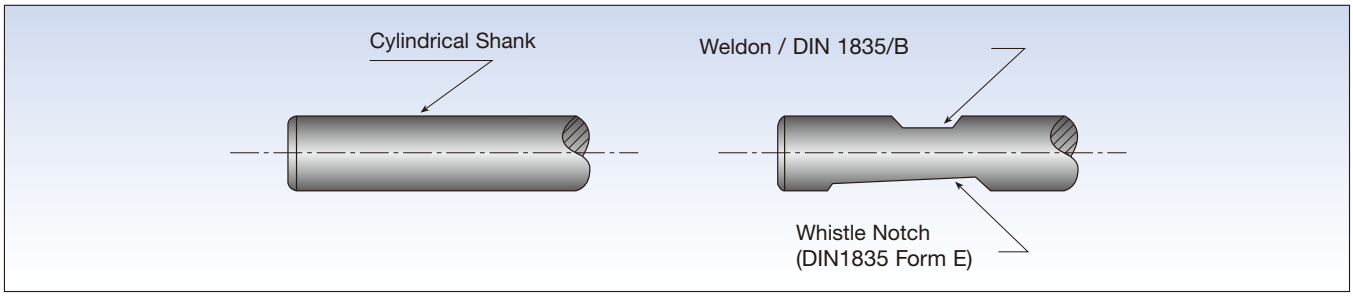


For internal coolant holders
Sealed Collet
- JET
For straight shank cutting tools with internal coolant supply.



For External coolant holders
Sealed Collet
- JET2
With angular double nozzles. Coolant flow is direct to the cutting edge
- for use with standard straight shank cutting tools (without coolant hole)

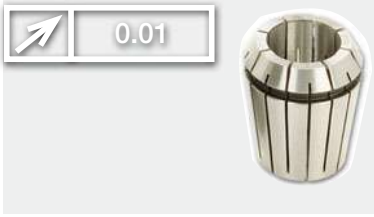
Standard Shank which can be used in Sealed Collets

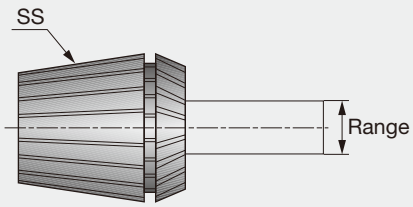


Note: The front end of the sealed collet should be located beyond Weldon or the whistle notch.

ER-SPR

ER spring collet (DIN6499)





Designation	SS	Range
ER11SPR0.5-1	ER11	0.5-1
ER11SPR1-2	ER11	1-2
ER11SPR2-3	ER11	2-3
ER11SPR3-4	ER11	3-4
ER11SPR4-5	ER11	4-5
ER11SPR5-6	ER11	5-6
ER11SPR6-7	ER11	6-7
ER16SPR0.5-1	ER16	0.5-1
ER16SPR1-2	ER16	1-2
ER16SPR2-3	ER16	2-3
ER16SPR3-4	ER16	3-4
ER16SPR4-5	ER16	4-5
ER16SPR5-6	ER16	5-6
ER16SPR6-7	ER16	6-7
ER16SPR7-8	ER16	7-8
ER16SPR8-9	ER16	8-9
ER16SPR9-10	ER16	9-10
ER20SPR1-2	ER20	1-2
ER20SPR2-3	ER20	2-3
ER20SPR3-4	ER20	3-4
ER20SPR4-5	ER20	4-5
ER20SPR5-6	ER20	5-6
ER20SPR6-7	ER20	6-7
ER20SPR7-8	ER20	7-8
ER20SPR8-9	ER20	8-9
ER20SPR9-10	ER20	9-10
ER20SPR10-11	ER20	10-11
ER20SPR11-12	ER20	11-12
ER20SPR12-13	ER20	12-13
ER25SPR1-2	ER25	1-2
ER25SPR2-3	ER25	2-3
ER25SPR3-4	ER25	3-4
ER25SPR4-5	ER25	4-5
ER25SPR5-6	ER25	5-6
ER25SPR6-7	ER25	6-7
ER25SPR7-8	ER25	7-8
ER25SPR8-9	ER25	8-9
ER25SPR9-10	ER25	9-10
ER25SPR10-11	ER25	10-11
ER25SPR11-12	ER25	11-12
ER25SPR12-13	ER25	12-13
ER25SPR13-14	ER25	13-14
ER25SPR14-15	ER25	14-15
ER25SPR15-16	ER25	15-16
ER32SPR2-3	ER32	2-3
ER32SPR3-4	ER32	3-4
ER32SPR4-5	ER32	4-5
ER32SPR5-6	ER32	5-6
ER32SPR6-7	ER32	6-7
ER32SPR7-8	ER32	7-8
ER32SPR8-9	ER32	8-9
ER32SPR9-10	ER32	9-10
ER32SPR10-11	ER32	10-11

Designation	SS	Range
ER32SPR11-12	ER32	11-12
ER32SPR12-13	ER32	12-13
ER32SPR13-14	ER32	13-14
ER32SPR14-15	ER32	14-15
ER32SPR15-16	ER32	15-16
ER32SPR16-17	ER32	16-17
ER32SPR17-18	ER32	17-18
ER32SPR18-19	ER32	18-19
ER32SPR19-20	ER32	19-20
ER40SPR3-4	ER40	3-4
ER40SPR4-5	ER40	4-5
ER40SPR5-6	ER40	5-6
ER40SPR6-7	ER40	6-7
ER40SPR7-8	ER40	7-8
ER40SPR8-9	ER40	8-9
ER40SPR9-10	ER40	9-10
ER40SPR10-11	ER40	10-11
ER40SPR11-12	ER40	11-12
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ER50SPR10-12	ER50	10-12
ER50SPR12-14	ER50	12-14
ER50SPR14-16	ER50	14-16
ER50SPR16-18	ER50	16-18
ER50SPR18-20	ER50	18-20
ER50SPR20-22	ER50	20-22
ER50SPR22-24	ER50	22-24
ER50SPR24-26	ER50	24-26
ER50SPR26-28	ER50	26-28
ER50SPR28-30	ER50	28-30
ER50SPR30-32	ER50	30-32
ER50SPR32-34	ER50	32-34

TUNGHOLD

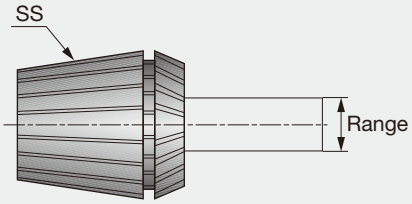
ER-SPR-AA

AA ultra precision ER spring collet (DIN6499)





ULTRA PRECISION AA



Designation	SS	Range
ER11SPR0.5-1AA	ER11	0.5-1
ER11SPR1-2AA	ER11	1-2
ER11SPR2-3AA	ER11	2-3
ER11SPR3-4AA	ER11	3-4
ER11SPR4-5AA	ER11	4-5
ER11SPR5-6AA	ER11	5-6
ER11SPR6-7AA	ER11	6-7
ER16SPR0.5-1AA	ER16	0.5-1
ER16SPR1-2AA	ER16	1-2
ER16SPR2-3AA	ER16	2-3
ER16SPR3-4AA	ER16	3-4
ER16SPR4-5AA	ER16	4-5
ER16SPR5-6AA	ER16	5-6
ER16SPR6-7AA	ER16	6-7
ER16SPR7-8AA	ER16	7-8
ER16SPR8-9AA	ER16	8-9
ER16SPR9-10AA	ER16	9-10
ER20SPR2-3AA	ER20	2-3
ER20SPR3-4AA	ER20	3-4
ER20SPR4-5AA	ER20	4-5
ER20SPR5-6AA	ER20	5-6
ER20SPR6-7AA	ER20	6-7
ER20SPR7-8AA	ER20	7-8
ER20SPR8-9AA	ER20	8-9
ER20SPR9-10AA	ER20	9-10
ER20SPR1-2AA	ER20	1-2
ER20SPR10-11AA	ER20	10-11
ER20SPR11-12AA	ER20	11-12
ER20SPR12-13AA	ER20	12-13
ER25SPR1-2AA	ER25	1-2
ER25SPR2-3AA	ER25	2-3
ER25SPR3-4AA	ER25	3-4
ER25SPR4-5AA	ER25	4-5
ER25SPR5-6AA	ER25	5-6
ER25SPR6-7AA	ER25	6-7
ER25SPR7-8AA	ER25	7-8
ER25SPR8-9AA	ER25	8-9
ER25SPR9-10AA	ER25	9-10
ER25SPR10-11AA	ER25	10-11
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ER32SPR2-3AA	ER32	2-3
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ER32SPR4-5AA	ER32	4-5
ER32SPR5-6AA	ER32	5-6
ER32SPR6-7AA	ER32	6-7
ER32SPR7-8AA	ER32	7-8
ER32SPR8-9AA	ER32	8-9
ER32SPR9-10AA	ER32	9-10
ER32SPR10-11AA	ER32	10-11

Designation	SS	Range
ER32SPR11-12AA	ER32	11-12
ER32SPR12-13AA	ER32	12-13
ER32SPR13-14AA	ER32	13-14
ER32SPR14-15AA	ER32	14-15
ER32SPR15-16AA	ER32	15-16
ER32SPR16-17AA	ER32	16-17
ER32SPR17-18AA	ER32	17-18
ER32SPR18-19AA	ER32	18-19
ER32SPR19-20AA	ER32	19-20
ER40SPR3-4AA	ER40	3-4
ER40SPR4-5AA	ER40	4-5
ER40SPR5-6AA	ER40	5-6
ER40SPR6-7AA	ER40	6-7
ER40SPR7-8AA	ER40	7-8
ER40SPR8-9AA	ER40	8-9
ER40SPR9-10AA	ER40	9-10
ER40SPR10-11AA	ER40	10-11
ER40SPR11-12AA	ER40	11-12
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ER40SPR16-17AA	ER40	16-17
ER40SPR17-18AA	ER40	17-18
ER40SPR18-19AA	ER40	18-19
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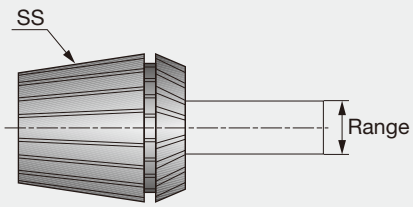
ER40SPR21-22AA	ER40	21-22
ER40SPR22-23AA	ER40	22-23
ER40SPR23-24AA	ER40	23-24
ER40SPR24-25AA	ER40	24-25
ER40SPR25-26AA	ER40	25-26

ER COOLIT, sealed spring collet, internal coolant supply (DIN6499)





Designation	SS	Range
ER16SEAL3-4	ER16	3-4
ER16SEAL4-5	ER16	4-5
ER16SEAL5-6	ER16	5-6
ER16SEAL6-7	ER16	6-7
ER16SEAL7-8	ER16	7-8
ER16SEAL8-9	ER16	8-9
ER16SEAL9-10	ER16	9-10
ER20SEAL3-4	ER20	3-4
ER20SEAL4-5	ER20	4-5
ER20SEAL5-6	ER20	5-6
ER20SEAL6-7	ER20	6-7
ER20SEAL7-8	ER20	7-8
ER20SEAL8-9	ER20	8-9
ER20SEAL9-10	ER20	9-10
ER20SEAL10-11	ER20	10-11
ER20SEAL11-12	ER20	11-12
ER20SEAL12-13	ER20	12-13
ER25SEAL3-4	ER25	3-4
ER25SEAL4-5	ER25	4-5
ER25SEAL5-6	ER25	5-6
ER25SEAL6-7	ER25	6-7
ER25SEAL7-8	ER25	7-8
ER25SEAL8-9	ER25	8-9
ER25SEAL9-10	ER25	9-10
ER25SEAL10-11	ER25	10-11
ER25SEAL11-12	ER25	11-12
ER25SEAL12-13	ER25	12-13
ER25SEAL13-14	ER25	13-14
ER25SEAL14-15	ER25	14-15
ER25SEAL15-16	ER25	15-16
ER32SEAL3-4	ER32	3-4
ER32SEAL4-5	ER32	4-5
ER32SEAL5-6	ER32	5-6
ER32SEAL6-7	ER32	6-7
ER32SEAL7-8	ER32	7-8
ER32SEAL8-9	ER32	8-9
ER32SEAL9-10	ER32	9-10
ER32SEAL10-11	ER32	10-11
ER32SEAL11-12	ER32	11-12
ER32SEAL12-13	ER32	12-13
ER32SEAL13-14	ER32	13-14
ER32SEAL14-15	ER32	14-15
ER32SEAL15-16	ER32	15-16
ER32SEAL16-17	ER32	16-17
ER32SEAL17-18	ER32	17-18
ER32SEAL18-19	ER32	18-19
ER32SEAL19-20	ER32	19-20
ER40SEAL3-4	ER40	3-4
ER40SEAL4-5	ER40	4-5
ER40SEAL5-6	ER40	5-6
ER40SEAL6-7	ER40	6-7
ER40SEAL7-8	ER40	7-8
ER40SEAL8-9	ER40	8-9

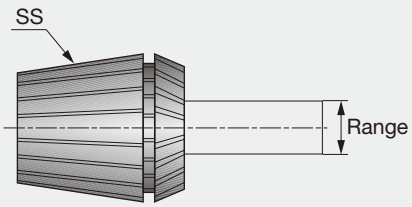
Designation	SS	Range
ER40SEAL9-10	ER40	9-10
ER40SEAL10-11	ER40	10-11
ER40SEAL11-12	ER40	11-12
ER40SEAL12-13	ER40	12-13
ER40SEAL13-14	ER40	13-14
ER40SEAL14-15	ER40	14-15
ER40SEAL15-16	ER40	15-16
ER40SEAL16-17	ER40	16-17
ER40SEAL17-18	ER40	17-18
ER40SEAL18-19	ER40	18-19
ER40SEAL19-20	ER40	19-20
ER40SEAL20-21	ER40	20-21
ER40SEAL21-22	ER40	21-22
ER40SEAL22-23	ER40	22-23
ER40SEAL23-24	ER40	23-24
ER40SEAL24-25	ER40	24-25
ER40SEAL25-26	ER40	25-26

TUNGHOLD

ER-SEAL-JET2

ER COOLIT, sealed spring collet, external coolant supply (DIN6499)





Designation	SS	Range
ER16SEAL3-4JET2	ER16	3-4
ER16SEAL4-5JET2	ER16	4-5
ER16SEAL5-6JET2	ER16	5-6
ER16SEAL6-7JET2	ER16	6-7
ER16SEAL7-8JET2	ER16	7-8
ER16SEAL8-9JET2	ER16	8-9
ER16SEAL9-10JET2	ER16	9-10
ER20SEAL3-4JET2	ER20	3-4
ER20SEAL4-5JET2	ER20	4-5
ER20SEAL5-6JET2	ER20	5-6
ER20SEAL6-7JET2	ER20	6-7
ER20SEAL7-8JET2	ER20	7-8
ER20SEAL8-9JET2	ER20	8-9
ER20SEAL9-10JET2	ER20	9-10
ER20SEAL10-11JET2	ER20	10-11
ER20SEAL11-12JET2	ER20	11-12
ER20SEAL12-13JET2	ER20	12-13
ER25SEAL3-4JET2	ER25	3-4
ER25SEAL4-5JET2	ER25	4-5
ER25SEAL5-6JET2	ER25	5-6
ER25SEAL6-7JET2	ER25	6-7
ER25SEAL7-8JET2	ER25	7-8
ER25SEAL8-9JET2	ER25	8-9
ER25SEAL9-10JET2	ER25	9-10
ER25SEAL10-11JET2	ER25	10-11
ER25SEAL11-12JET2	ER25	11-12
ER25SEAL12-13JET2	ER25	12-13
ER25SEAL13-14JET2	ER25	13-14
ER25SEAL14-15JET2	ER25	14-15
ER25SEAL15-16JET2	ER25	15-16
ER32SEAL3-4JET2	ER32	3-4
ER32SEAL4-5JET2	ER32	4-5
ER32SEAL5-6JET2	ER32	5-6
ER32SEAL6-7JET2	ER32	6-7
ER32SEAL7-8JET2	ER32	7-8
ER32SEAL8-9JET2	ER32	8-9
ER32SEAL9-10JET2	ER32	9-10
ER32SEAL10-11JET2	ER32	10-11
ER32SEAL11-12JET2	ER32	11-12
ER32SEAL12-13JET2	ER32	12-13
ER32SEAL13-14JET2	ER32	13-14
ER32SEAL14-15JET2	ER32	14-15
ER32SEAL15-16JET2	ER32	15-16
ER32SEAL16-17JET2	ER32	16-17
ER32SEAL17-18JET2	ER32	17-18
ER32SEAL18-19JET2	ER32	18-19
ER32SEAL19-20JET2	ER32	19-20
ER40SEAL3-4JET2	ER40	3-4
ER40SEAL4-5JET2	ER40	4-5
ER40SEAL5-6JET2	ER40	5-6
ER40SEAL6-7JET2	ER40	6-7
ER40SEAL7-8JET2	ER40	7-8
ER40SEAL8-9JET2	ER40	8-9

Designation	SS	Range
ER40SEAL9-10JET2	ER40	9-10
ER40SEAL10-11JET2	ER40	10-11
ER40SEAL11-12JET2	ER40	11-12
ER40SEAL12-13JET2	ER40	12-13
ER40SEAL13-14JET2	ER40	13-14
ER40SEAL14-15JET2	ER40	14-15
ER40SEAL15-16JET2	ER40	15-16
ER40SEAL16-17JET2	ER40	16-17
ER40SEAL17-18JET2	ER40	17-18
ER40SEAL18-19JET2	ER40	18-19
ER40SEAL19-20JET2	ER40	19-20
ER40SEAL20-21JET2	ER40	20-21
ER40SEAL21-22JET2	ER40	21-22
ER40SEAL22-23JET2	ER40	22-23
ER40SEAL23-24JET2	ER40	23-24
ER40SEAL24-25JET2	ER40	24-25
ER40SEAL25-26JET2	ER40	25-26

TUNGHOLD
SET ER-SPR

Set of ER spring collets (DIN6499)



Designation	Collet size	Qty	Range
SETER11SPR7	ER11	7	0.5-7
SETER16SPR10	ER16	10	0.5-10
SETER20SPR12	ER20	12	1-13
SETER25SPR15	ER25	15	1-16
SETER32SPR18	ER32	18	2-20
SETER40SPR23	ER40	23	3-26
SETER50SPR12	ER50	12	10-34

TUNGHOLD
SET ER-SPR-AA

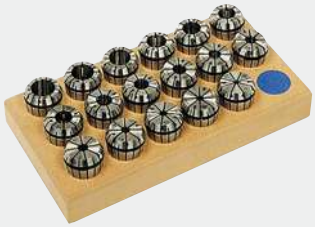
Set of AA ultra precision ER spring collets (DIN6499)



Designation	Collet size	Qty	Range
SETER11SPR7AA	ER11	7	0.5-7
SETER16SPR10AA	ER16	10	0.5-10
SETER20SPR12AA	ER20	12	1-13
SETER25SPR15AA	ER25	15	1-16
SETER32SPR18AA	ER32	18	2-20
SETER40SPR23AA	ER40	23	3-26

TUNGHOLD
SET ER-SEAL

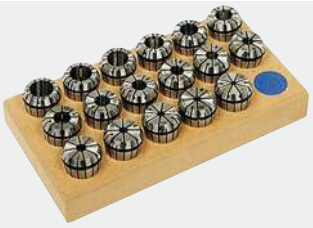
Set of ER spring collets, for internal coolant supply (DIN6499)



Designation	Collet size	Qty	Range
SETER16SEAL7	ER16	7	3-10
SETER20SEAL10	ER20	10	3-13
SETER25SEAL13	ER25	13	3-16
SETER32SEAL17	ER32	17	3-20
SETER40SEAL23	ER40	23	3-26

TUNGHOLD
SET ER-SEAL-JET2

Set of ER spring collets, for external coolant supply (DIN6499)



Designation	Collet size	Qty	Range
SETER16SEAL7JET2	ER16	7	3-13
SETER25SEAL13JET2	ER25	13	3-20
SETER32SEAL17JET2	ER32	17	3-26
SETER40SEAL23JET2	ER40	23	3-26

TUNGHOLD
SET ER SPR-EM(1)

Set of ER spring collets, for endmills (DIN6499)



Designation	Collet size	Qty	Range
SETER16SPR8EM	ER16	8	3,4,5,6,7,8,9,10
SETER20SPR5EM	ER20	5	4,6,8,10,12
SETER25SPR6EM	ER25	6	4,6,8,10,12,16
SETER32SPR6EM	ER32	6	6,8,10,12,16,20
SETER40SPR7EM	ER40	7	6,8,10,12,16,20,25

Contains popular endmill sizes only.

TUNGHOLD
SET-ER SEAL-EM(1)

Set of ER spring collets, for internal coolant supply, for endmills (DIN6499)

Designation	Collet size	Qty	Range
SETER16SEAL5EM	ER16	5	4,5,6,8,10
SETER20SEAL5EM	ER20	5	4,6,8,10,12
SETER25SEAL6EM	ER25	6	4,6,8,10,12,16
SETER32SEAL6EM	ER32	6	6,8,10,12,16,20
SETER40SEAL7EM	ER40	7	6,8,10,12,16,20,25

Contains popular endmill sizes only.

TUNGHOLD
SET ER-SEAL-EM JET2(1)

Set of ER spring collets, for external coolant supply, for endmills (DIN6499)

Designation	Collet size	Qty	Range
SETER25SEAL6EMJET2	ER25	6	4,6,8,10,12,16
SETER32SEAL6EMJET2	ER32	6	6,8,10,12,16,20
SETER40SEAL7EMJET2	ER40	7	6,8,10,12,16,20,25

(1) Contains popular endmill sizes only.

TUNGHOLD
KIT R-8-ER

Kit for ER collet chuck and spring collets (R-8 Bridgeport)



Designation	Collet size	Qty	Range
KITR-810ER16	ER16	10	0.5-10
KITR-818ER32	ER32	18	2-20

Each kit has one collet chuck, a full set of ER collets, and a wrench.

TUNGHOLD
KIT DIN2080-ER

Kit for ER collet chuck and spring collets (DIN2080)



Designation	Collet size	Qty	Range
KITDIN20803018ER32	ER32	18	2-20
KITDIN20804018ER32	ER32	18	2-20
KITDIN20804023ER40	ER40	23	3-26
KITDIN20805023ER40	ER40	23	3-26

Each kit has one collet chuck, a full set of ER collets, and a wrench.

TUNGHOLD
KIT MT-ER

Kit for ER collet chuck and spring collets (Morse taper)



Designation	Collet size	Qty	Range
KITMT318ER32	ER32	18	2-20
KITMT423ER40	ER40	23	3-26

Each kit has one collet chuck, a full set of ER collets, and a wrench.

TUNGHOLD
KIT ST-ER-Mini

Kit for ER Mini collet chuck and spring collets (cylindrical shank)



Designation	Collet size	Qty	Range
KITST12X807ER11M	ER11	7	0.5-7
KITST12X8010ER16M	ER16	10	0.5-10
KITST16X507ER11MF	ER11	7	0.5-7
KITST16X1007ER11M	ER11	7	0.5-7
KITST16X1507ER11M	ER11	7	0.5-7
KITST20X10010ER16M	ER16	10	0.5-10
KITST20X15010ER16M	ER16	10	0.5-10
KITST20X10012ER20M	ER20	12	1-12
KITST20X15012ER20M	ER20	12	1-12

• Each kit contains one collet chuck, a full set of ER collets and a Wrench. • F indicates a flat on the shank.

TUNGHOLD

KIT ST-ER

Kit for ER collet chuck and spring collets (cylindrical shank)



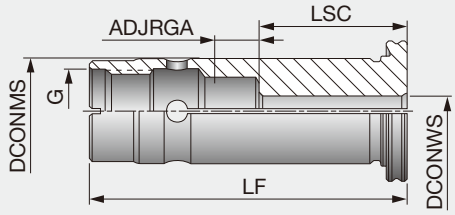
Designation	Collet size	Qty	Range
KITST16X507ER11F	ER11	7	0.5-7
KITST20X1007ER11	ER11	7	0.5-7
KITST20X1507ER11	ER11	7	0.5-7
KITST20X5010ER16F	ER16	10	0.5-10
KITST20X10010ER16	ER16	10	0.5-10
KITST20X15010ER16	ER16	10	0.5-10
KITST20X5012ER20F	ER20	12	1-12
KITST25X10012ER20	ER20	12	1-12

• Each kit contains one collet chuck, a full set of ER collets and a Wrench. • F indicates a flat on the shank.

TUNGMAX

SC-SPR

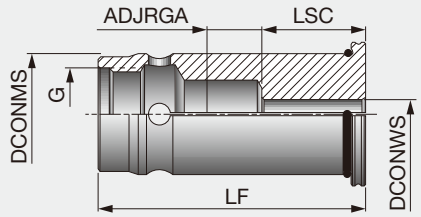
SC straight collet (TungMax)



Designation	DCONWS	DCONMS	LF	LSC	ADJRGA	G
SC20SPR6	6	20	60	28	7	M16
SC20SPR8	8	20	60	28	7	M16
SC20SPR10	10	20	60	35	13	M16
SC20SPR12	12	20	60	40	8	M16
SC20SPR14	14	20	60	40	8	M16
SC20SPR15	15	20	60	40	8	M16
SC20SPR16	16	20	60	39	9	M16
SC32SPR6	6	32	72	28	17	M24X1.5
SC32SPR8	8	32	72	28	17	M24X1.5
SC32SPR10	10	32	72	35	13	M24X1.5
SC32SPR12	12	32	72	40	5	M24X1.5
SC32SPR14	14	32	72	40	5	M24X1.5
SC32SPR15	15	32	72	40	19.5	M24X1.5
SC32SPR16	16	32	72	44	17.5	M24X1.5
SC32SPR18	18	32	72	44	17.5	M24X1.5
SC32SPR19	19	32	72	44	17.5	M24X1.5
SC32SPR20	20	32	72	46	15.5	M24X1.5
SC32SPR24	24	32	72	45	10.5	M24X1.5
SC32SPR25	25	32	72	51	10.5	M24X1.5

TUNGMAX
SC-SEAL

Sealed collet (TungMax)



Designation	DCONWS	DCONMS	LF	LSC	ADJRGA	G
SC20SEAL6	6	20	60	28	7	M16
SC20SEAL8	8	20	60	28	7	M16
SC20SEAL10	10	20	60	35	13	M16
SC20SEAL12	12	20	60	40	8	M16
SC20SEAL14	14	20	60	40	8	M16
SC20SEAL15	15	20	60	40	8	M16
SC20SEAL16	16	20	60	39	9	M16
SC32SEAL6	6	32	72	28	17	M24X1.5
SC32SEAL8	8	32	72	28	17	M24X1.5
SC32SEAL10	10	32	72	35	13	M24X1.5
SC32SEAL12	12	32	72	40	5	M24X1.5
SC32SEAL14	14	32	72	40	5	M24X1.5
SC32SEAL15	15	32	72	40	5	M24X1.5
SC32SEAL16	16	32	72	44	17.5	M24X1.5
SC32SEAL18	18	32	72	44	17.5	M24X1.5
SC32SEAL19	19	32	72	44	17.5	M24X1.5
SC32SEAL20	20	32	72	46	15.5	M24X1.5
SC32SEAL24	24	32	72	46	15.5	M24X1.5
SC32SEAL25	25	32	72	51	10.5	M24X1.5

TUNGMAX
PRESET SC-CAP

Preset screw housing for SC-SPR collets (TungMax)

Fig. 1

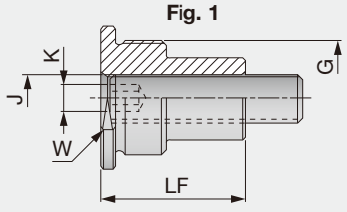
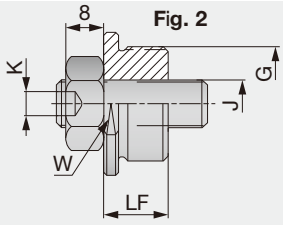


Fig. 2



Designation	LF	W	J	G	Fig.	Range	Key size K	Collet size
PRESETSCCAP8X1.25L	28	16	M8X25	M16	1	6-8	4	SC20
PRESETSCCAP8X1.25	15	16	M8X25	M16	2	10-16	4	SC20
PRESETSCCAP10X1.5L	30	27	M10X30	M24X1.5	1	6-14	5	SC32
PRESETSCCAP10X1.5	13.5	27	M10X30	M24X1.5	2	16-25	5	SC32

TUNGHYDRO
KIT BT-HYDRO

Kit for hydraulic chucks (MAS-BT Form A/B) (TungHydro)



Designation	BT size	DCONWS	Qty	Range
KITBT40HYDRO20X73	40	20	5	8,10,12,14,16
KITBT40HYDRO32X110	40	32	7	6,8,10,12,16,20,25

Each kit has one HYDROFIT chuck, a set of SC...HYDRO sealed reducers and a clamping wrench.

TUNGHYDRO
KIT DIN69871-HYDRO

Kit for hydraulic chucks (DIN69871) (TungHydro)



Designation	SK size	DCONWS	Qty	Range
KITDIN6987140HYDRO20X65	40	20	5	8,10,12,14,16
KITDIN6987140HYDRO32X117	40	32	7	6,8,10,12,16,20,25

Each kit has one HYDROFIT chuck, a set of SC...HYDRO sealed reducers and a clamping wrench.

TUNGHYDRO
KIT HSK A-HYDRO

Kit for hydraulic chucks (HSK) (TungHydro)



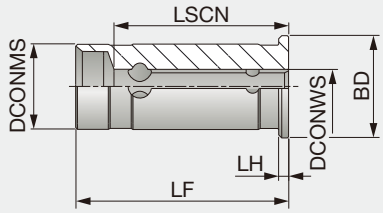
Designation	HSK size	DCONWS	Qty	Range
KITHSKA63HYDRO20X100	63	20	5	8,10,12,14,16
KITHSKA63HYDRO32X125	63	32	7	6,8,10,12,16,20,25

Each kit has one HYDROFIT chuck, a set of SC...HYDRO sealed reducers and a clamping wrench.

TUNGHYDRO

SC-HYDRO

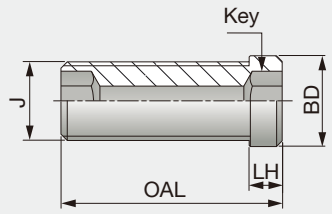
Sealed reduction sleeve for hydraulic chucks



Designation	DCONMS	DCONWS	LSCN	LF	BD	LH
SC12SHYDRO3	12	3	19	46.5	16	2
SC12SHYDRO4	12	4	24	46.5	16	2
SC12SHYDRO5	12	5	28	46.5	16	2
SC12SHYDRO6	12	6	33	46.5	16	2
SC12SHYDRO8	12	8	39	46.5	16	2
SC20SHYDRO3	20	3	20	53	24	2
SC20SHYDRO4	20	4	25	53	24	2
SC20SHYDRO5	20	5	27	53	24	2
SC20SHYDRO6	20	6	34	53	24	2
SC20SHYDRO8	20	8	39	53	24	2
SC20SHYDRO10	20	10	40	53	24	2
SC20SHYDRO12	20	12	41	53	24	2
SC20SHYDRO14	20	14	44	53	24	2
SC20SHYDRO16	20	16	44	53	24	2
SC25SHYDRO6	25	6	37	60	30	4
SC25SHYDRO8	25	8	37	60	30	4
SC25SHYDRO10	25	10	40	60	30	4
SC25SHYDRO12	25	12	44	60	30	4
SC25SHYDRO14	25	14	46	60	30	4
SC25SHYDRO16	25	16	48	60	30	4
SC25SHYDRO18	25	18	50	60	30	4
SC25SHYDRO20	25	20	50	60	30	4
SC32SHYDRO6	32	6	33	66	40	4
SC32SHYDRO8	32	8	38	66	40	4
SC32SHYDRO10	32	10	39	66	40	4
SC32SHYDRO12	32	12	42	66	40	4
SC32SHYDRO14	32	14	44	66	40	4
SC32SHYDRO16	32	16	44	66	40	4
SC32SHYDRO18	32	18	44	66	40	4
SC32SHYDRO20	32	20	49	66	40	4
SC32SHYDRO25	32	25	66	66	40	4

TUNGHYDRO
PRESET SCREW HYDRO

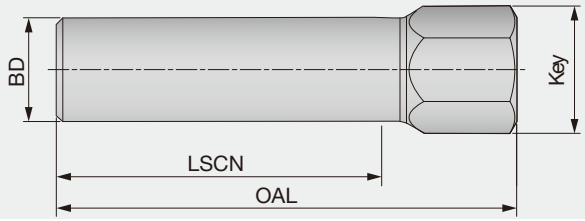
Preset screw for hydraulic collet chucks



Designation	BD	J	OAL	LH	Wrench
PRESETSCREWHYDROM5	5	M5	14	1	2.5
PRESETSCREWHYDROM6	6	M6	14	1.5	3
PRESETSCREWHYDROM8	8	M8X1	14	2	4
PRESETSCREWHYDROM10	10	M10X1	17	2	5
PRESETSCREWHYDROM16	14	M16X1	20	2	8

TUNGHYDRO
TEST BAR HYDRO

Torque test bar for hydraulic chucks



Designation	BD	OAL	Wrench	LSCN(1)	Torque*
TESTBARHYDRO6	6	53	10	27	15
TESTBARHYDRO8	8	53	10	27	25
TESTBARHYDRO10	10	56	10	32	50
TESTBARHYDRO12	12	62	10	37	110
TESTBARHYDRO14	14	62	10	37	120
TESTBARHYDRO16	16	71	17	37	180
TESTBARHYDRO18	18	71	17	42	230
TESTBARHYDRO20	20	71	17	42	250
TESTBARHYDRO25	25	79	17	48	310
TESTBARHYDRO32	32	87	17	52	450

(1) Minimum holding length, *Torque: Recommended torque (N·m) for clamping.

TUNGMAX
KIT SK-TUNGMAX

Kit for power chuck holder and spring collets (DIN69871) (TungMax)



Designation	SK size	DCONMS	Qty	Range
KITSK40MAXIN20X956	40	20	6	6,8,10,12,14,16
KITSK40MAXIN32X1067	40	32	7	6,8,10,12,16,20,25
KITSK50MAXIN32X1007	50	32	7	6,8,10,12,16,20,25

Each kit has one power chuck, a set of SC-SPR collets, extraction hook, and wrench.

KIT HSK A-TUNGMAX

Kit for power chuck holder and spring collets (HSK) (TungMax)



Designation	HSK size	DCONMS	Qty	Range
KITHSKA100MAXIN20X1156	40	20	6	6,8,10,12,14,16
KITHSKA63MAXIN20X956	50	20	6	6,8,10,12,14,16
KITHSKA63MAXIN32X1137	50	32	7	6,8,10,12,16,20,25

Each kit has one power chuck, a set of SC-SPR collets, extraction hook, and wrench.

KIT BT-TUNGMAX

Kit for power chuck holder and spring collets (BT) (TungMax)



Designation	BT size	DCONMS	Qty	Range
KITBT40MAXIN20X856	40	20	6	6,8,10,12,14,16
KITBT40MAXIN32X1087	40	32	7	6,8,10,12,16,20,25
KITBT50MAXIN20X1056	50	20	6	6,8,10,12,14,16
KITBT50MAXIN32X1067	50	32	7	6,8,10,12,16,20,25

Each kit has one power chuck, a set of SC-SPR collets, extraction hook, and wrench.

SET SC-SPR

Set of SC collets (TungMax)



Designation	Collet size	Qty	Range
SETSC20SPR6	20	6	6,8,10,12,14,16
SETSC32SPR9	32	9	6,8,10,12,14,16,18,20,25

TUNGMAX
SET SC-SEAL

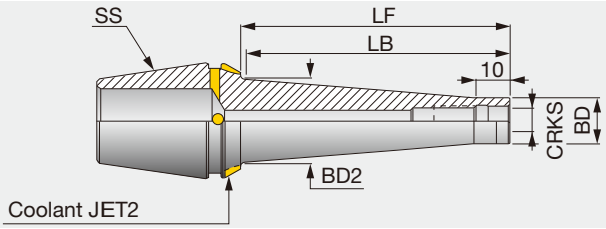
Set of SC collets with coolant hole (TungMax)



Designation	Collet size	Qty	Range
SETSC20SEAL6	20	6	6,8,10,12,14,16
SETSC32SEAL9	32	9	6,8,10,12,14,16,18,20,25

TUNGFLEX
ER-ODP

Threaded connector for ER collet chucks (TungFlex)

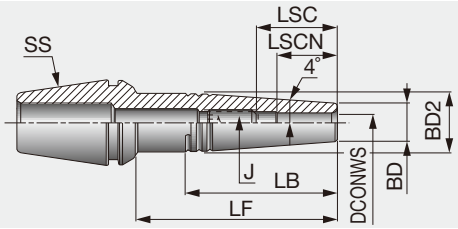


Designation	CRKS	SS	BD	BD2	LF	LB
ER32ODPM6X25	M6	ER32	9.8	14	25	22
ER32ODPM6X50	M6	ER32	9.8	20	50	48
ER32ODPM6X75	M6	ER32	9.8	23	75	74
ER32ODPM8X25	M8	ER32	13.1	15	25	22
ER32ODPM8X50	M8	ER32	13.1	23	50	49
ER32ODPM8X75	M8	ER32	13.1	23	75	74
ER32ODPM10X25	M10	ER32	18	20	25	23
ER32ODPM10X50	M10	ER32	18	24	50	49
ER32ODPM12X25	M12	ER32	21	24	25	24
ER32ODPM12X50	M12	ER32	21	24	50	49

TUNGSHRINK

ER-SRK

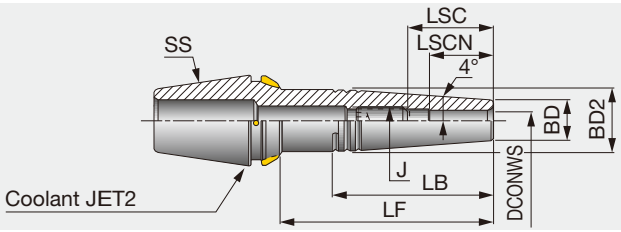
TungShrink, ER collet type



Designation	SS	DCONWS	BD	BD2	LF	LB	LSCN	LSC	J	Wrench
ER11SRK3X10 (1)	ER11	3	7.6	8.5	10	-	9.5	-	-	-
ER11SRK3X25 (1)	ER11	3	7.6	8.5	25	-	11.5	-	-	-
ER11SRK4X10 (1)	ER11	4	7.6	8.5	10	-	9.5	-	-	-
ER11SRK4X25 (1)	ER11	4	7.6	8.5	25	-	11.5	-	-	-
ER20SRK3X35	ER20	3	10	13.5	35	24	10	16	M6	3
ER20SRK3X60	ER20	3	10	13.5	60	24	10	16	M6	3
ER20SRK4X35	ER20	4	10	13.5	35	24	12	18	M6	3
ER20SRK4X60	ER20	4	10	13.5	60	24	12	18	M6	3
ER20SRK5X35	ER20	5	10	13.5	35	24	15	21	M6	3
ER20SRK5X60	ER20	5	10	13.5	60	24	15	21	M6	3
ER20SRK6X35	ER20	6	11	14.7	35	25	18	24	M8	4
ER20SRK6X60	ER20	6	11	15.2	60	29	18	24	M8	4
ER25SRK3X35	ER25	3	10	13.5	35	24	10	16	M6	3
ER25SRK3X60	ER25	3	10	16.3	60	44	10	16	M6	3
ER25SRK4X35	ER25	4	10	13.5	35	24	12	18	M6	3
ER25SRK4X60	ER25	4	10	16.3	60	44	12	18	M6	3
ER25SRK5X35	ER25	5	10	13.5	35	24	15	21	M6	3
ER25SRK5X60	ER25	5	10	16.3	60	44	15	21	M6	3
ER25SRK6X35	ER25	6	11	14.7	35	26	18	24	M8	4
ER25SRK6X60	ER25	6	11	17.3	60	44	18	24	M8	4
ER25SRK8X35	ER25	8	14	17.8	35	26	25	30	M10	5
ER25SRK8X60	ER25	8	14	19.7	60	39	25	31	M10	5
ER32SRK3X35	ER32	3	10	13.2	35	22	10	16	M6	3
ER32SRK3X60	ER32	3	10	16.3	60	44	10	16	M6	3
ER32SRK3X85	ER32	3	10	19.8	85	70	10	16	M6	3
ER32SRK4X35	ER32	4	10	13.4	35	23	12	18	M6	3
ER32SRK4X60	ER32	4	10	16.3	60	44	12	18	M6	3
ER32SRK4X85	ER32	4	10	19.8	85	70	12	18	M6	3
ER32SRK5X35	ER32	5	10	13.5	35	24	15	21	M6	3
ER32SRK5X60	ER32	5	10	16.3	60	44	15	21	M6	3
ER32SRK5X85	ER32	5	10	19.8	85	70	15	21	M6	3
ER32SRK6X35	ER32	6	11	14.7	35	25	18	24	M8	4
ER32SRK6X60	ER32	6	11	17.3	60	45	18	24	M8	4
ER32SRK6X85	ER32	6	11	20.8	85	69	18	26	M8	4
ER32SRK8X35	ER32	8	14	18.8	35	33	25	31	M10	5
ER32SRK8X60	ER32	8	14	20.4	60	45	25	31	M10	5
ER32SRK8X85	ER32	8	14	23.2	85	65	25	31	M10	5
ER32SRK10X35	ER32	10	16	20.8	35	34	30	35	M12	6
ER32SRK10X60	ER32	10	16	22.4	60	44	30	36	M12	6
ER32SRK10X85	ER32	10	16	23	85	49	30	36	M12	6
ER32SRK12X35	ER32	12	20	24	35	28	32	-	-	-
ER32SRK12X60	ER32	12	20	24	60	28	32	38	M14	6
ER32SRK12X85	ER32	12	20	24	85	28	32	38	M14	6

(1) Use SpinJet spindle only.

TungShrink, ER collet type, for external coolant supply

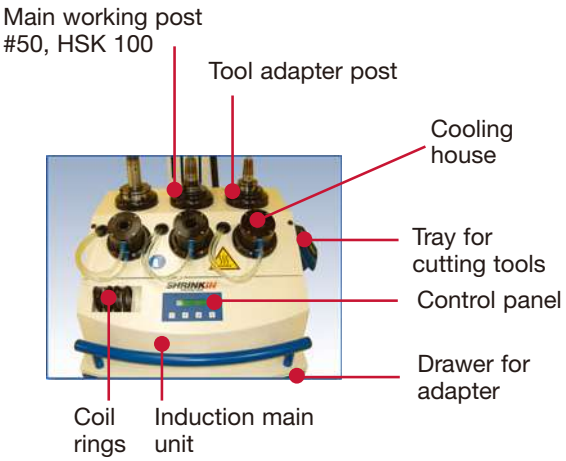


Designation	SS	DCONWS	BD	BD2	LF	LB	LSCN	LSC	J	Wrench
ER20SRK3X35JET2	ER20	3	10	13.5	35	24.5	10	16	M6	3
ER20SRK5X35JET2	ER20	5	10	13.5	35	24.5	15	21	M6	3
ER20SRK6X35JET2	ER20	6	11	14.7	35	25.5	18	24	M8	4
ER20SRK6X60JET2	ER20	6	11	15.2	60	29.5	18	24	M8	4
ER25SRK3X35JET2	ER25	3	10	13.5	35	24.5	10	16	M6	3
ER25SRK3X60JET2	ER25	3	10	16.3	60	44.5	10	16	M6	3
ER25SRK4X35JET2	ER25	4	10	13.5	35	24.5	12	18	M6	3
ER25SRK4X60JET2	ER25	4	10	16.3	60	44.5	12	18	M6	3
ER25SRK5X35JET2	ER25	5	10	13.5	35	24.5	15	21	M6	3
ER25SRK5X60JET2	ER25	5	10	16.3	60	44.5	15	21	M6	3
ER25SRK6X35JET2	ER25	6	11	14.7	35	26	18	24	M8	4
ER25SRK6X60JET2	ER25	6	11	17.3	60	44.5	18	24	M8	4
ER25SRK8X35JET2	ER25	8	14	17.8	35	26.5	25	30	M10	5
ER25SRK8X60JET2	ER25	8	14	19.7	60	39.5	25	31	M10	5
ER32SRK3X35JET2	ER32	3	10	13.2	35	22.5	10	16	M6	3
ER32SRK3X60JET2	ER32	3	10	16.3	60	44.5	10	16	M6	3
ER32SRK3X85JET2	ER32	3	10	19.8	85	70	10	16	M6	3
ER32SRK4X35JET2	ER32	4	10	13.4	35	23.5	12	18	M6	3
ER32SRK4X60JET2	ER32	4	10	16.3	60	44.5	12	18	M6	3
ER32SRK4X85JET2	ER32	4	10	19.8	85	70	12	18	M6	3
ER32SRK5X35JET2	ER32	5	10	13.5	35	24.5	15	21	M6	3
ER32SRK5X60JET2	ER32	5	10	16.3	60	44.5	15	21	M6	3
ER32SRK5X85JET2	ER32	5	10	19.8	85	70	15	21	M6	3
ER32SRK6X35JET2	ER32	6	11	14.7	35	25.5	18	24	M8	4
ER32SRK6X60JET2	ER32	6	11	17.3	60	45	18	24	M8	4
ER32SRK6X85JET2	ER32	6	11	20.8	85	69.5	18	26	M8	4
ER32SRK8X35JET2	ER32	8	14	18.8	35	33	25	31	M10	5
ER32SRK8X60JET2	ER32	8	14	20.4	60	45	25	31	M10	5
ER32SRK8X85JET2	ER32	8	14	23.2	85	65	25	31	M10	5
ER32SRK10X35JET2	ER32	10	16	20.8	35	34	30	35	M12	6
ER32SRK10X60JET2	ER32	10	16	22.4	60	44.5	30	36	M12	6
ER32SRK10X85JET2	ER32	10	16	23	85	49.5	30	36	M12	6
ER32SRK12X35JET2	ER32	12	20	24	35	28	32	-	-	-
ER32SRK12X60JET2	ER32	12	20	24	60	28	32	38	M14	6
ER32SRK12X85JET2	ER32	12	20	24	85	28	32	38	M14	6

TUNGSHRINK
IND SHRINKIN UNIT

SHRINKIN Induction heating unit for shrink tool chucking





Designation	Machine
IND SHRINK IN UNIT EUR	3-380-500V 50/60HZ

TUNGSHRINK
IND SHRINK START UNIT

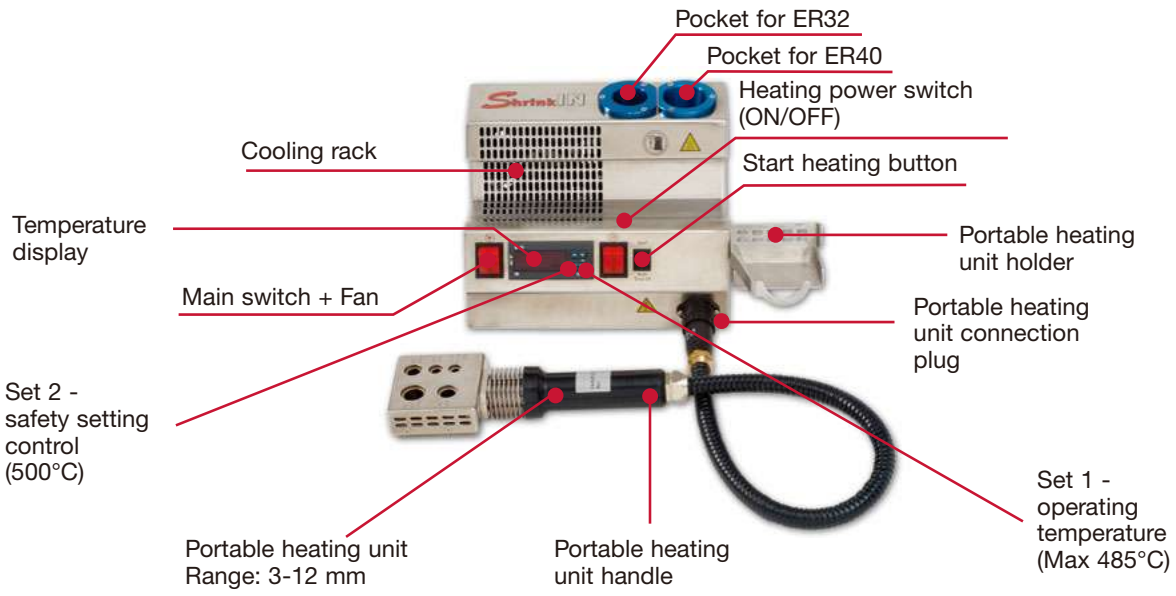
SHRINKIN Induction heating unit for shrink tool chucking



Designation	Machine
IND SHRINK START UNIT EUR	3-380-500V 50/60HZ

TUNGSHRINK
SHRINKIN UNIT V2

SHRINKIN Induction heating unit for shrink tool chucking



Designation	Machine
SHRINKIN UNIT V2 EUR	220V 50/60HZ

TUNGSHRINK
SET ER-SRK

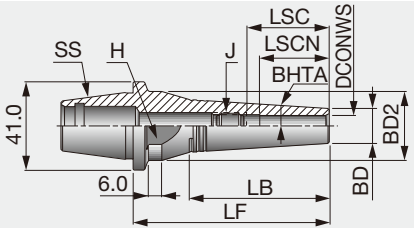
Set of ER collets with thermal shrink chucks



Designation	Collet size	Qty	Range
SETER32SRKL6EUR	32	6	4,5,6,8,10,12
SETER32SRKM6EUR	32	6	4,5,6,8,10,12
SETER32SRKS6EUR	32	6	4,5,6,8,10,12

TUNGCLICK
ER-SRF

TungShrink, quick change type

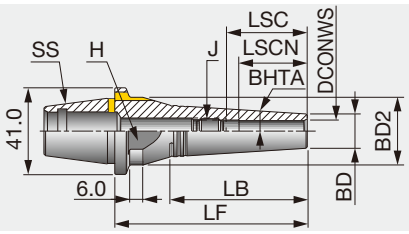


Designation	SS	DCONWS	BD	BD2	LF	LB	J	Wrench	BHTA	H	LSCN	LSC
ER32SRF3X50	32 SRF	3	10	32	50	31	M6	3	4°	27	10	16
ER32SRF3X85	32 SRF	3	10	32	85	60.5	M6	3	4°	27	10	16
ER32SRF4X50	32 SRF	4	10	32	50	31	M6	3	4°	27	12	18
ER32SRF4X85	32 SRF	4	10	32	85	60.5	M6	3	4°	27	12	18
ER32SRF5X50	32 SRF	5	10	32	50	31	M6	3	4°	27	15	21
ER32SRF5X85	32 SRF	5	10	32	85	60.5	M6	3	4°	27	15	21
ER32SRF6X50	32 SRF	6	11	32	50	31	M8	4	4°	27	18	24
ER32SRF6X85	32 SRF	6	11	32	85	60.5	M8	4	4°	27	18	24
ER32SRF8X50	32 SRF	8	14	32	50	33	M10	5	4°	27	25	31
ER32SRF8X85	32 SRF	8	14	32	85	60.5	M10	5	4°	27	25	31
ER32SRF10X50	32 SRF	10	16	32	50	35	M12	6	4°	27	30	35
ER32SRF10X85	32 SRF	10	16	32	85	60.5	M12	6	4°	27	30	36
ER32SRF12X50	32 SRF	12	20	32	50	35	M14	6	4°	27	32	37
ER32SRF12X85	32 SRF	12	20	32	85	50	M14	6	4°	27	32	38

Tightening torque: 235 N·m.

TUNGCLICK
ER-SRF JET2

TungClick, quick change type, thermal shrinking holder



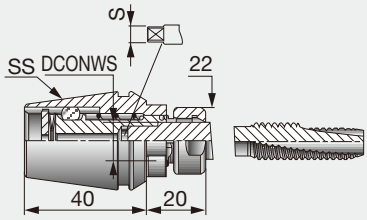
Designation	SS	DCONWS	BD	BD2	LF	LB	J	Wrench	BHTA	H	LSCN	LSC
ER32SRF3X50JET2	32 SRF	3	10	32	50	31	M6	3	4°	27	10	16
ER32SRF3X85JET2	32 SRF	3	10	32	85	60	M6	3	4°	27	10	16
ER32SRF4X50JET2	32 SRF	4	10	32	50	31	M6	3	4°	27	12	18
ER32SRF4X85JET2	32 SRF	4	10	32	85	60	M6	3	4°	27	12	18
ER32SRF5X85JET2	32 SRF	5	10	32	85	60	M6	3	4°	27	15	21
ER32SRF6X50JET2	32 SRF	6	11	32	50	31	M8	4	4°	27	18	24
ER32SRF6X85JET2	32 SRF	6	11	32	85	60	M8	4	4°	27	18	24
ER32SRF8X50JET2	32 SRF	8	14	32	50	33	M10	5	4°	27	25	31
ER32SRF8X85JET2	32 SRF	8	14	32	85	60	M10	5	4°	27	25	31
ER32SRF10X50JET2	32 SRF	10	16	32	50	35	M12	6	4°	27	30	35
ER32SRF10X85JET2	32 SRF	10	16	32	85	60	M12	6	4°	27	30	36
ER32SRF12X50JET2	32 SRF	12	20	32	50	35	M14	6	4°	27	32	37
ER32SRF12X85JET2	32 SRF	12	20	32	85	50	M14	6	4°	27	32	38

Tightening torque: 235 N·m.

TUNGGTI

GTIN ER-ISO

Tapping attachment for ER collet chuck holders (ISO)



0.1 mm
0.8 mm ↕ 4 mm
0.1 mm

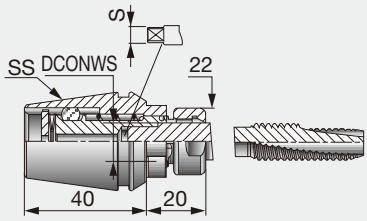
Designation	SS	DCONWS	S	Tap min	Tap max	H
GTINER32ISO2.24X1.80	ER32	2.24	1.8	M3	M3	20
GTINER32ISO2.50X2.00	ER32	2.5	2	M3.5	M3.5	20
GTINER32ISO2.80X2.24	ER32	2.8	2.24	M2.2	M2.5	20
GTINER32ISO3.15X2.50	ER32	3.15	2.5	M3	M4	20
GTINER32ISO3.55X2.80	ER32	3.55	2.8	M3.5	M4.5	20
GTINER32ISO4.00X3.15	ER32	4	3.15	M4	M5	20
GTINER32ISO4.50X3.55	ER32	4.5	3.55	M6	M6	20
GTINER32ISO5.00X4.00	ER32	5	4	M5	M5	20
GTINER32ISO5.60X4.50	ER32	5.6	4.5	UNC#12-24	UNC#12-24	20
GTINER32ISO6.30X5.00	ER32	6.3	5	M6	M8	20
GTINER32ISO7.10X5.60	ER32	7.1	5.6	UNC#-3/8-16	UNC#-3/8-16	20
GTINER32ISO8.00X6.30	ER32	8	6.3	M8	M10	20
GTINER32ISO9.00X7.10	ER32	9	7.1	M12	M12	20
GTINER32ISO10.00X8.00	ER32	10	8	M10	M10	20
GTINER32ISO11.20X9.00	ER32	11.2	9	M14	M14	20
GTINER32ISO12.50X10.00	ER32	12.5	10	M16	M16	20

No coolant should be induced through the tapping collet, as it will cause malfunctioning of the mechanism.

TUNGGTI

GTIN ER-DIN

Tapping attachment for ER collet chuck holders (DIN)



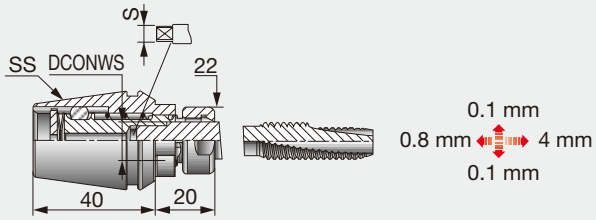
0.1 mm
0.8 mm ↕ 4 mm
0.1 mm

Designation	SS	DCONWS	S	Tap min	Tap max	H
GTINER32DIN2.50X2.10	ER32	2.5	2.1	M1	M1.8	20
GTINER32DIN2.80X2.10	ER32	2.8	2.1	M2	M4	20
GTINER32DIN3.50X2.70	ER32	3.5	2.7	M3	M5	20
GTINER32DIN4.00X3.00	ER32	4	3	M3	M5	20
GTINER32DIN4.50X3.40	ER32	4.5	3.4	M4	M6	20
GTINER32DIN6.00X4.90	ER32	6	4.9	M5	M8	20
GTINER32DIN7.00X5.50	ER32	7	5.5	M10	M10	20
GTINER32DIN8.00X6.20	ER32	8	6.2	M8	M8	20
GTINER32DIN9.00X7.00	ER32	9	7	M12	M12	20
GTINER32DIN10.00X8.00	ER32	10	8	M10	M10	20
GTINER32DIN11.00X9.00	ER32	11	9	M14	M14	20
GTINER32DIN12.00X9.00	ER32	12	9	M16	M16	20

No coolant should be induced through the tapping collet, as it will cause malfunctioning of the mechanism.

TUNGGTI
GTIN ER-JIS

Tapping attachment for ER collet chuck holders (JIS)



Designation	SS	DCONWS	S	Tap min	Tap max	H
GTINER32JIS3.00X2.50	ER32	3	2.5	M1	M2.6	20
GTINER32JIS4.00X3.20	ER32	4	3.2	M3	M3.5	20
GTINER32JIS5.00X4.00	ER32	5	4	M4	M4	20
GTINER32JIS6.00X4.50	ER32	6	4.5	M6	M6	20
GTINER32JIS6.20X5.00	ER32	6.2	5	M8	M8	20
GTINER32JIS7.00X5.50	ER32	7	5.5	M10	M10	20
GTINER32JIS8.50X6.50	ER32	8.5	6.5	M12	M12	20
GTINER32JIS10.50X8.00	ER32	10.5	8	M14	M14	20
GTINER32JIS12.50X10.00	ER32	12.5	10	M16	M16	20

No coolant should be induced through the tapping collet, as it will cause malfunctioning of the mechanism

TUNGHOLD
PS BT-JIS/MAZAK

Pull stud with JIN/ANSI retention knob (BT), for MAZAK machines

Fig. 1

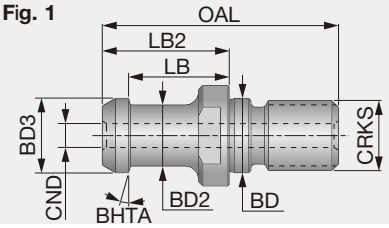


Fig. 2

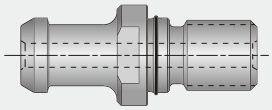


Fig. 3

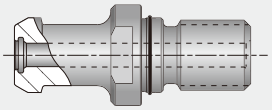


Fig. 1: Coolant holes only in items with B suffix. Fig. 2: With O-ring for outer diameter.
Fig. 3: With O-rings for outer and inner diameters

Designation	BT size	CRKS	BD3	BD2	BD	CND	LB	OAL	LB2	BHTA	Fig.
PSBT3015M12JISB	30	M12	12	8	13	4	18.4	43	23.4	15°	1
PSBT4015M16JISB	40	M16	19	14	17	5.5	23	54	29	15°	1
PSBT4015M16JISOB	40	M16	19	14	17	5.5	23	54	29	15°	2
PSBT4015M16JISOBO	40	M16	19	14	17	5.5	23	54	29	15°	3
PSBT5015M24JISB	50	M24	28	21	25	8	25	74	34	15°	1
PSBT5015M24JISOB	50	M24	28	21	25	8	25	74	34	15°	2
PSBT5015M24JISOBO	50	M24	28	21	25	8	25	74	34	15°	3
PSBT4045M16MAZAKB	40	M16	18.79	12.4	17	7	14.026	44.1	19.1	45°	1
PSBT5045M24MAZAKB	50	M24	28.95	20.8	25	8	17.58	65.2	25.2	45°	1

TUNGHOLD
PS BT-MAS

Pull stud with MAS retention knob (BT)

Fig. 1

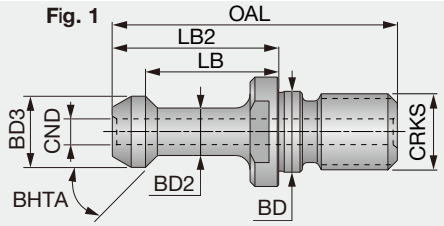


Fig. 2

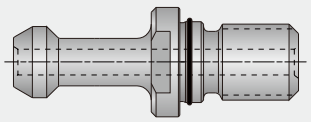


Fig. 3

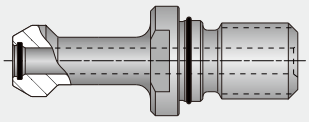


Fig. 1: Coolant holes only in items with B suffix. Fig. 2: With O-ring for outer diameter.
Fig. 3: With O-rings for outer and inner diameters

Designation	BT size	CRKS	BD3	BD2	BD	CND	LB	OAL	LB2	BHTA	Fig.
PSBT3045M12MAS1	30	M12	11	7	12.5	-	18	43	23	45°	1
PSBT3045M12MAS1B	30	M12	11	7	12.5	3	18	43	23	45°	1
PSBT3060M12MAS2	30	M12	11	7	12.5	-	18	43	23	60°	1
PSBT4045M16MAS1	40	M16	15	10	17	-	28	60	35	45°	1
PSBT4045M16MAS1B	40	M16	15	10	17	5.5	28	60	35	45°	1
PSBT4060M16MAS2	40	M16	15	10	17	-	28	60	35	60°	1
PSBT4060M16MAS2B	40	M16	15	10	17	5.5	28	60	35	60°	1
PSBT4090M16MAS3	40	M16	15	10	17	-	28	60	35	90°	1
PSBT4090M16MAS3B	40	M16	15	10	17	5.5	28	60	35	90°	1
PSBT5045M24MAS1	50	M24	23	17	25	-	35	85	45	45°	1
PSBT5045M24MAS1B	50	M24	23	17	25	6	35	85	45	45°	1
PSBT5045M24MAS1OB	50	M24	23	17	25	6	35	85	45	45°	2
PSBT5045M24MAS1OBO	50	M24	23	17	25	6	35	85	45	45°	3
PSBT5060M24MAS2	50	M24	23	17	25	-	35	85	45	60°	1
PSBT5060M24MAS2B	50	M24	23	17	25	6	35	85	45	60°	1
PSBT5060M24MAS2OB	50	M24	23	17	25	6	35	85	45	60°	2
PSBT5090M24MAS3	50	M24	23	17	25	-	35	85	45	90°	1
PSBT5090M24MAS3B	50	M24	23	17	25	6	35	85	45	90°	1
PSBT5090M24MAS3OB	50	M24	23	17	25	6	35	85	45	90°	2

TUNGHOLD
PS SK-DIN

Pull stud with JIS63398 retention knob (DIN69872)

Fig. 1

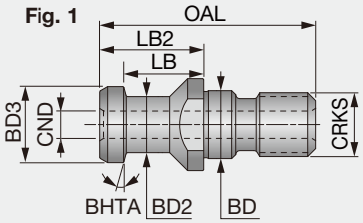


Fig. 2

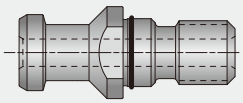


Fig. 3

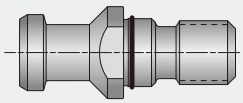
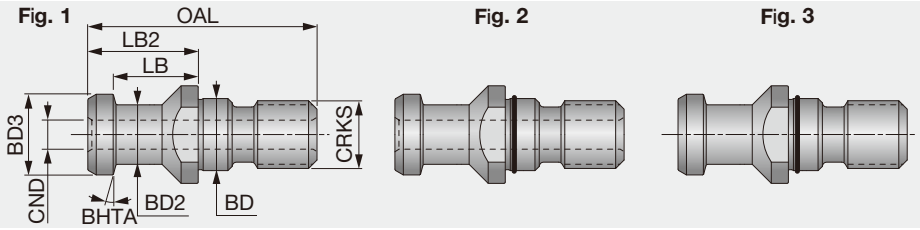


Fig. 1: Coolant holes only in items with B suffix.
Fig. 2: With O-ring for outer diameter. Fig. 3: With O-rings for outer and inner diameters

Designation	SK size	CRKS	BD3	BD2	BD	CND	LB	OAL	LB2	BHTA	Fig.
PSSK3015M12DIN	30	M12	13	9	13	-	19	44	24	15°	1
PSSK4015M16DIN	40	M16	19	14	17	-	20	54	26	15°	1
PSSK4015M16DINO	40	M16	19	14	17	-	20	54	26	15°	3
PSSK4015M16DINB	40	M16	19	14	17	7	20	54	26	15°	1
PSSK4015M16DINOB	40	M16	19	14	17	7	20	54	26	15°	2
PSSK5015M24DIN	50	M24	28	21	25	-	25	74	34	15°	1
PSSK5015M24DINO	50	M24	28	21	25	-	25	74	34	15°	3
PSSK5015M24DINB	50	M24	28	21	25	11.5	25	74	34	15°	1

TUNGHOLD
PS CAT-ISO

Pull stud with CAT-MAS G-mm Retention knob, with coolant hole

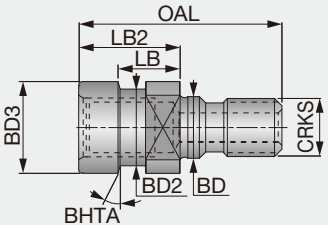


Designation	CAT size	CRKS	BD3	BD2	BD	CND	LB	OAL	LB2	BHTA
PSCAT3045M12ISOB	30	M12	13.35	9.3	13	4.75	8.1	34	11.8	45°
PSCAT4045M16ISOB	40	M16	18.95	12.9	17	7.35	11.2	44.5	16.4	45°
PSCAT5045M24ISOB	50	M24	29.1	19.6	25	8	17.9	65.5	25.55	45°

Coolant holes only in items with B suffix.

TUNGHOLD
PS OTT-BT

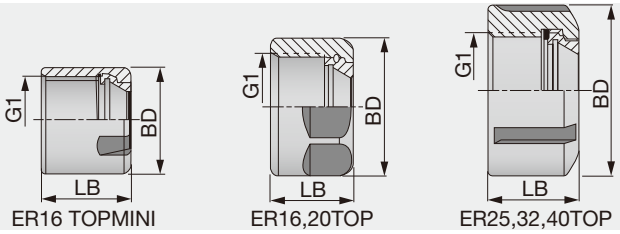
Pull stud with OTT system retention knob (BT)



Designation	BT size	CRKS	BD3	BD2	BD	LB	OAL	LB2	BHTA
PSOTTBT40M16	40	M16	25	21.1	17	16.6	56	28	15°
PSOTTBT50M24	50	M24	39.3	32	25	13.4	65	25	15°

TUNGHOLD
NUT ER-TOP

Nut for ER collet chucks (DIN6499)

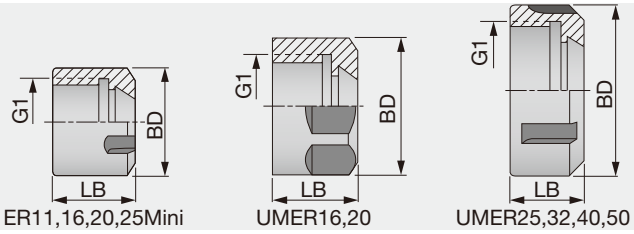


Designation	BD	LB	G1	Torque*
NUTER16TOP	28	17	M22X1.5	68.7
NUTER20TOP	34	19	M25X1.5	117.7
NUTER25TOP	42	20	M32X1.5	196.1
NUTER32TOP	50	22	M40X1.5	215.7
NUTER40TOP	63	25	M50X1.5	245.1

*Torque: Recommended torque (N·m) for clamping

TUNGHOLD
NUT ER-UM/MINI

UM/Mini nut for ER collet chucks (DIN6499)

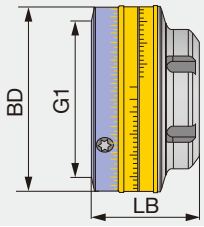


Designation	BD	LB	G1	Torque*
NUTER11GHS (1)	16	11.5	M13X0.75	-
NUTER11MINI	16	10.8	M13X0.75	29.4
NUTER11UM	19	11.3	M14X0.75	49
NUTER16MINI	22	18	M19X1.0	39.2
NUTER16UM	28	17	M22X1.5	68.7
NUTER20MINI	28	19	M24X1.0	78.5
NUTER20UM	34	19	M25X1.5	117.7
NUTER25MINI	35	20	M30X10	98
NUTER25UM	42	20	M32X1.5	196.1
NUTER32UM	50	22	M40X1.5	215.7
NUTER40UM	63	25	M50X1.5	245.1
NUTER50UM	78	35	M64X2.0	343.2

*Torque: Recommended torque (N·m) for clamping (1) To be used only for SpinJet spindles

TUNGBALANCE
NUT ER-BALANCE

Balanceable nut for ER collet chucks (DIN6499)

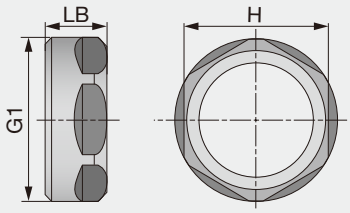


Designation	BD	LB	G1	Torque*
NUTER16TOPBIN	36	44	M22X1.5	68.7
NUTER25TOPBIN	37.5	58	M32X1.5	196.1

*Torque: Recommended torque (N·m) for clamping

TUNGSHORT
NUT ER-SHORT

Nut for ER collet chucks (TungShort)

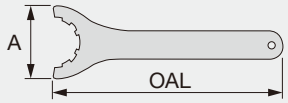


Designation	H	LB	G1	Torque*
NUTER20SHORT	22	10.7	M25X1.5	117.7
NUTER32SHORT	36	15	M40X1.5	215.7
NUTER40SHORT	46	16	M50X1.5	245.1

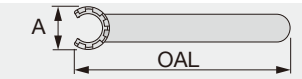
*Torque: Recommended torque (N·m) for clamping

TUNGHOLD
WRENCH ER

Wrench for ER nut (DIN6499)



Wrench ER 25,32,40,50



Wrench ER 11,16,20,25 Mini



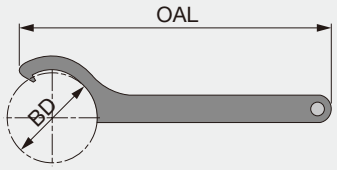
Wrench ER 11,16,20,TungShort,TungClick

Designation	A	H	OAL
WRENCHER11SMS (1)	16	-	95
WRENCHER11MINI	16.8	-	95
WRENCHER11	32	17	95
WRENCHER16MINI	22.5	-	117
WRENCHER16	42.5	25	143
WRENCHER20MINI	28	-	128
WRENCHER20	53.5	30	172
WRENCHER25MINI	29	-	120
WRENCHER25	70	-	207
WRENCHER32	78	-	255
WRENCHER40	95	-	285
WRENCHER50	110	-	350
WRENCHER20SHORTRING22	48	22	260
WRENCHER32SHORT	75	36	303
WRENCHER40SHORT	94	46	378
WRENCHER32CLICKIN27	57	27	239
WRENCHER32CLICKIN32	67	32	273

(1) Use SpinJet spindle only.

TUNGMAX
WRENCH

Wrench for TungMax collets

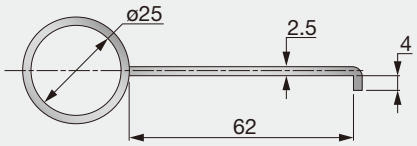


Designation	BD	OAL
WRENCHMAXIN20HOOK	26	205
WRENCHMAXIN32HOOK	68	240

TUNGHOLD

SC

SC collet extracting hook

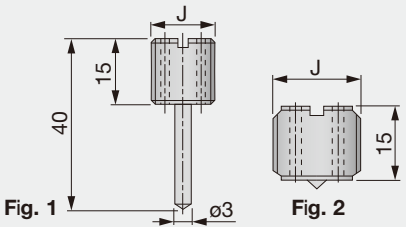


Designation
EXTRACTOR SC COLLETS

TUNGHOLD

PRESET ER-JET

Preset screw for ER collet chucks

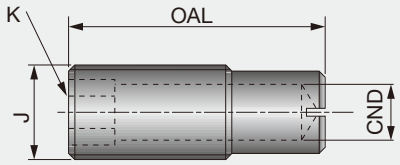


Designation	J	Fig.
PRESETER-JET8X1	M8X1.0	2
PRESETER-JET8X1.25	M8X1.25	2
PRESETER-JET10X1.5	M10X1.5	2
PRESETER-JET12X1	M12X1.0	2
PRESETER-JET12X1.75L	M12X1.75	1
PRESETER-JET12X1.75	M12X1.75	2
PRESETER-JET14X1	M14X1.0	2
PRESETER-JET16X2	M16X2	2
PRESETER-JET16X2L	M16X2	1
PRESETER-JET18X1	M18X1.0	2
PRESETER-JET18X1.5	M18X1.5	2
PRESETER-JET18X1.5L	M18X1.5	1
PRESETER-JET22X1.5	M22X1.5	2
PRESETER-JET22X1.5L	M22X1.5	1
PRESETER-JET28X1.5	M28X1.5	2

TUNGMAX

Preset Screw

Preset screw for SC-SPR

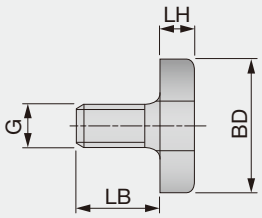


Designation	J	OAL	CND	K
PRESETMAXIN16X30	M16	30	8	8
PRESETMAXIN16X44	M16	44	8	8
PRESETMAXIN20X55	M20	55	12	12

TUNGHOLD

SCREW-SEM

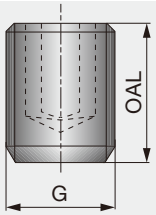
Lock screw for shell mill holders



Designation	G	BD	LH	LB
M8CLAMPSCREWSEM16	M8	20	6	16
M10CLAMPSCREWSEM22	M10	28	7	18
M12CLAMPSCREWSEM27	M12	35	8	22
M16CLAMPSCREWSEM32	M16	42	9	26
M20CLAMPSCREWSEM40	M20	52	10	30
M24CLAMPSCREWSEM50	M24	63	12	36

TUNGHOLD
SCREW-EM

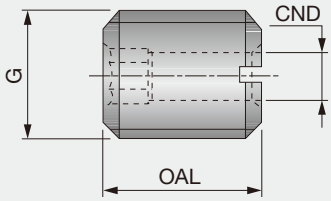
Lock screw for endmill holders



Designation	G	OAL	Applicable shank diameter
SRM6X10DIN1835B	M6	10	6
SRM8X10DIN1835-B	M8	10	8
SRM10X12DIN1835-B	M10	12	10
SRM12X16DIN1835-B	M12	16	12,14
SRM14X16DIN1835-B	M14	16	14,16
SRM16X16DIN1835-B	M16	16	20
SRM18X2X20DIN1835-B	M18X2	20	25,32
SRM20X2X20DIN1835-B	M20X2	20	40
SRM24X2X25DIN1835-B	M24X2	25	50
SRM16X10.3EMSHORT	M16	10.3	20
SRM18X2X10EMSHORT	M18X2	10	2

TUNGHOLD
PRESET SCREW

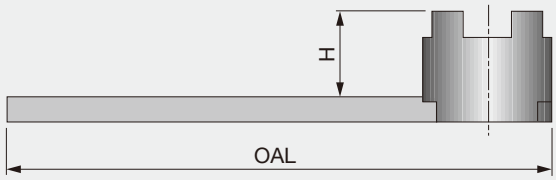
Preset screw with coolant hole for EME/SRKIN holders



Designation	G	OAL	CND	Applicable shank	Wrench
PRESETSCREWM6X20B	M6X1	20	2.5	EME/SRKIN	3
PRESETSCREWM8X20B	M8X1.25	20	3.5	EME/SRKIN	4
PRESETSCREWM10X18B	M10X1.5	18	4.5	EME/SRKIN	5
PRESETSCREWM12X18B	M12X1.75	18	5.5	EME/SRKIN	6
PRESETSCREWM16X20B	M16X2	20	7.5	EME/SRKIN	6
PRESETSCREWM16X25B	M16X2	25	7.5	SRKIN	6

TUNGHOLD
WRENCH SEMC

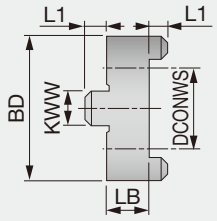
Wrench for face mill and shell mill combination type holders (DIN6368)



Designation	Clamping bore dia.	G	H	OAL
WRENCHM8SEMC16	16	M8	20	180
WRENCHM10SEMC22	22	M10	25	200
WRENCHM12SEMC27	25.4,27	M12	32	225
WRENCHM16SEMC32	31.75,32	M16	36	250
WRENCHM20SEMC40	38.1,40	M20	40	280
WRENCHM24SEMC50	50,50.8	M24	50	315

TUNGHOLD
DRIVING RING SEMC

Driving ring for face mill and shell mill combination type holders (DIN6366/1)

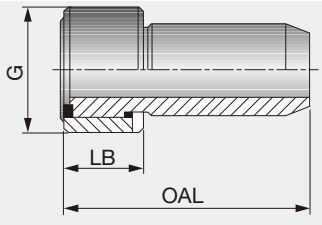


Designation	DCONWS	BD	LB	L1	KWW
16D.RINGSEMC	16	32	10	8	5
22D.RINGSEMC	22	40	12	10	6
27D.RINGSEMC	27	48	12	12	6.3
32D.RINGSEMC	32	58	14	14	7
40D.RINGSEMC	40	70	14	16	8
50D.RINGSEMC	50	90	16	18	9

Should be used with WRENCH SEMC.

TUNGHOLD
COOLING TUBE-HSK

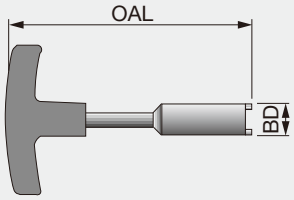
Cooling tube for HSK shank



Designation	HSK size	OAL	LB	G
COOLINGTUBEHSKA40	40	29.1	7.5	M12X1
COOLINGTUBEHSKA50	50	32.7	9.5	M16X1
COOLINGTUBEHSKA63	63	36	11.5	M18X1
COOLINGTUBEHSKA80	80	36.6	13.5	M20X1.5
COOLINGTUBEHSKA100	100	43.6	15.5	M24X1.5

TUNGHOLD
WRENCH

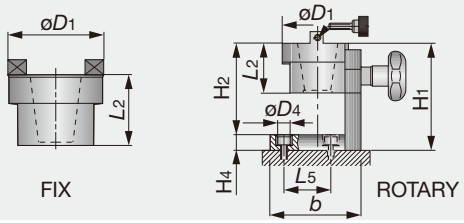
Wrench for HSK cooling tube



Designation	HSK size	BD	OAL
WRENCHCOOLTUBEHSK40	40	11	120
WRENCHCOOLTUBEHSK50	50	15	120
WRENCHCOOLTUBEHSK63	63	17	122
WRENCHCOOLTUBEHSK80	80	18.5	186
WRENCHCOOLTUBEHSK100	100	22	141

TUNGHOLD
TOOL CLAMP

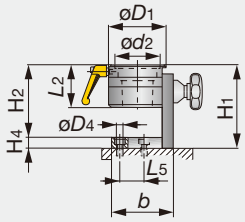
Tool clamp fixture for ISO, DIN69871, and BT MAS-403 BT shanks



Designation	CSI	øD1	L2	H1	H2	H4	b	L5	øD4
TOOLCLAMP30ROTARY	ROTARY	70	56	128	109	19	104	40	12.5
TOOLCLAMP40ROTARY	ROTARY	82	56	128	109	19	104	40	12.5
TOOLCLAMP50ROTARY	ROTARY	103	71	170	151	19	144	85	12.5
TOOLCLAMP30FIX	FIX	82	58	-	-	-	-	-	-
TOOLCLAMP40FIX	FIX	82	58	-	-	-	-	-	-
TOOLCLAMP50FIX	FIX	103	71	-	-	-	-	-	-

TUNGHOLD
MULTI CLAMP (HSK)

Multi-clamp rotary fixture for HSK shank



Designation	CSI	ød2	øD1	L2	H1	H2	H4	b	L5	øD4
MULTICLAMP32E/F	HSK A/C50	32	113.2	70	133	114	19	144	40	12.5
MULTICLAMP40E/F	HSK A/C63	40	113.2	70	133	114	19	144	40	12.5
MULTICLAMP50E/F	HSK A/C100	50	113.2	70	133	114	19	144	40	12.5
MULTICLAMP63E/F	HSK E/F32	63	113.2	70	133	114	19	144	40	12.5
MULTICLAMP50A/C	HSK E/F40	50	82	72	142	123	19	104	40	12.5
MULTICLAMP63A/C	HSK E/F50	63	95	72	142	123	19	104	40	12.5
MULTICLAMP100A/C	HSK E/F63	100	130	90	178	159	19	144	85	12.5

EASYLOCK
EASY LOCK

Electrical nut-clamp torque control device

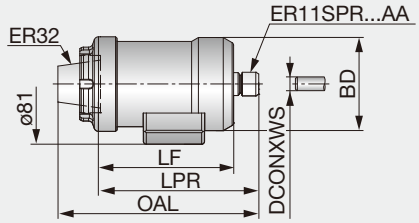


Note: Assemble the collet and cutting tool.
By hand, place the nut onto the collet chuck.

Designation	Machine
EASYLOCKT.CEU	200/240V 50/60 HZ

SPINJET
TJS-ER32

Coolant driven high speed compact spindle for ER32 collet chuck



Designation	LF	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETER32	92	109	136	63	7	1.3

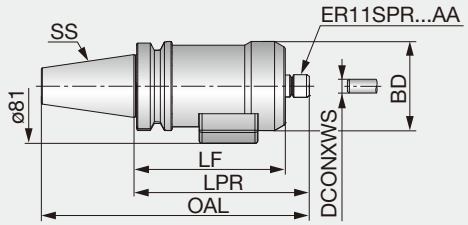
• Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
• Min. flow rate: 12 l/min
(1) Max. tool shank diameter: ø7 mm

SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETER32	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

SPINJET
TJS-BT

Coolant driven high speed compact spindle with BT shank



Designation	SS	LF	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETBT30	BT30	124	141	189	63	7	1.6
TJSGJETBT40	BT40	107	124	189	63	7	1.8

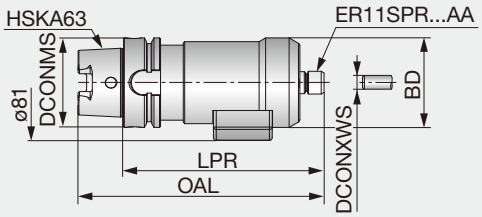
• Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
• Min. flow rate: 12 l/min
(1) Max. tool shank diameter: ø7 mm

SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETBT...	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

SPINJET
TJS-HSK A63

Coolant driven high speed compact spindle with HSK A63 shank



Designation	DCONMS	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETHSKA63	63	141	173	63	7	1.8

- Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
- Min. flow rate: 12 l/min

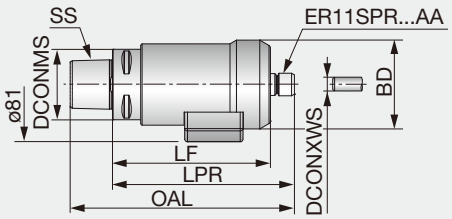
(1) Max. tool shank diameter: ø7 mm

SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETHSKA63	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

SPINJET
TJS-C

Coolant driven high speed compact spindle with TungCap PSC shank



Designation	SS	DCONMS	LF	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETC5	C5	50	112	129	159	63	7	1.5
TJSGJETC6	C6	63	102	119	157	63	7	1.6

- Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
- Min. flow rate: 12 l/min

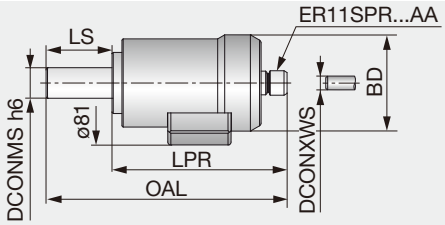
(1) Max. tool shank diameter: ø7 mm

SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETC...	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

SPINJET
TJS-ST

Coolant driven high speed compact spindle with straight (cylindrical) shank



Designation	DCONMS	LS	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETST20	20	43	115	158	63	7	1.2

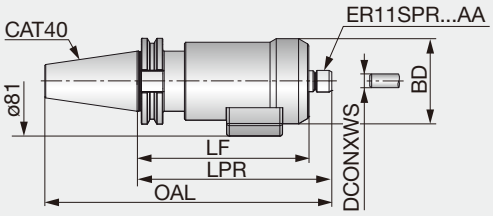
• Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
• Min. flow rate: 12 l/min
(1) Max. tool shank diameter: ø7 mm

SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETST20	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

SPINJET
TJS-CAT

Coolant driven high speed compact spindle with CAT shank



Designation	LF	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETCAT40	127	144	212	63	7	2

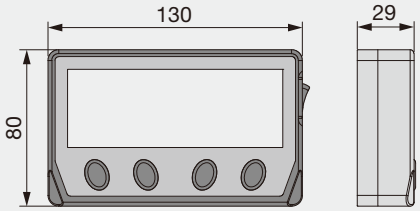
• Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
• Min. flow rate: 12 l/min
(1) Max. tool shank diameter: ø7 mm

SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETCAT40	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

SPINJET
Wireless RPM speed display

RPM speed display (SpinJet)



Designation		Adaptive product
TJSTSDDISPLAYEUR	(for Europe)	TJS spindles
TJSTSDDISPLAYUSA	(for the United States and Japan)	TJS spindles

Including plug adapter

- Plug adaptor for wireless RPM speed display

Type	TJSTSDDISPLAYEUR	TJSTSDDISPLAYUSA
Designation	TJSDISP.POWERSUPP-EUR	TJSDISP.POWERSUPP-USA
Appearance	 Plug adaptor for Europe	 Plug adaptor for the United States and Japan

Plug adaptor is also sold separately.

SPINJET
New and old product comparison table



New models ⟷ Discontinued models

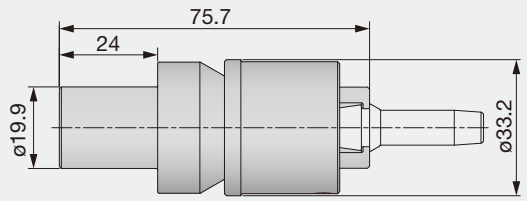


Alternative designation	Discontinued designation	Alternative designation	Discontinued designation
-	TJS20KBT30L	-	TJS40KC6L
TJSGJETBT30	TJS20KBT30R	TJSGJETC6	TJS40KC6R
-	TJS30KBT30L	-	TJS20KER32L
TJSGJETBT30	TJS30KBT30R	TJSGJETER32	TJS20KER32R
-	TJS40KBT30L	-	TJS30KER32L
TJSGJETBT30	TJS40KBT30R	TJSGJETER32	TJS30KER32R
-	TJS20KBT40L	-	TJS40KER32L
TJSGJETBT40	TJS20KBT40R	TJSGJETER32	TJS40KER32R
-	TJS30KBT40L	-	TJS20KHSKA63L
TJSGJETBT40	TJS30KBT40R	TJSGJETHSKA63	TJS20KHSKA63R
-	TJS40KBT40L	-	TJS30KHSKA63L
TJSGJETBT40	TJS40KBT40R	TJSGJETHSKA63	TJS30KHSKA63R
-	TJS20KCAT40L	-	TJS40KHSKA63L
TJSGJETCAT40	TJS20KCAT40R	TJSGJETHSKA63	TJS40KHSKA63R
-	TJS30KCAT40L	-	TJS20KDIN698714
TJSGJETCAT40	TJS30KCAT40R	-	TJS20KDIN6987140R
-	TJS40KCAT40L	-	TJS30KDIN698714
TJSGJETCAT40	TJS40KCAT40R	-	TJS30KDIN6987140R
-	TJS20KC5L	-	TJS40KDIN698714
TJSGJETC5	TJS20KC5R	-	TJS40KDIN6987140R
-	TJS30KC5L	-	TJS20KST20L
TJSGJETC5	TJS30KC5R	TJSGJETST20	TJS20KST20R
-	TJS40KC5L	-	TJS30KST20L
TJSGJETC5	TJS40KC5R	TJSGJETST20	TJS30KST20R
-	TJS20KC6L	-	TJS40KST20L
TJSGJETC6	TJS20KC6R	TJSGJETST20	TJS40KST20R
-	TJS30KC6L		
TJSGJETC6	TJS30KC6R		

- As of December 28, 2018, all orders for discontinued models are not accepted. As of December 31, 2020, all services and supports including repairs and spare part sales will end.

ER-SRK Shrink collet adapter

ER11 shrink collet adapter for induction heating device

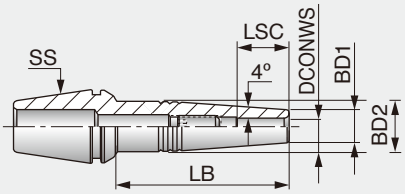


Designation	Adaptive product
INDER11TOOLADAPTER	TJS spindles

SPINJET

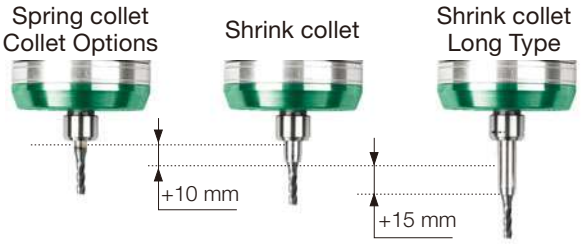
ER-SRK Shrink collet

ER11 shrink collet for induction heating device



Designation	SS	DCONWS	LB	LSC	BD2	BD1
ER11SRK3X10	ER11	3	10	9.5	8.5	7.6
ER11SRK3X25	ER11	3	25	11.5	8.5	7.6
ER11SRK4X10	ER11	4	10	9.5	8.5	7.6
ER11SRK4X25	ER11	4	25	11.5	8.5	7.6

• For carbide tools only

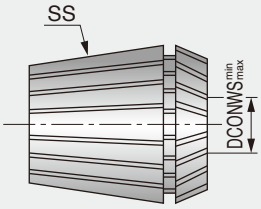


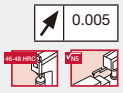
SPINJET

ER-SPR-AA

ER11 AA collet



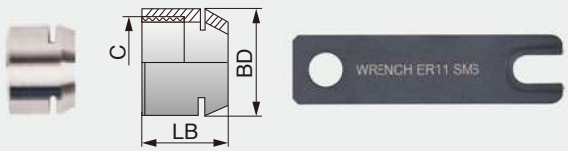




Designation	SS	DCONWS min	DCONWS max
ER11SPR0.5-1AA	ER11	0.5	1
ER11SPR1-2AA	ER11	1	2
ER11SPR2-3AA	ER11	2	3
ER11SPR3-4AA	ER11	3	4
ER11SPR4-5AA	ER11	4	5
ER11SPR5-6AA	ER11	5	6
ER11SPR6-7AA	ER11	6	7

• AA collet run-out: 0.005 mm

Nut and wrench for collets



Designation	BD	LB	C	Wrench for nut
NUTER11GHS	16	11.5	M13X0.75	WRENCHER11SMS

Shaft lock key



Designation
TJSSHAFTLOCKKEYGJET

Complete Tightening & Rigid Clamping



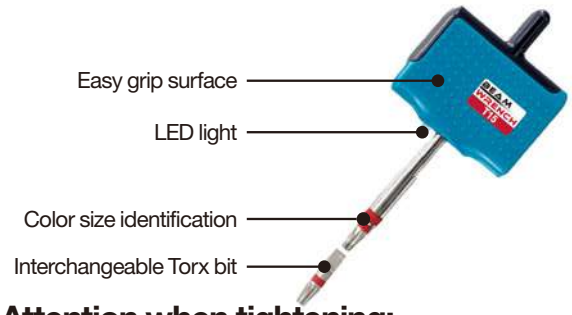
Features

LED illuminates at correct torque!

- When reaching the required clamping force, the LED will be activated.
- Enables the operator to set the insert correctly.
- Provides stable and correct clamping forces in any position.

Available in various torque sizes!

- 5 Torx sizes are available.
- Hardened steel enhances the life of bit.



How to exchange a bit.

Unlock the used bit

- Pull the sleeve to loosen the bit



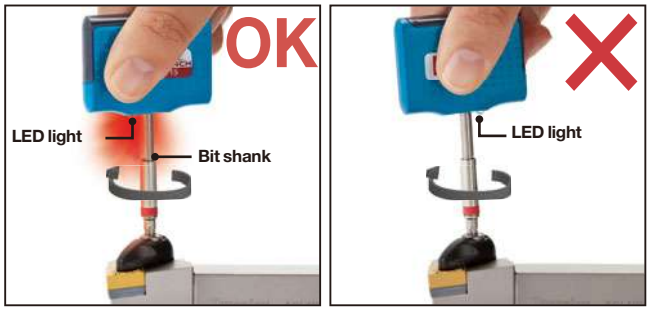
Lock the new bit

- After placing the bit in the correct position, push the sleeve to lock the bit.



Attention when tightening:

- Hold the grip in a position, so the LED can be seen on the left side of bit shank. (See the picture below)
- Tighten the screw clockwise.



BEAMWRENCH set

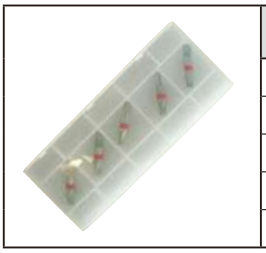


Grip Type	Designation	Torx size	Torque (N·m)	Color
Single flag	**BW-SF6**	T 6	0.6	White
	BW-SF7	T 7	0.9	Black
	BW-SF8	T 8	1.2	Green
	BW-SF9	T 9	1.4	Blue



Grip Type	Designation	Torx size	Torque (N·m)	Color
Double flag	**BW-DF8**	T 8	1.2	Green
	BW-DF9	T 9	1.4	Blue
	BW-DF15	T 15	3.0	Red

BEAMWRENCH Torx bits set



Bit Designation	Torx Size	Torque (N·m)	Color
BW-TX6SET5	T 6	0.6	White
BW-TX7SET5	T 7	0.9	Black
BW-TX8SET5	T 8	1.2	Green
BW-TX9SET5	T 9	1.4	Blue
BW-TX15SET5	T 15	3.0	Red

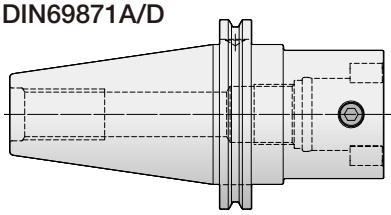
Purchase the Torx bit set with same color of your BeamWrench.

Torx bits set: Packing Quantity = 5 pcs.

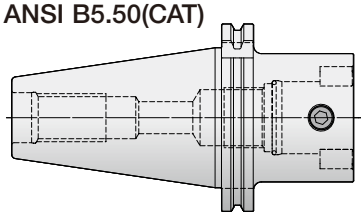
SWISSBORE SWISS TOOLS

Wide range of variation quick change system

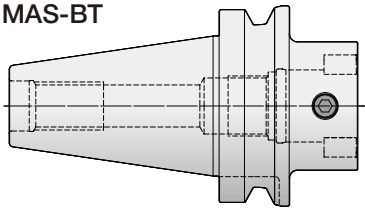
DIN69871A/D



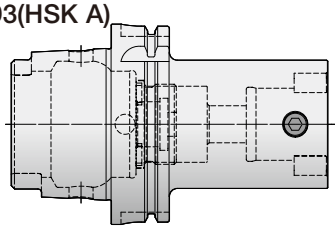
ANSI B5.50(CAT)



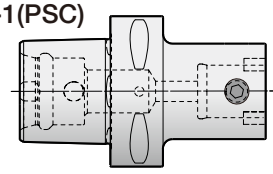
MAS-BT



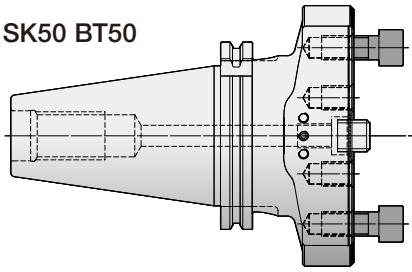
DIN69893(HSK A)



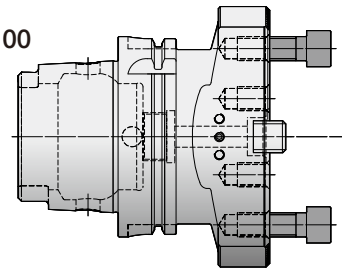
ISO26623-1(PSC)



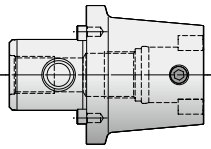
SK50 BT50



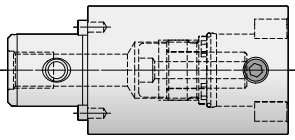
HSK-A100



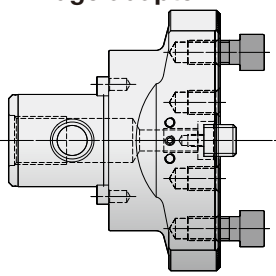
Reduction



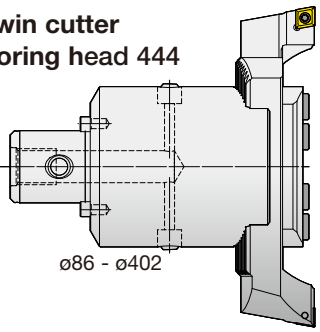
Extension



Bridge adaptor

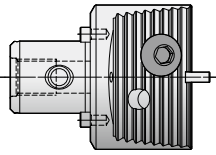


Twin cutter
Boring head 444



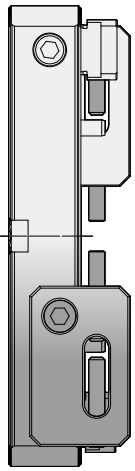
ø86 - ø402

Twin cutter
Boring head 404



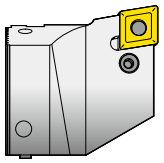
ø23.5 - ø153

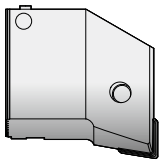
Extension
Bridge



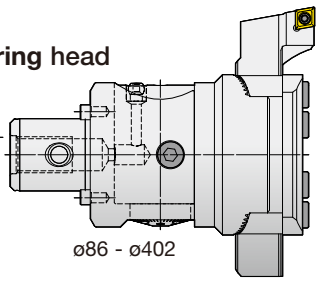
ø150 - ø2205

Boring head
570, 575, 580



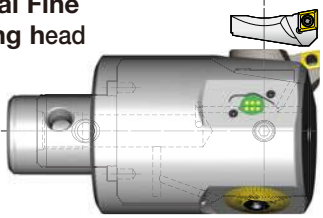


Fine boring head 354



ø86 - ø402

Digital Fine Boring head 305

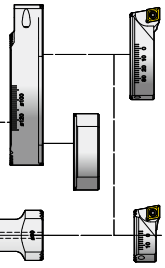


ø23.9 - ø203.1

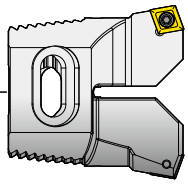
Digital display unit



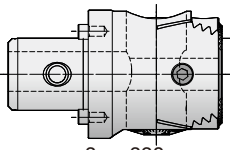
Boring holder



Insert holder 70° 424

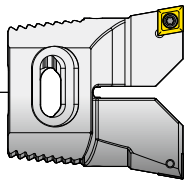


Fine boring head 210



ø3 - ø320

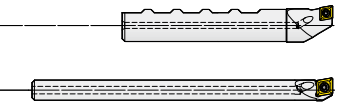
Insert holder 90° 414, 434

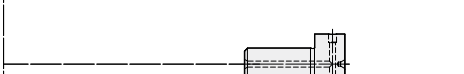


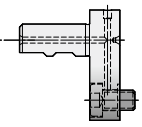
Digital fine head 206



ø3 - ø88



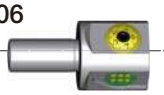




Digital boring head 591



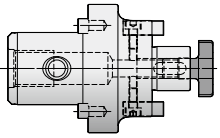
Digital micro boring head 206



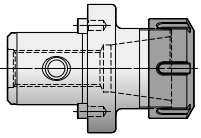
ø0.3 - ø19.1



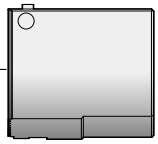
Milling adaptor



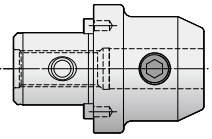
Collet chuck adaptor



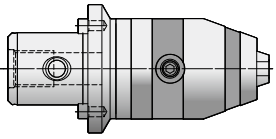
Counter weight



Endmill adaptor



NC drill chuck



SWISSBORE

GH1-DA

Digital display unit

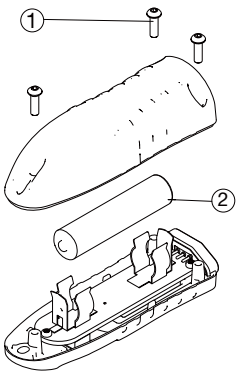


Designation
GH1-DA2.BG0.077

- High precision display unit with accuracy of 0.001 mm in diameter.
- Display unit features direct measurement system with no backlash.
- The illuminated display can be rotated 180 degrees to apply any measuring situation.
- mm/inch switchable
- Standard AAA battery installed.
- Magnet attachment

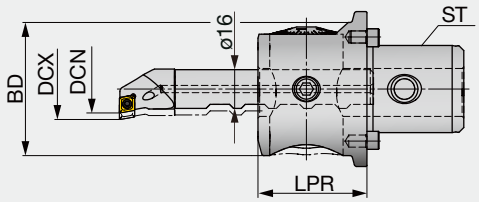
SPARE PARTS

Designation	Clamping screw ①	Screw wrench	Battery ②
GH1-DA2.BG0.077	900.309.022.008	900.308.011.045	AAA



SWISSBORE
SwissBore206

Digital fine boring head ø9.75 - ø88.1

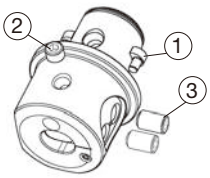


Radius adjustment range: 2.7 mm

Designation	ST	BD	DCN	DCX	LPR
206.064.025.045	ST6	55	9.75	88.1	45

SPARE PARTS

Designation	Drive pin ①	Clamping screw ②	Fastening screw ③
206.***.025.***	900.102.064.000	900.204.010.008	900.204.010.008

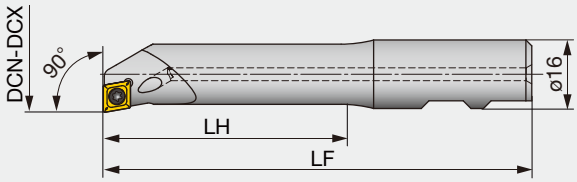




Boring bars 254,256
Option :Display unit GH1-DA2.BG0.077

SWISSBORE
SwissBore254

Boring bar ø9.75 - ø30.1



Designation	DCN	DCX	LH	LF	Insert
254.010.006.075	9.75	15.1	30	75	CC**0602...
254.015.006.090	14.75	20.1	51	90	CC**0602...
254.020.006.105	19.75	25.1	72	105	CC**0602...
254.025.006.115	24.75	30.1	82	115	CC**0602...

Applicable for 7 MPa pressure coolant

SPARE PARTS

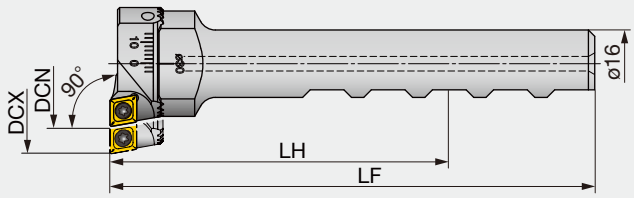
Designation	Clamping screw	Screw wrench
254.0**.006.**	CSTB-2.5S	T-8F

Reference pages: SwissBore254: Inserts → B109 -, CBN → B180, PCD → B190 -

SWISSBORE

SwissBore256

Boring bar ø29.75 - ø88.1

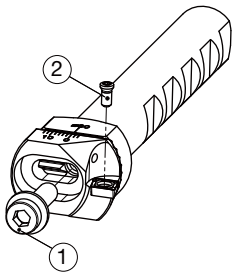


Designation (Shank)	Designation (Insert holder)	DCN	DCX	LH	LF	Insert
256.030.048.115	256.030.006.012	29.75	48.1	85	115	CC**0602...
256.048.088.115	256.048.006.014	47.75	88.1	85	115	CC**0602...

Applicable for 7 MPa pressure coolant

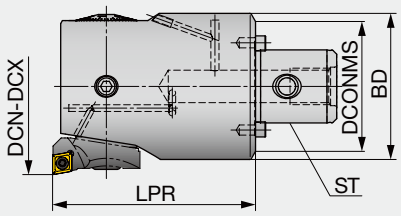
SPARE PARTS

Designation	Clamping screw ①	Clamping screw ②	Wrench
256.0**.006.0**	900.256.005.016	CSTB-2.5S	T-8F



Reference pages: SwissBore256: Inserts → B109 -, CBN → B180, PCD → B190 -

Digital fine boring head ø23.9 - ø203.1

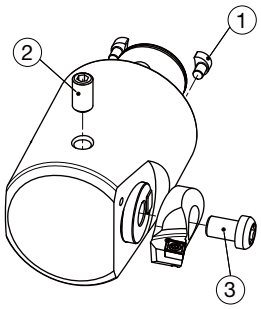


Designation	ST	DCN	DCX	DCONMS	BD	LPR	Insert holder
305.020.024.035	ST1	23.9	31.1	20	22.5	35.5	314.011.024.006/007
305.020.024.035	ST1	29.9	37.1	20	22.5	35.5	314.011.030.006/007
305.025.031.040	ST2	30.9	40.1	25	25	40	314.013.031.006/007
305.025.031.040	ST2	30.9	47.1	25	25	40	314.013.038.006/007
305.032.040.047	ST3	39.9	51.1	32	32	47	314.017.040.006/007
305.032.040.047	ST3	47.9	59.1	32	32	47	314.017.048.006/007
305.039.051.057	ST4	50.9	67.1	39	42	57	314.022.051.006/007
305.039.051.057	ST4	64.9	81.1	39	42	57	314.022.065.006/007
305.050.067.080	ST5	66.9	87.1	50	55	80	314.030.067.009/011
305.050.067.080	ST5	84.9	105.1	50	55	80	314.030.085.009/011
305.064.087.100	ST6+	86.9	116.1	64	72	100	314.030.067.009/011
305.064.087.100	ST6+	104.9	134.1	64	72	100	314.030.085.009/011
305.090.116.130	ST7+	115.9	153.1	90	94	130	314.030.067.009/011
305.090.116.130	ST7+	133.9	171.1	90	94	130	314.030.085.009/011
305.090.116.130	ST7+	153.9	191.1	90	94	130	314.726.003.009/011
305.090.116.130	ST7+	165.9*	203.1*	90	94	130	-

*Option : insert holder (314.726.003.009 or 314.726.003.011) & adapter (900.803.001.006)
Applicable for 7 MPa pressure coolant

SPARE PARTS

Designation	Drive pin ①	Clamping screw ②	Fastening screw ③
305.020.024.035	900.102.020.000	900.304.004.003	900.314.004.006
305.025.031.040	900.102.025.000	900.304.005.004	900.314.005.008
305.032.040.047	900.102.032.000	900.304.006.005	900.314.006.010
305.039.051.057	900.102.039.000	900.304.008.006	900.314.008.012
305.050.067.080	900.102.050.000	900.304.010.010	900.314.010.016
305.064.087.100	900.102.064.000	900.304.010.018	900.314.010.016
305.090.116.130	900.102.090.000	900.304.010.030	900.314.010.016

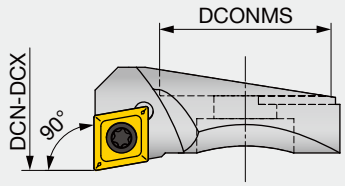




Reference pages: SwissBore305: Insert Holder → K172

SWISSBORE
SwissBore314

Insert holder 90°corner for CC**insert

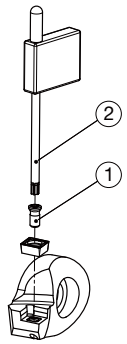


Designation	DCN	DCX	DCONMS	Insert	Boring head
314.011.024.006	23.9	31.1	11	CC**0602**	305.020.024.035
314.011.030.006	29.9	37.1	11	CC**0602**	305.020.024.035
314.013.031.006	30.9	40.1	13	CC**0602**	305.025.031.040
314.013.038.006	37.9	47.1	13	CC**0602**	305.025.031.040
314.017.040.006	39.9	51.1	17	CC**0602**	305.032.040.047
314.017.048.006	47.9	59.1	17	CC**0602**	305.032.040.047
314.022.051.006	50.9	67.1	22	CC**0602**	305.039.051.057
314.022.065.006	64.9	81.1	22	CC**0602**	305.039.051.057
314.030.067.009	66.9	87.1	30	CC**09T3**	305.050.067.080
314.030.085.009	84.9	105.1	30	CC**09T3**	305.050.067.080
314.030.067.009	86.9	116.1	30	CC**09T3**	305.064.087.100
314.030.085.009	104.9	134.1	30	CC**09T3**	305.064.087.100
314.030.067.009	115.9	153.1	30	CC**09T3**	305.090.116.130
314.030.085.009	133.9	171.1	30	CC**09T3**	305.090.116.130
314.726.003.009	153.9	191.1	30	CC**09T3**	305.090.116.130

SPARE PARTS

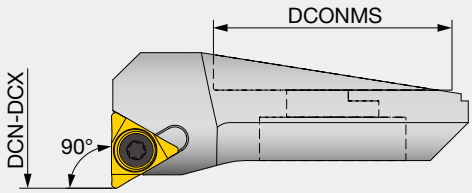



Designation	Clamping screw ①	Wrench ②
314.***.***006	CSTB-2.5S	T-8F
314.***.***009	CSTB-4S	T-15F



Reference pages SwissBore314: Inserts → B109 -, CBN → B180, PCD → B190 - Boring Head → K171

Insert holder 90°corner for TP**insert

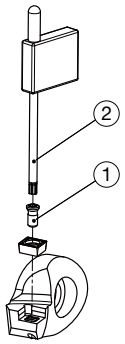


Designation	DCN	DCX	DCONMS	Insert	Boring head
314.011.024.007	23.9	31.1	11	TP**0701**	305.020.024.035
314.011.030.007	29.9	37.1	11	TP**0701**	305.020.024.035
314.013.031.007	30.9	40.1	13	TP**0701**	305.025.031.040
314.013.038.007	37.9	47.1	13	TP**0701**	305.025.031.040
314.017.040.007	39.9	51.1	17	TP**0701**	305.032.040.047
314.017.048.007	47.9	59.1	17	TP**0701**	305.032.040.047
314.022.051.007	50.9	67.1	22	TP**0701**	305.039.051.057
314.022.065.007	64.9	81.1	22	TP**0701**	305.039.051.057
314.030.067.011	66.9	87.1	30	TP**1102**	305.050.067.080
314.030.085.011	84.9	105.1	30	TP**1102**	305.050.067.080
314.030.067.011	86.9	116.1	30	TP**1102**	305.064.087.100
314.030.085.011	104.9	134.1	30	TP**1102**	305.064.087.100
314.030.067.011	115.9	153.1	30	TP**1102**	305.090.116.130
314.030.085.011	133.9	171.1	30	TP**1102**	305.090.116.130
314.726.003.011	153.9	191.1	30	TP**1102**	305.090.116.130

SPARE PARTS




Designation	Clamping screw ①	Wrench ②
314.***.***007	CSTB-2.2L038	T-7F
314.***.***011	CSTB-2.5S	T-8F

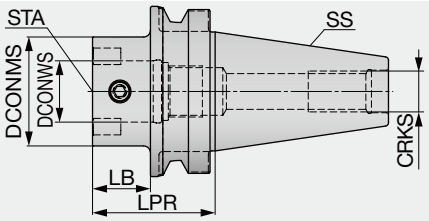


Reference pages SwissBore314: Inserts → B142 -, CBN → B183 -, PCD → B192
Boring Head → K171

SWISSBORE

SwissBore134

Master shank holder for MAS-BT



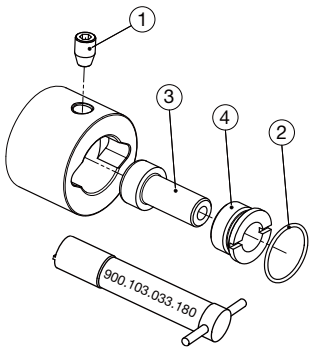
Designation	SS	STA	DCONMS	DCONWS	LPR	LB	CRKS
134.530.050.038	BT30	ST5	50	28	38	16	M12
134.540.020.042	BT40	ST1	20	11	42	15	M16
134.540.025.042	BT40	ST2	25	14	42	15	M16
134.540.032.044	BT40	ST3	32	18	44	17	M16
134.540.039.048	BT40	ST4	39	22	48	21	M16
134.540.050.055	BT40	ST5	50	28	55	28	M16
134.540.064.046	BT40	ST6+	64	36	46	19	M16
134.550.020.063	BT50	ST1	20	11	63	25	M24
134.550.025.063	BT50	ST2	25	14	63	25	M24
134.550.032.065	BT50	ST3	32	18	65	27	M24
134.550.039.069	BT50	ST4	39	22	69	31	M24
134.550.050.072	BT50	ST5	50	28	72	34	M24
134.550.064.072	BT50	ST6+	64	36	72	34	M24
134.550.090.086	BT50	ST7+	90	46	86	48	M24

SPARE PARTS

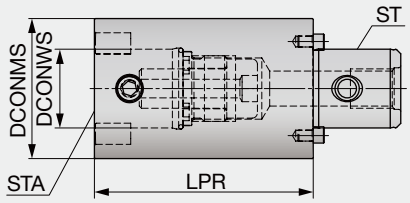





Clamping size	Clamping screw ①	O-ring②	Tension screw③	Threaded ring④
ST1	900.100.004.005	900.101.008.002	-	-
ST2	900.100.005.006	900.101.011.002	-	-
ST3	900.100.006.008	900.101.015.002	-	-
ST4	900.100.008.011	900.101.019.002	-	-
ST5	900.100.010.012	900.101.025.002	-	-
ST6	900.100.012.018	900.101.032.002	-	-
ST6+	900.100.012.018	900.101.032.002	900.102.018.040	900.103.030.020
ST7+	900.100.020.029	900.101.043.002	900.102.024.045	900.103.040.020



Extension adapter



Designation	ST	STA	DCONMS	DCONWS	LPR
164.020.020.020	ST1	ST1	20	11	20
164.020.020.030	ST1	ST1	20	11	30
164.025.025.030	ST2	ST2	25	14	30
164.025.025.045	ST2	ST2	25	14	45
164.032.032.030	ST3	ST3	32	18	30
164.032.032.045	ST3	ST3	32	18	45
164.039.039.040	ST4	ST4	39	22	40
164.039.039.060	ST4	ST4	39	22	60
164.050.050.060	ST5	ST5	50	28	60
164.050.050.090	ST5	ST5	50	28	90
164.064.064.060	ST6+	ST6+	64	36	60
164.064.064.100	ST6+	ST6+	64	36	100
164.090.090.100	ST7+	ST7+	90	46	100
164.090.090.160	ST7+	ST7+	90	46	160

Option : Tension screw & Threading ring of ST+ type

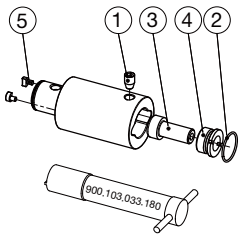
SPARE PARTS







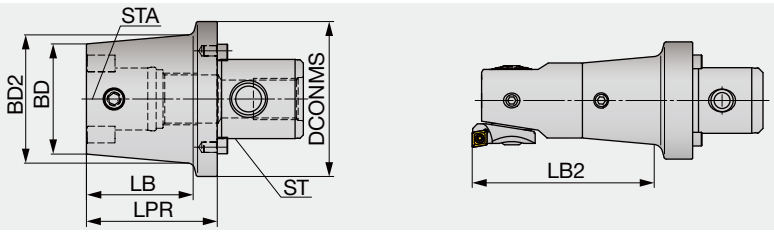
Clamping size	Clamping screw ①	O-ring ②	Tension screw ③	Threaded ring ④	Drive pin ⑤
ST1	900.100.004.005	900.101.008.002	-	-	900.102.020.000
ST2	900.100.005.006	900.101.011.002	-	-	900.102.025.000
ST3	900.100.006.008	900.101.015.002	-	-	900.102.032.000
ST4	900.100.008.011	900.101.019.002	-	-	900.102.039.000
ST5	900.100.010.012	900.101.025.002	-	-	900.102.050.000
ST6	900.100.012.018	900.101.032.002	-	-	900.102.064.000
ST6+	900.100.012.018	900.101.032.002	900.102.018.040	900.103.030.020	900.102.064.000
ST7+	900.100.020.029	900.101.043.002	900.102.024.045	900.103.040.020	900.102.090.000



SWISSBORE

SwissBore184

Reduction adapter



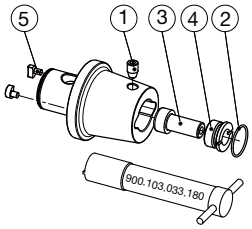
Designation	ST	STA	DCONMS	BD	BD2	LPR	LB	LB2
184.025.020.036	ST2	ST1	25	20	23	36	25	60.5
184.032.025.034	ST3	ST2	32	25	29	34.5	20	60
184.039.032.047	ST4	ST3	39	32	38	47	35	82
184.050.039.040	ST5	ST4	50	39	48	40	25.5	82.5
184.064.050.039	ST6+	ST5	64	50	60	39	24	104

LB2 : Max boring depth with twin cutter or fine boring head
Option : Tension screw & Threading ring of ST+ type

SPARE PARTS



Clamping size	Clamping screw ①	O-ring②	Tension screw③	Threaded ring ④	Drive pin ⑤
ST1	900.100.004.005	900.101.008.002	-	-	900.102.020.000
ST2	900.100.005.006	900.101.011.002	-	-	900.102.025.000
ST3	900.100.006.008	900.101.015.002	-	-	900.102.032.000
ST4	900.100.008.011	900.101.019.002	-	-	900.102.039.000
ST5	900.100.010.012	900.101.025.002	-	-	900.102.050.000
ST6	900.100.012.018	900.101.032.002	-	-	900.102.064.000
ST6+	900.100.012.018	900.101.032.002	900.102.018.040	900.103.030.020	900.102.090.000



PINZBOHR® Boring System

Features

● Highly economical modular tool system

Tools are functionally classified and combined with arbor heads available in a wide variety of shapes and sizes to make up various ring tools. When used in diversified machining processes, this will help reduce the tooling costs considerably.

● Applicable to a wide range of bore diameters from minimum ø5.5 to maximum ø500 mm

The head, for small diameter finish and applicable down to ø5.5 mm. The heads for roughing and finishing can cope with wide-ranging diameters from ø24 ~ ø500 mm when the head is changed and combined with fine adjustment function.

● High rigidity and accuracy

The head and arbor are connected firmly with two tapered threads and drive key, ensuring high rigidity and superior repetition accuracy.

● One action adjustment

The heads for rough boring can be adjusted in terms of two edge dimensions quickly in one action. The adjusting screw is protected with the damage prevention function.

● Abundant insert variation

The inserts used are standard products complying with ISO. Insert grades and chipbreakers applied to various work materials and achining conditions are available in a wide range of shapes and sizes.

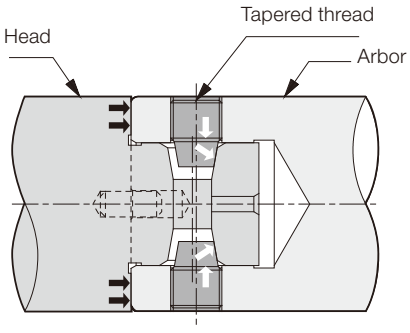
● Variety of cartridges

The rough boring heads of ø80 mm or more in diameter are available with various inserts and step machining cartridges.



Part assembly

Coupling System



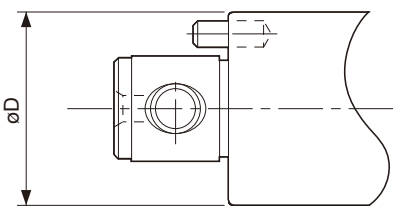
Strong rigid connection between Boring Head and Arbor.

Connection diameter

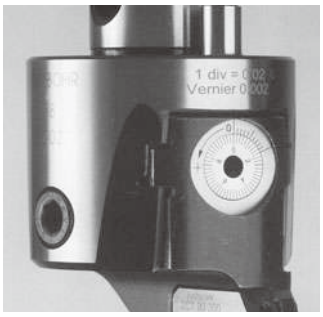
Arbor Designation

Ex) BT35042160

└ øD



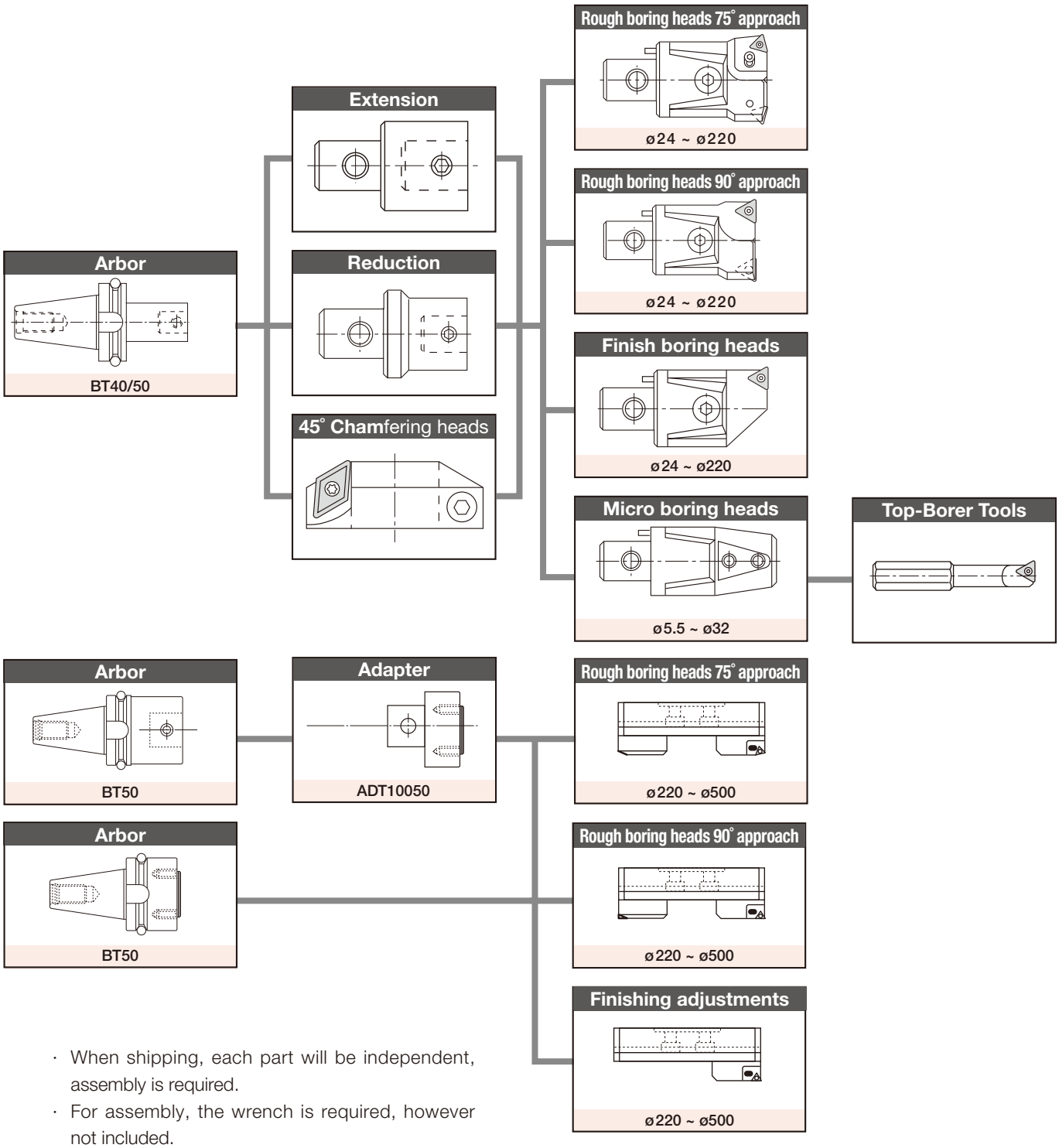
Adjusting of Finishing Heads



Adjusting Accuracy ø0.002 mm

PINZBOHR® Boring System is a tie-up product with MYFHE, S. A.

System



- When shipping, each part will be independent, assembly is required.
- For assembly, the wrench is required, however not included.
- Pull-stud bolt is not included.
- The insert is not included and should be purchased separately.

PINZBOHR® Boring System is a tie-up product with MYFHE, S. A.

Designation System for PINZBOHR®

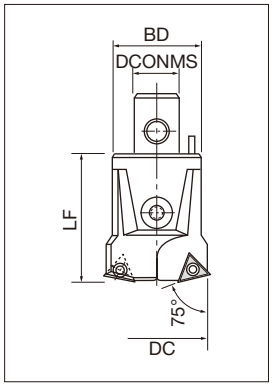
Boring Heads

A	Finish boring heads
D	Rough boring heads
① Application	

75° / 90°
③ Approach angle

2CT / 3CT
④ Cartridge Size
(When cartridge required)

Ex) ① **A** ② **85** ③ **90** ④ **3CT** ⑤ **300**



② Head Size (BD)

BD	Dia. (DC)	BD	Dia. (DC)
22	ø24 ~ 30	85	ø100 ~ 125
27	ø29 ~ 40	100	ø125 ~ 160
32	ø39 ~ 50	200	ø160 ~ 220
42	ø49 ~ 65	300	ø220 ~ 320
54	ø63 ~ 82	400	ø290 ~ 400
68	ø80 ~ 102	500	ø370 ~ 500

⑤ Insert Size

300	TC□□16T3□□
400	CC□□0602□□
402N	CN□□1204□□
409	CC□□09T3□□

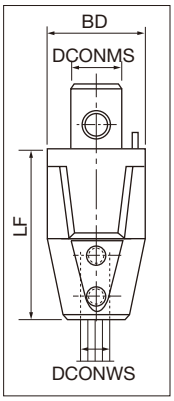
Micro Boring Heads

Ex) ① **A** ② **32** ③ **010**

① Application	
A	Finish boring heads

② Head Size: BD

③ Diameter of setting Boring Bars: DCONWS



Arbor

Ex) ① **BT** ② **340** ③ **22** ④ **50**

① Shank type: BT (MAS BT 403)

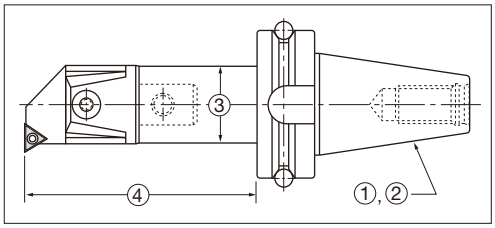
② Taper size

340	BT40
350	BT50
550	#50 (For large boring head)

③ Shank: BD

④ Effective boring depth (LPR)

50	130
55	160
60	200
75	260
80	320
100	–



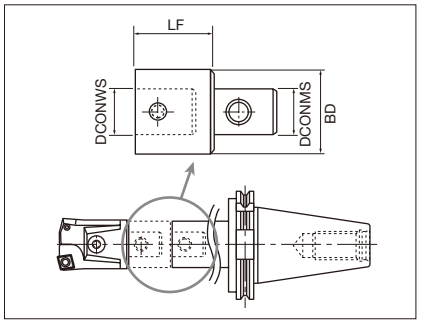
Extension

Ex) ① **P** ② **22** ③ **20**

① Extension

② Shank: BD

③ Extension length: LF



Reduction

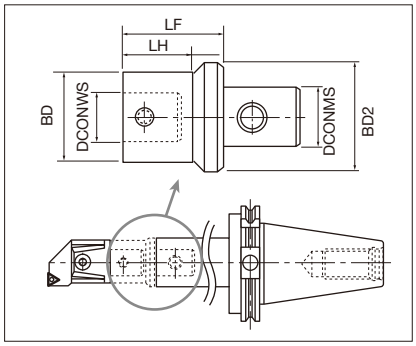
Ex) ① **R** ② **27** ③ **22** ④ **36**

① Reduction

② Shank: Machine side BD

③ Shank: Head side BD2

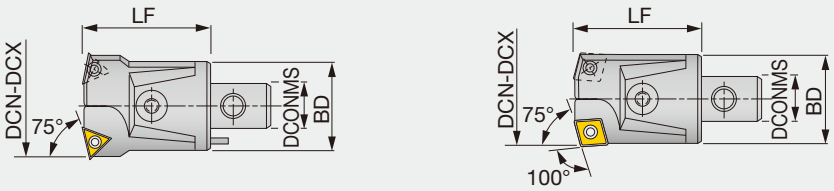
④ Reduction length: LF



PINZBOHR® Boring System is a tie-up product with MYFHE, S. A.

D##75

Roughing head, with 75° approach angle, for ø24 - ø82 mm

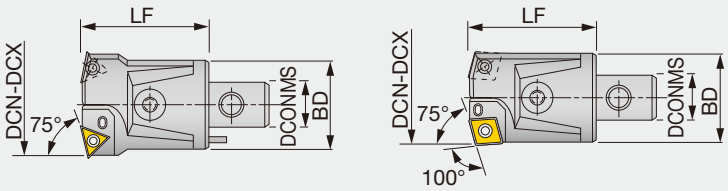


Designation	DCN	DCX	BD	DCONMS	LF	WT(kg)	Insert
D2275400	24	30	22	12	34	0.1	CC**0602...
D2775409	29	40	27	15	42	0.18	CC**09T3...
D3275409	39	50	32	20	45	0.26	CC**09T3...
D4275300	49	65	42	24	56	0.6	TC**16T3...
D4275402N	53	65	42	24	56	0.6	CN**1204...
D5475300	63	82	54	28	66	1.1	TC**16T3...
D5475402N	63	82	54	28	66	1.1	CN**1204...

100° corner: CC**0602, CC**09T3, CN**1204

D##75_CT

Roughing head, with 75° approach angle, for ø80 - ø220 mm, with cartridge

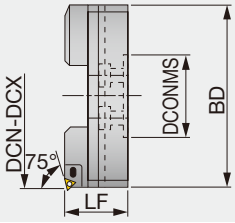


Designation	DCN	DCX	BD	DCONMS	LF	WT(kg)	Insert
D68752CT300	80	102	68	36	86	2.3	TC**16T3...
D68752CT402N	80	102	68	36	86	2.3	CN**1204...
D85753CT300	100	125	85	50	100	4.3	TC**16T3...
D85753CT402N	100	125	85	50	100	4.3	CN**1204...
D100753CT300	125	160	110	60	100	6.8	TC**16T3...
D100753CT402N	125	160	110	60	100	6.8	CN**1204...
D200753CT300	160	220	145	60	100	9	TC**16T3...
D200753CT402N	160	220	145	60	100	9	CN**1204...

100° corner: CN**1204

D##75_CT-Large

Roughing head, with 75° approach angle, for ø220 - ø320 mm, with cartridge



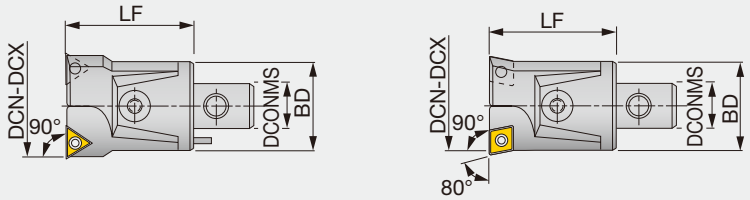
Designation	DCN	DCX	BD	DCONMS	LF	WT(kg)	Insert
D300753CT300	220	320	202	60	90	10.1	TC**16T3...
D300753CT402N	220	320	202	60	90	10.1	CN**1204...

Reference pages
D##75: Inserts → B054 -, B109 -, B137 -, CBN → B170 -, B180, PCD → B188 -
D##75_CT: Inserts → B054 -, B137 -, CBN → B170 -, PCD → B188 -
D##75_CT-Large: Inserts → B054 -, B137 -, CBN → B170 -, PCD → B188 -

PINZBOHR® Boring System is a tie-up product with MYFHE, S. A.

D##90

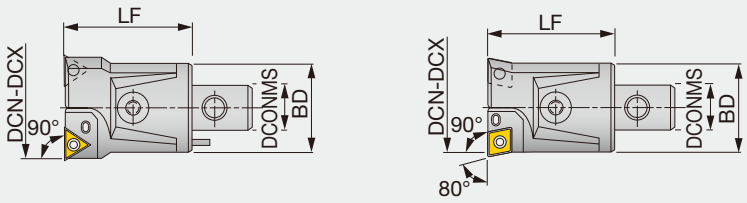
Roughing head, with 90° approach angle, for ø24 - ø82 mm



Designation	DCN	DCX	BD	DCONMS	LF	WT(kg)	Insert
D2290400	24	30	22	12	34	0.1	CC**0602...
D2790409	29	40	27	15	42	0.18	CC**09T3...
D3290409	39	50	32	20	45	0.26	CC**09T3...
D4290300	49	65	42	24	56	0.6	TC**16T3...
D4290402N	53	65	42	24	56	0.6	CN**1204...
D5490300	63	82	54	28	66	1.1	TC**16T3...
D5490402N	63	82	54	28	66	1.1	CN**1204...

D##90_CT

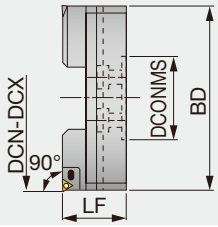
Roughing head, with 90° approach angle, for ø80 - ø220 mm, with cartridge



Designation	DCN	DCX	BD	DCONMS	LF	WT(kg)	Insert
D68902CT300	80	102	68	36	86	2.3	TC**16T3...
D68902CT402N	80	102	68	36	86	2.3	CN**1204...
D85903CT300	100	125	85	50	100	4.3	TC**16T3...
D85903CT402N	100	125	85	50	100	4.3	CN**1204...
D100903CT300	125	160	110	60	100	6.8	TC**16T3...
D100903CT402N	125	160	110	60	100	6.8	CN**1204...
D200903CT300	160	220	145	60	100	9	TC**16T3...
D200903CT402N	160	220	145	60	100	9	CN**1204...

D##90_CT-Large

Roughing head, with 90° approach angle, for ø220 - ø320 mm, with cartridge



Designation	DCN	DCX	BD	DCONMS	LF	WT(kg)	Insert
D300903CT300	220	320	202	60	90	10.1	TC**16T3...
D300903CT402N	220	320	202	60	90	10.1	CN**1204...

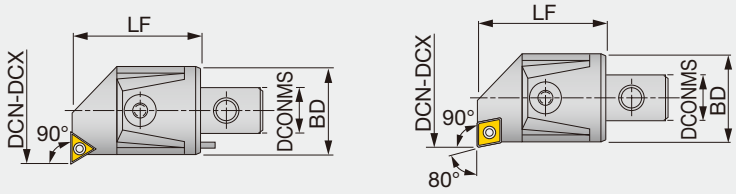
Reference pages

D##90: Inserts → B054 -, B109 -, B137 -, CBN → B170 -, B180, PCD → B188 -
D##90_CT: Inserts → B054 -, B137 -, CBN → B170 -, PCD → B188 -
D##90_CT-Large: Inserts → B054 -, B137 -, CBN → B170 -, PCD → B188 -

PINZBOHR® Boring System is a tie-up product with MYFHE, S. A.

A##90

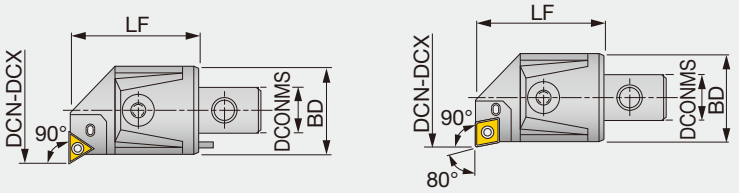
Finishing head, with 90° approach angle, for ø24 - ø82 mm



Designation	DCN	DCX	BD	DCONMS	LF	WT(kg)	Insert
A2290400	24	30	22	12	34	0.08	CC**0602...
A2790409	29	40	27	15	42	0.18	CC**09T3...
A3290409	39	50	32	20	45	0.25	CC**09T3...
A4290300	49	65	42	24	56	0.58	TC**16T3...
A4290402N	53	65	42	24	56	0.58	CN**1204...
A5490300	63	82	54	28	66	1.05	TC**16T3...
A5490402N	63	82	54	28	66	1.05	CN**1204...

A##90_CT

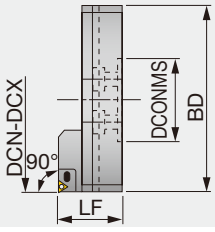
Finishing head, with 90° approach angle, for ø80 - ø220 mm, with cartridge



Designation	DCN	DCX	BD	DCONMS	LF	WT(kg)	Insert
A68902CT300	80	102	68	36	86	2.18	TC**16T3...
A68902CT402N	80	102	68	36	86	2.18	CN**1204...
A85903CT300	100	125	85	50	100	4.2	TC**16T3...
A85903CT402N	100	125	85	50	100	4.2	CN**1204...
A100903CT300	125	160	110	60	100	6.6	TC**16T3...
A100903CT402N	125	160	110	60	100	6.6	CN**1204...
A200903CT300	160	220	145	60	100	8.96	TC**16T3...
A200903CT402N	160	220	145	60	100	8.96	CN**1204...

A##90_CT-Large

Finishing head, with 90° approach angle, for ø220 - ø320 mm, with cartridge



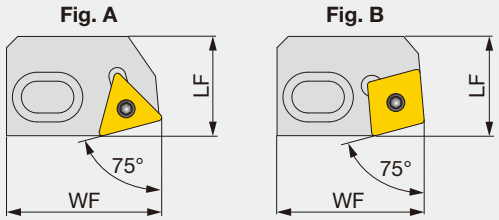
Designation	DCN	DCX	BD	DCONMS	LF	WT(kg)	Insert
A300903CT300	220	320	202	60	90	9.3	TC**16T3...
A300903CT402N	220	320	202	60	90	9.3	CN**1204...

Reference pages
A##90: Inserts → B054 -, B109 -, B137 -, CBN → B170 -, B180, PCD → B188 -
A##90_CT: Inserts → B054 -, B137 -, CBN → B170 -, PCD → B188 -
A##90_CT-Large: Inserts → B054 -, B137 -, CBN → B170 -, PCD → B188 -

PINZBOHR® Boring System is a tie-up product with MYFHE, S. A.

#CT75

Cartridge, with 75° approach angle

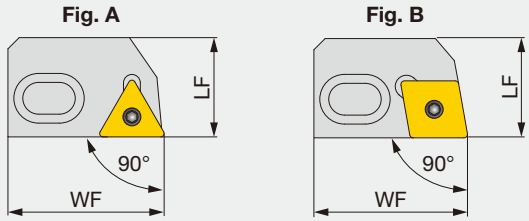


Designation	WF	LF	Insert	Fig.
2CT75300	35	22.5	TC**16T3...	A
2CT75402N	35	22.5	CN**1204...	B
3CT75300	39	28	TC**16T3...	A
3CT75402N	39	28	CN**1204...	B

100° corner: CN**1204

#CT90

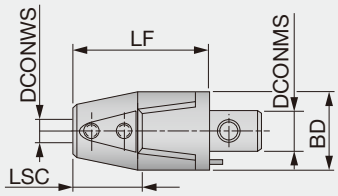
Cartridge, with 90° approach angle



Designation	WF	LF	Insert	Fig.
2CT90300	35	22.5	TC**16T3...	A
2CT90402N	35	22.5	CN**1204...	B
3CT90300	39	28	TC**16T3...	A
3CT90402N	39	28	CN**1204...	B

A##_Small

Finishing head, for ø5.5 - ø38 mm, for top borer boring bars



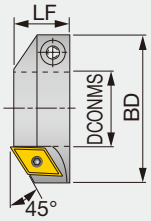
Designation	DCN	DCX	DCONWS	LSC	BD	DCONMS	LF	WT(kg)
A27008	5.5	21	8	24	27	15	50	0.18
A32010	5.5	24	10	29	32	20	58	0.37
A42012	5.5	32	12	37	42	24	70	0.69
A42016	5.5	38	16	37	42	24	70	0.69

Reference pages
#CT75: Inserts → B054 -, B137 -, CBN → B170 -, PCD → B188 -
#CT90: Inserts → B054 -, B137 -, CBN → B170 -, PCD → B188 -

PINZBOHR® Boring System is a tie-up product with MYFHE, S. A.

CH##

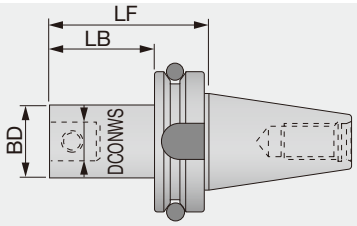
Chamfering tool



Designation	BD	DCONMS	LF	WT(kg)	Parts				Insert
					Screw for inserts	Driver	Wrench	clamping Screw	
CH22	43	22	24	0.1	CSTB-4	T15	P-4	M5×20	DC**11T3...
CH27	48	27	24	0.18	CSTB-4	T15	P-4	M5×20	DC**11T3...
CH32	62	32	30	0.26	CSTB-4	T15	P-5	M6×30	DC**11T3...
CH42	72	42	30	0.33	CSTB-4	T15	P-5	M6×35	DC**11T3...
CH54	94	54	40	0.77	CSTB-5	T20	P-6	M8×45	DC**1504...
CH68	110	68	40	1.02	CSTB-5	T20	P-8	M10×50	DC**1504...
CH85	145	85	55	2.34	CSTB-5	T20	P-10	M12×70	DC**1504...

BT340

Arbor with BT40 taper



Designation	BD	DCONWS	LB	LF	WT(kg)	Parts Tapered thread
BT3402250	22	12	16	46	1.2	22 68
BT3402280	22	12	46	76	1.3	22 68
BT34022100	22	12	66	96	1.39	22 68
BT3402755	27	15	13	40	1.2	27 610
BT34027100	27	15	58	88	1.45	27 610
BT34027130	27	15	88	118	1.6	27 610
BT3403260	32	20	15	43	1.2	32 810
BT34032100	32	20	55	85	1.47	32 810
BT34032130	32	20	85	115	1.7	32 810
BT3404275	42	24	19	48	1.3	42 1014
BT34042160	42	24	104	134	2.25	42 1014
BT34042200	42	24	144	174	2.75	42 1014
BT3405490	54	28	24	54	1.8	54 1220
BT34054160	54	28	94	124	2.8	54 1220
BT34054200	54	28	134	164	3.55	54 1220
BT34068160	68	36	74	95	2.8	68 1624

Reference pages: CH##: Inserts → B119 -, CBN → B181 -, PCD → B190 -

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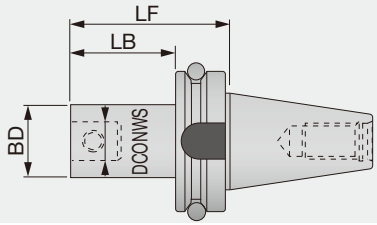
BT350

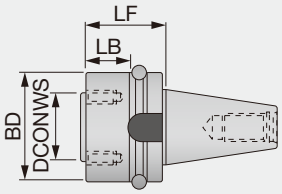
Arbor with BT50 taper



Designation	BD	DCONWS	LB	LF	WT(kg)	Parts Tapered thread
BT3502280	22	12	46	87	4.2	22 68
BT35022100	22	12	66	107	4.35	22 68
BT3502755	27	15	13	51	4.05	27 610
BT35027100	27	15	58	99	4.4	27 610
BT35027130	27	15	88	129	4.5	27 610
BT3503260	32	20	15	54	3.95	32 810
BT35032130	32	20	85	126	4.6	32 810
BT35032160	32	20	115	156	4.8	32 810
BT3504275	42	24	19	59	4.15	42 1014
BT35042160	42	24	104	145	5.2	42 1014
BT35042200	42	24	144	185	5.8	42 1014
BT3505490	54	28	24	65	4.8	54 1220
BT35054160	54	28	94	135	5.8	54 1220
BT35054200	54	28	134	175	6.5	54 1220
BT35068115	68	36	29	68	4.45	68 1624
BT35068200	68	36	114	156	7.2	68 1624
BT35068260	68	36	174	216	8.85	68 1624
BT35085200	85	50	100	142	7.85	85 1630
BT35085260	85	50	160	202	10.65	85 1630
BT35085320	85	50	220	262	13.4	85 1630
BT350100170	100	60	70	95	6.15	100 2035
BT350100260	100	60	160	202	12.85	100 2035
BT350100320	100	60	220	262	16.5	100 2035

BT550

Arbor with BT50 taper for large diameter



Designation	BD	DCONWS	LB	LF	WT(kg)
BT550160	100	60	35	70	6.25

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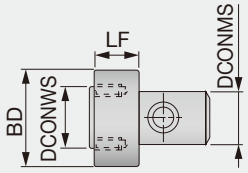
ADT

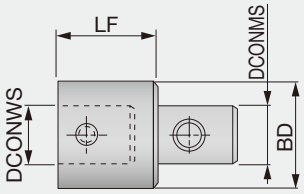
Adapter for large diameter heads



Designation	BD	DCONWS	DCONMS	LF	WT(kg)
ADT10050	100	60	60	50	4.6

P##

Extension adapter, for extending overhang length



Designation	BD	DCONWS	DCONMS	LF	WT(kg)	Parts Tapered thread
P2220	22	12	12	20	0.1	22 68
P2230	22	12	12	30	0.14	22 68
P2730	27	15	15	30	0.18	27 610
P2745	27	15	15	45	0.25	27 610
P3235	32	20	20	35	0.26	32 810
P3252	32	20	20	52	0.38	32 810
P4240	42	24	24	40	0.48	42 1014
P4260	42	24	24	60	0.7	42 1014
P5450	54	28	28	50	0.95	54 1220
P5475	54	28	28	75	1.4	54 1220
P6860	68	36	36	60	1.8	68 1624
P6890	68	36	36	90	2.6	68 1624
P8570	85	50	50	70	3.05	85 1630
P85105	85	50	50	105	4.45	85 1630
P10080	100	60	60	80	4.6	100 2035
P100120	100	60	60	120	7.1	100 2035

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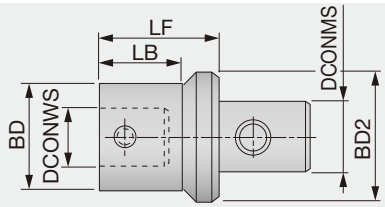
R##

Reduction adapter, for attaching small diameter head to large diameter arbor



Designation	BD	DCONWS	DCONMS	LF	LB	BD2	WT(kg)	Parts Tapered thread
R272236	22	12	15	36	26	27	0.2	22 68
R322240	22	12	20	40	30	32	0.25	22 68
R422258	22	12	24	58	48	42	0.35	22 68
R542286	22	12	28	86	76	54	0.65	22 68
R6822102	22	12	36	102	90	68	1.05	22 68
R322734	27	15	20	34	24	32	0.25	27 610
R422750	27	15	24	50	40	42	0.4	27 610
R542780	27	15	28	80	70	54	0.7	27 610
R682795	27	15	36	95	83	68	1.05	27 610
R423246	32	20	24	46	36	42	0.45	32 810
R543276	32	20	28	76	66	54	0.75	32 810
R683290	32	20	36	90	78	68	1.2	32 810
R544270	42	24	28	70	60	54	0.95	42 1014
R684282	42	24	36	82	70	68	1.4	42 1014
R854295	42	24	50	95	83	85	2.05	42 1014
R685472	54	28	36	72	60	68	1.65	54 1220
R855490	54	28	50	90	78	85	2.5	54 1220
R8568100	68	36	50	100	88	85	3.35	68 1624

PINZBOHR® Boring System is a tie-up product with MYFHE, S. A.

PARTS

Roughing boring heads 75° approach

(Designation is written with spaces.)

Shape	Designation	Screw for inserts	Wrench	Wrench	Clamping screw	Cartridge			
							Adjusting screw	Clamping screw	Washer
	D22 75 400	CSTB-2.5	T8	P-3, P-2	D22 21	–	–	–	–
	D27 75 409	CSTB-4M	T15	P-4, P-2	D27 21	–			
	D32 75 409	CSTB-4M	T15	P-4, P-2.5	D32 21	–			
	D42 75 300	CSTB-4M	T15	P-5, P-3	D42 21	–			
	D42 75 402N	MLP44	P-2.5	P-5, P-3	D42 21	–			
	D54 75 300	CSTB-4M	T15	P-6, P-3	D54 21	–			
	D54 75 402N	MLP44	P-2.5	P-6, P-3	D54 21	–			
	D68 75 2CT 300	CSTB-4M	T15	P-8, P-5, 4, 2	D68 21	2CT 75 300	D68 29	D68 27	D68 28
	D68 75 2CT 402N	MLP44	P-2.5	P-8, P-5, 4, 2	D68 21	2CT 75 402N			
	D85 75 3CT 300	CSTB-4	T15	P-8, P-5, 3	D85 21	3CT 75 300	D85 29	D68 27	D85 28
	D85 75 3CT 402N	MLP44	P-2.5	P-8, P-5, 3	D85 21	3CT 75 402N			
	D100 75 3CT 300	CSTB-4	T15	P-8, P-5, 3	D100 21	3CT 75 300			
	D100 75 3CT 402N	MLP44	P-2.5	P-8, P-5, 3	D100 21	3CT 75 402N			
	D200 75 3CT 300	CSTB-4	T15	P-8, P-5, 3	D100 21	3CT 75 300			
	D200 75 3CT 402N	MLP44	P-2.5	P-8, P-5, 3	D100 21	3CT 75 402N			
	D300 75 3CT 300	CSTB-4	T15	P-5, P-4, 3	D300 58	3CT 75 300			
	D300 75 3CT 402N	MLP44	P-2.5	P-5, P-4, 3	D300 58	3CT 75 402N			
	D400 75 3CT 300	CSTB-4	T15	P-5, P-4, 3	D300 58	3CT 75 300			
	D400 75 3CT 402N	MLP44	P-2.5	P-5, P-4, 3	D300 58	3CT 75 402N			
	D500 75 3CT 300	CSTB-4	T15	P-5, P-4, 3	D300 58	3CT 75 300			
	D500 75 3CT 402N	MLP44	P-2.5	P-5, P-4, 3	D300 58	3CT 75 402N			

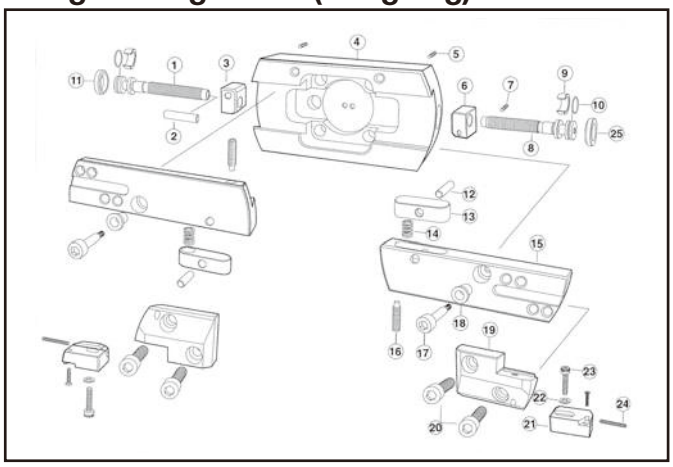
Roughing boring heads 90° approach

(Designation is written with spaces.)

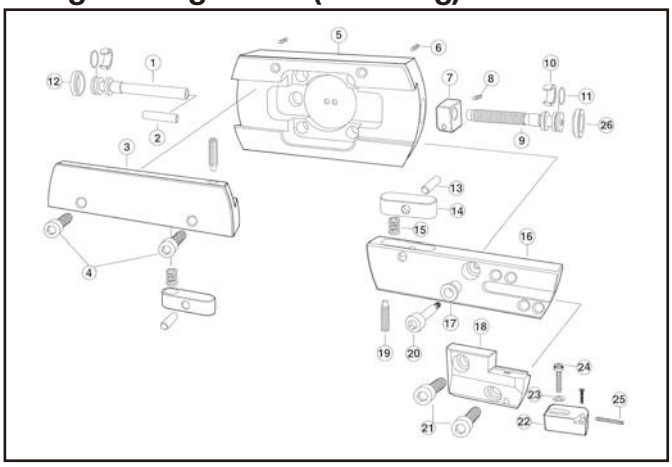
Shape	Designation	Screw for inserts	Wrench	Wrench	Clamping screw	Cartridge			
							Adjusting screw	Clamping screw	Washer
	D22 90 400	CSTB-2.5	T8	P-3, P-2	D22 21	–	–	–	–
	D27 90 409	CSTB-4M	T15	P-4, P-2	D27 21	–			
	D32 90 409	CSTB-4M	T15	P-4, P-2.5	D32 21	–			
	D42 90 300	CSTB-4M	T15	P-5, P-3	D42 21	–			
	D42 90 402N	MLP44	P-2.5	P-5, P-3	D42 21	–			
	D54 90 300	CSTB-4M	T15	P-6, P-3	D54 21	–			
	D54 90 402N	MLP44	P-2.5	P-6, P-3	D54 21	–			
	D68 90 2CT 300	CSTB-4M	T15	P-8, P-5, 4, 2	D68 21	2CT 90 300	D68 29	D68 27	D68 28
	D68 90 2CT 402N	MLP44	P-2.5	P-8, P-5, 4, 2	D68 21	2CT 90 402N			
	D85 90 3CT 300	CSTB-4	T15	P-8, P-5, 3	D85 21	3CT 90 300	D85 29	D68 27	D85 28
	D85 90 3CT 402N	MLP44	P-2.5	P-8, P-5, 3	D85 21	3CT 90 402N			
	D100 90 3CT 300	CSTB-4	T15	P-8, P-5, 3	D100 21	3CT 90 300			
	D100 90 3CT 402N	MLP44	P-2.5	P-8, P-5, 3	D100 21	3CT 90 402N			
	D200 90 3CT 300	CSTB-4	T15	P-8, P-5, 3	D100 21	3CT 90 300			
	D200 90 3CT 402N	MLP44	P-2.5	P-8, P-5, 3	D100 21	3CT 90 402N			
	D300 90 3CT 300	CSTB-4	T15	P-5, P-4, 3	D300 58	3CT 90 300			
	D300 90 3CT 402N	MLP44	P-2.5	P-5, P-4, 3	D300 58	3CT 90 402N			
	D400 90 3CT 300	CSTB-4	T15	P-5, P-4, 3	D300 58	3CT 90 300			
	D400 90 3CT 402N	MLP44	P-2.5	P-5, P-4, 3	D300 58	3CT 90 402N			
	D500 90 3CT 300	CSTB-4	T15	P-5, P-4, 3	D300 58	3CT 90 300			
	D500 90 3CT 402N	MLP44	P-2.5	P-5, P-4, 3	D300 58	3CT 90 402N			

PINZBOHR® Boring System is a tie-up product with MYFHE, S. A.

Large boring heads (Roughing)



Large boring heads (Finishing)

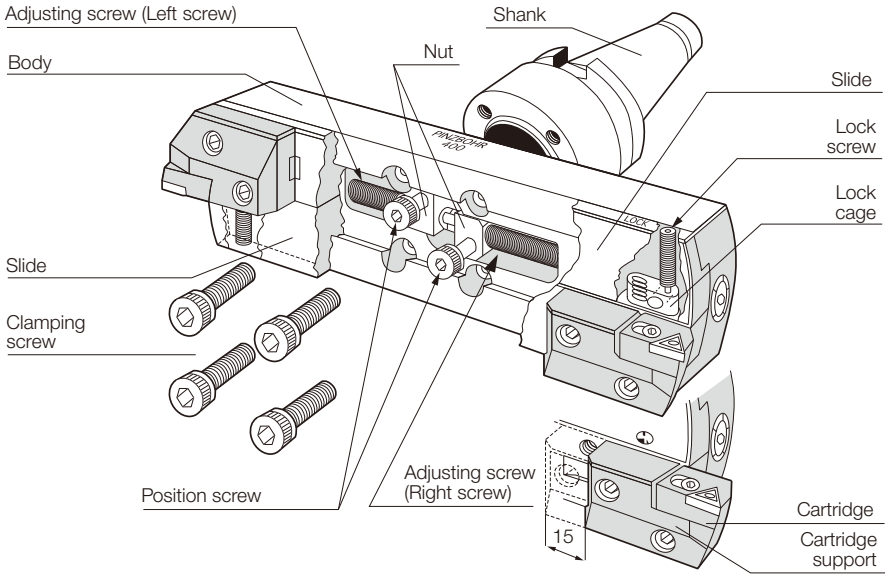


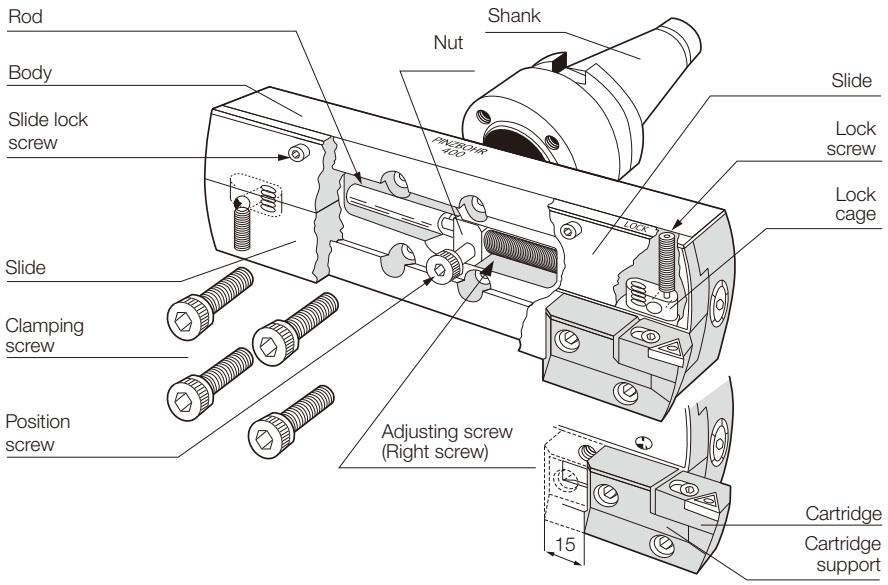
size	D300□□□□□□□□	D400□□□□□□□□	D500□□□□□□□□
①	D300 51	D400 51	D500 51
②	D300 66	D300 66	D300 66
③	D300 55	D300 55	D300 55
④	D300 03	D400 03	D500 03
⑤	D68 23	D68 23	D68 23
⑥	D300 54	D300 54	D300 54
⑦	D300 65	D300 65	D300 65
⑧	D300 50	D400 50	D500 50
⑨	A68 16	A68 16	A68 16
⑩	A68 25	A68 25	A68 25
⑪	A68 15	A68 15	A68 15
⑫	D300 60	D300 60	D300 60
⑬	D300 56	D300 56	D300 56
⑭	D300 59	D300 59	D300 59
⑮	D300 01	D400 01	D500 01
⑯	D300 58	D300 58	D300 58
⑰	D300 57	D300 57	D300 57
⑱	D300 62	D300 62	D300 62
⑲	D300 49	D300 49	D300 49
⑳	D300 61	D300 61	D300 61
㉑	3CT□□ □□□	3CT□□ □□□	3CT□□ □□□
㉒	D68 28	D68 28	D68 28
㉓	D85 27	D85 27	D85 27
㉔	D85 29	D85 29	D85 29
㉕	D300 15	D300 15	D300 15

size	D300□□□□□□□□	D400□□□□□□□□	D500□□□□□□□□
①	A300 52	A400 52	A500 52
②	D300 66	D300 66	D300 66
③	A300 02	A400 02	A500 02
④	A300 63	A300 63	A300 63
⑤	D300 03	D400 03	D500 03
⑥	D68 23	D68 23	D68 23
⑦	D300 54	D300 54	D300 54
⑧	D300 65	D300 65	D300 65
⑨	D300 50	D400 50	D500 50
⑩	A68 16	A68 16	A68 16
⑪	A68 25	A68 25	A68 25
⑫	A68 15	A68 15	A68 15
⑬	D300 60	D300 60	D300 60
⑭	D300 56	D300 56	D300 56
⑮	D300 59	D300 59	D300 59
⑯	D300 01	D400 01	D500 01
⑰	D300 62	D300 62	D300 62
⑱	D300 49	D300 49	D300 49
⑲	D300 58	D300 58	D300 58
⑳	D300 57	D300 57	D300 57
㉑	D300 61	D300 61	D300 61
㉒	3CT□□ □□□	3CT□□ □□□	3CT□□ □□□
㉓	D68 28	D68 28	D68 28
㉔	D85 27	D85 27	D85 27
㉕	D85 29	D85 29	D85 29
㉖	D300 15	D300 15	D300 15

PINZBOHR® Boring System is a tie-up product with MYFHE, S. A.

LARGE BORING HEADS

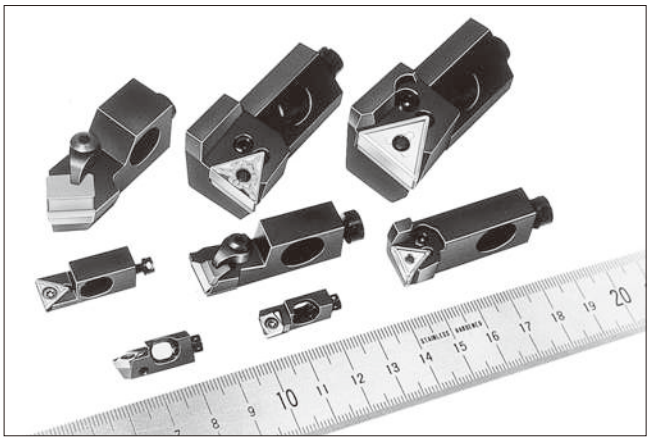




PINZBOHR® Boring System is a tie-up product with MYFHE, S. A.

Cartridge

Features of Cartridges



- **Available in a wide range of shank sizes. (06CA ~ 20CA)**
- **Variety of types and sizes for a wide range of boring operations.**

PN Pin-lock type, negative rake cartridges excel in tooling economy.

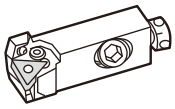
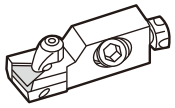
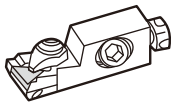
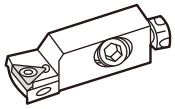
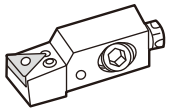
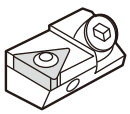
SP Screw-on type, positive rake cartridges featuring more free cutting action and machining accuracy.

CP Clamp-on type, positive rake cartridges featuring a variety of styles and sizes.

CE Clamp-on type, highly positive rake cartridges provide free cutting action and used for machining non-ferrous metals.

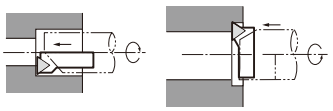
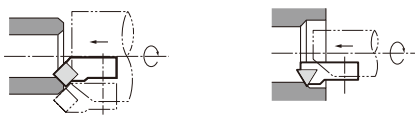
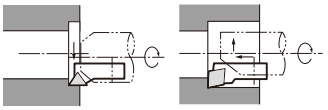
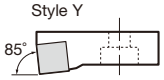
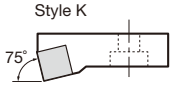
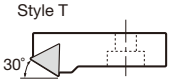
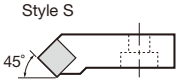
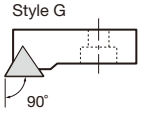
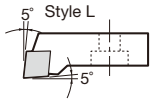
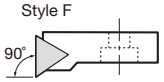
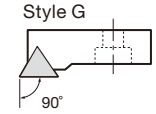
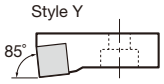
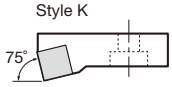
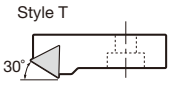
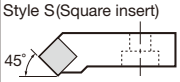
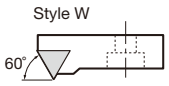
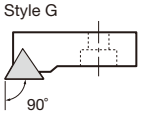
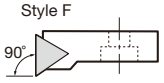
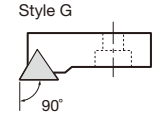
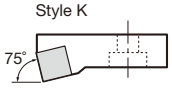
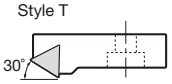
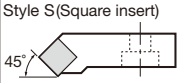
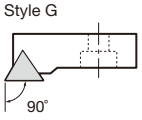
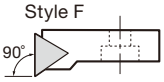
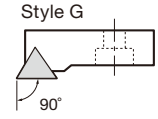
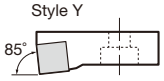
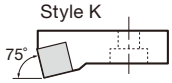
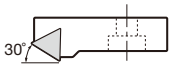
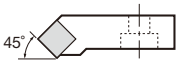
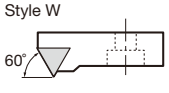
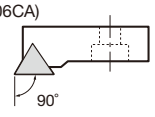
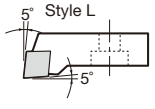
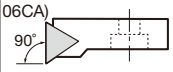
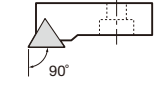
PNE Pin-lock type, negative rake cartridges used only for external machining.

List of Cartridges

Type	Appearance	Size	Min. bore dia. (mm)	Cutting edge height (mm)	Rake angle	Applicable Insert		Clamping mechanism	No. of items	Features and notes
						Relief angle	Hole			
PN		10CA	40	10	Negative	0°	With ISO hole	Pin-lock	12	• Excellent in economy
		12CA	50	12					14	
		16CA	60	16					14	
		20CA	70	20					10	
CP		10CA	40	10	Positive	11°	Without	Clamp-on	16	• Tough insert • Variety of styles and sizes
		12CA	50	12					16	
		16CA	60	16					16	
		20CA	70	20					2	
CE		10CA	40	10	Positive	20°	Without	Clamp-on	16	• More free cutting action • Best suitable for machining non-ferrous metals
		12CA	50	12					16	
SP		06CA	20	6	Positive	11°	With ISO hole	Screw-on	10	• Provides free cutting action • Good chip control
		08CA	25	8					10	
		10CA	40	10					16	
		12CA	50	12					16	
PNE		10CA	–	10	Negative	0°	With ISO hole	Pin-lock	8	• For external use • Made to order
		12CA	–	12					10	
A		(09CA) (Corresponds to 09CA)	32	9	Positive	11°	With Tungaloy's standard hole	Screw-on	12	• Mini-cartridge

Note: Min. bore diameters shown above are for axial mounting.

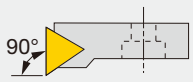
List of ISO Standard Cartridges by Application

Type	Boring		Chamfering and boring			Facing and boring	
			External and internal 45-chamfering (PSSN type can not be used for external chamfering) 				
PN	Cutting edge angle 85° Style Y  **PSYN** K206	Cutting edge angle 75° Style K  **PSKN** K197	Cutting edge angle 30° Style T  **PTTN** K204	Cutting edge angle 45° Style S  **PSSN** K201		Cutting edge angle 0° Style G  **PTGN** K195	Cutting edge angle 5° Style L  **PCLN** K199
	Cutting edge angle 90° Style F  **PTFN** K193	Cutting edge angle 0° Style G  **PTGN** K195					
CP	Cutting edge angle 85° Style Y  **CSYP** K207	Cutting edge angle 75° Style K  **CSKP** K197	Cutting edge angle 30° Style T  **CTTP** K205	Cutting edge angle 45° Style S(Square insert)  **CSSP** K201 **CTSP** K203	Cutting edge angle 60° Style W  **CTWP** K200	Cutting edge angle 0° Style G  **CTGP** K195	
	Cutting edge angle 90° Style F  **CTFP** K193	Cutting edge angle 90° Style G  **CTGP** K195					
CE		Cutting edge angle 75° Style K  **CSKE** K198	Cutting edge angle 30° Style T  **CTTE** K205	Cutting edge angle 45° Style S(Square insert)  **CSSE** K202 **CTSE** K203		Cutting edge angle 0° Style G  **CTGE** K196	
	Cutting edge angle 90° Style F  **CTFE** K194	Cutting edge angle 90° Style G  **CTGE** K196					
SP	Cutting edge angle 85° Style Y  **SSYP** K207	Cutting edge angle 75° Style K  **SSKP** K198	Cutting edge angle 30° Style T (80° rhombic only for 06CA)  **STTP** K206 **SCTP** K206 (06CA)	Cutting edge angle 45° Style S (Square insert) (80° rhombic only for 06CA)  **SSSP** K202 **STSP** K204 **SCSP** K204 (06CA)	Cutting edge angle 60° Style W  **STWP** K200	Cutting edge angle 0° Style G (80° rhombic only for 06CA)  **STGP** K196	Cutting edge angle 5° Style L  **SCLP** K199 (06CA)
	Cutting edge angle 90° Style F (80° rhombic only for 06CA)  **STFP** K194 **SCFP** K194 (06CA)	Cutting edge angle 0° Style G (80° rhombic only for 06CA)  **STGP** K196					

Please see the each product page (K***) for the product details.

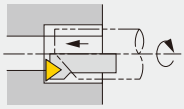
PN PTFN-CA

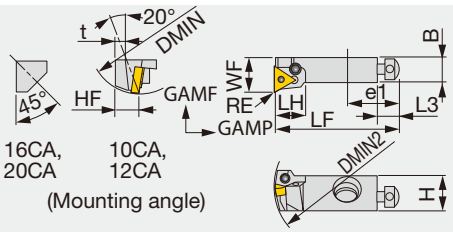
Lever-lock cartridge, with 90° approach angle, for negative 60° triangular inserts



Cutting edge style F

Main application
Shoulder boring





(Mounting angle)

Right hand (R) shown. 80° rhombic insert used for 06CA.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
PTFNR/L10CA-11	40	55	0.4	14	50	12	10	14.5	10	20	8	-6°	-8°	5	TN**1103...
PTFNR/L12CA-16	50	75	0.8	20	55	16	12	19.5	15	20	8	-6°	-8°	6	TN**1604...
PTFNR/L16CA	55	-	0.8	25	63	23	16	16	17	25	8	-6°	-8°	0	TN**1604...
PTFNR/L20CA	70	-	0.8	25	70	28	20	20	19	30	10	-6°	-7°	0	TN**2204...

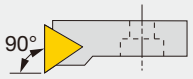
- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Lever	Clamping screw	Axial adjusting screw	Radial adjusting screw	Cartridge setting screw	Wrench	Shim retainer	Sizing plate (Optional parts)	Sizing plate ass'y (Optional parts)
PTFNR/L10CA-11	-	LCL22N	LCS22	ASM54	SSHM4-4	CHHM6-15	P-2F,P-5	-	-	PSTR/L10
PTFNR/L12CA-16	-	LCL33N	LCS33	ASM54	SSHM4-4	CHHM6-25	P-2F,P-5	-	-	PSTR/L12
PTFNR/L16CA	LST317CA	LCL3	LCS3	ASM6	SSHM5-6	BHM8-25U	P-2.5,P-5	LSP3	S0816B/S1016B	-
PTFNR/L20CA	LST42CA	LCL4	LCS4	ASM6	SSHM5-6	BHM8-30U	P-2.5,P-3,P-5	LSP4	S0820B/S1020B	-

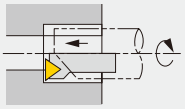
CP CTFP-CA

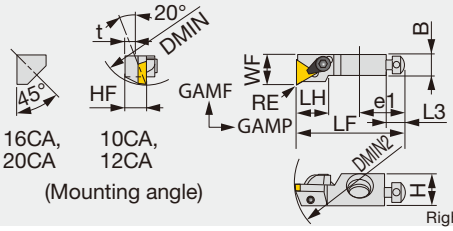
Clamp-on cartridge, with 90° approach angle, for 11° clearance triangular inserts



Cutting edge style F

Main application
Shoulder boring





(Mounting angle)

Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
CTFPR/L10CA-11	40	55	0.4	14	50	15	10	14.5	10	20	8	4°	0°	5	TP**1103...
CTFPR/L12CA-16	50	75	0.8	20	55	17	12	19.5	15	20	8	5°	2°	6	TP**1603...
CTFPR/L16CA	55	-	0.8	25	63	23	16	16	17	25	8	5°	0°	0	TP**1603...
CTFPR/L20CA	70	-	0.8	25	70	22	20	20	19	30	10	5°	0°	0	TP**2204...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

SPARE PARTS

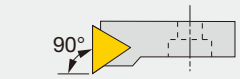
Designation	Shim	Shim screw	Clamping screw	Axial adjusting screw	Radial adjusting screw	Cartridge setting screw	Wrench	Chipbreaker piece	Sizing plate (Optional parts)	Sizing plate ass'y (Optional parts)
CTFPR/L10CA-11	-	-	CSG-5 (CSG-5S)	ASM54	SSHM4-10	CHHM6-15	P-2,P-2.5,P-5	CBT-2M	-	PSTR/L10
CTFPR/L12CA-16	-	-	CSG-6 (CSG-6S)	ASM54	SSHM4-14	CHHM6-25	P-2,P-3,P-5	CBT-3M	-	PSTR/L12
CTFPR/L16CA	PAT-32	SM3X0.5X8	CSG-8S	ASM6	SSHM5-16	BHM8-25U	P-2.5,P-4	-	S0816B/S1016B	-
CTFPR/L20CA	PAT-42	SM3X0.5X8	CSG-8	ASM6	SSHM6-16	BHM8-30U	P-3,P-4	-	S0820B/S1020B	-

- Cartridges for K-style cutting edge: S0816A or S1016A; S-style cutting edge: S0816C or S1016B
- When not using chipbreaker piece, clamping screw in ( ) should be used.

Reference pages
PN PTFN-CA: Inserts → B084 -, CBN → B176 -, PCD → B188 -
CP CTFP-CA: Inserts → B142 -, CBN → B183 -, PCD → B192

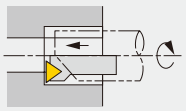
CE CTFE-CA

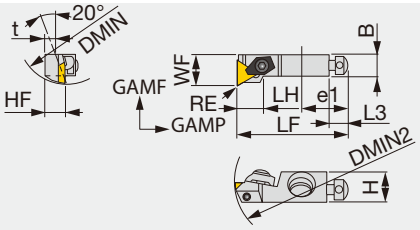
Clamp-on cartridge, with 90° approach angle, for 20° clearance triangular inserts



Cutting edge style **F**

Main application
Shoulder boring





Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
CTFER/L10CA-11	40	55	0.4	14	50	12	10	14.5	10	20	8	10°	5°	5	TE**1103...
CTFER12CA-16	50	75	0.8	20	55	18	12	19.5	15	20	8	10°	5°	6	TE**1603...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

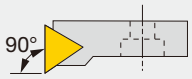
SPARE PARTS

Designation	Clamping screw	Axial adjusting screw	Radial adjusting screw	Cartridge setting screw	Wrench	Chipbreaker piece	Sizing plate ass'y (Optional parts)
CTFER/L10CA-11	CSW-40	ASM54	SSHM4-8	CHHM6-15	P-2,P-2.5,P-5	CBT-2M	PSTR/L10
CTFER/L12CA-16	CSW-50	ASM54	SSHM4-14	CHHM6-25	P-2,P-3,P-5	CBT-3M	PSTR/L12

SP STFP-CA / SCFP-CA

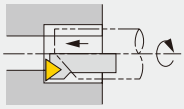
Screw-on cartridge, with 90° approach angle, for 11° clearance triangular inserts and rhombic inserts

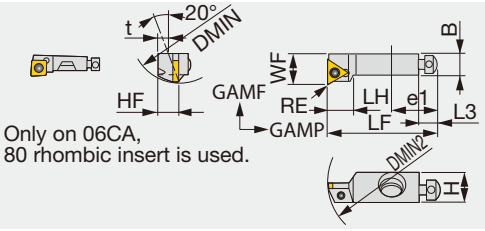
80° rhombic insert used for 06CA.



Cutting edge style **F**

Main application
Shoulder boring





Only on 06CA,
80 rhombic insert is used.

Right hand (R) shown. 80° rhombic insert used for 06CA.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
SCFPR/L06CA-05	20	30	0.4	8	25	8.5	6	7.5	5.5	12	4.5	0°	0°	3.5	CP**0502...
STFPR/L08CA-09	25	35	0.4	10	32	10	8	11.5	7.5	17	6	4°	0°	4.5	TP**0902...
STFPR/L10CA-11	40	55	0.4	14	50	12	10	14.5	10	20	8	4°	0°	5	TP**1102...
STFPR/L12CA-16	50	75	0.8	20	55	17	12	19.5	15	20	8	5°	2°	6	TP**16T3...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

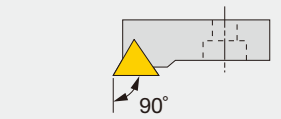
SPARE PARTS

Designation	Clamping screw	Axial adjusting screw	Radial adjusting screw	Cartridge setting screw	Wrench	Torx wrench	Sizing plate ass'y (Optional parts)
SCFPR/L06CA-05	CSTB-2.2S	ASM34S	SSHM3-6	CHHM3.5-10	P-1.5,P-3	T-7F	PT06
STFPR/L08CA-09	CSTB-2.2S	ASM34L	SSHM3-6	CHHM4-10	P-1.5,P-3	T-7F	PSTR/L08
STFPR/L10CA-11	CSTB-2.5	ASM54	SSHM4-10	CHHM6-15	P-2,P-5	T-8F	PSTR/L10
STFPR/L12CA-16	CSTB-4S	ASM54	SSHM4-14	CHHM6-25	P-2,P-5	T-15F	PSTR/L12

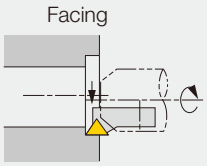
Reference pages
CE CTFE-CA: Inserts → Special
SP STFP-CA: Inserts → B117 (CP**), B142 - (TP**), CBN → B183 -, PCD → B192

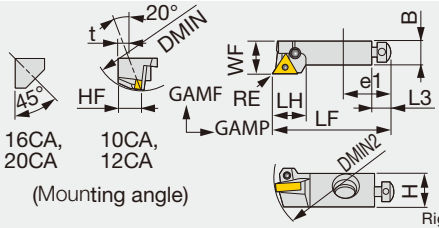
PN PTGN-CA

Lever-lock cartridge, with 90° approach angle, for negative 60° triangular inserts



Cutting edge style **G**





(Mounting angle)

Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
PTGNR/L10CA-11	40	55	0.4	14	50	14	10	14.5	10	20	8	-6°	-8°	5	TN**1103...
PTGNR/L12CA-16	50	75	0.8	20	55	20	12	19.5	15	20	8	-6°	-8°	5	TN**1604...
PTGNR/L16CA	60	75	0.8	25	63	23	16	16	17	25	8	-6°	-10°	0	TN**1604...
PTGNR20CA	70	90	0.8	25	70	28	20	20	19	30	10	-6°	-8°	0	TN**2204...

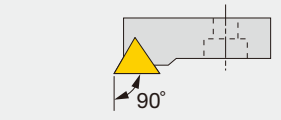
- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- **RE: Standard corner radius

SPARE PARTS

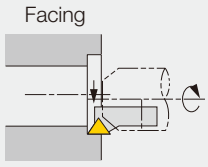
Designation	Shim	Lever	Clamping screw	Axial adjusting screw	Radial adjusting screw	Cartridge setting screw	Wrench	Shim Shim retainer	Sizing plate (Optional parts)	Sizing plate ass'y (Optional parts)
PTGNR/L10CA-11	-	LCL22N	LCS22	ASM54	SSHM4-4	CHHM6-15	P-2F,P-5	-	-	PSTR/L10
PTGNR/L12CA-16	-	LCL33N	LCS33	ASM54	SSHM4-4	CHHM6-25	P-2F,P-5	-	-	PSTR/L12
PTGNR/L16CA	LST317CA	LCL3	LCS3	ASM6	SSHM5-6	BHM8-25U	P-2.5,P-5	LSP3	S0816B/S1016B	-
PTGNR/L20CA	LST42CA	LCL4	LCS4	ASM6	SSHM5-6	BHM8-30U	P-2.5,P-3,P-5	LSP4	S0820B/S1020B	-

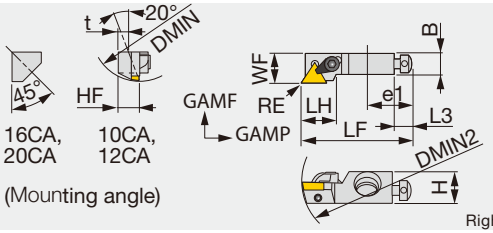
CP CTGP-CA

Clamp-on cartridge, with 90° approach angle, for 11° clearance triangular inserts



Cutting edge style **G**





(Mounting angle)

Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
CTGPR/L10CA-11	40	55	0.4	14	50	16	10	14.5	10	20	8	4°	0°	5	TP**1103...
CTGPR/L12CA-16	50	75	0.8	20	55	21	12	19.5	15	20	8	3°	2°	5	TP**1603...
CTGPL16CA	55	75	0.8	25	63	25	16	16	17	25	8	0°	0°	0	TP**1603...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Shim screw	Clamping screw	Axial adjusting screw	Radial adjusting screw	Cartridge setting screw	Wrench	Chipbreaker piece	Sizing plate (Optional parts)	Sizing plate ass'y (Optional parts)
CTGPR/L10CA-11	-	-	CSG-5 (CSG-5S)	ASM54	SSHM4-10	CHHM6-15	P-2,P-2.5,P-5	CBT-2M	-	PSTR/L10
CTGPR/L12CA-16	-	-	CSG-6 (CSG-6S)	ASM54	SSHM4-14	CHHM6-25	P-2,P-3,P-5	CBT-3M	-	PSTR/L12
CTGPR/L16CA	PAT-32	SM3X0.5X8	CSG-8S	ASM6	SSHM5-16	BHM8-25U	P-2.5,P-4	-	S0816B/S1016B	-

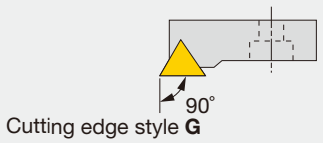
Reference pages

PN PTGN-CA: Inserts → B084 -, CBN → B176 -, PCD → B188 -

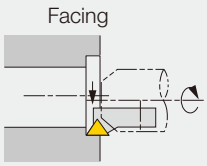
CP CTGP-CA: Inserts → B142 -, CBN → B183 -, PCD → B192

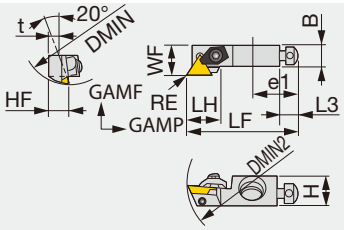
CE CTGE-CA

Clamp-on cartridge, with 90° approach angle, for 20° clearance triangular inserts



Cutting edge style **G**





Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
CTGER/L10CA-11	40	55	0.4	14	50	15	10	14.5	10	20	8	5°	10°	5	TE**1103...
CTGER/L12CA-16	50	75	0.8	20	55	20	12	19.5	15	20	8	5°	10°	6	TE**1603...

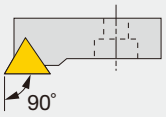
• **RE: Standard corner radius

SPARE PARTS

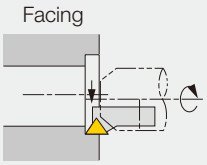
Designation	Clamping screw	Axial adjusting screw	Radial adjusting screw	Cartridge setting screw	Wrench	Chipbreaker piece	Sizing plate ass'y (Optional parts)
CTGER/L10CA-11	CSW-40	ASM54	SSHM4-8	CHHM6-15	P-2,P-2.5,P-5	CBT-2M	PSTR/L10
CTGER/L12CA-16	CSW-50	ASM54	SSHM4-14	CHHM6-25	P-2,P-3,P-5	CBT-3M	PSTR/L12

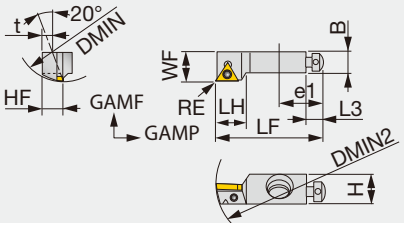
SP STGP-CA

Screw-on cartridge, with 90° approach angle, for 11° clearance triangular inserts



Cutting edge style **G**





Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
STGPR/L08CA-09	25	35	0.4	10	32	10.9	8	11.5	7.5	17	6	4°	0°	6	TP**0902...
STGPR/L10CA-11	40	55	0.4	14	50	14	10	14.5	10	20	8	4°	0°	8	TP**1102...
STGPL12CA-16	50	75	0.8	20	55	19	12	19.5	15	20	8	5°	2°	8	TP**16T3...

• **RE: Standard corner radius

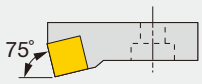
SPARE PARTS

Designation	Clamping screw	Axial adjusting screw	Radial adjusting screw	Cartridge setting screw	Wrench	Torx wrench	Sizing plate ass'y (Optional parts)
STGPR/L08CA-09	CSTB-2.2S	ASM34L	SSHM3-6	CHHM4-10	P-1.5,P-3	T-7F	PSTR/L08
STGPR/L10CA-11	CSTB-2.5	ASM54	SSHM4-10	CHHM6-15	P-2,P-5	T-8F	PSTR/L10
STGPR/L12CA-16	CSTB-4S	ASM54	SSHM4-14	CHHM6-25	P-2,P-5	T-15F	PSTR/L12

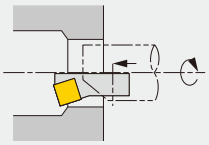
Reference pages
CE CTGE-CA: Inserts → Special
SP STGP-CA: Inserts → B142 -, CBN → B183 -, PCD → B192

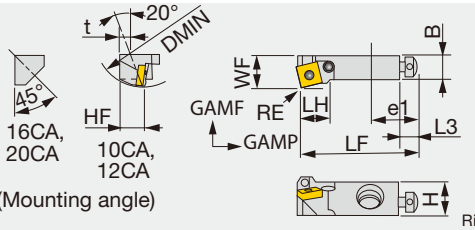
PN PSKN-CA

Lever-lock cartridge, with 75° approach angle, for negative 90° square inserts



Cutting edge style **K**





Right hand (R) shown.

Designation	DMIN	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
PSKNR10CA-09	40	0.8	14	50	12	10	14.5	10	20	8	-6°	-8°	5	SN**0903...
PSKNR/L12CA-12	50	0.8	20	55	16	12	19.5	15	20	8	-6°	-8°	5	SN**1204...
PSKNR/L16CA	55	0.8	25	63	23	16	16	17	25	8	-6°	-8°	0	SN**1204...
PSKNR20CA	70	1.2	25	70	28	20	20	19	30	10	-6°	-7°	0	SN**1506...

- In above table, DMIN is min. bore dia. for axial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

SPARE PARTS







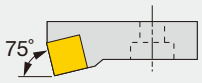




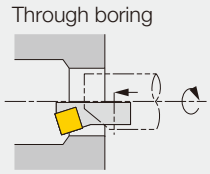

Designation	Shim	Lever	Cartridge setting screw	Axial adjusting screw	Radial adjusting screw	Cartridge setting screw	Wrench	Shim Shim retainer	Sizing plate (Optional parts)	Sizing plate ass'y (Optional parts)
PSKNR/L10CA-09	-	LCL32N	LCS22	ASM54	SSHM4-4	CHHM6-15	P-2F,P-5	-	-	PSTR/L10
PSKNR/L12CA-12	-	LCL43N	LCS43	ASM54	SSHM4-4	CHHM6-25	P-2,P-2.5,P-5	-	-	PSTR/L12
PSKNR/L16CA	LSS42CA	LCL4	LCS4CA	ASM6	SSHM5-6	BHM8-25U	P-2.5,P-3,P-5	LSP4	S0816B/S1016B	-
PSKNR/L20CA	LSS53CA	LCL5	LCS5CA	ASM6	SSHM5-6	BHM8-30U	P-2.5,P-3,P-5	LSP5	S0820B/S1020B	-

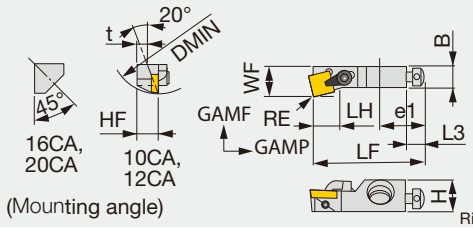
CP CSKP-CA

Clamp-on cartridge, with 75° approach angle, for 11° clearance square inserts



Cutting edge style **K**





Right hand (R) shown.

Designation	DMIN	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
CSKPR/L10CA-09	40	0.8	14	50	12	10	14.5	10	20	8	5°	0°	5	SP**0903...
CSKPR/L12CA-12	50	0.8	20	55	17	12	19.5	15	20	8	5°	2°	6	SP**1203...
CSKPR/L16CA	55	0.8	25	63	22	16	16	17	25	8	5°	0°	0	SP**1203...

- In above table, DMIN is min. bore dia. for axial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

SPARE PARTS









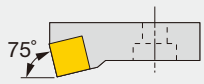



Designation	Shim	Shim screw	Clamping screw	Axial adjusting screw	Radial adjusting screw	Cartridge setting screw	Wrench	Chipbreaker piece	Shim Shim retainer (Optional parts)	Sizing plate ass'y (Optional parts)
CSKPR/L10CA-09	-	-	CSG-5 (CSG-5S)	ASM54	SSHM4-10	CHHM6-15	P-2,P-2.5,P-5	CBS-3M	-	PSTR/L10
CSKPR/L12CA-12	-	-	CSG-6 (CSG-6S)	ASM54	SSHM4-14	CHHM6-25	P-2,P-3,P-5	CBS-4M	-	PSTR/L12
CSKPR/L16CA	PAS-42	SM3X0.5X8	CSG-8S	ASM6	SSHM5-16	BHM8-25U	P-2.5,P-4	-	*	-

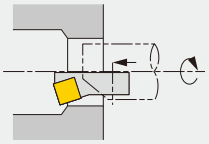
Reference pages
PN PSKN-CA: Inserts → B075 -, CBN → B175, PCD → B189
CP CSKP-CA: Inserts → B134 -, CBN → B182, PCD → B191

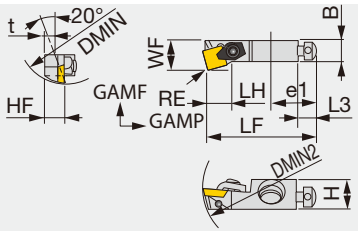
CE CSKE-CA

Clamp-on cartridge, with 75° approach angle, for 20° clearance square inserts



Cutting edge style **K**





Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
CSKER10CA-09	40	55	0.8	14	50	11.3	10	14.5	10	20	8	10°	5°	8	SE**0903...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

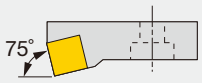
SPARE PARTS

Designation	Cartridge setting screw	Wrench 1	Wrench 2	Wrench 3
CSKER10CA-09	CHHM6-15	P-2	P-2.5	P-5

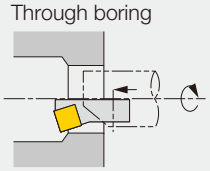
Designation	Clamping screw	Axial adjusting screw	Radial adjusting screw	Chipbreaker piece	Sizing plate ass'y (Optional parts)
CSKER10CA-09	CSW-40	ASM54	SSHM4-8	CBS-3M	PSTR/L10

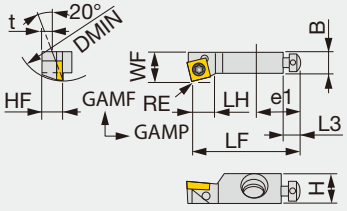
SP SSKP-CA

Screw-on cartridge, with 75° approach angle, for 11° clearance square inserts



Cutting edge style **K**





Right hand (R) shown.

Designation	DMIN	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
SSKPR10CA-09	40	0.8	14	50	12.7	10	14.5	10	20	8	5°	0°	8	SP**0903...
SSKPR12CA-12	50	0.8	20	55	16	12	19.5	15	20	8	5°	2°	8	SP**1204...

- In above table, DMIN is min. bore dia. for axial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

SPARE PARTS

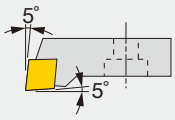
Designation	Clamping screw	Cartridge setting screw	Wrench 1	Wrench 2	Wrench 3
SSKPR10CA-09	CSTB-4S	CHHM6-15	P-2	T-15F	P-5
SSKPR12CA-12	CSTB-5S	CHHM6-25	P-2	T-20F	P-5

Designation	Axial adjusting screw	Radial adjusting screw	Sizing plate ass'y (Optional parts)
SSKPR10CA-09	ASM54	SSHM4-10	PSTR/L10
SSKPR12CA-12	ASM54	SSHM4-14	PSTR/L12

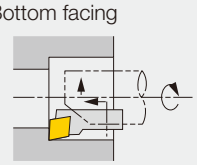
Reference pages
CE CSKE-CA: Inserts → Special
SP SSKP-CA: Inserts → B134 -, CBN → B182

PN PCLN-CA

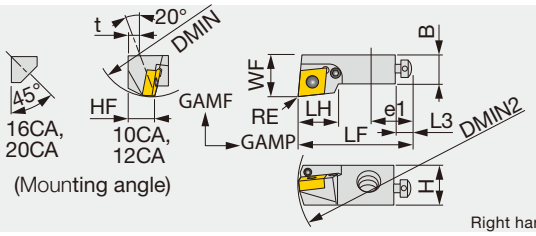
Lever-lock cartridge, with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **L**



Bottom facing



(Mounting angle)

Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
PCLNR/L12CA-12	50	75	0.8	20	55	19	12	19.5	15	20	8	-6°	-8°	6	CN**1204...
PCLNR/L16CA	55	75	0.8	25	63	28	16	16	17	25	8	-6°	-8°	0	CN**1204...
PCLNR/L20CA	70	90	1.2	25	70	31	20	20	19	30	10	-6°	-8°	0	CN**1606...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

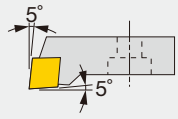
SPARE PARTS

Designation	Cartridge setting screw 1	Cartridge setting screw 2	Sizing plate 1	Sizing plate 2	Wrench 1	Wrench 2	Wrench 3
PCLNR/L12CA-12	-	CHHM6-25	-	-	P-2	P-2.5	P-5
PCLNR/L16CA	BHM8-25U	-	S0816B	S1016B	P-2.5	P-3	P-5
PCLNR/L20CA	-	-	-	-	P-2.5	P-3	P-5

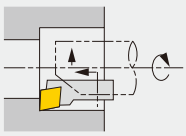
Designation	Shim	Lever	Cartridge setting screw	Axial adjusting screw	Radial adjusting screw	Shim retainer	Sizing plate ass'y (Optional parts)
PCLNR/L12CA-12	-	LCL43N	LCS43	ASM54	SSHM4-4	-	PSTR/L12
PCLNR/L16CA	LSC 42CA	LCL4	LCS4CA	ASM6	SSHM5-6	LSP4	-
PCLNR/L20CA	LSC 53CA	LCL5	LCS5CA	ASM6	SSHM5-6	LSP5	-

SP SCLP-CA

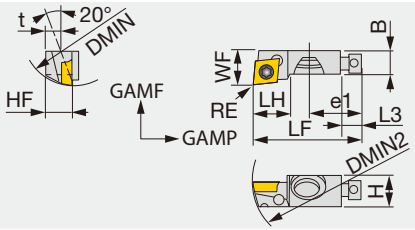
Screw-on cartridge, with 95° approach angle, for 11° clearance square inserts



Cutting edge style **L**



Bottom facing



Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
SCLPR/L06CA-05	20	30	0.4	8	25	8.5	6	7.5	5.5	12	4.5	0°	0°	3.5	CP**0502...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Cartridge setting screw	Wrench 1	Wrench 2	Wrench 3
SCLPR/L06CA-05	CSTB-2.2S	CHHM3.5-10	P-1.5	T-7F	P-3

Designation	Axial adjusting screw	Radial adjusting screw	Sizing plate ass'y (Optional parts)
SCLPR/L06CA-05	ASM34S	SSHM3-6	PT06

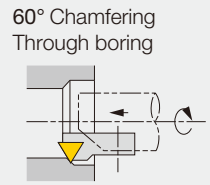
Reference pages: PN PCLN-CA: Inserts → B054 -, CBN → B170 -, PCD → B188 -
SP SCLP-CA: Inserts → B117

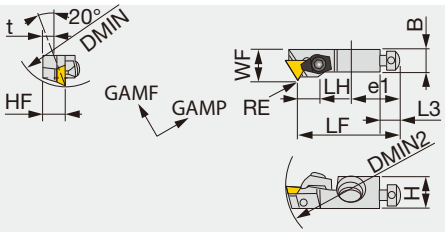
CP CTWP-CA

Clamp-on cartridge, with 60° approach angle, for 11° clearance triangular inserts



Cutting edge style **W**





Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
CTWPR10CA-11	40	55	0.4	14	44	13	10	14.5	10	20	8	4°	0°	5	TP**1103...
CTWPR/L12CA-16	50	75	0.8	20	47	11	12	19.5	15	20	8	4°	0°	6	TP**1603...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- Hand of the insert to be used should be selected depending on the application.
- **RE: Standard corner radius

SPARE PARTS

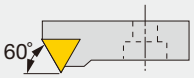
Designation	Cartridge setting screw	Wrench 1	Wrench 2	Wrench 3
CTWPR10CA-11	CHHM6-15	P-2	P-2.5	P-5
CTWPR/L12CA-16	CHHM6-25	P-2	P-3	P-5

Designation	Clamping screw	Axial adjusting screw	Radial adjusting screw	Chipbreaker piece	Sizing plate ass'y (Optional parts)
CTWPR/L10CA-11	CSG-5 (CSG-5S)	ASM54	SSHM4-10	CBT-2M	PSTR/L10
CTWPR/L12CA-16	CSG-6 (CSG-6S)	ASM54	SSHM4-14	CBT-3M	PSTR/L12

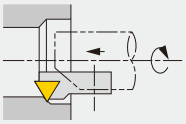
- Cartridges for K-style cutting edge: S0816A or S1016A; S-style cutting edge: S0816C or S1016B
- When not using chipbreaker piece, clamping screw in ( ) should be used.
- Hand of the insert to be used should be selected depending on the application.

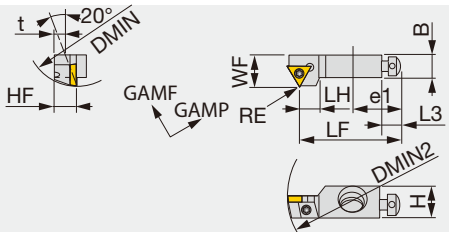
SP STWP-CA

Screw-on cartridge, with 60° approach angle, for 11° clearance triangular inserts



Cutting edge style **W**





Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
STWPR08CA-09	25	35	0.4	10	28	6	8	11.5	7.5	17	6	4°	0°	6	TP**0902...
STWPR/L10CA-11	40	55	0.4	14	44	9	10	14.5	10	20	8	4°	0°	8	TP**1102...
STWPR12CA-16	50	75	0.8	20	47	9	12	19.5	15	20	8	4°	0°	8	TP**16T3...

- In above table, DMIN is min. bore dia. for axial mounting and DMIN2 is for radial mounting.
- Hand of the insert to be used should be selected depending on the application.
- **RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Cartridge setting screw	Wrench 1	Wrench 2	Wrench 3
STWPR08CA-09	CSTB-2.2S	CHHM4-10	P-1.5	T-7F	P-3
STWPR/L10CA-11	CSTB-2.5	CHHM6-15	P-2	T-8F	P-5
STWPR12CA-16	CSTB-4S	CHHM6-25	P-2	T-15F	P-5

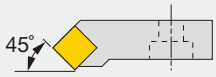
Designation	Axial adjusting screw	Radial adjusting screw	Sizing plate ass'y (Optional parts)
STWPR08CA-09	ASM34L	SSHM3-6	PSTR/L08
STWPR/L10CA-11	ASM54	SSHM4-10	PSTR/L10
STWPR12CA-16	ASM54	SSHM4-14	PSTR/L12

Reference pages
CP CTWP-CA: Inserts → B142 -, CBN → B183 -, PCD → B192
SP STWP-CA: Inserts → B142 -, CBN → B183 -, PCD → B192

PN PSSN-CA

Lever-lock cartridge, with 45° approach angle, for negative 90° square inserts

Square insert

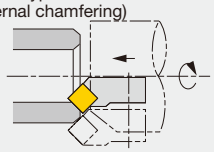


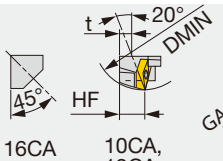
Cutting edge style **S**

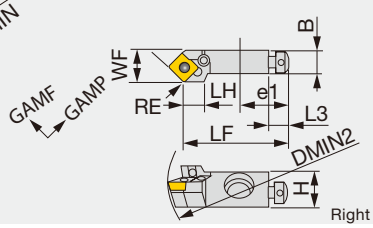
Main application

45° Inner 45° chamfering

(PSSN type can not be used for external chamfering)







Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
PSSNR/L10CA-09	40	55	0.8	14	44	10	10	14.5	10	20	8	-12°	0°	5	SN**0903...
PSSNR/L12CA-12	50	75	0.8	20	47	12	12	19.5	15	20	8	-12°	0°	6	SN**1204...
PSSNR/L16CA	55	75	0.8	25	53	28	16	16	17	25	8	-11°	0°	0	SN**1204...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- Hand of the insert to be used should be selected depending on the application.
- **RE: Standard corner radius

SPARE PARTS

Designation	Cartridge setting screw 1	Cartridge setting screw 2	Wrench 1	Wrench 2	Wrench 3	Radial adjusting screw
PSSNR/L10CA-09	-	CHHM4-4	P-5	P-2F	-	SSHM4-4
PSSNR/L12CA-12	-	CHHM6-25	P-2	P-2.5	P-5	SSHM4-4
PSSNR/L16CA	BHM8-25U	CHHM6-25	P-2.5	P-3	P-5	SSHM5-6

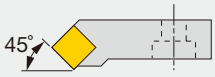
Designation	Shim	Lever	Cartridge setting screw	Axial adjusting screw	Shim retainer	Sizing plate (Optional parts)	Sizing plate ass'y (Optional parts)
PSSNR/L10CA-09	-	LCL32N	LCS22	ASM54	-	-	PSTR/L10
PSSNR/L12CA-12	-	LCL43N	LCS43	ASM54	-	-	PSTR/L12
PSSNR/L16CA	LSS42CA	LCL4	LCS4CA	ASM6	LSP4	S0816B/S1016B	-

- Cartridges for K-style cutting edge: S0816A or S1016A; S-style cutting edge: S0816C or S1016B

CP CSSP-CA

Clamp-on cartridge, with 45° approach angle, for 11° clearance square inserts

Square insert

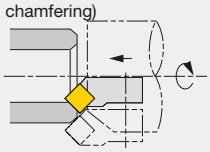


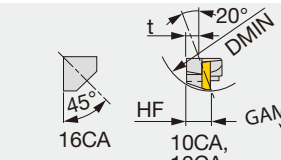
Cutting edge style **S**

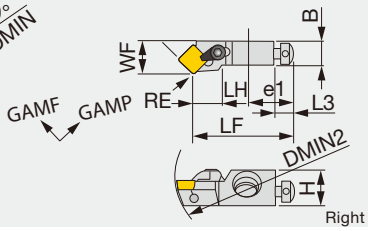
Main application

Inner and external 45° chamfering

(PSSN type can not be used for external chamfering)







Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
CSSPR/L10CA-09	40	55	0.8	14	44	11	10	14.5	10	20	8	3°	0°	5	SP**0903...
CSSPR/L12CA-12	50	75	0.8	20	47	13	12	19.5	15	20	8	4°	0°	6	SP**1203...
CSSPR16CA	55	75	0.8	25	53	15	16	16	17	25	8	0°	0°	0	SP**1203...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- Hand of the insert to be used should be selected depending on the application.
- **RE: Standard corner radius

SPARE PARTS

Designation	Cartridge setting screw 1	Cartridge setting screw 2	Wrench 1	Wrench 2	Wrench 3	Radial adjusting screw
CSSPR/L10CA-09	-	CHHM6-15	P-2	P-2.5	P-5	SSHM4-10
CSSPR/L12CA-12	-	CHHM6-25	P-2	P-3	P-5	SSHM4-14
CSSPR16CA	BHM8-25U	-	P-2.5	P-4	-	SSHM5-16

Designation	Shim	Shim screw	Clamping screw	Axial adjusting screw	Radial adjusting screw	Chipbreaker piece	Sizing plate ass'y (Optional parts)
CSSPR/L10CA-09	-	-	CSG-5 (CSG-5S)	ASM54	SSHM4-10	CBS-3M	PSTR/L10
CSSPR/L12CA-12	-	-	CSG-6 (CSG-6S)	ASM54	SSHM4-14	CBS-4M	PSTR/L12
CSSPR16CA	PAS-42	SM3X0.5X8	CSG-8S	ASM6	SSHM5-16	-	-

- Cartridges for K-style cutting edge: S0816A or S1016A; S-style cutting edge: S0816C or S1016B
- When not using chipbreaker piece, clamping screw in ( ) should be used.

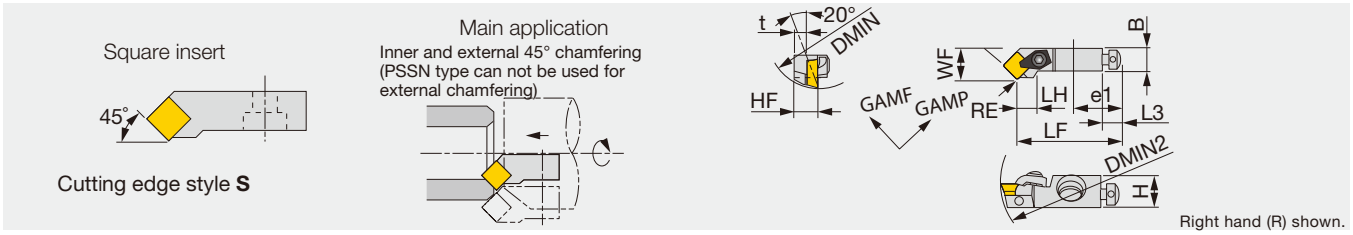
Reference pages

PN PSSN-CA: Inserts → B075 -, CBN → B175, PCD → B189

CP CSSP-CA: Inserts → B134 -, CBN → B182, PCD → B191

CE CSSE-CA

Clamp-on cartridge, with 45° approach angle, for 20° clearance square inserts



Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
CSSER12CA-12	50	75	0.8	20	47	12	12	19.5	15	20	8	10°	0°	6	SE**1203...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- Hand of the insert to be used should be selected depending on the application.
- **RE: Standard corner radius

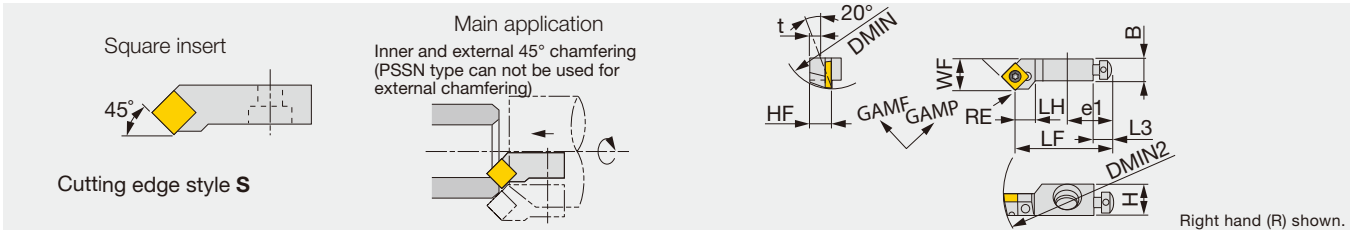
SPARE PARTS

Designation	Cartridge setting screw	Wrench 1	Wrench 2	Wrench 3
CSSER12CA-12	CHHM6-25	P-2	P-3	P-5

Designation	Clamping screw	Axial adjusting screw	Radial adjusting screw	Chipbreaker piece	Sizing plate ass'y (Optional parts)
CSSER12CA-12	CSW-50	ASM54	SSHM4-14	CBS-4M	PSTR/L12

SP SSSP-CA

Screw-on cartridge, with 45° approach angle, for 11° clearance square inserts



Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
SSSPR/L10CA-09	40	55	0.8	14	44	9	10	14.5	10	20	8	3°	0°	8	SP**0903...
SSSPR/L12CA-12	50	75	0.8	20	47	13	12	19.5	15	20	8	4°	0°	8	SP**1204...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- Hand of the insert to be used should be selected depending on the application.
- **RE: Standard corner radius

SPARE PARTS

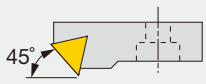
Designation	Clamping screw	Cartridge setting screw	Wrench 1	Wrench 2	Wrench 3
SSSPR/L10CA-09	CSTB-4S	CHHM6-15	P-2	T-15F	P-5
SSSPR/L12CA-12	CSTB-5S	CHHM6-25	P-2	T-20F	P-5

Designation	Axial adjusting screw	Radial adjusting screw	Sizing plate ass'y (Optional parts)
SSSPR/L10CA-09	ASM54	SSHM4-10	PSTR/L10
SSSPR/L12CA-12	ASM54	SSHM4-14	PSTR/L12

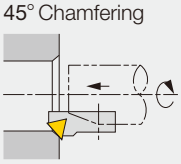
Reference pages
CE CSSE-CA: Inserts → Special
SP SSSP-CA: Inserts → B134 -, CBN → B182, PCD → B191

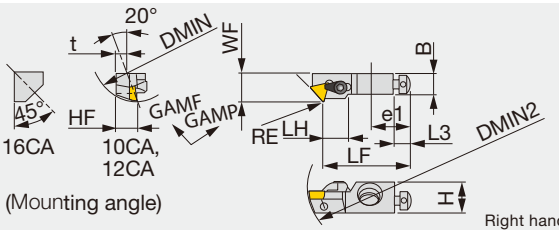
CP CTSP-CA

Clamp-on cartridge, with 45° approach angle, for 11° clearance triangular inserts



Cutting edge style **S**





Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
CTSPR/L10CA-11	40	55	0.4	14	44	12	10	14.5	10	20	8	3°	0°	5	TP**1103...
CTSPR/L12CA-16	50	75	0.8	20	47	11	12	19.5	15	20	8	4°	0°	6	TP**1603...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

SPARE PARTS

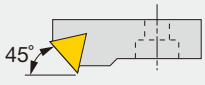
Designation	Cartridge setting screw	Wrench 1	Wrench 2	Wrench 3
CTSPR/L10CA-11	CHHM6-15	P-2	P-2.5	P-5
CTSPR/L12CA-16	CHHM6-25	P-2	P-3	P-5

Designation	Clamping screw	Axial adjusting screw	Radial adjusting screw	Chipbreaker piece	Sizing plate ass'y (Optional parts)
CTSPR/L10CA-11	CSG-5 (CSG-5S)	ASM54	SSHM4-10	CBT-2M	PSTR/L10
CTSPR/L12CA-16	CSG-6 (CSG-6S)	ASM54	SSHM4-14	CBT-3M	PSTR/L12

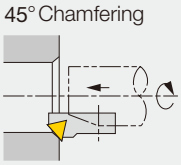
- Cartridges for K-style cutting edge: S0816A or S1016A; S-style cutting edge: S0816C or S1016B
- When not using chipbreaker piece, clamping screw in ( ) should be used.

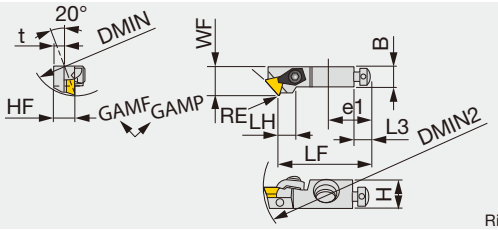
CE CTSE-CA

Clamp-on cartridge, with 45° approach angle, for 20° clearance triangular inserts



Cutting edge style **S**





Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
CTSER10CA-11	40	55	0.4	14	44	8	10	14.5	10	20	8	10°	0°	5	TE**1103...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

SPARE PARTS

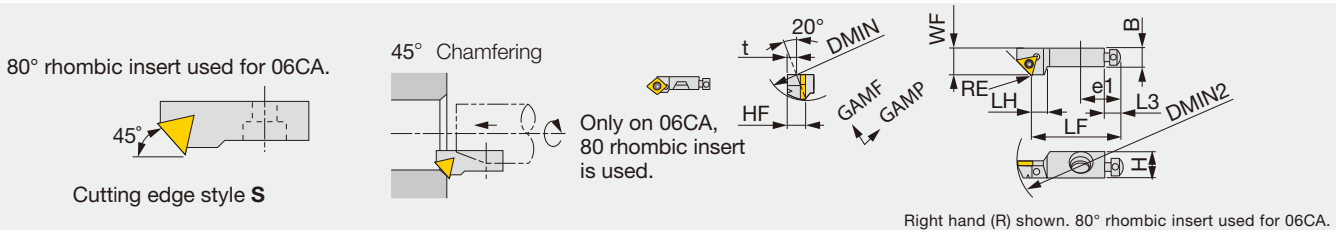
Designation	Cartridge setting screw	Wrench 1	Wrench 2	Wrench 3
CTSER10CA-11	CHHM6-15	P-2	P-2.5	P-5

Designation	Clamping screw	Axial adjusting screw	Radial adjusting screw	Chipbreaker piece	Sizing plate ass'y (Optional parts)
CTSER10CA-11	CSW-40	ASM54	SSHM4-8	CBT-2M	PSTR/L10

Reference pages
CP CTSP-CA: Inserts → B142 -, CBN → B183 -, PCD → B192
CE CTSE-CA: Inserts → Special

SP STSP-CA / SCSP-CA

Screw-on cartridge, with 45° approach angle, for 11° clearance triangular inserts and rhombic inserts



Right hand (R) shown. 80° rhombic insert used for 06CA.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
SCSPR/L06CA-05	20	30	0.4	8	22	6	6	7.5	5.5	12	4.5	0°	0°	3.5	CP**0502...
STSPR/L08CA-09	25	35	0.4	10	28	5.2	8	11.5	7.5	17	6	0°	0°	4.5	TP**0902...
STSPR/L10CA-11	40	55	0.4	14	44	9	10	14.5	10	20	8	3°	0°	5	TP**1102...
STSPR/L12CA-16	50	75	0.8	20	47	11	12	19.5	15	20	8	4°	0°	6	TP**16T3...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

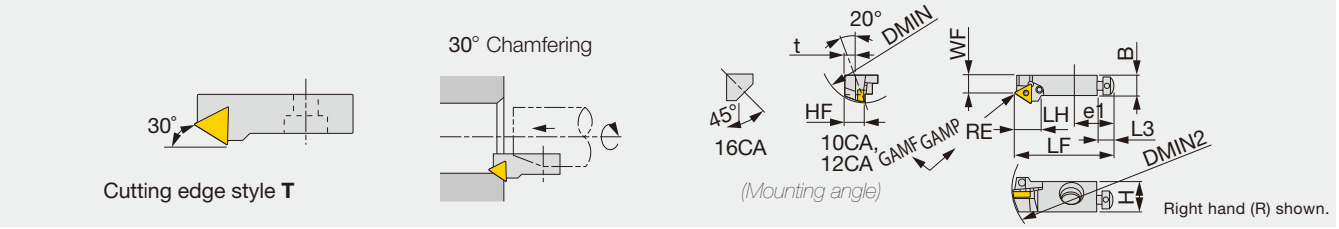
SPARE PARTS

Designation	Clamping screw	Cartridge setting screw	Wrench 1	Wrench 2	Wrench 3
SCSPR/L06CA-05	CSTB-2.2S	CHHM3.5-10	P-1.5	T-7F	P-3
STSPR/L08CA-09	CSTB-2.2S	CHHM4-10	P-1.5	T-7F	P-3
STSPR/L10CA-11	CSTB-2.5	CHHM6-15	P-2	T-8F	P-5
STSPR/L12CA-16	CSTB-4S	CHHM6-25	P-2	T-15F	P-5

Designation	Axial adjusting screw	Radial adjusting screw	Sizing plate ass'y (Optional parts)
SCSPR/L06CA-05	ASM34S	SSHM3-6	PT06
STSPR/L08CA-09	ASM34L	SSHM3-6	PSTR/L08
STSPR/L10CA-11	ASM54	SSHM4-10	PSTR/L10
STSPR/L12CA-16	ASM54	SSHM4-14	PSTR/L12

PN PTTN-CA

Lever-lock cartridge, with 30° approach angle, for negative 60° triangular inserts



Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
PTTNR/L10CA-11	40	55	0.4	9	50	13	10	14.5	10	20	8	-10°	0°	5	TN**1103...
PTTNR/L12CA-16	50	75	0.8	13	55	19	12	19.5	15	20	8	-10°	0°	6	TN**1604...
PTTNR/L16CA	60	75	0.8	15	63	22	16	16	17	25	8	-10°	-2°	0	TN**1604...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

SPARE PARTS

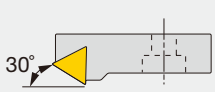
Designation	Cartridge setting screw	Sizing plate 1	Sizing plate 2	Wrench 1	Wrench 2
PTTNR/L10CA-11	CHHM6-15	-	-	P-5	P-2F
PTTNR/L12CA-16	CHHM6-25	-	-	P-5	P-2F
PTTNR/L16CA	BHM8-25U	S0816B	S1016B	P-2.5	P-5

Designation	Shim	Lever	Cartridge setting screw	Axial adjusting screw	Radial adjusting screw	Shim retainer	Sizing plate ass'y (Optional parts)
PTTNR/L10CA-11	-	LCL22N	LCS22	ASM54	SSHM4-4	-	PSTR/L10
PTTNR/L12CA-16	-	LCL33N	LCS33	ASM54	SSHM4-4	-	PSTR/L12
PTTNR/L16CA	LST317CA	LCL3	LCS3	ASM6	SSHM5-6	LSP3	-

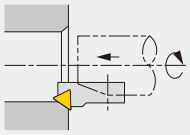
Reference pages
SP STSP-CA: Inserts → B117 (CP**), B142 - (TP**), CBN → B183 -, PCD → B192
PN PTTN-CA: Inserts → B084 -, CBN → B176 -, PCD → B188 -

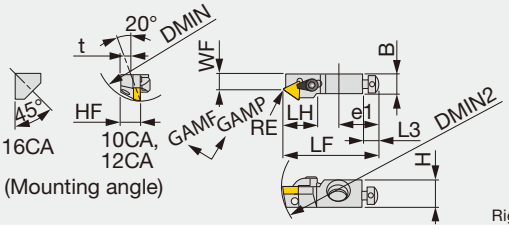
CP CTTP-CA

Clamp-on cartridge, with 30° approach angle, for 11° clearance triangular inserts



Cutting edge style **T**





Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
CTTPR/L10CA-11	40	55	0.4	9	50	18	10	14.5	10	20	8	0°	0°	5	TP**1103...
CTTPR12CA-16	50	75	0.8	13	55	22	12	19.5	15	20	8	4°	0°	6	TP**1603...
CTTPL16CA	55	75	0.8	15	63	23	16	16	17	25	8	0°	0°	0	TP**1603...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

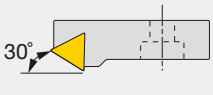
SPARE PARTS

Designation	Cartridge setting screw	Sizing plate 1	Sizing plate 2	Wrench 1	Wrench 2	Wrench 3
CTTPL10CA-11	CHHM6-15	-	-	P-2	P-2.5	P-5
CTTPR/L12CA-16	CHHM6-25	-	-	P-2	P-3	P-5
CTTPL16CA	BHM8-25U	S0816B	S1016B	P-2.5	P-4	-

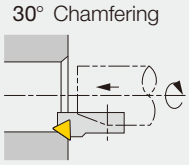
Designation	Shim	Shim screw	Clamping screw	Axial adjusting screw	Radial adjusting screw	Sizing plate ass'y (Optional parts)	Chipbreaker piece
CTTPR/L10CA-11	-	-	CSG-5 (CSG-5S)	ASM54	SSHM4-10	PSTR/L10	CBT-2M
CTTPR12-16	-	-	CSG-6 (CSG-6S)	ASM54	SSHM4-14	PSTR12	CBT-3M
CTTPL10CA	PAT-32	SM3X0.5X8	CSG-8S	ASM6	SSHM5-16	-	-

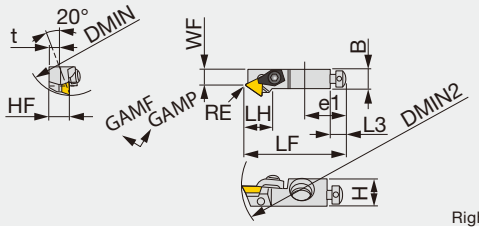
CE CTTE-CA

Clamp-on cartridge, with 30° approach angle, for 20° clearance triangular inserts



Cutting edge style **T**





Right hand (R) shown.

Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
CTTER10CA-11	40	55	0.4	9	50	14	10	14.5	10	20	8	10°	0°	5	TE**1103...
CTTER12CA-16	50	75	0.8	13	55	18	12	19.5	15	20	8	10°	0°	6	TE**1603...

- In the above table, DMIN is the minimum bore diameter for axial mounting, and DMIN2 is for radial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

SPARE PARTS

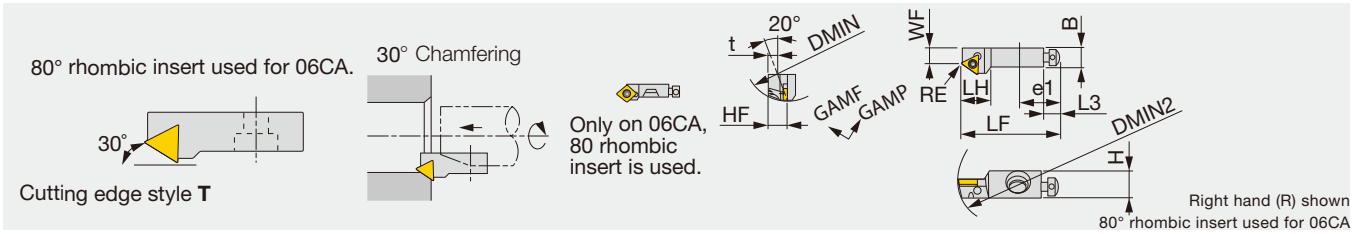
Designation	Cartridge setting screw	Wrench 1	Wrench 2	Wrench 3
CTTER10CA-11	CHHM6-15	P-2	P-2.5	P-5
CTTER12CA-16	CHHM6-25	P-2	P-3	P-5

Designation	Clamping screw	Axial adjusting screw	Radial adjusting screw	Chipbreaker piece	Sizing plate ass'y (Optional parts)
CTTER10CA-11	CSW-40	ASM54	SSHM4-8	CBT-2M	PSTR10
CTTER12CA-16	CSW-50	ASM54	SSHM4-14	CBT-3M	PSTR12

Reference pages
CP CTTP-CA: Inserts → B142 -, CBN → B183 -, PCD → B192
CE CTTE-CA: Inserts → Special

SP STTP-CA / SCTP-CA

Screw-on cartridge, with 30° approach angle, for 11° clearance triangular inserts and rhombic inserts



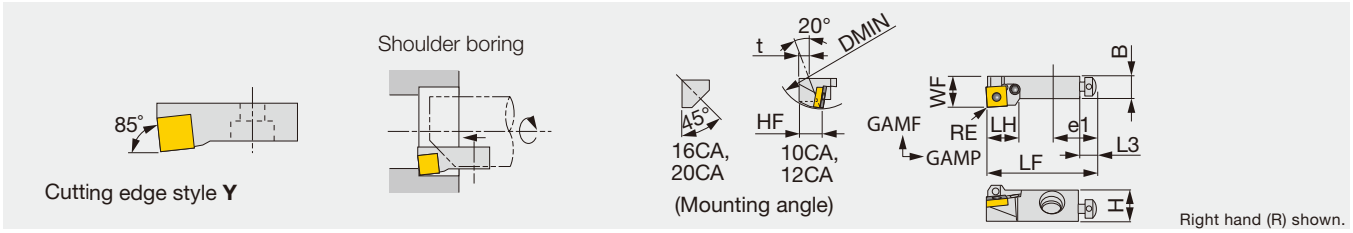
Designation	DMIN	DMIN2	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
SCTPR06CA-05	20	30	0.4	5.4	25	9	6	7.5	5.5	12	4.5	0°	0°	3.5	CP**0502...
STTPR/L08CA-09	25	35	0.4	6	32	10	8	11.5	7.5	17	6	0°	0°	4.5	TP**0902...
STTPR10CA-11	40	55	0.4	9	50	15	10	14.5	10	20	8	0°	0°	5	TP**1102...

SPARE PARTS

Designation	Clamping screw	Axial adjusting screw	Radial adjusting screw	Cartridge setting screw	Wrench	Torx wrench	Sizing plate ass'y (Optional parts)
SCTPR/L06CA-05	CSTB-2.2S	ASM34S	SSHM3-6	CHHM3.5-10	P-1.5,P-3	T-7F	PT06
STTPR/L08CA-09	CSTB-2.2S	ASM34L	SSHM3-6	CHHM4-10	P-1.5,P-3	T-7F	PSTR/L08
STTPR/L10CA-11	CSTB-2.5	ASM54	SSHM4-10	CHHM6-15	P-2,P-5	T-8F	PSTR/L10

PN PSYN-CA

Lever-lock cartridge, with 85° approach angle, for negative 90° square inserts



Designation	DMIN	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
PSYNR10CA-09	40	0.8	14	50	14	10	14.5	10	20	8	-6°	-8°	5	SN**0903...
PSYNR12CA-12	50	0.8	20	55	18	12	19.5	15	20	8	-6°	-8°	6	SN**1204...
PSYNR16CA	55	0.8	25	63	26	16	16	17	25	8	-6°	-8°	0	SN**1204...
PSYNR20CA	70	1.2	25	70	30	20	20	19	30	10	-6°	-7°	0	SN**1506...

- In above table, DMIN is min. bore dia. for axial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).
- **RE: Standard corner radius

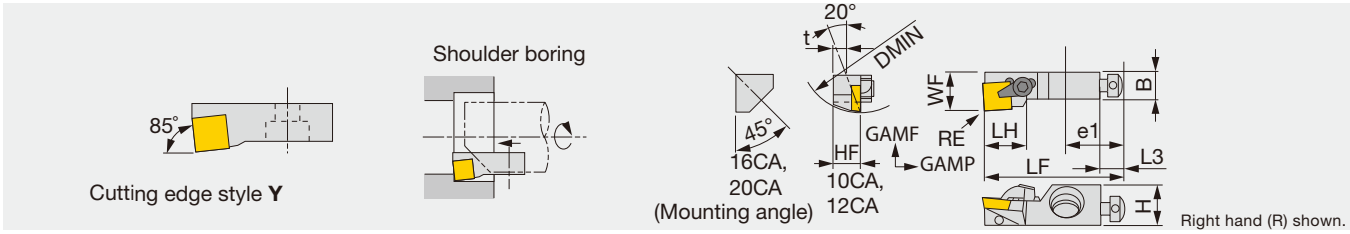
SPARE PARTS

Designation	Shim	Lever	Shim screw	Axial adjusting screw	Radial adjusting screw	Cartridge setting screw	Wrench	Shim Shim retainer	Sizing plate	Sizing plate ass'y (Optional parts)
PSYNR10CA-09	-	LCL32N	LCS22	ASM54	SSHM4-4	CHHM4-4	P-2F,P-5	-	-	PSTR/L10
PSYNR12CA-12	-	LCL43N	LCS43	ASM54	SSHM4-4	CHHM6-25	P-2,P-2.5,P-5	-	-	PSTR/L12
PSYNR16CA	LSS42CA	LCL4	LCS4CA	ASM6	SSHM5-6	BHM8-25U	P-2.5,P-3,P-5	LSP4	S0816B/S1016B	-
PSYNR20CA	LSS53CA	LCL5	LCS5CA	ASM6	SSHM5-6	BHM8-30U	P-2.5,P-3,P-5	LSP5	S0820B/S1020B	-

Reference pages
SP STTP-CA: Inserts → B117 (CP**), B142 - (TP**), CBN → B183 -, PCD → B192
PN PSYN-CA: Inserts → B075 -, CBN → B175, PCD → B189

CP CSYP-CA

Clamp-on cartridge, with 85° approach angle, for 11° clearance square inserts



Designation	DMIN	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
CSYPR/L10CA-09	40	0.8	14	50	15	10	14.5	10	20	8	5°	0°	5	SP**0903...
CSYPR12CA-12	50	0.8	20	55	19	12	19.5	15	20	8	5°	2°	6	SP**1203...
CSYPR16CA	55	0.8	25	63	23	16	16	17	25	8	5°	0°	0	SP**1203...

- In above table, DMIN is min. bore dia. for axial mounting.
- When using a right or left hand insert, use right-hand cartridges (R) with left-hand inserts (L); and left-hand cartridges (L) with right-hand inserts (R).

SPARE PARTS

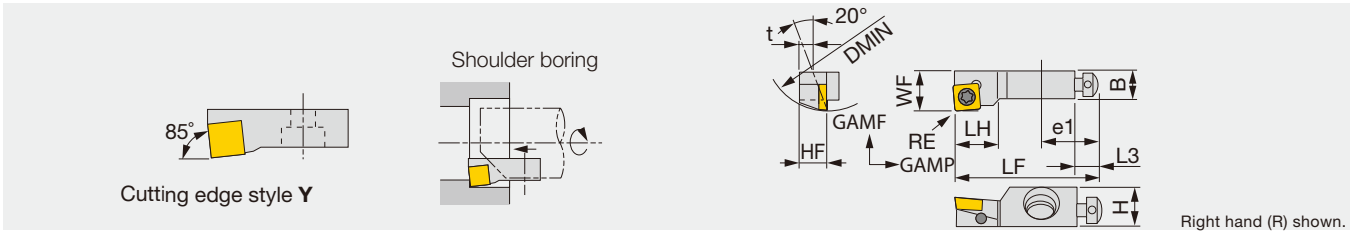
Designation	Cartridge setting screw	Sizing plate 1	Sizing plate 2	Wrench 1	Wrench 2	Wrench 3
CSYPR/L10CA-09	CHHM6-15	-	-	P-2	P-2.5	P-5
CSYPR12CA-12	CHHM6-25	-	-	P-2	P-3	P-5
CSYPR16CA	BHM8-25U	-	-	P-2.5	P-4	-

Designation	Shim	Shim screw	Clamping screw	Axial adjusting screw	Radial adjusting screw	Chipbreaker piece	Sizing plate ass'y (Optional parts)
CSYPR/L10CA-09	-	-	CSG-5 (CSG-5S)	ASM54	SSHM4-10	CBS-3M	PSTR/L10
CSYPR12CA-12	-	-	CSG-6 (CSG-6S)	ASM54	SSHM4-14	CBS-4M	PSTR/L12
CSYPR16CA	PAS-42	SM3X0.5X8	CSG-8S	ASM6	SSHM5-16	-	-

- Cartridges for K-style cutting edge: S0816A or S1016A; S-style cutting edge: S0816C or S1016B
- When not using chipbreaker piece, clamping screw in ( ) should be used.

SP SSYP-CA

Screw-on cartridge, with 85° approach angle, for 11° clearance square inserts



Designation	DMIN	RE**	WF	LF	LH	HF	H	B	e1	L3	GAMF	GAMP	t	Insert
SSYPR10CA-09	40	0.8	14	50	15	10	14.5	10	20	8	5°	0°	5	SP**0903...

- In above table, DMIN is min. bore dia. for axial mounting.
- **RE: Standard corner radius

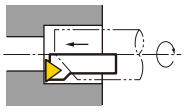
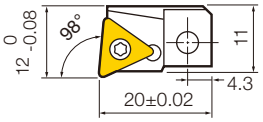
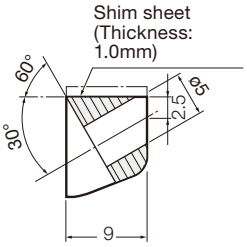
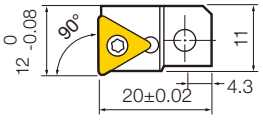
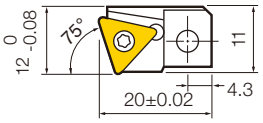
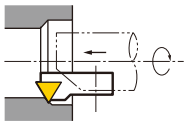
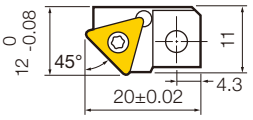
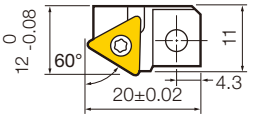
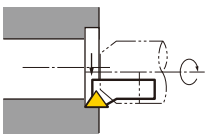
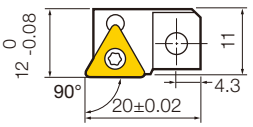
SPARE PARTS

Designation	Clamping screw	Wrench 1	Wrench 2	Wrench 3
SSYPR10CA-09	CSTB-4S	P-2	T-15F	P-5

Designation	Axial adjusting screw	Radial adjusting screw	Cartridge setting screw	Sizing plate ass'y (Optional parts)
SSYPR10CA-09	ASM54	SSHM4-10	CHHM6-15	PSTR/L10

Reference pages
CP CSYP-CA: Inserts → B134 -, CBN → B182, PCD → B191
SP SSYP-CA: Inserts → B134 -, CBN → B182, PCD → B191

A-type (Positive rake, compact type)

Application		Shape	Designation	Specification
Boring			ATX-0 R/L	● Applicable inserts TP□□1103□□ (With Tungaloy's standard hole) B142 -, B183 - ● Min. bore diameter ø32 ● Cutting edge height 9 mm ● Dimension for mounting 
			ATF-0 R/L	
			ATK-0 R/L	
Chamfering			ATS-0 R/L	
			ATT-0 R/L	
Facing			ATG-0 L	

Note: Right hand (R) shown.

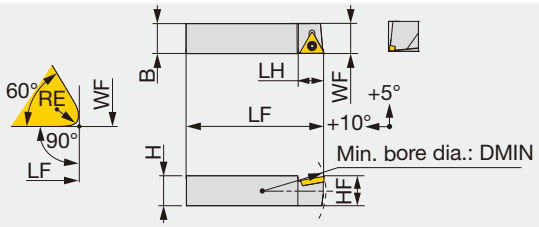
SPARE PARTS

Designation	Mounting screw	Adjusting screw (axial direction)	Insert clamping screw	Shim sheet	Wrench
For all products	M4×15	M3×0.5×8	CSTA-NO2L	SM-00	P-1.5, T-8F

Boring bar tool

TBS1

Square shank, with 90° approach angle



TBS1**T** is shown.

Designation	DMIN	WF	HF	LH	B	H	LF	RE**	INSERT
TBS108T08	25	7.8	7.8	9	8	8	40	0.4	TP**0802...
TBS110T09	38	9.8	9.8	10	10	10	50	0.4	TP**0902...
TBS113T11	50	12.8	12.8	12	13	13	60	0.4	TP**1102...
TBS116C12	62	15.8	15.8	18	16	16	80	0.8	CP**1204...
TBS119C12	72	18.8	18.8	18	19	19	95	0.8	CP**1204...
TBS125C16	82	24.8	24.8	22	25	25	125	1.2	CP**1605...

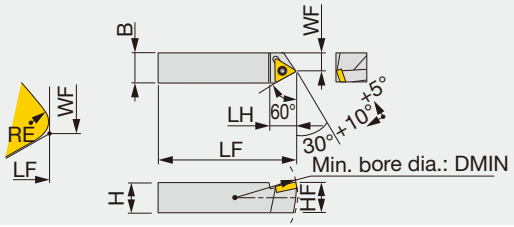
- Figures shown above are of 13 mm or smaller square shanks used for normal direction of rotation.
- For the tools used for reverse direction of rotation, add H in the end of the designation. (Example: TBS308T08H)
- Use left-hand inserts (L) for normal direction of rotation, and right-hand inserts (R) for reverse direction of rotation.

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
TBS108T08	CSTB-2L	-	-	-	T-6F
TBS110T09	CSTB-2.2	-	-	-	T-7F
TBS113T11	CSTB-2.5	-	-	-	T-8F
TBS116C12	CSTB-5	-	-	-	T-20F
TBS119C12	CSTB-4F	DTS6-4	SSC4T3-P	P-4	T-15F
TBS125C16	CSTB-4F	DTS6-4	SSC54-P	P-4	T-15F

TBS3

Square shank, with 30° approach angle



TBS3**T** is shown.

Designation	DMIN	WF	HF	LH	B	H	LF	RE**	INSERT
TBS308T08	25	4.7	7.8	8	8	8	40	0.4	TP**0802...
TBS310T09	38	6	9.8	11	10	10	50	0.4	TP**0902...
TBS313T11	50	8.3	12.8	12	13	13	60	0.4	TP**1102...
TBS316C12	62	9.7	15.8	21	16	16	80	0.8	CP**1204...
TBS319C12	72	12.7	18.8	21	19	19	95	0.8	CP**1204...

- Figures shown above are of 13 mm or smaller square shanks used for normal direction of rotation.
- For the tools used for reverse direction of rotation, add H in the end of the designation. (Example: TBS308T08H)
- Use left-hand inserts (L) for normal direction of rotation, and right-hand inserts (R) for reverse direction of rotation.

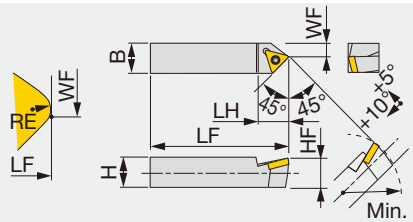
SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
TBS308T08	CSTB-2L	-	-	-	T-6F
TBS310T09	CSTB-2.2	-	-	-	T-7F
TBS313T11	CSTB-2.5	-	-	-	T-8F
TBS316C12	CSTB-5	-	-	-	T-20F
TBS319C12	CSTB-4F	DTS6-4	SSC4T3-P	P-4	T-15F

Reference pages: TBS1, TBR3: Inserts → B142 - (TP**), B117 - (CP**), CBN → B183 -, PCD → B192

TBS4

Square shank, with 45° approach angle



TBS4**T** is shown.

Designation	DMIN	WF	HF	LH	B	H	LF	RE**	INSERT
TBS408T08	25	3.2	7.8	9	8	8	40	0.4	TP**0802...
TBS410T09	38	4.2	9.8	10	10	10	50	0.4	TP**0902...
TBS413T11	50	6.2	12.8	14	13	13	60	0.4	TP**1102...
TBS416C12	62	7.3	15.8	22	16	16	80	0.8	CP**1204...
TBS419C12	72	10.3	18.8	22	19	19	95	0.8	CP**1204...
TBS425C16	82	14.2	24.8	26	25	25	125	1.2	CP**1605...

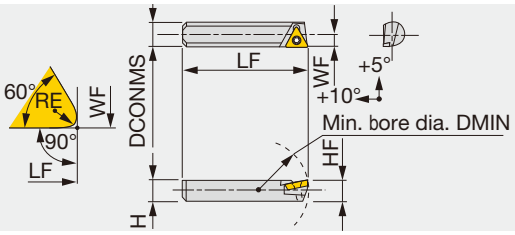
- Figures shown above are of 13 mm or smaller square shanks used for normal direction of rotation.
- For the tools used for reverse direction of rotation, add H in the end of the designation. (Example: TBS308T08H)
- Use left-hand inserts (L) for normal direction of rotation, and right-hand inserts (R) for reverse direction of rotation.

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
TBS408T08	CSTB-2L	-	-	-	T-6F
TBS410T09	CSTB-2.2	-	-	-	T-7F
TBS413T11	CSTB-2.5	-	-	-	T-8F
TBS416C12	CSTB-5	-	-	-	T-20F
TBS419C12	CSTB-4F	DTS6-4	SSC4T3-P	P-4	T-15F
TBS425C16	CSTB-4F	DTS6-4	SSC54-P	P-4	T-15F

TBR1

Round shank, with 90° approach angle



TBR1**T** is shown.

Designation	DMIN	WF	HF	H	DCONMS	LF	RE**	INSERT
TBR108T08	30	4	7	7	8	35	0.2	TP**0802...
TBR110T09	40	5	8.5	8.5	10	50	0.2	TP**0902...
TBR112T11	50	6	10.5	10.5	12	60	0.2	TP**1102...

- Figures shown above are of 8 mm or larger diameter shank used for normal direction of rotation.
- For the tools used for reverse direction of rotation, add H in the end of the designation. (Example: TBR105E04H)
- For the tools for normal direction of rotation, use a left hand insert, and for reverse direction of rotation, use a right hand insert.

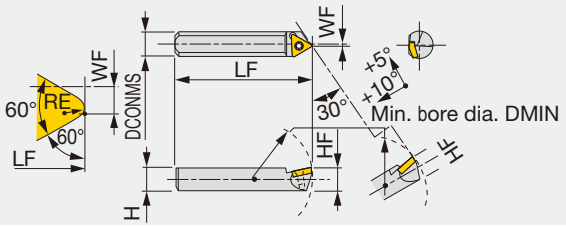
SPARE PARTS

Designation	Clamping screw	Wrench
TBR108T08	CSTB-2L	T-6F
TBR110T09	CSTB-2.2	T-7F
TBR112T11	CSTB-2.5	T-8F

Reference pages: TBS4, TBR1: Inserts → B142 - (TP**), B117 - (CP**), CBN → B183 -, PCD → B192

TBR3

Round shank, with 30° approach angle



TBR3**T** is shown.

Designation	DMIN	WF	HF	H	DCONMS	LF	RE**	INSERT
TBR305E04	19	0.5	4	4	5	20	0.2	EP**0401...
TBR308T08	30	0.5	7	7	8	35	0.2	TP**0802...
TBR312T11	50	1	10.5	10.5	12	60	0.4	TP**1102...
TBR316T16	60	1.5	14	14	16	80	0.8	TP**16T3...

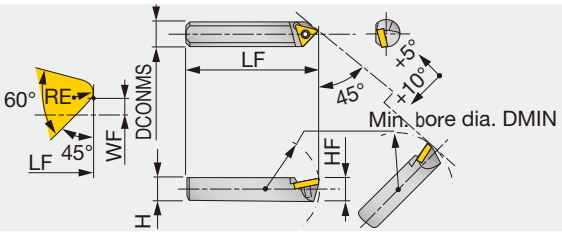
- Figures shown above are of 8 mm or larger diameter shank used for normal direction of rotation.
- For the tools used for reverse direction of rotation, add H in the end of the designation. (Example: TBR105E04H)
- For the tools for normal direction of rotation, use a left hand insert, and for reverse direction of rotation, use a right hand insert.

SPARE PARTS

Designation	Clamping screw	Wrench
TBR305E04	CSTB-2	T-6F
TBR308T08	CSTB-2L	T-6F
TBR312T11	CSTB-2.5	T-8F
TBR316T16	CSTB-4	T-15F

TBR4

Round shank, with 45° approach angle



TBR4**T** is shown.

Designation	DMIN	WF	HF	H	DCONMS	LF	RE**	INSERT
TBR406E04	24	0	5	5	6	25	0.2	EP**0401...
TBR408T08	30	0.5	7	7	8	35	0.2	TP**0802...
TBR410T09	40	1	8.5	8.5	10	50	0.2	TP**0902...
TBR412T11	50	1	10.5	10.5	12	60	0.4	TP**1102...
TBR416T16	60	1.5	14	14	16	80	0.8	TP**16T3...

- Figures shown above are of 8 mm or larger diameter shank used for normal direction of rotation.
- For the tools used for reverse direction of rotation, add H in the end of the designation. (Example: TBR105E04H)
- For the tools for normal direction of rotation, use a left hand insert, and for reverse direction of rotation, use a right hand insert.

SPARE PARTS

Designation	Clamping screw	Wrench
TBR406E04	CSTB-2	T-6F
TBR408T08	CSTB-2L	T-6F
TBR410T09	CSTB-2.2	T-7F
TBR412T11	CSTB-2.5	T-8F
TBR416T16	CSTB-4	T-15F

Reference pages: TBR3, TBR4: Inserts → B127 - (EP**), B142 - (TP**), CBN → B182 -, PCD → B192

Top-Borer Tool

Features

- Indexable insert jig boring tools usable for commercially available adjustable boring heads.
- Minimum bore diameter ø5.5 mm.
- Available in three types of SEXP, SWUB and STUP.



Applicable for PINZBOHR small diameter finish boring heads.
(See page K183)

Applications by Type

SEXP 	● Minimum bore diameter: ø5.5 mm. ● A 75° rhombic insert is used. Stable insert holding assures precision boring.
SWUB 	● Available in two sizes of minimum bore diameters of ø7 and ø8 mm. ● Uses an economical trigon insert.
STUP 	● Available in five sizes of minimum bore diameters of ø10, ø12, ø14, ø16 and ø18 mm. ● Many standard items make them applicable for a wide range of applications.

Designation system for Top-Borer Tools

Symbol	Material
S	Steel
C	Carbide

❶ Shank material

Symbol	Min. bore dia. DMIN (mm)
055	5.5
07	7
08	8
10	10

❸ Min. bore dia.

Symbol	Insert type
04	EPGT0401□□
03	WBGT0301□□
08	TPGT0802□□
11	TPGT1102□□

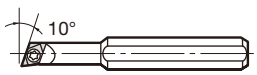
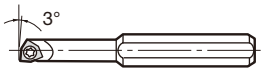
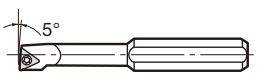
❻ Applicable insert

S ❶ | 08 ❷ | ❸ 055 | SEXP ❹ | R ❺ | ❻ 04

❷ Shank size

Symbol	Shank diameter (mm)
08	8
10	10
12	12
16	16

❹ Tool shape

Symbol	Shape
SEXP	
SWUB	
STUP	

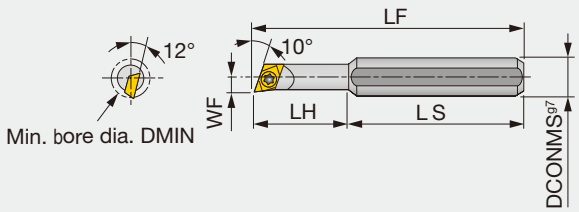
❺ Hand of cartridge

Symbol	Hand
R	Right
L	Left
N	Neutral

* Avilable holders are supplied from tooling manufactures.

S/C-SEXPR/L

Top borer tool



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	LS	RE**	INSERT
S08055-SEXPR04	Steel	5.5	8	2.8	45	19	26	0.4	EP**0401...
S10055-SEXPR04	Steel	5.5	10	2.8	51	19	32	0.4	EP**0401...
S12055-SEXPR04	Steel	5.5	12	2.8	51	19	32	0.4	EP**0401...
C10055-SEXPR04	Carbide	5.5	10	2.8	62	30	32	0.4	EP**0401...
C12055-SEXPR04	Carbide	5.5	12	2.8	62	30	32	0.4	EP**0401...

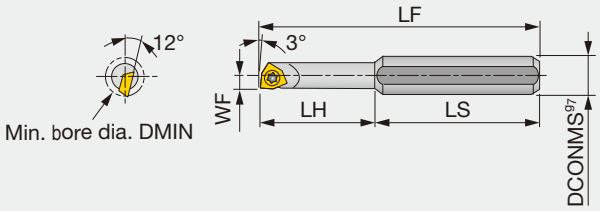
SPARE PARTS

Designation	Clamping screw	Wrench
S/C-SEXPR	CSTB-2	T-6F

Note: Use right-hand tool holders (R) with left-hand inserts (L); and left-hand tool holders (L) with right-hand inserts (R).

S/C-SWUBR

Top borer tool, for positive 80° trigon inserts with 5° clearance



Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	LS	RE**	INSERT
S1008-SWUBR03	Steel	8	10	4.1	60	28	32	0.4	WBGT0301...
S1208-SWUBR03	Steel	8	12	4.1	60	28	32	0.4	WBGT0301...
C1008-SWUBR03	Carbide	8	10	4.1	76	44	32	0.4	WBGT0301...
C1208-SWUBR03	Carbide	8	12	4.1	76	44	32	0.4	WBGT0301...

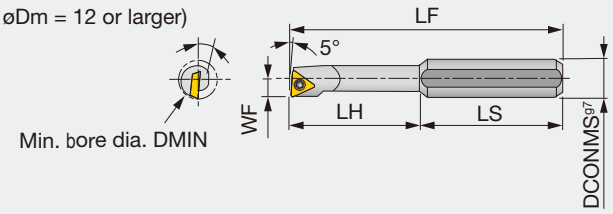
SPARE PARTS

Designation	Clamping screw	Wrench
S/C-SWUBR	CSTB-2	T-6F

Note: Use right-hand tool holders (R) with left-hand inserts (L); and left-hand tool holders (L) with right-hand inserts (R).

S/C-STUPR/L

Top borer tool, for positive 60° triangular inserts with 11° clearance



Right hand (R) shown.

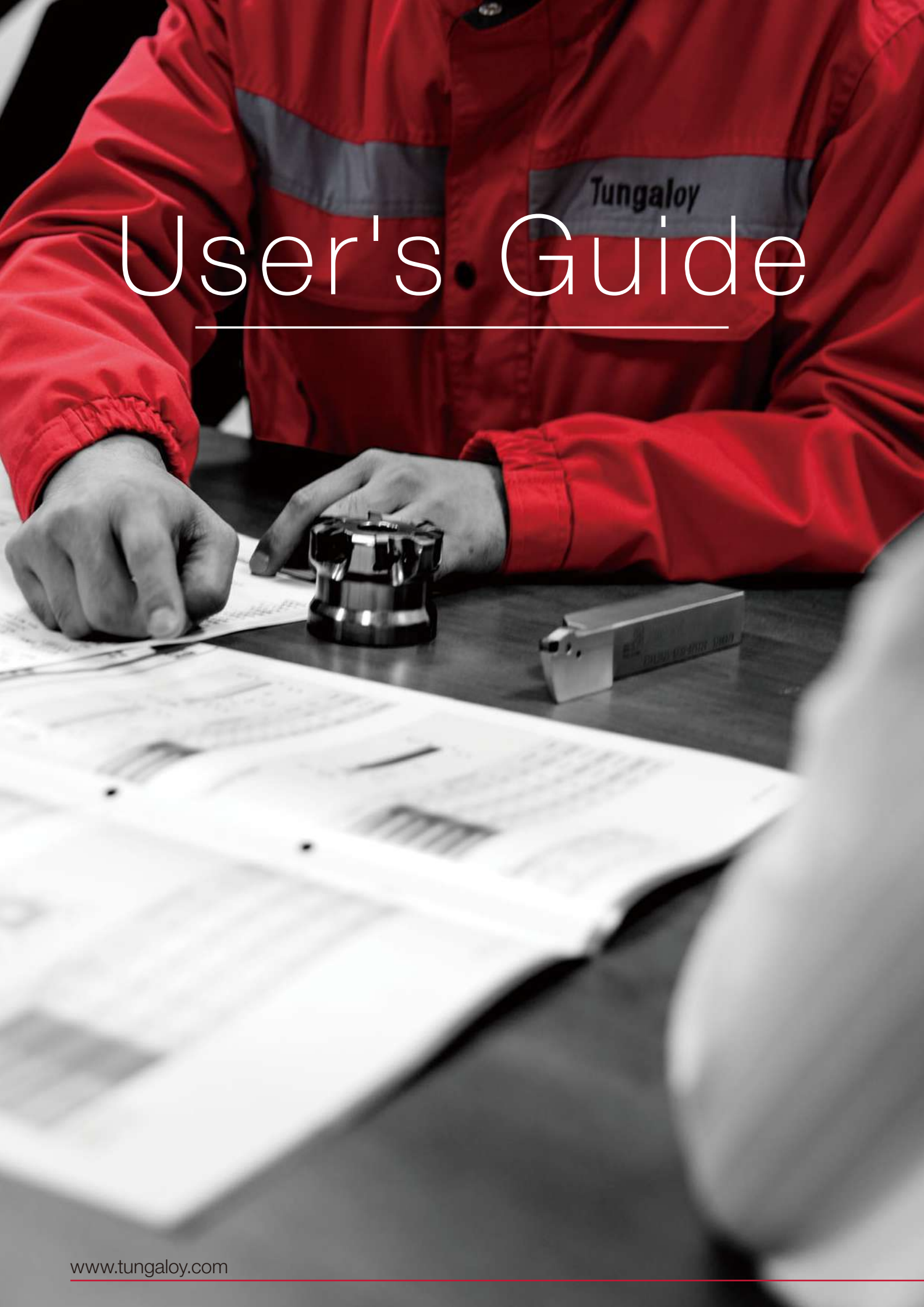
Designation	Material	DMIN	DCONMS	WF	LF	LH	LS	RE**	INSERT
S0810-STUPR08	Steel	10	8	5	61	-	-	0.4	TPGT0802...
S1010-STUPR08	Steel	10	10	5	67	35	32	0.4	TPGT0802...
S1210-STUPR08	Steel	10	12	5	67	35	32	0.4	TPGT0802...
S1212-STUPR08	Steel	12	12	6	74	42	32	0.4	TPGT0802...
S1212-STUPR11	Steel	12	12	6	74	42	32	0.4	TP*T1102...
S1214-STUPR11	Steel	14	12	7	81	-	-	0.4	TP*T1102...
C1010-STUPR08	Carbide	10	10	5	87	55	32	0.4	TP*T0802...
C1210-STUPR08	Carbide	10	12	5	87	55	32	0.4	TP*T0802...
C1212-STUPR11	Carbide	12	12	6	98	66	32	0.4	TP*T1102...
C1214-STUPR11	Carbide	14	12	7	109	84	25	0.4	TP*T1102...

SPARE PARTS

Designation	Clamping screw	Wrench
S**10-STUPR08	CSTB-2L040	T-6F
S1212-STUPR08	CSTB-2L	T-6F
S121*-STUPR11	CSTB-2.5	T-8F
C1*10-STUPR08	CSTB-2L040	T-6F
C121*-STUPR11	CSTB-2.5	T-8F

Note: Use right-hand tool holders (R) with left-hand inserts (L); and left-hand tool holders (L) with right-hand inserts (R)

Reference pages
S/C-SEXPR/L: Inserts → B127 -, CBN → B182, PCD → B191
S/C-SWUBR/L: Inserts → B157 -, S/C-STUPR/L: Insert → B142 -



User's Guide

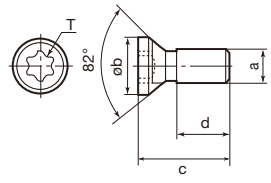
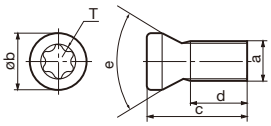
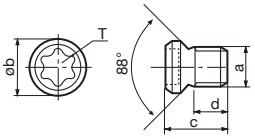
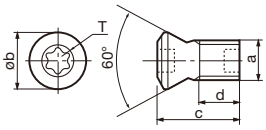
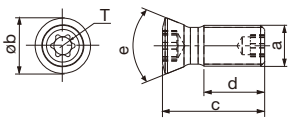
USER´S GUIDE

Parts for Tools L002

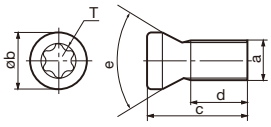
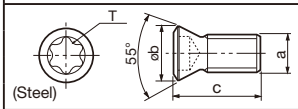
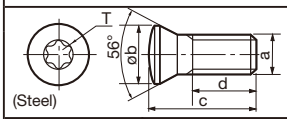
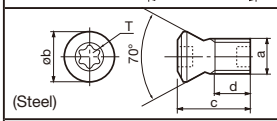
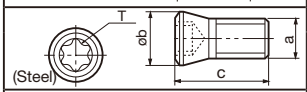
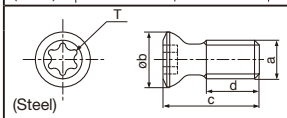
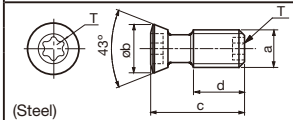
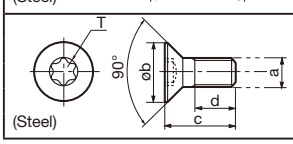
Technical Reference L028

User's Guide- Parts for Tools

Screws

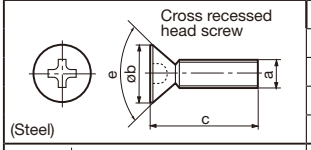
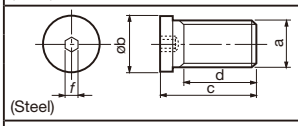
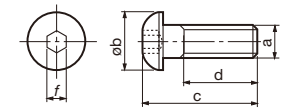
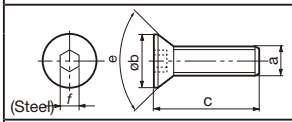
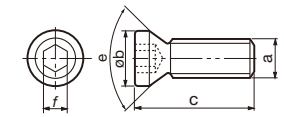
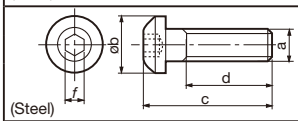
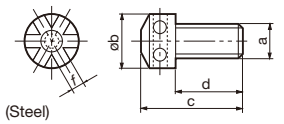
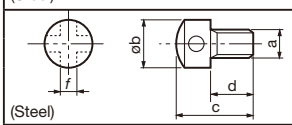
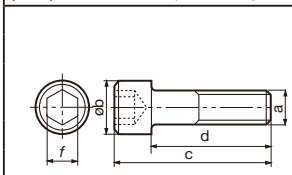
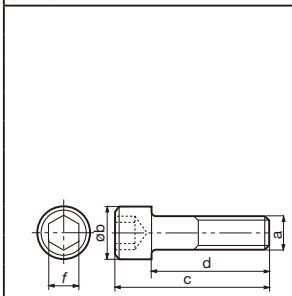
Shape	Designation	Dimension (mm)						Torque (N·m)
		a	øb	c	d	e	T / *f*	
	**CSTA-NO2**	#2-56UNC	4	6	4	82°	T8	1.3
	CSTA-NO2S			5	3			
	CSTA-NO2L			8	6			
	CSTA-NO3	#3-48UNC	4.3	7	4		T9	2.3
	CSTA-NO5	#5-40UNC	5	8	5			
	CSTA-1.6	M1.6x0.35	2.5	3.1	0.9		T6	0.6
	CSTA-4	M4x0.7	7	10	7.7		T15	3.5
	CSTA-5	M5x0.8	7.2	15	11			
	CSTA-5S			12	8			
	CSTA-5SS			9.5	5.5			
	CSTA-5ST25			12	8		T25	5
	CSPA-5IP15		7.1	15	11		15IP	3.5
	CSPA-5SIP15			12	8			
	CSPA-5IP20			15	11		20IP	5
	CSPA-5SIP20			12	8			
(Steel)	**CSP-2L033**	M2x0.4	2.6	3.3	1.9	88°	6IP	0.7
	**CSTB-2**		2.7	3.3	1.4	60°	T6	0.7
	CSTB-2L			5.2	3.3			
	CSTB-2L040			4	2.1			
	CSTB-2.2	M2.2x0.45	3.5	6.1	3.5		T7	1
	CSTB-2.2L038			3.8	2.2			
	CSTB-2.2S			4.6	2			
	CSTB-2.2R		3.1	6.1	3.7			
	CSTB-2.5	M2.5x0.45	3.5	6	3.4		T8	1.3
	CSTB-2.5L080			8	5.4			
	CSTB-2.5B			5.5	2.6			
	CSTB-2.5S			4.8	2.2			
	**CSTB-3**	M3x0.5	4.1	8	4.5		T9	2.3
	CSTB-3L042			4.2	0.7			
	CSTB-3L050			5	2			
	CSTB-3L081		4.2	8.1	4.7		T8	1.3
	CSTB-3S		4.1	6	2.5		T9	2.3
CSP-2L033 type shown	**CSTB-3.5ST**	M3.5x0.6	5.3	12.5	4		T15	3.5
	CSTB-3.5H		5.2	6.5	3.1			
	CSTB-3.5		5.5	8.4	4.3			
	CSTB-3.5T		6.5	10	5.5		T20	5
	CSTB-3.5TS			8.5	4			
	CSTB-3.5D		4.7	8.4	4.9		T9	2.3
	CSTB-3.5L110		5.5	11	7.5		T15	3.5
	CSTB-3.5L115		4.8	11.5	7		T10	2.5
	CSTB-3.5L115-S		4.8	11.5	6.5			3.5
	**CSTB-3.5L**		5.3	12.5	8.4		T15	3.5
	CSTB-4	M4x0.7	5.5	11.4	7.4			
	CSTB-4L060			6	2			
	CSTB-4L085			8.48	3.48			
CSTB-4SD type shown	**CSTB-4L090**		5.7	9	5.5			
	CSTB-4L115-S		5.5	11.5	6.5			5.5
	CSTB-4S		5.5	8	4			3.5
	CSTB-4ST	M4x0.5	6.4	14.7				
	CSTB-4SD	M4x0.7	5.5	8			T8	1.3
	**CSTB-4M**			9.5	5.5		T15	3.5
	CSTB-4F	M4x0.5	7	14.7	8.7			
	CSTB-4TS	M4x0.7	6.5	9	4.5		T20	5
	CSTB-5	M5x0.8	7	12	7.5			
	CSTB-5S			9.5	5			
	CSTB-5L105			10.5	6.1			
	CSTB-5L120			12	6.5			
	CSTB-5L159		7.2	15.9	11.2			
CSTC-4L type shown	**CSTB-5L163-S**		6.9	16.3	11.3			6
	CSTC-4L055DR	M4x0.5	5.42	5.5	2	44°	T8/T10	1.3/2.5
	CSTC-4L055DL	M4x0.5	5.42	5.5	2		T8/T10	1.3/2.5
	CSTC-4L100DR	M4x0.7	5.42	10	5.95		T8/T10	1.3/2.5
	CSTC-4L100DL	M4x0.7	5.42	10	5.95		T8/T10	1.3/2.5
	CSPB-2L043	M2x0.4	2.7	4.3	2.5	60°	6IP	0.7
	CSPB-2H		2.6	3.4	1.6			
	CSPB-2.2	M2.2x0.45	3	6	3.9		7IP	1
	CSPB-2.2SH			4	2			1.1
	CSPB-2.5	M2.5x0.45	3.5	6	3.5		8IP	1.3
	CSPB-2.5S			4.2	1.7			
	CSPB-2.5SH		3.3	5.2	3.3		7IP	1.1
(Steel)	**CSPB-3.5**	M3.5x0.6	5.2	9	5.6		15IP	3.5

Screws

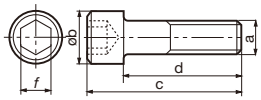
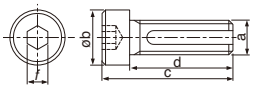
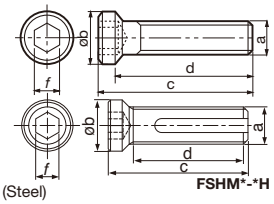
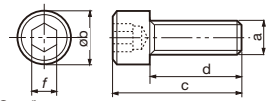
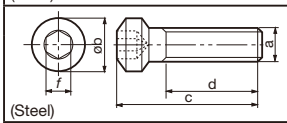
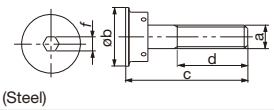
Shape	Designation	Dimension (mm)						Torque (N·m)
		a	øb	c	d	e	T / f	
	CSPB-3.5S	M3.5x0.6	5.2	6.5	3.1			
	CSPB-4	M4x0.7	5.5	11.6	7.4		15IP	3.5
	CSPB-4S			8.2	4	60°		
	CSPB-5	M5x0.8	7	12	7.5		20IP	5
	VX040024A	M4	5.45	9	6		T15	4.5
	VX040028A	M4	5.2	9.7	4.7	44°	T15	4.5
	SR14-500/L5.1	M4	5.5	5.1	2.3		T15	3.5
	SR14-500-L7.0	M4	5.5	7	4.2		T15	3.5
	SR14-562	M3.5	4.8	8.75	5.55		T10	3.5
	SR14-562/S	M3.5	4.8	6.5	3.3	60°	T10	3.5
	SR14-591	M5x0.8	6.6	13.5	7.6		T20	5
	SR34-508	M2.2x0.45	3.15	4.6	2.67		T7	0.9
	SR34-514	M2.5x0.45	3.3	5.2	3.2		T7	0.9
	SR76-943	M6	9.6	20	10	90°	T20	5
	SR76-961	M5	6.6	13.5	7.35	61°	T15	3.5
	SR76-963	M5	8.6	20	9.6	91°	T15	3.5
	SR-10503833-S	M2.5X0.45	3.25	3.8	1.75	60°	T7	-
	SR 114-018-L3.40	M2.5	3.6	3.35	2	56°	T6	0.7
	SM40-143-H0	M4X0.7	5.6	14.3	8.4	61°	T15	3.5
	TS25F080A	M2.25X0.35	3.7	6.9	2.1	60°	T8	1.3
	TS25064I	M2.5X0.45	3.5	6.4	3.8	50°	T8	1.3
	TS30F100A	M3X0.35	4.6	8.3	2.2		T10	2.5
	TS30085I/HG	M3X0.5	4.3	8.5	5.6		T9	2.3
	TS30C72I	M3X0.5	4.2	7.2	4.5	60°	T9	2.3
	TS40085I/HG	M4	5.7	8.5	4.5		T15	3.5
	TS35085I/HG	M3X0.6	5.3	8.5	4.3		T15	3.5
	TS40093I/HG	M4	5.7	9.3	4.3		T15	3.5
	TS40B100I	M4	6	10	6	R3.0	T15	3.5
	TS40F120A	M4X0.5	6	10.6	3	60°	T15	3.5
	TS45120I	M4.5	6.9	12	7.5	R3.5	T20	5
	TS50115I	M5	7	11.35	6.4		T20	5
	TS50230D3	M5X0.8	7	23	13.5		T20	-
	TS50250D35	M5X0.8	7.5	25	14.5		T25	-
	TS50F160A	M5X0.5	7	13.9	3.5		T20	5
	TS60265D4	M6X1.0	8	26.5	15.5		T25	-
	TS60285D42	M6X1.0	8.5	28.5	16.7	60°	T25	-
	TS60320D5	M6X1.0	9.5	31	18		T25	-
	TS60F200A	M6X0.75	8.2	16.7	4.5		T20	7
	TS70F250A	M7X0.75	10	21	5.6		T25	7
(Steel)	TS80F300A	M8X1.0	10	34	20		T25	-
	TS80F300A	M8X1.0	12	25	7.3		T30	10
 (Steel)	CSPD-1.8S	M1.8x0.35	2.4	3.3	1.4		6IP	0.7
	CSTD-3T	M3x0.5	4.3	7	4.5		T10	2.5
	CSPD-3				4.2		10IP	2.5
 (Steel)	CSTB-4.5L110P	M4.5X0.75	6.6	11.7	7		T15	3.5
 (Steel)	SRM5X0.8IP20X+ACROLYTE	M5X0.8	9.2	15	9.8		20IP	7.5
 (Steel)	CSTC-2	M2x0.4	3.1	5.1	-		T6	0.7
 (Steel)	CSTR-4L100	M4x0.7	5.7	10	5.5		T15	3.5
 (Steel)	SR16-212-01397	M5x0.8	6.4	12.5	6.8		T20/T10	2.5
	SR16-212-01397L							
 (Steel)	CST-3.5	M3.5X0.6	6	4.8	-		T9	2.3
	CST-3.5S			3.5	-			
	CST-5	M5x0.8	10	18	13		T25	5
	CST-5S			12	7			
	CSTF-2L055-S	M2x0.4	2.7	5.5	3.8		T6	0.7

User's Guide- Parts for Tools

Screws

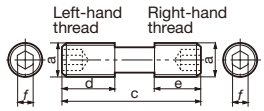
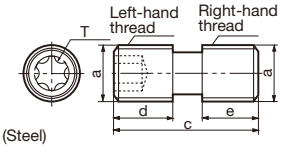
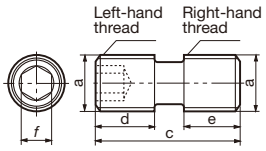
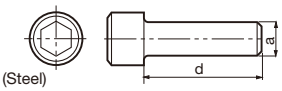
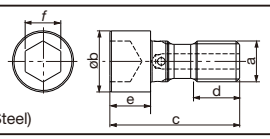
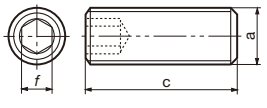
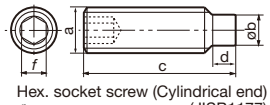
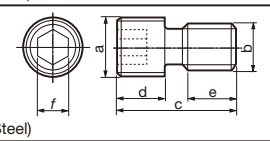
Shape	Designation	Dimension (mm)						Torque (N·m)
		a	øb	c	d	T / f	e	
 Cross recessed head screw (Steel)	**SM2.5×0.45×8**	M2.5x0.45	5	8	-	-	90°	-
	SM2.5×0.5×8	M2.5x0.5	5	8	-	-	90°	-
	SM3×0.5×6	M3x0.5	6	6	-	-	90°	-
	SM3×0.5×8			8	-	-	90°	-
	SM3×0.5×10			10	-	-	90°	-
 (Steel)	**MSP-5**	M5x0.8	6.1	7.9	4.9	2		1.5
	MSP-6.3	M6.3x1	7.7	12.7	9.9	2.5		3
 (Steel)	**BHM3-8**	M3x0.5	5.5	10	8	2		1.5
	BHM4-8	M4x0.7	7	10.6		2.5		2.2
	BHM4-10			12.6	10			
	BHM5-14	M5x0.8	9	17.6	14	3		3
	BHM6-20-A	M6x1.0	10.5	24	20	4		5
	BHM8-25U	M8	14	29.3	25	5		8.5
	BHM8-30U			34.3	30			
 (Steel)	**CSHM-3-8**	M3	6	8	-	2	90°	1.5
 (Steel)	**CSHB-4-A**	M4	5.5	11		T15	60°	2
	CSHB-6	M6	8.5	19	-	4	60°	5
	CSHB-6-A	M6	8.5	19				5
 (Steel)	**RT-1**	M6	10	22.5	14	4		5
	RT-2	M8	13	31	20	5		8.5
 (Steel)	**ASM6**	M6	10	18	12	3		-
	AJM5F	M5x0.5	9	13	8	2		-
	AJM5	M5x0.8	9	13	8	2		-
 (Steel)	**ASM34S**	M3	4.8	8	5	2		-
	ASM34L			11	8			-
	ASM54	M5x0.8	9	14	9	3		-
 (Steel)	**CHHM3.5-10**	M3.5x0.6	6	13.5	10	3		3
	CHHM4-10	M4x0.7	7	14				
	CHHM5-14	M5x0.8	8.5	19	14	4		5
	CHHM5-18			23	18			
	CHHM6-15	M6	10	21	15	5		8.5
	CHHM6-20			–	20			
	CHHM6-25			31	25			
 Hex. socket head screw (JISB1176) (Steel)	**CM3X0.5X6**	M3x0.5	5.5	9	6	2.5		2.2
	CM3X0.5X10			13	10			
	CM4X0.7X10	M4x0.7	7	14		3		3
	CM4X0.7X12			16	12			
	CM4X0.7X14			18	14			
	CM4X0.7X15			19	15			
	CM4X0.7X20			24	20			
	CM4X0.7X20-M0-A		6	24	20			
	CM5X0.8X8	M5x0.8	8.5	13	8	4		5
	CM5X0.8X10-A			15	10			
	CM5X0.8X12			17	12			
	CM5X0.8X12-A			17	12			
	CM5X0.8X14			18	14			
	CM5X0.8X16			21	16			
	CM5X0.8X16-A			21	16			
	CM5X0.8X18			23	18			
	CM5X0.8X20-A			25	20			
	CM5X0.8X25-A			30	25			
	CM5X15	M5		20	15			

Screws

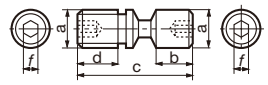
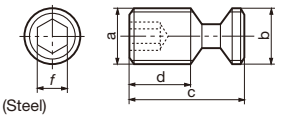
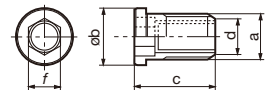
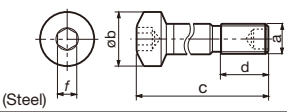
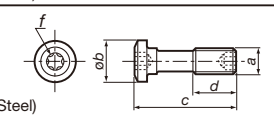
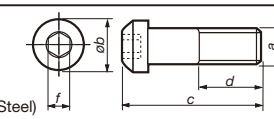
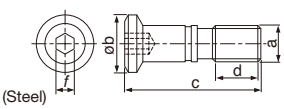
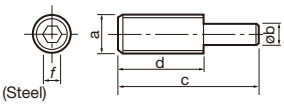
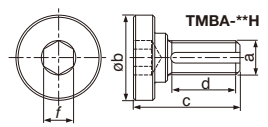
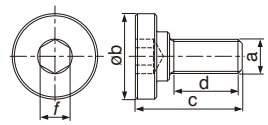
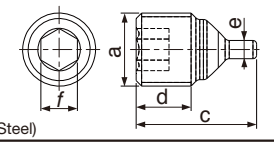
Shape	Designation	Dimension (mm)							Torque (N·m)
		a	øb	c	d	e	f	g	
 Hex. socket head screw (JISB1176)	CM6X1X16-A	M6x1.0	10	22	16		5		8.5
	CM6X1X20-A			26	20				
	CM6X1X25-A			31	25				
	CM6X1.0X40-A			46	40				
	CM6X10	M6		16	10				
	CM6X15			21	15				
	CM6X16			22	16				
	CM6X20			26	20				
	CM6X25			31	25				
	CM6X30-S	M6x1.0	10	35.7	28				
	CM8X1.25X20-A	M8x1.25	13	28	20		6		25
	CM8X1.25X25-A			33	25				
	CM8X30H			36	30		5		
	CM10X30	M10x1.5	16	30	20		8		40
	CM10X30H		16	38	30		6		40
	CM12X30H	M12x1.75	18	40			8		70
	CM16X40H	M16x2	24	54	40		10		100
	CM16x75	M16	24	75	51		14		100
	CM16x120	M16	24	120	96		14		100
	CM16x140	M16	24	140	116		14		100
 CM***H	CM20x80	M20	30	80	50		17		150
	CM20x120	M20	30	120	90		17		150
	CM20x150	M20	30	150	120		17		150
	CAP-CM12x1.75x50	M12	18	50	38		10		70
	CAP-CM16X2.0X55	M16	24	55	39		14		40
	CAP-CM20X2.5X50	M20	30	50	30		17		100
	C0.375X1.125H	3/8-24UNF	14.27	38.11	28.58		5.55		35
	C0.500X1.375H	1/2-20UNF	19.05	47.63	34.93		7.94		70
	SD06-A3	M10x1.5	16	70	60		8		40
	SRM6X16DIN912-12.9	M6x1	10	22	14.1		5		
	VC00TEDI12040F	M12	26	51	40		8		60
	VC00TEDI20040F	M20	49	50	34.5		12		150
	VC00TANG16040F	M16	46	46.5	33		10		60
	SD08-98	M12x1.75	18	77	65		10		70
	LHM12x1.75x30-C	M12	18	36.9	30		8		70
	VC004762I10035F	M10	16	45	34.5		8		60
(Steel)	FCS3	M3x0.5	5.5	16	12		2.5		
	FCS6	M6x1	10	26	20		5		
 (Steel) FSHM*-*H	FSHM8-30	M8x1.25	11	30	27		5		25
	FSHM8-30H								25
	FSHM10-40	M10	14	40	36.5		6		40
	FSHM10-40H								40
 (Steel)	SHCM4-10	M4x0.7	6	14	10		3		3
	SHCM4-12			16	12				
	SHCM4-16			20	16				
 (Steel)	CTS-M6	M6x1	10	25	16.4		4		5
 (Steel)	RSFTS-050M	M10	25	52	42.5		6		

User's Guide- Parts for Tools

Screws

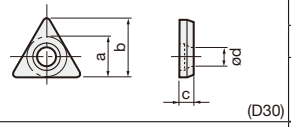
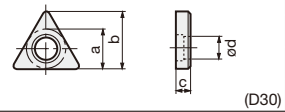
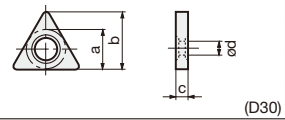
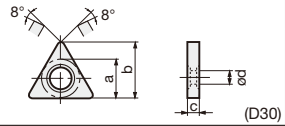
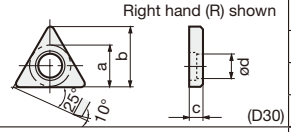
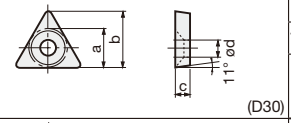
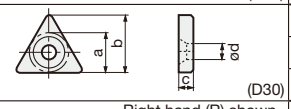
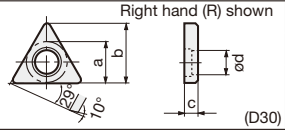
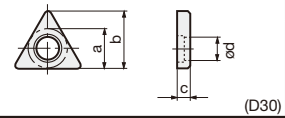
Shape	Designation	Dimension (mm)						Torque (N·m)
		a	øb	c	d	e	T / f	
 (Steel)	**MCS520-2.5**	M5×0.8		20	7	6	2.5	3
	MCS620-3	M6×1				7	3	6
	MCS625-3			25	10	8		
	MCS825-4	M8×1			12.5	6.5	4	8
	MCS828-4			28.5	12	10.5		
	NDS-8A			30	11.5	11.5		
	NDS-8S	M8×1.25		20	8	8		
	RSRGR5M40	M4		9	3.67	4.17	T8	
	SR PS 118-0273	M10		40	16.5	15	5	40
 (Steel)	**DS-5T**	M5×0.8		12	5	5	T10	3.5
	DS-6T	M6		15	6	6	T15	3.5
	DS-6P	M6×1		21	7	7	15IP	6
	FDS-8ST	M8×1		20	8	8	T27	10
	FDS-8ST-18			18		6		
 (Steel)	**DS-6**	M6×1		15	6	6	3	6
	DS-8	M8×1.25		16	7	7	4	8
	DS-8S			13	5.5	5.5		
	DS-10	M10×1.5		26	10	12	5	8
	FDS-6Z	M6×0.75		20.5		5.5	3	6
	FDS-8	M8×1		26		10	4	8
	FDS-8S			20	8	8		
	FDS-8SS			18.5		6.5		
 (Steel)	**SS100**	1/4-20UNC			19.05			
	S-412	10-32UNF			19.05			
 (Steel)	**SHM8x1.25x35-C**	M8	13	43	23	8	6	25
	SHM10x1.5x30-C	M10	16	40	17	10	8	40
	SHM16x2x35-C	M16	24	51	18	16	14	100
	SHM20x2.5x40-C	M20	30	58	20	18	17	150
 Hex. socket screw (Flat end)(JISB1177)	**SSHM2.5-3**	M2.5		3			1.5	1
	SSHM3-3	M3		3				
	SSHM3-4			4				
	SSHM3-6			6				
	SSHM4-4	M4		4			2	1.5
	SSHM4-5			5				
	SSHM4-6			6				
	SSHM4-8			8				
	SSHM4-10			10				
	SSHM4-14			14				
	SSHM5-6	M5		6			2.5	2
	SSHM5-10			10				
	SSHM5-16			16				
	SSHM6-12	M6		12			3	3
	SSHM6-16			16				
	SSHM6-18			18				
	SSHM6-20			20				
	SSHM8-8	M8		8			4	5
	SSHM8-10			10				
	SSHM8-12			12				
	SSHM8-14			14				
	SSHM8-16			16				
(Steel)	**SSHM8-18**			18				
 Hex. socket screw (Cylindrical end) (JISB1177) (Steel)	**M5×7**	M5	3.5	7	1.25	-	2.5	2
	M5×8			8		-		
	M5×10			10		-		
	M6×30	M6	4	30	1.5	-	3	3
 (Steel)	**JDS-3525**	M3.5x0.35	M2.5 x0.45	7.5	3	2.5	2	1
	JDS-5040	M5x0.5	M4 x0.7	10	4	4	2.5	1

Screws

Shape	Designation	Dimension (mm)						Torque (N·m)
		a	b	c	d	e	T / f	
 LCS2 has a hex. socket in threaded end only.	LCS2	M5	5	14	6.5		2	1.5
	LCS3	M6	6	17			2.5	2
	LCS3B			15				
	LCS4	M8	8	21			3	3
	LCS4K				9.6			
	LCS4CA			17.5	6.5			
	LCS5			25	8.5			
	LCS5CA			20.5				
(Steel)	LCS6	M10	9.8	27.2	9.9		4	5
	LCS8	M12	11.8	36	12.8		5	8
	LCS8C	M10	9.8	30.2	13.3		4	5
 (Steel)	LCS22	M5	M5	10	4.7		2	1.5
	LCS22A	M6	M6	10.7				
	LCS23A	M5	M5	13.1	5.1		2.5	2
	LCS33	M5	M5	12	6.2		2	1.5
	LCS43	M6	M6	13.5	7.3		2.5	2
 (Steel)	DTS5-3.5	M5	6.3	8.65	M3.5		3.5	4
	DTS5-3.5SS			6.8				
	DTS5-3.5S			7				
	DTS6-4	M6	7.7	10.2	M4		4	5
	DTS6-4.5		7.5	10	M4.5		4.5	5
 (Steel)	DLCS33	M5	9	31.5	10		3	3
	DLCS43	M6	12	34	9.5		4	5
	DLCS54	M8x1	14	41	11			7
	DLCS64	M10x1	16	50	15		5	8
 (Steel)	ACS-5W	M5	8	20	8.5		T15	4
	ACS-6W	M6	10	26	12.1		T20	6.4
 (Steel)	ACS3	M5x0.8	7.5	25.6	12-15		3	4
	ACS4	M6x1	9	27.7	14-17		4	7
 (Steel)	WCS3	M6	9.5	22.5	8		3	3
 (Steel)	PT1/4GN		13.175	10	-		6	9.5
	1/8-28		9.728	7	-		5	8
 (Steel)	LS-8	M8	6	33	20		4	5
(Steel)	CCS4-A							
	BH5-10-A							
	BH4-10-A							
	BH-40050-A							
 TMBA-**H  (Steel)	TMBA-M10	M10x1.5	27	30	21		8	40
	TMBA-M12	M12x1.75	33	36	26		10	70
	TMBA-M12H	M12x1.75		34.5			8	
	TMBA-M16	M16x2	40	50	40		14	100
	TMBA-M16H	M16x2						
	TMBA-M20	M20x2.5	50	56	42		17	150
	TMBA-M20H	M20x2.5						
	TMBA-M24	M24x3	65	69	55		19	150
	TMBA-M24H	M24x3						
	TMBA-0.500H	1/2-20UNF	33	33.9	25.4		7.94	70
	TMBA-0.750H	3/4-16UNF	50	58.28	47.28		12.7	150
 (Steel)	SR-10400611	M4X0.5		6.6	3	1	2	

User's Guide- Parts for Tools

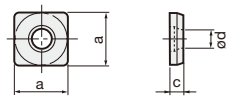
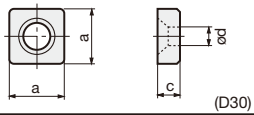
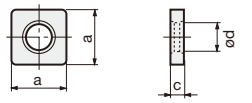
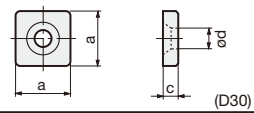
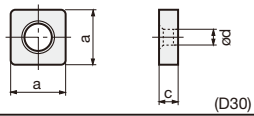
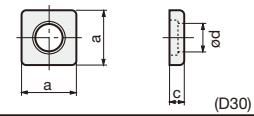
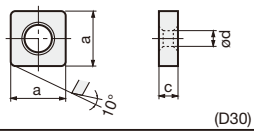
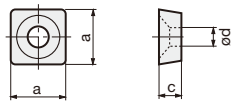
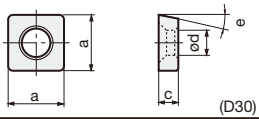
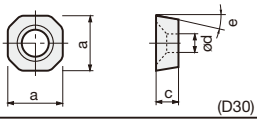
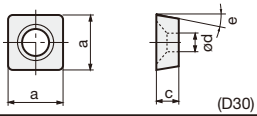
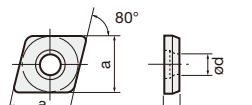
Shims

Shape	Designation	Dimension (mm)				
		a	b	c	ød	
 (D30)	**AST322**	9.3	13.2	3.2	4.4	
	AST422	12.5	18			
 (D30)	**MST-322**	9.1	12.9	3.24	5.8	
	MST-432	12.5	17.9	4.8	7.3	
	MST-533	15.6	22.2		9.7	
	MST-644	18.8	26.6	6.4	11.3	
 (D30)	**LST317**	9.3	13.2	2.7	5	
	LST42	12.5	18	3.2	6.7	
	LST53	15.7	22.3	4.8	7.7	
	LST42K	10.9	15.6	3.2	6.7	
 (D30)	**LST317CA**	9.3	13.2	2.7	5	
	LST42CA	12.5	18	3.2	6.7	
Right hand (R) shown  (D30)	**ELST42**	11.5	16.5	3.2	6.5	
	ELST317	8.5	12	2.7	4.9	
	ELST317BR					
	ELST317BL					
 (D30)	**PAT-32**	8.2	11.7	3.2	3.5	
	***PAT-53**	13.4	19.8	4.8	5	
 (D30)	**NAT-32**	9.5	13.4	3.2	3.5	
	NAT-42E	12.4	17.8		3.1	
Right hand (R) shown  (D30)	**LST317BR**	9.3	13.2	2.7	5	
	LST317BL					
 (D30)	**SST32**	8.5	11.9	3.2	5.4	

Note: * marked shims are made of steel.

User's Guide- Parts for Tools

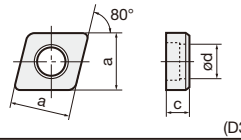
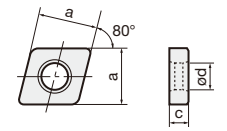
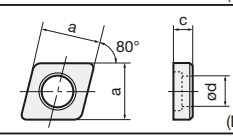
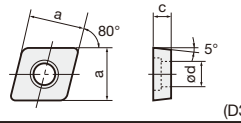
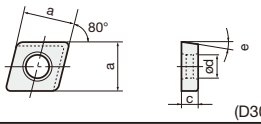
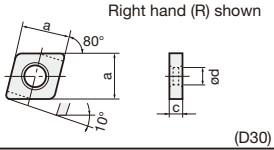
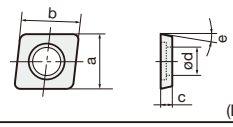
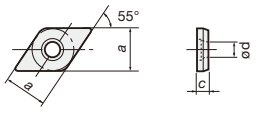
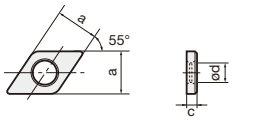
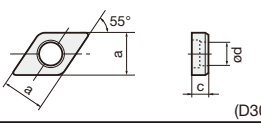
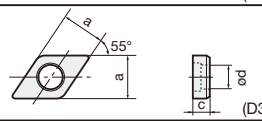
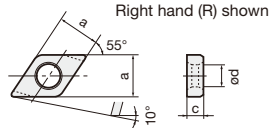
Shims

Shape	Designation	Dimension (mm)				
		a	b	c	ød	e
 (D30)	**ASS422**	12.5		3.2	4.4	
	CS44-A			4.7		
 (D30)	**ASS533**	15.7		4.8	5.5	
	ASS634	18.9				
 (D30)	**ELSS32**	8.5		3.2	4.9	
	LSS33	9.3		4.3	5	
	ELSS42	11.7		3.2	6.5	
	LSS42	12.5			6.7	
	ELSS53	14.7		4.8	8	
	LSS53	15.7			7.7	
	ELSS63	17.9			9.7	
	LSS63	18.9				
	ELSS84	24.2		6.4	12.9	
	LSS84	25.2			13.1	
 (D30)	**NAS-42**	12.7		3.2	3.5	
	NAS-04	31.5		6.4	9.1	
 (D30)	**MSS-432**	12.5		4.8	7.3	
	MSS-442			6.4		
 (D30)	**SSS32**	8.5		3.2	5.4	
Right hand (R) shown  (D30)	**LSS42BR**	12.5		3.2	6.7	
	LSS42BL					
 (D30)	**PAS-32**	8.2		3.2	3	
	PAS-42	11.4			3.5	
	***PAS-63**	17		4.8	5	
 (D30)	**LSS42CA**	12.5		3.2	6.7	8°
	LSS53CA	15.7		4.8	7.7	10°
 (D30)	**FSSA1102**	11.6		2	5.5	13°
 (D30)	**FSSP1102**	11		2	5.5	17°
 (D30)	**ASC322**	9.3		3.2	4.4	
	ASC422	12.5				
	ASC533	15.7		4.8	5.5	
	ASC634	18.9				
	CC44-A	12.5		4.7		

Note: * marked shims are made of steel.

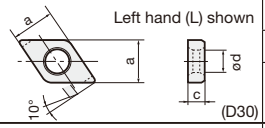
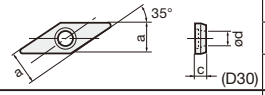
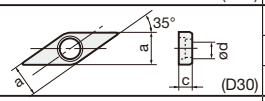
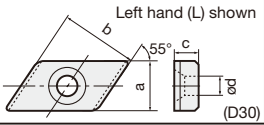
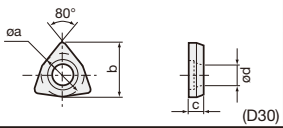
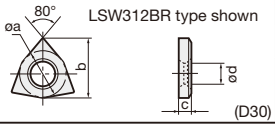
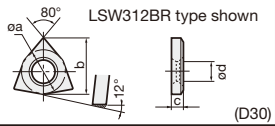
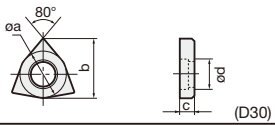
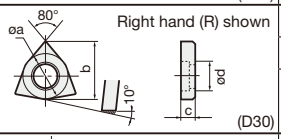
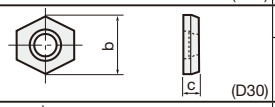
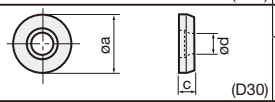
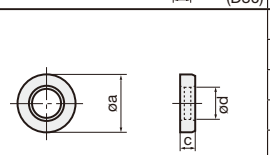
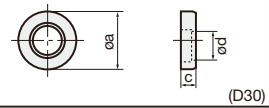
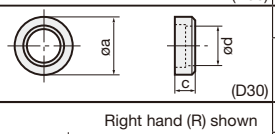
User's Guide- Parts for Tools

Shims

Shape	Designation	Dimension (mm)				
		a	b	c	ød	e
 (D30)	**MSC-432**	12.5		4.8	7.3	
	MSC-442			6.4		
	MSC-533	15.6		4.8	9.7	
	MSC-543			6.4		
	MSC-634	18.8			11.3	
 (D30)	**ELSC32**	8.5		3.2	6.2	
	LSC42	12.5			6.5	
	ELSC42	11.7				
	LSC53	15.7		4.8	7.7	
	ELSC53	14.7			8.1	
	ELSC63	17.9			9.7	
	LSC63	18.9				
	LSC317	9.3		2.7	5	
 (D30)	**SSC32**	8.5		3.2	5.4	
	SSC4T3	11.4		4	6.6	
 (D30)	**SSC4T3-P**	11.4		4	6.6	5°
	SSC54-P	13.4				5°
 (D30)	**LSC42CA**	12.5		3.2	6.7	8°
	LSC53CA	15.7		4.8	7.7	10°
Right hand (R) shown  (D30)	**LSC42BR**	12.5		3.2	6.7	
	LSC42BL					
 (D30)	**ZSA1102**	10.5	11	2	5.475	11°
	ZSA1502	15.6	12.4		6	11°
 (D30)	**ASD322**	9.3		3.2	4.4	
	ASD423	12.5		3.2	4.4	
	ASD432	12.5		4.8	4.4	
	CD44-A	12.5		4.7		
 (D30)	**ELSD32**	8.5		3.2	4.9	
	ELSD42	11.7			6.5	
	LSD42	12.5			6.7	
	LSD42A					
	LSD43			4.8		
	LSD43A					
 (D30)	**MSD-322**	9.3		3.2	5.8	
	MSD-432	12.5		4.8	7.3	
	MSD-442			6.4		
 (D30)	**SSD32**	8.5		3.2	5.4	
Right hand (R) shown  (D30)	**ELSD317BR**	8.5		2.7	4.9	
	ELSD317BL					
	LSD42BR	12.5		3.2	6.7	
	LSD42BL					

User's Guide- Parts for Tools

Shims

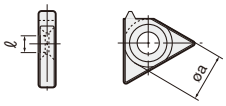
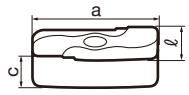
Shape	Designation	Dimension (mm)				
		øa	b	c	ød	
 Left hand (L) shown (D30)	**LSZ42BR**	12.5		3.2	6.7	
	LSZ42BL					
 (D30)	**ASV322**	9.3		3.2	4.4	
	CV34-A	9.3		4.7		
 (D30)	**MSV-322**	9.26		3.2	5.8	
	SSV32	8.4			5.4	
	SSV42	11			6.3	
 Left hand (L) shown (D30)	**CSK54R**	9.4	14.8	4.8	3.5	
	CSK54L					
 (D30)	**ASW322**	9.33	11.5	3.2	4.4	
	ASW422	12.5	15.2			
 LSW312BR type shown (D30)	**LSW312**	9.33	11.5	2.7	5	
	LSW42	12.5	15.5	3.2	6.7	
 LSW312BR type shown (D30)	**LSW312BR**	9.33	11.5	2.7	5	
	LSW312BL					
 (D30)	**MSW-432**	12.8	15.8	4.8	7.3	
	MSW-533	16	19.7		9.7	
	MSW-633	19.2	23.7		11.3	
 Right hand (R) shown (D30)	**MSW-432BR**	12.8	15.8	4.8	7.3	
	MSW-432BL					
 (D30)	**CH44-A**		12.5	4.7		
 (D30)	**ASR420**	12.5		3.2	4.4	
 (D30)	**LSR32**	8.9		3.2	5	
	LSR32C	8.4				
	LSR42	12.1			6.7	
	LSR42C	9.9			5	
	LSR53C	14		4.8	6.7	
	LSR63C	17.2			8.2	
	LSR84C	21.9		6.4	9.7	
 (D30)	**MSR-43**	12.5		4.8	7.3	
	MSR-44			6.4		
 (D30)	**SSR32**	8.7		3.18	5.2	
 Right hand (R) shown (D30)	**G16EL/IR**	9.5	-	3.2	4	
	G16ER/IL			3.2		
	G16EL/IR-DT			3.97	5.4	
	G16ER/IL-DT			3.97		

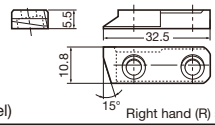
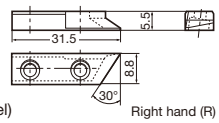
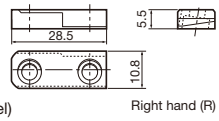
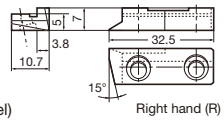
User's Guide- Parts for Tools

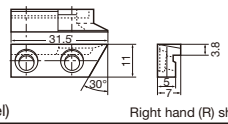
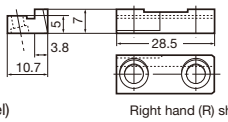
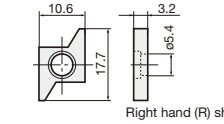
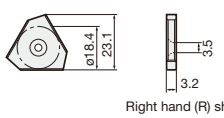
Shims

Shape	Designation	Dimension (mm)		
		øa	ℓ	Lead angle
	AE16-4DT	9.5	5.4	4°
	AE16-3DT		5.4	3°
	AE16-2DT		5.4	2°
	A16-1DT		5.4	1°
	AE16-0DT		5.4	0°
	AE16-99DT		5.4	-1°
	AE16-98DT		5.4	-2°
	AE16-4		4	4°
	AE16-3		4	3°
	AE16-2		4	2°
	A16-1		4.3	1°
	AE16-0		4	0°
	AE16-99		4	-1°
	AE16-98		4	-2°
	AN16-4DT	9.5	5.4	4°
	AN16-3DT		5.4	3°
	AN16-2DT		5.4	2°
	AN16-0DT		5.4	0°
	AN16-99DT		5.4	-1°
	AN16-98DT		5.4	-2°
	AN16-4		4	4°
	AN16-3		4	3°
	AN16-2		4	2°
	AN16-0		4	0°
	AN16-99		4	-1°
	AN16-98		4	-2°
	GXE16-98	9.5	4	-2°
	GXE16-98DT		5.4	-2°
	GXE16-99		4	-1°
	GXE16-99DT		5.4	-1°
	GXE16-0		4	0°
	GXE16-0DT		5.4	0°
	GXE16-1		4.3	1°
	GX16-1DT		5.4	1°
	GXE16-2		4	2°
	GXE16-2DT		5.4	2°
	GXE16-3		4	3°
	GXE16-3DT		5.4	3°
	GXE16-4		4	4°
	GXE16-4DT		5.4	4°
	GXE22-98DT	12.7	6.6	-2°
	GXE22-99DT			-1°
	GXE22-0DT			0°
	GX22-1DT			1°
	GXE22-2DT			2°
	GXE22-3DT			3°
	GXE22-4DT			4°
	GXN16-98	9.5	4	-2°
	GXN16-98DT		5.4	-2°
	GXN16-99		4	-1°
	GXN16-99DT		5.4	-1°
	GXN16-0		4	0°
	GXN16-0DT		5.4	0°
	GXN16-1		4.3	1°
	GXN16-2		4	2°
	GXN16-2DT		5.4	2°
	GXN16-3		4	3°
	GXN16-3DT		5.4	3°
	GXN16-4		4	4°
	GXN16-4DT		5.4	4°
	GXN22-98DT	12.7	6.6	-2°
	GXN22-99DT			-1°
	GXN22-0DT			0°
	GXN22-2DT			2°
	GXN22-3DT			3°
(D30)	GXN22-4DT			4°

Shims

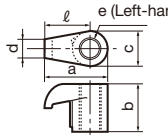
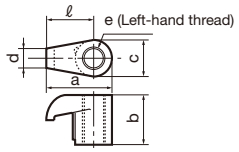
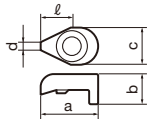
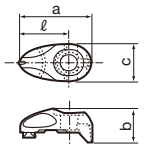
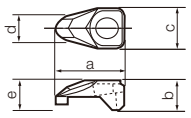
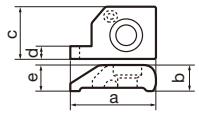
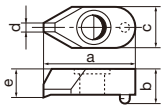
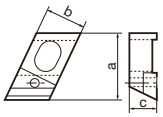
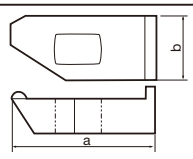
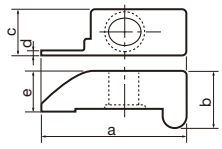
Shape	Designation	Dimension (mm)				
		a	øa	ℓ	c	Lead angle
	NXE22-98		12.7	4		-2°
	NXE22-99					-1°
	NXE22-0					0°
	NXE22-1			4.5		1°
	NXE22-2			4		2°
	NXE22-3					3°
	NXE22-4					4°
	NXE27-98		15.9	4		-2°
	NXE27-99					-1°
	NXE27-0					0°
	NXE27-1			4.5		1°
	NXE27-2			4		2°
	NXE27-3					3°
	NXE27-4					4°
	NXN22-98		12.7	4		-2°
	NXN22-99					-1°
	NXN22-0					0°
	NXN22-1			4.5		1°
	NXN22-2			4		2°
	NXN22-3					3°
	NXN22-4					4°
	NXN27-98		15.9	4		-2°
	NXN27-99					-1°
	NXN27-0					0°
	NXN27-1			4.5		1°
	NXN27-2			4		2°
	NXN27-3					3°
(D30)	NXN27-4					4°
	TSL12R	12		4.7	4.5	4.5°
	TSL12L	12		4.7	4.5	4.5°
	TSL16R	15.9		6.4	5	5°
	TSL16L	15.9		6.4	5	5°
	TSL24R	23.8		9.4	7.1	7°
	TSL24L	23.8		9.4	7.1	7°
	TSL12RI	10.7		4.7	4.5	4.5°
	TSL12LI	10.7		4.7	4.5	4.5°
	TSL16RI	18.8		6.4	5	5°
(D30)	TSL16LI	18.8		6.4	5	5°

Shape	Designation
 (Steel) Right hand (R) shown	SL-1R
	SL-1L
 (Steel) Right hand (R) shown	SL-2R
	SL-2L
 (Steel) Right hand (R) shown	SL-3R
	SL-3L
 (Steel) Right hand (R) shown	SL-6R
	SL-6L

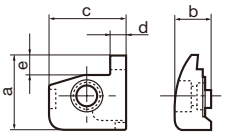
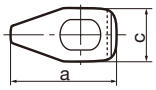
Shape	Designation
 (Steel) Right hand (R) shown	SL-7R
	SL-7L
 (Steel) Right hand (R) shown	SL-8R
	SL-8L
 (D30) Right hand (R) shown	SGSR151
	SGSL151
 (D30) Right hand (R) shown	STN62R
	STN62L

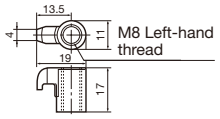
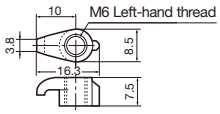
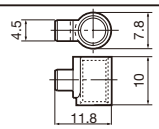
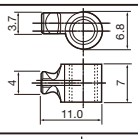
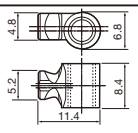
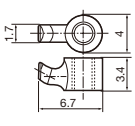
User's Guide- Parts for Tools

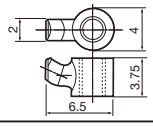
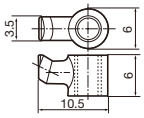
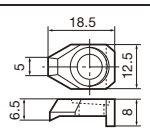
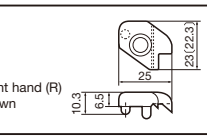
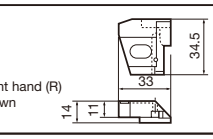
Clamps

Shape	Designation	Dimension (mm)					
		a	b	c	d	e	ℓ
 e (Left-hand thread) (Steel)	**MCL-5M**	14.7	11	7.8	4	M5	10.8
	MCL-6	18.6	11.5	9.5		M6	13.8
	MCL-8S	19.1	13.5	10.9	5	M8	13.6
	MCL-8M	22.5					17
	MCL-8L	25.5	14.5		4		20
 e (Left-hand thread) (Steel)	**MCPM-6**	14.7	11.2	7.9	4	M5	10.8
	MCPM-9	19.1	16.8	10.9	5	M8×1	13.6
	MCPM-12	22.5					17
	MCPM-20	18.6	9.5	9.5	4	M6	13.8
	MCPM-21		12.2				
	MCPM-22	21.5	13.2				16.7
	MCPM-30	25.5	16.8	10.9	5	M8×1	20
 (Steel)	**DCPM-33**	16	9.3	10.5	2.4		8.5
	DCPM-43	21.2	11.5	13.5	3		13.2
	DCPM-54	25.8	15.25	14	3.5		
	DCPM-64	28.4	15.5	16	4		
 (Steel)	**ACP3S**	22.8	9.5	10			15
	ACP3S-E	21.7	9.5	10			13.9
	ACP4S	25.7	12	13			17.7
	ACP5S	30.1	12.9	15	-	-	20.7
	ACP6S	33.4	12.8	16.5	-	-	24
 (Steel)	**ACP3**	17.9	10	10	6.5	6.3	
	ACP4	25.9	13.9	12	7	10.8	
 Right hand (R) shown (Steel)	**CTC-3R**	29	8.8	16	2.2	8	
	CTC-3L						
	CTC-4R			17	3.2		
	CTC-4L						
	CTC-5R			18	4.2		
	CTC-5L						
 (Steel)	**CP81A**	28	10.5	12	3.5	8	
	CP81B						
 TC-3 type shown, TC-4 : Left-hand thread (Steel)	**TC-3**	19	12.5	8.3	–	–	–
	TC-4	21.6		8			
 (Steel)	**TF-72**	22	11.3				
	TF-73	22	11.3				
	TF-184	22	11.3				
	TF-185	22	11.3				
 (Steel)	**CCR2**	34.7	14.9	10.7	1.2	10.5	
	CCL2						
	CCR3				2.2		
	CCL3						
	CCR4				2.8		
	CCL4						
	CCR5				3.2		
	CCL5						
	CCR6				3.9		
	CCL6						
	CCR8				4.9		
	CCL8						

Clamps

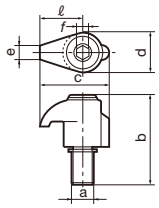
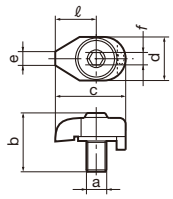
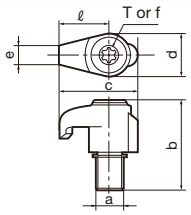
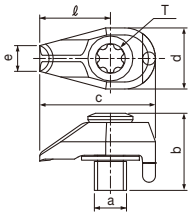
Shape	Designation	Dimension (mm)					
		a	b	c	d	e	
 Right hand (R) shown	CFG-3SR	22	11	23.1	2	6	
	CFG-3SL						
	CFG-4SR				3		
	CFG-4SL						
	CFG-4DR	32				16	
	CFG-4DL						
	CFG-5SR	22			4	6	
	CFG-5SL						
	CFG-5DR	32				16	
	CFG-5DL						
	CFG-6SR	23			5	7	
	CFG-6SL						
	CFG-6DR	33				17	
	CFG-6DL						
	CFG-8SR	28		27.1	7	8	
	CFG-8SL						
	CFG-8DR	38				18	
(Steel)	CFG-8DL						
 (Steel)	CCP4-A	29.1		14			

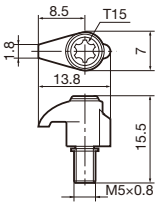
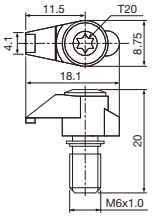
Shape	Designation
 (Steel)	NF-84A
 (Steel)	CP536
 (Steel)	CP91
 (Steel)	CP900
 (Steel)	CP910
 (Steel)	JCP-1

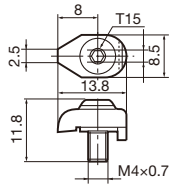
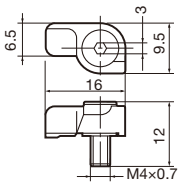
Shape	Designation
 (Steel)	JCP-2
 (Steel)	JCP-3 JCP-3N
 (Steel)	CQ-1
 Right hand (R) shown (Steel)	CPK5R CPK5L
 Right hand (R) shown (Steel)	C11R-5 C11L-5

User's Guide- Parts for Tools

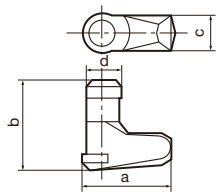
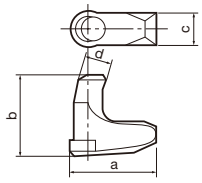
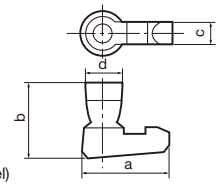
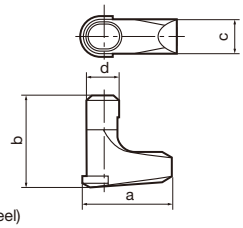
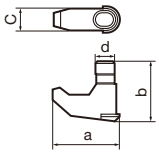
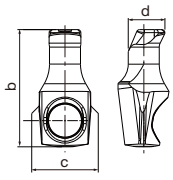
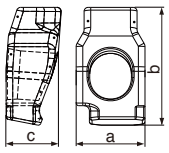
Clamp Sets

Shape	Designation	Dimension (mm)						
		a	b	c	d	e	ℓ	T / f
 (Steel)	**CSG-5S**	M5×0.8	13.5	13.8	7	1.8	8.5	2.5
	CSG-5		15.5					
	CSG-6S	M6×1		16.3	8.5	2.5	10	3
	CSG-6		18					
	CSG-6L		21.5					
	CSG-8S	M8×1	21	20.5	11	3.5	12.5	4
	CSG-8		23.5					
 (Steel)	**CSW-00**	M4×0.7	11.5	12	8	2	7.5	2.5
	CSW-1	M5×0.8	16.5	16.5	9.5	4	10	3
	CSW-0	M4×0.7	11.5	13.8	8.5	2.5	8	2.5
	CSW-2	M6×1	20	20.5	11	6	13	4
	CSW-40	M4×0.7	12	13.2	8	2	7.5	2.5
	CSW-50	M5×0.8	15	16.9	10		9.5	3
 (Steel)	**CSP16**	M5×0.8	15.5	14.4	6.9	3.2	9.1	T15
	CSP22	M6×1	20	18.1	8.9	4.2	11.5	T20
	CSP27	M8×1.25	23.5	24.4	11.9	3.9	15.6	4
 (Steel)	**CSY-15**	M4×0.7	11.6	11.5	7	3	6	15IP
	CSY-20	M5×0.8	12	18	9.5	4	11	20IP

Shape	Designation
 (Steel)	**CSG-5T**
 (Steel)	**CSX20**

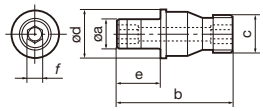
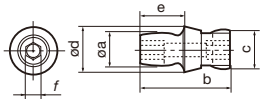
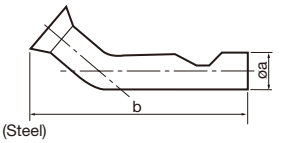
Shape	Designation
 (Steel)	**CSW-0T**
 (Steel)	**CSL-4**

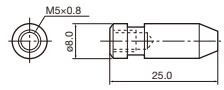
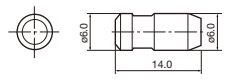
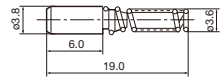
Levers

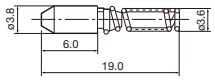
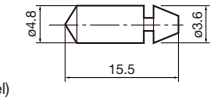
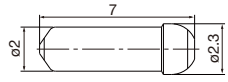
Shape	Designation	Dimension (mm)				
		a	b	c	d	
 (Steel)	**LCL3**	10	12	3.7	3.6	
	LCL4	14.6	14	4.7	4.7	
	LCL5	17.1	17	6	6	
	LCL6	20.5	21	7.5	7.5	
	LCL8	25.4	25.4	8.6	8.6	
 (Steel)	**LCL3C**	10.8	11.8	3.4	3	
	LCL4C	13	13.4	3.7	3.4	
	LCL5C	18.6	17.7	4.7	4.5	
	LCL6C	20.5	19	6	5.7	
	LCL8C	24.2	23.5	7.5	6.2	
 (Steel)	**LCL22N**	7.5	6.5	2.6	2.06	
	LCL32N	10	7.8	3.2	3.2	
	LCL33NL	11.5	9.5	3.1	3.6	
	LCL33N	10	9.4	3.2	3.2	
	LCL43N	13.4	10	4.7	4.7	
 (Steel)	**LCL23**	7.8	8.5	2.6	2.1	
	LCL33	10.1	12.1	3.6	3.7	
	LCL33L	12	11.5	3.1	3.6	
	LCL43S	13.5	13.2	4.7	4.7	
	LCL43M					
	LCL44	16.1	14.6	4.7	4.7	
	LCL54	16.5	17.2	6.1	6	
 (Steel)	**DLCL43**	15.55	14	5	4.7	
	DLCL54	19.1	19.1	6.1	6	
	DLCL64	21.5	21	7.5	7.5	
 (Steel)	**SLLV-1**		7.75	3.4	2.43	
	SLLV-2		7.75	3.4	2.75	
 (Steel)	**FCL4**	5	7.78	3.81		
	FCL8	10	14.3	5.39		

User's Guide- Parts for Tools

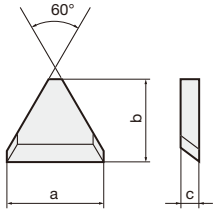
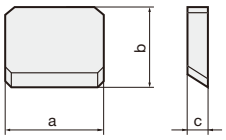
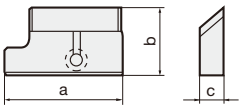
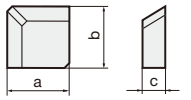
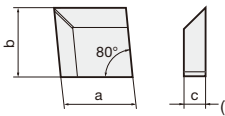
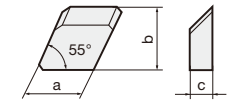
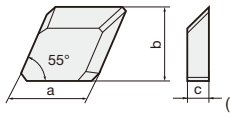
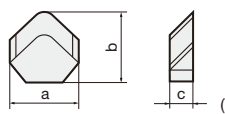
Pins

Shape	Designation	Dimension (mm)					
		øa	b	øc	ød	e	*f*
 (Steel)	**MLP32L**	3.9	8.8	M5×0.8	5.6	3.5	2
	MLP33	3.7					
	MLP34L	3.7	13.1		6.2	5	
	MLP46	5	17.2	M6.3×1	7.8	5.5	2.5
	MLP46L		18.6			6.9	
	MLP58	6.2	21.9	M8×1	10.3		3
	MLP68	7.8		M10×1	11.9		4
	MLP68L		24.1			9.1	
 (Steel)	**MLP44**	5	13.2	M6.3×1	7.1	5.5	2.5
	MLP33L	3.7	10.4	M5×0.8	5.6	5.1	2
 (Steel)	**SW99**	8	47.5				

Shape	Designation
 (Steel)	**SP-8**
 (Steel)	**SP-6**
 (Steel)	**BP-3**

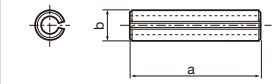
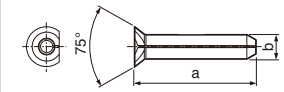
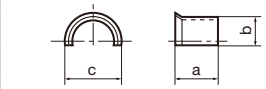
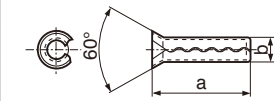
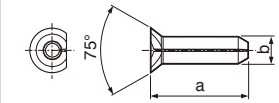
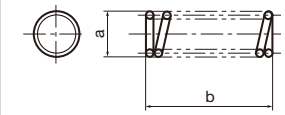
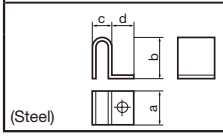
Shape	Designation
 (Steel)	**BP-360**
 (Steel)	**BP-490**
 (Steel)	**SL-PI-2**

Chipbreaker Pieces

Shape	Designation	Dimension (mm)				
		a	b	c		
 (TX30)	**CBT-2S**	8.8	7.6	2		
	CBT-2M	7.4	6.6			
	CBT-3S	13.3	12.1	2.5		
	CBT-3M	12.3	11.1			
	CBT-3L	11.3	10.1			
	CBT-4S	18.8	16.9			
	CBT-4M	17.8	15.9			
	CBT-4L	16.8	14.4			
	NCT-2S	14.2	11.8			
	NCT-2M	13	10.8			
	NCT-2L	11.9	9.8			
 (TX30)	**CBS-3S**	9.5	8.3	2		
	CBS-3M		7.3			
	CBS-4S	12.7	11.6	2.5		
	CBS-4SN					
	CBS-4M		10.6			
	CBS-4L		9.1			
	NCS-3S		11.2			
	NCS-3M		10.2			
	NCS-3L		8.7			
 Right hand (R) shown (TX30)	**B11 R-5**	24	13	5		
	B11 L-5					
 (TX30)	**CBS-4SN**	11.5	11.5	2.5		
	CBS-4MN	10.5	10.5			
	CBS-4LN	9	9			
	NCS-3SN	11.2	11.2			
	NCS-3MN	10.2	10.2			
	NCS-3LN	8.7	8.7			
 (TX30)	**CBC-4SN**	11.5	11.5	2.5		
	CBC-4MN	10.5	10.5			
	CBC-4LN	9.5	9.5			
 Right hand (R) shown (TX30)	**CBD-4SR**	12.7	11.5	2.5		
	CBD-4MR		10.5			
	CBD-4ML					
	CBD-4LR		9.5			
 (TX30)	**CBD-4SN**	11.5	11.5	2.5		
	CBD-4MN	10.5	10.5			
 (TX30)	**CBR-4SN**	12.7	11.9	2.5		
	CBR-4MN		10.9			

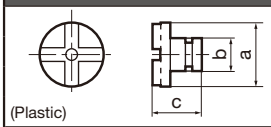
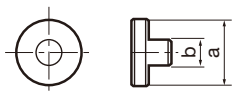
User's Guide- Parts for Tools

Springs (Springs for Shims)

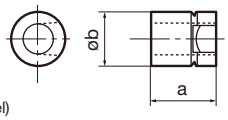
Shape	Designation	Dimension (mm)					
		a	b	c	d		
 (Steel)	**SP-2.5**	12	2.7				
 (Steel)	**SP-16-L14**	13.6	2.85				
 (Steel)	**LSP3**	5.5	3	5.9			
	LSP3L	7					
	LSP4		4	7.6			
	LSP4S	6					
	LSP5	8.5	4.5	8.8			
	LSP6	11	5.9	10.9			
	LSP6C	8.5	4.8	9.3			
	LSP8	12	10	15.4			
 (Steel)	**PSP-2.5**	10	2.7				
	PSP-4.0	16	4.2				
	PSP301	7.6	3				
 (Steel)	**PSP-16**	9.75	2.85				
 (Steel)	**BP-0**	3.6	13				
	BP-5-A						
	BP-7	7	11				
	BP-8.8	8.8	10				
	BP-9	8.3					
	BP-10	9.1					
	SP913	9	13				
 (Steel)	**BSP-1**	7.8	7.5	4.8	6		

User's Guide- Parts for Tools

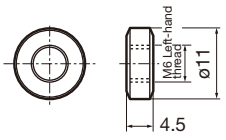
Coolant Supply Attachment

Shape	Designation	Dimension (mm)					
		a	b	c	Thread		
 (Plastic)	**EA-20**	20	10	15			
	EA-25	25					
	EA-32	32	16				
 (Plastic)	**CA-16**	16	8		M6		
	CA-20	20	8.5		M6		
	CA-25	25	11.5		R1/8		
	CA-32	32	11.5		R1/8		
	CA-40	40	11.5		R1/8		

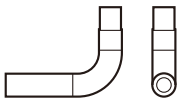
Pistons

Shape	Designation	Dimension (mm)				
		a	øb			
 (Steel)	**DPIS33**	12.6	9			
	DPIS43	11.8	10			
	DPIS44	13.4	10			
	DPIS54	16	13			
	DPIS64		15			

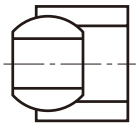
Nuts

Shape	Designation
	**SRW11**

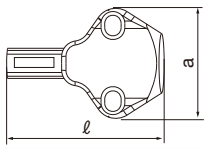
Coolant Pipe & Nozzle

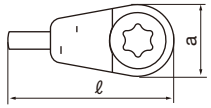
Shape	Designation
	**PNZ5**

Coolant Nozzle

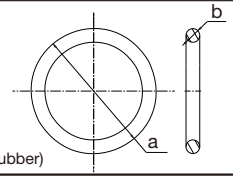
Shape	Designation
	**CNZ125**
	SATZ-M8X1-M3
	SATZ-M10X1-M5
	EZ104
	EZ83

Coolant unit

Shape	Designation	Dimension (mm)	
		a	ℓ
	**CU-CW-CHP**	20.8	29.7
	CU-D-CHP	20.8	29.6
	CU-V-CHP	20.8	30

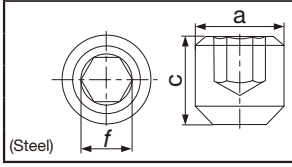
Shape	Designation	Dimension (mm)	
		a	ℓ
	**S-CU-CHP**	7	16.2

O-ring for TungTurn-Jet

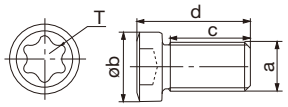
Shape	Designation	Dimension (mm)				
		a	øb			
 (Rubber)	**OR6.4X0.9N**	8.2	0.9			
	OR14X2.5NN	19	2.5			

User's Guide- Parts for Tools

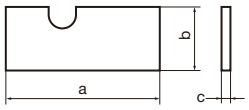
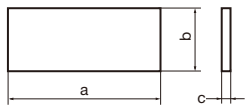
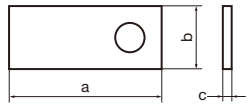
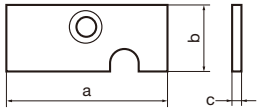
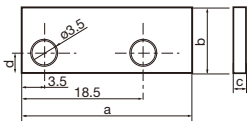
Coolant screw for TungTurn-Jet

Shape	Designation	Dimension (mm)				
		a	c			T / *f*
 (Steel)	**SRM4X4 TL360**	M4	4			2

Mounting screw for TungTurn-Jet

Shape	Designation	Dimension (mm)				
		a	øb	c	d	T / *f*
 (Steel)	**SRM3**	M3X0.5	4.2	7	4.9	T8

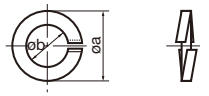
Sizing Plates

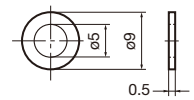
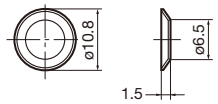
Shape	Designation	Dimension (mm)					
		a	b	c	d		
 (Steel)	**S0816A**	55	15.5	0.8			
	S1016A			1			
	S0816B	50		0.8			
	S1016B			1			
	S0816C	45		0.8			
	S1016C			1			
	S0820A	61	19.5	0.8			
	S1020A			1			
	S0820B	54.5		0.8			
	S1020B			1			
	SM-00	18	8	1			
 (Steel)	**SW04**	25.5	5.8	0.25			
				0.5			
				1			
	SW05	37	8.3	0.25			
	SW06	36	10.8	0.5			
				1			
	SW08	35.5	12.3	2			
 (Steel)	**S0810**	40	11	0.8			
	S1010			1			
 Attached with fix screw and wrench. (Steel)	**PSTR08**	24	11	1.5			
	PSTL08						
	PSTR10	42	16.5	2			
	PSTL10						
	PSTR12	47	19	2			
	PSTL12						
 (Steel)	**AP0801**	26	9.5	0.5	3		
	AP0802			1			
	AP0803			1.5			
	AP0804			2			
	AP0805			2.5			
	AP1101	30	11.5	0.5	5		
	AP1102			1			
	AP1103			1.5			
	AP1104			2			
	AP1105			2.5			
	AP1106			3			

SW04 is composed of three plates and SW05 to SW08 are composed of four plates.
Note on fixing screws: PSTR/L08 is attached with CSSM2-4 and other types are attached with CSHM3-8.

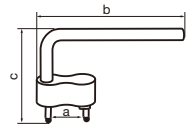
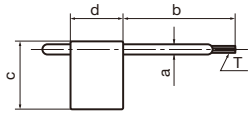
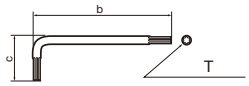
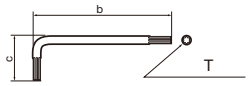
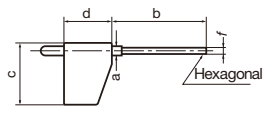
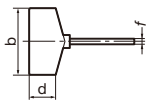
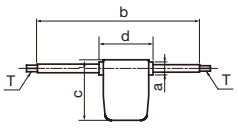
User's Guide- Parts for Tools

Washers

Shape	Designation	Dimension (mm)					
		øa	øb				
	**VA4**	7.6	4.1				
	VA5	9.2	5.1				
	VA6	10.5	6.1				

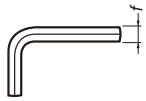
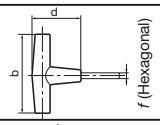
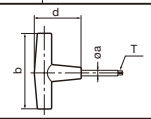
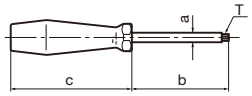
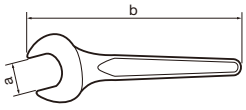
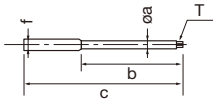
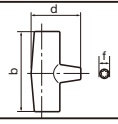
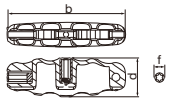
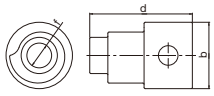
Shape	Designation
	**CPW5**
	**CDW6**

Wrenches and Drivers

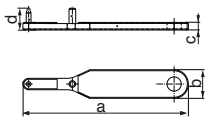
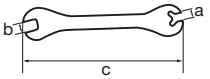
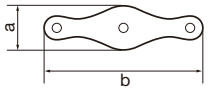
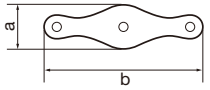
Shape	Designation	Dimension (mm)					
		a	b	c	d	*f*	T
	**CRW23**	9.7	78.5	55.0			
	CRW33	9.3					
	**T-6F**	2	35	14.5	15		T6
	T-7F			19	19		T7
	T-8F	2.5	40				T8
	T-9F	3		23.5	20		T9
	T-15F	3.5	45	28	21		T15
	T-20F	4					T20
	IP-6F	2	35	14.8	14.9		6IP
	SET T-15/5	3.5	45	28	21		T15
	T-20TORX	3.9	49	30	22		T20
	**T-6L**		48	16			T6
	T-8L						T8
	T-9L						T9
	T-15L		59	22			T15
	T-25TORX		66	23.3			T25
	**KEYV-T20**		60	22			T20
	KEYV-T25		65	23			T25
	KEYV-T30L		190	37			T30
	KEYV-T40L		208	43			T40
	KEYV-T50L		232	48			T50
	**P-2F**	4	44	20	12.5	2	
	P-2.5F	5	45	25	20	2.5	
	HW2.0/5RED	3	38	15	15	2	
	**P-2.5T**		42		15	2.5	
	**T-1008/5**	6.5	85	28	25	-	T10/T8
	T-2010/5					-	T10/T20

User's Guide- Parts for Tools

Wrenches, Drivers and Lubricant

Shape	Designation	Dimension (mm)					
		a	b	c	d	*f*	T
	**1/4HEX**					6.35	
	5/32HEX					3.97	
	1/8HEX					3.18	
	3/32HEX					2.38	
	P-2					2	
	P-2.5					2.5	
	P-3					3	
	P-3.5					3.5	
	P-4					4	
	P-4.5					4.5	
	P-5					5	
	P-6					6	
	**TP-3A**		70		45.5	3	
	TP-4		85		53	4	
	TP-5					5	
	**T-15T**	5	65		45		T15
	T-20T						T20
	T-27T		85		42		T27
	IP-20T	4	100		32		20IP
 Handle shape somewhat varies depending on the type number from the above figure.	**T-6D**	2.5	45	70			T6
	T-7D	2					T7
	T-8D	2.6	61	67.5			T8
	T-9D	3	65	80			T9
	T-10D	3.3	70	90			T10
	T-15D	3.65	71	100			T15
	T-20D	4.6	90				T20
	T-25D	4.4	87	86			T25
	IP-6DB		45	70			6IP
	IP-7D	2.5	45	75			7IP
	IP-8D	3	55	80			8IP
	IP-10D	3.3	71	89			10IP
	IP-15D	4	80	100			15IP
	IP-20D	4	90	100			20IP
	**KS-21**	21	195				
	KS-24	24	215				
	KS-27	27	235				
	KS-32	32	275				
	KS-36	36	305				
	**M-1000**						
	**BT15S**	3.9	50	90		6	T15
	BT15M	3.9	50	118		6	T15
	BT20S	4.6	50	90		6	T20
	BT20M	4.6	50	118		6	T20
	BLD IP15/S7	3.9	50	90		6	15IP
	BLD IP15/M7	3.9	50	118		6	15IP
	BLD IP20/S7	4.6	50	90		6	20IP
	BLD IP20/M7	4.6	50	118		6	20IP
	BLD T10/S7	3.9	57	75		6	T10
	BLD T10/S7-A	3.9	57	75		6	T10
	**H-TB**		100		37	6	
	H-TBS		75		37	6	
	**H-TB2W**		95		31.4	6	
	**AJC08**		11		17	4.1	

Wrenches and Drivers

Shape	Designation	Dimension (mm)					
		a	b	c	d	*f*	T
	**ECW-456EF**	87	15	4	11.5		
	ECW-456I	80.5	22	4	10.5		
	**KEYV-S05**	4	5.5	100			
	KEYV-S06	5.4	8	125			
	KEYV-S08	6.6	10	150			
	KEYV-S10	7.7	13	175			
	KEYV-S12	9.4	16	250			
	KEYV-W20						
	**KEYV-177**	29	110				
	KEYV-217	29	110				
	**KGDT-100**	32	108.5				
	KGDT-110	32	108.5				
	KGDT-120	32	108.5				
	KGDT-130	32	108.5				
	KGDT-140	32	108.5				
	KGDT-150	32	108.5				

User's Guide- Parts for Tools

Locators

Designation	Applicable Tool
LD150R	TXD15125R ~ TXD15315R
LD440R/L	TMD44 TGD4400R/L-A TFD44
LD442R/L	EGD4400R
LD540R/L	TMD54
LE302R	ESE3050R (RS**) ~ 3063R (RS**)
LE303R/L	TSE3003R/LIA ~ 3006R/LIA
LE402AR	ESE4050RA ESE4063RA
LE403R/L	TSE4003R/LIA TSE4004R/LIA ESE4003RIA-S32
LE405R/L	TSE4005R/LIA ~ 4012R/LIA
LE413R/L	THE40
LE444R/L	TME4403R/LI ~ 4405R/LI TME4403R/LB ~ 4405R/LB EME4405R ~ 4404RI
LE446R/L	TME4406R/LI ~ 4412R/LI TME4406R/LB ~ 4412R/LB
LE540R/L	TME54
LF440R/L	THF44
LF540R/L	THF54
LF602R	ERF6050R ~ ERF6063R
LF602R/L	TRF6003R/LI ~ TRF6006R/LI TRF6008R/LI ~ TRF6012R/LI
LMS56R/L	MS08R/L ~ MS12R/L
LN423R/L	TGN42
LN645R/L	TPN64
LP403R/L	TSP4003R/LIA ~ TSP4004R/LIA TFP4004R/LIA
LP405R/L	TSP4005R/LIA ~ TSP4012R/LIA TFP4005R/LIA ~ TFP4012R/LIA
LP413R/L	TGP41 TGP42
LP514R/L	TGP51
LPP16R	TPP16
LR602R/L	ERD6050RA ~ ERD6063RA
LR603R/L	TRD6003R/L TRD6004R/L ~ TRD6008R/L
LV525R/L	VSN 1
LV530R/L	VSN 2
LV556R/L	VSN60
LW400R	EFP4063R
LW400R/L	TFD44 TFP4000 SFP4000
LW402R	EFP4050R

Insert locking wedges

Designation	Applicable Tool
FDS-8SST	EDPD09063R EDPD09063RB
FDS-8ST-18	EDP09080R EDPD09080RB DPD09100R~DPD09160R DPD09100RB~DPD09160RB
FW-242R/L	ø63
FW-243R/L	ø80~100
FW-245R/L	ø125 ~
FW304R/L-D	DAD15 DPD15 EDPD15 QPP15
WF150R	TXD15125R ~ TXD15315R
WF310R/L	TGP4100BA TGP4103R/LIA
WF330N	TSE4003R/LIA TSE4004R/LIA ESE4003RIA-S32 TSP4003R/LIA ~ TSP4004R/LIA TFP4004R/LIA
WF330R/L	TSE3003R/LIA ~ 3006R/LIA
WF444R/L	TME4403R/LI ~ 4405R/LI TME4403R/LB ~ 4405R/LB EME4405R ~ 4404RI TME4406R/LI ~ 4412R/LI TME4406R/LB ~ 4412R/LB
WF500R	TSE4005R/LIA ~ 4012R/LIA TSP4005R/LIA ~ TSP4012R/LIA TFP4005R/LIA ~ TFP4012R/LIA
WF500R/L	TMD54 TGP51 THF54
WF50R/L	TME54
WF602R	ERF6050R ~ ERF6063R
WF603R/L	TRF6003R/LI ~ TRF600R/LI
WF608R/L	TRF6008R/LI ~ TRF6012R/LI
WF875N	TPYD06 EPYD06
WN645R/L	TPN64
WP193TR/L	EGD4400R
WP440R/L	TMD44 TGD4400R/L-A TFD44 TGP4100IA ~ TGP4112R/LIA TGP42 THF44 THE40
WR602R/LW	ERD6050RA ~ ERD6063RA
WR603R/L	TRD6003R/L TRD6004R/L ~ TRD6008R/L
WT402R	ESE4050RA ESE4063RA
WT402R/L	EME4450RB ~ 4404RB

User's Guide- Parts for Tools

Locator adjusting wedges

Designation	Applicable Tool
FW-305	TFD44 TFP40 SFP4000 EFP4063
FW325R/L-D	DAD15 QPP15 DPD15 EDPD15
RSFTC1008	TPYP12...
RSFTC1009	EPYP12M032C25.0R05
RSFTC1011	EPYP12M025C25.0R03

Fine adjusting screws

Designation	Applicable Tool
AJM5	DPD09 EDPD09
ASM34L	DPD24

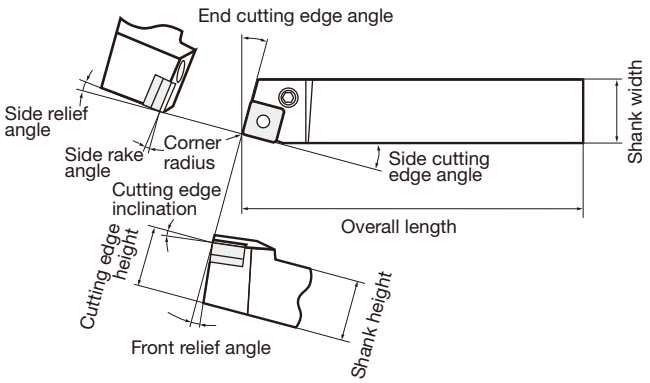
Cover

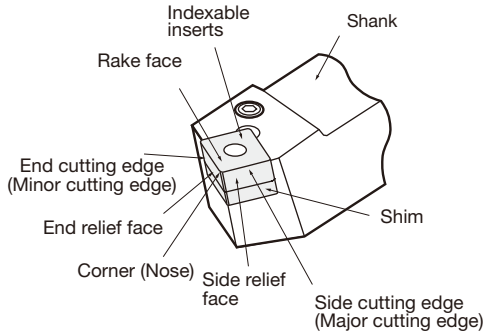
Designation	Applicable Tool
RSFTS6063M	TPYP12M063B22.0R10
RSFTS6080	TPYP12*080B**R12
RSFTS6100	TPYP12*100B**R16
RSFTS6125	TPYP12*125B**R20

User's Guide- Technical Reference

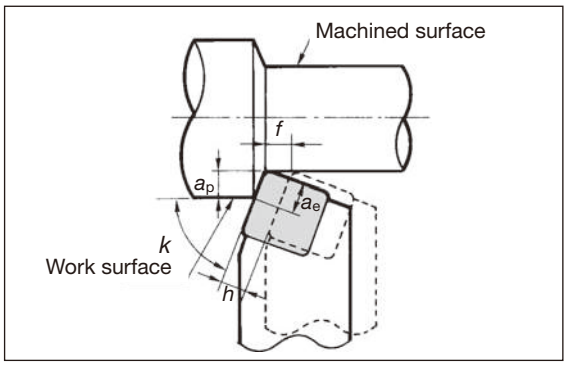
Turning Tools

Name of tools parts



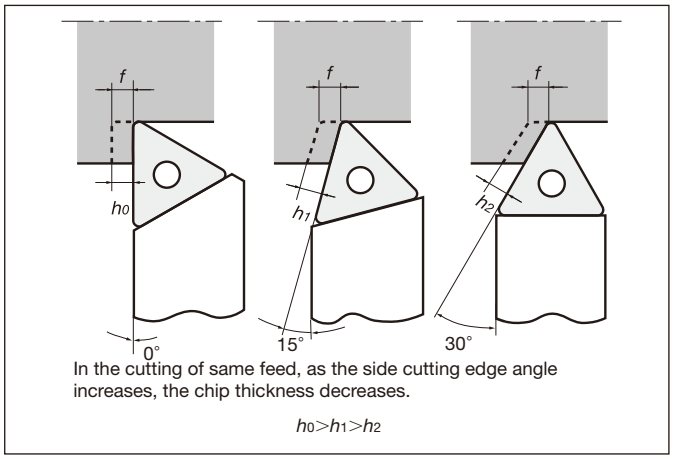


Relating angles between tool and workpiece



a_p … Depth of cut (Distance between work surface and machined surface)
a_e … Length of cutting edge engaging in cutting.
k … Cutting edge angle (Angle to be made by cutting edge and work surface)
f … Feed per revolution
h … Thickness to be cut per revolution
Machined surface … Workpiece surface after having machined.
Work surface … Workpiece surface to be cut.

●Effect of side cutting edge angle



In the cutting of same feed, as the side cutting edge angle increases, the chip thickness decreases.

$h_0 > h_1 > h_2$

●Honing

TAC indexable inserts of steel cutting grades are honed.
Honing specifications are shown in the following table.

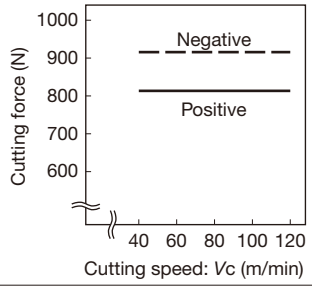
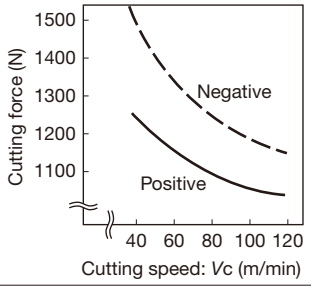
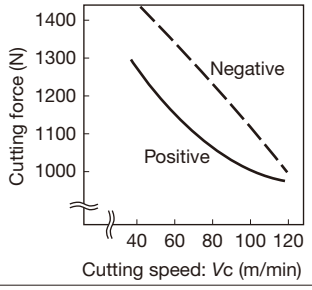
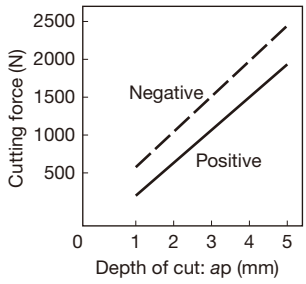
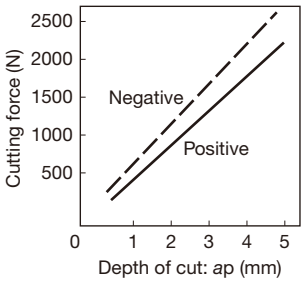
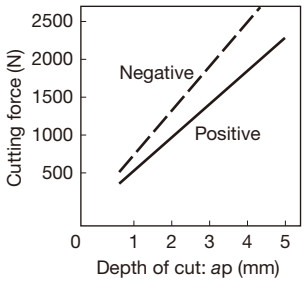
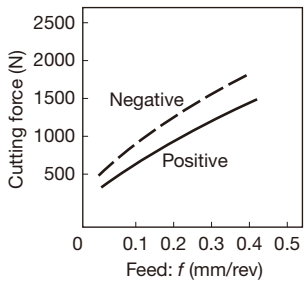
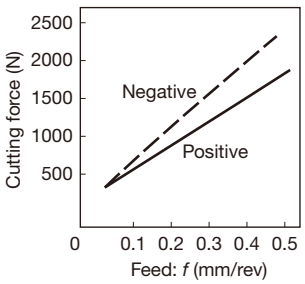
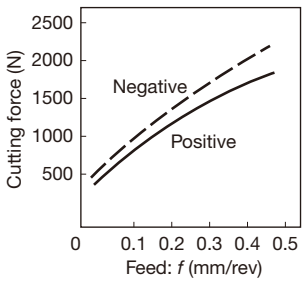
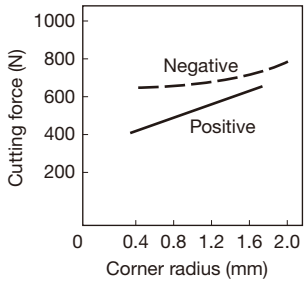
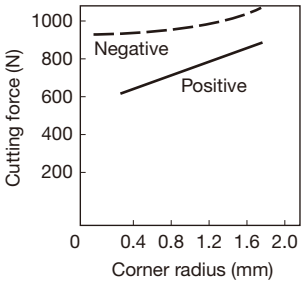
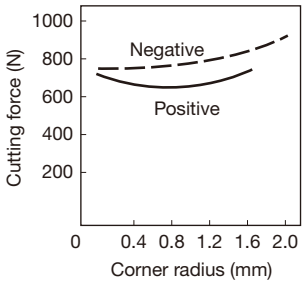
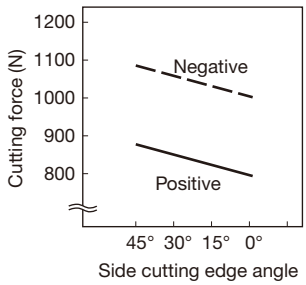
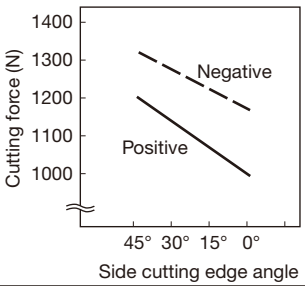
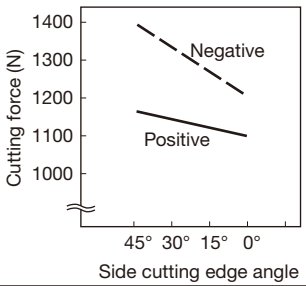
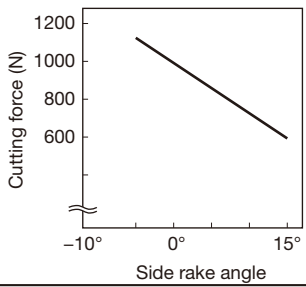
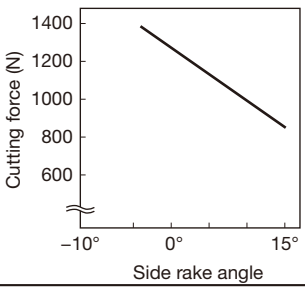
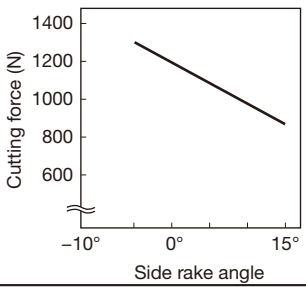
Edge condition	Shape
Sharp edge	
Round honing	
Chamfered honing	

●Effects of tool geometry on cutting phenomena

Increasing \ Phenomena	Flank wear	Crater wear	Edge strength	Cutting force	Surface finish	Chattering	Cutting edge temperature	Chip shape and flow
Cutting edge inclination	–	Decrease	Lower	Radial force decrease	–	Less tendency	Lower	Effect on flow direction
Side rake angle	–	Decrease	Lower	Decrease	–	–	Lower	Effect on shape
Relief angle	Decrease	–	Lower	Decrease	–	Likely to occur	Lower	–
End cutting edge angle	Decrease	–	Lower	Radial force decrease	Roughen	Less tendency	Lower	–
Side cutting edge angle	Decrease	Decrease	Increase	Radial force decrease	–	Likely to occur	Increase	Decrease thickness
Nose radius	Decrease to some level		Increase	Increase	Improve	Likely to occur	Increase	Effect on flow direction
Honing width	Increase	–	Increase	Increase	–	Likely to occur	Increase	–

Turning Tools

Relations between cutting force and cutting conditions or cutting phenomena

Condition	Grey cast iron (HB130)	Stainless steel (HB145)	Carbon steel (HB230)
Cutting speed and cutting force f = 0.2 mm/rev a_p = 2 mm Side cutting edge angle 0° Corner radius RE 0.4			
Depth of cut and cutting force V_c = 100 m/min f = 0.2 mm/rev Side cutting edge angle 0° Corner radius RE 0.4			
Feed and cutting force V_c = 100 m/min a_p = 2 mm Side cutting edge angle 0° Corner radius RE 0.4			
Corner radius and cutting force V_c = 100 m/min f = 0.2 mm/rev a_p = 1.2 mm Side cutting edge angle 0°			
Side cutting edge angle and cutting force V_c = 100 m/min f = 0.2 mm/rev a_p = 2 mm Corner radius RE 0.4			
Side rake angle and cutting force V_c = 100 m/min f = 0.2 mm/rev a_p = 2 mm Side cutting edge angle 0° Corner radius RE 0.2			

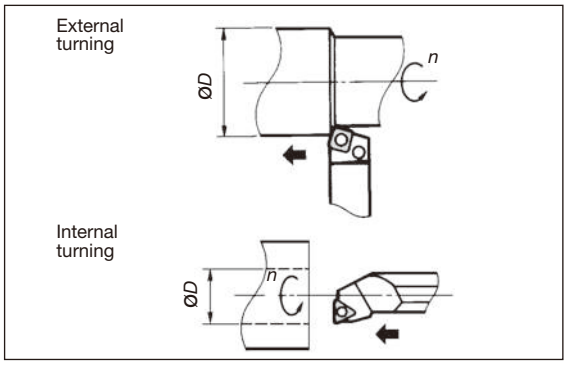
* 9.8N = 1kgf

User's Guide- Technical Reference

Turning Tools

Calculation formulas for turning

●Cutting speed



When calculating cutting speed from number of revolutions:

$$Vc = \frac{\pi \times \varnothing D \times n}{1000}$$

V_c : Cutting speed (m/min)
n : Number of revolution (min^{-1})
$\varnothing D$: Diameter of workpiece (mm)
$\pi \approx 3.14$

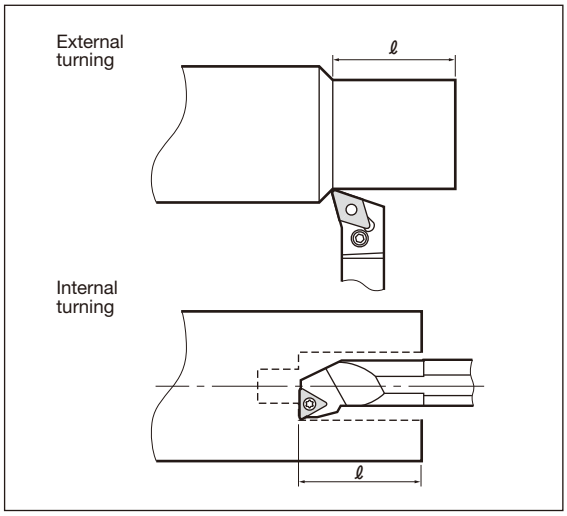
When calculating required number of revolutions from cutting speed:

$$n = \frac{Vc \times 1000}{\pi \times \varnothing D}$$

Example : Calculating the cutting speed when turning a ø150 mm-diameter workpiece at 250 min^{-1}

$$V_c = \frac{3.14 \times 150 \times 250}{1000} = 117 \text{ m/min}$$

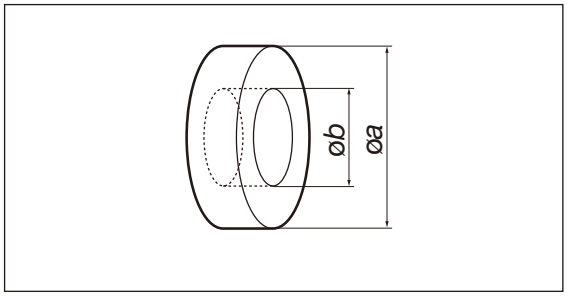
●Cutting time on external and internal turning



$$T_{(min)} = \frac{\ell}{f \times n}$$

T : Cutting time (min)
ℓ : Cutting length (mm)
f : Feed (mm/rev)
n : Number of revolution (min^{-1})

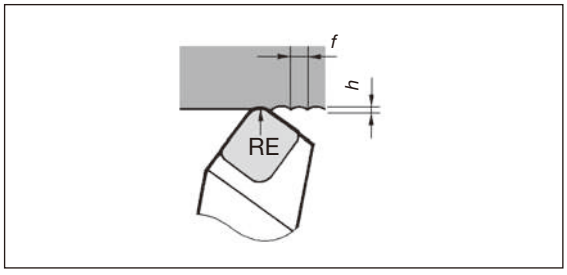
●Cutting time on face turning



$$T_{(min)} = \frac{\pi \times (\varnothing a^2 - \varnothing b^2)}{4000 \times v_c \times f}$$

V_c : Cutting speed (m/min)
f : Feed (mm/rev)
T : Cutting Time (min)

●Theoretical surface roughness



$$h_{(\mu m)} = \frac{f^2}{8 \times r} \times 1000$$

h : Surface roughness (µm)
f : Feed (mm/rev)
r : Nose radius (mm) 〔RE〕
〔 〕The notation in the brackets is the one used in the catalog (ISO compliant)

●Calculation of power consumption (kW)

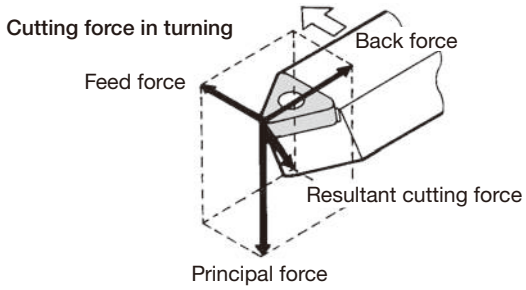
$$P_{c(kW)} = \frac{F \times Vc}{60000}$$

P_c : Power requirement (kW)
F : Cutting force (N)
V_c : Cutting speed (m/min)

Turning Tools

Cutting forces

(1) Finding from the diagram based on experimental data.
(2) In case determining by simplified equation:



$$F = k_c \times a_p \times f \quad (\mathrm{N})$$

F : Cutting force (N)
k_c : Specific cutting force (N/mm²)
[Refer to the Table below]
a_p : Depth of cut (mm)
f : Feed (mm/rev)

Example :
Calculating the cutting force when cutting a high carbon steel (ISO C55) at f = 0.2 mm/rev and ap = 3 mm.
$F = 3430 \times 3 \times 0.2 = 2058$N

●Calculating power requirement

$$P_c = \frac{k_c \times a_p \times v_c \times f}{60 \times 1000} \quad (\mathrm{kW})$$

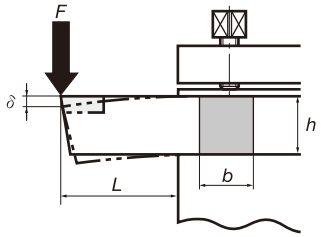
P_c : Net power requirement (kW)
k_c : Specific cutting force (N/mm²)
[Refer to the Table below]
v_c : Cutting speed (m/min)
a_p : Depth of cutting (mm)
f : Feed (mm/rev)

Value of specific cutting force (k_c)

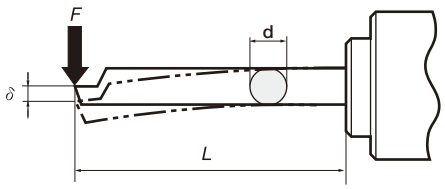
Workpiece material (JIS)	Tensile strength (MPa)	Hardness (HB)	Value of specific cutting force on feed k_c (N/mm²)				
			0.04 (mm/rev)	0.1 (mm/rev)	0.2 (mm/rev)	0.4 (mm/rev)	1.0 (mm/rev)
SS400, S15C	390	100	3430	2840	2450	2080	1700
S35C, S40C	590	170	4220	3490	2940	2500	2080
S50C, SCr430	785	230	4900	4020	3430	2940	2400
SCM440, SNCM439	980	300	5390	4410	3780	3240	2650
SDK	1765 (56HRC)	56HRC	8390	6870	5880	5000	4120
FC200	(160HB)	160	2550	1960	1630	1340	1030
FCD600	(200HB)	200	3330	2550	2110	1750	1340
Aluminium alloy	(89HB)	89	1350	1130	950	810	670
Aluminium			1050	870	740	640	520
Magnesium alloy			390	390	390	390	390
Brass			1080	1080	1080	1080	1080

●Bending stress and tool deflection

Square shank



Round shank



Bending stress

(1) Square shank

$$S = \frac{6 \times F \times L}{b \times h^2} \quad (\mathrm{MPa})$$

(2) Round shank

$$S = \frac{32 \times F \times L}{\pi \times d_3} \quad (\mathrm{MPa})$$

Tool deflection (mm)

(1) Square shank

$$\delta = \frac{4 \times F \times L^3}{E \times b \times h^3} \quad (\mathrm{mm})$$

(2) Round shank

$$\delta = \frac{64 \times F \times L^3}{3 \times \pi \times E \times d_4} \quad (\mathrm{mm})$$

S : Bending stress in shank (MPa)
F : Cutting force (N)
L : Overhang length of tool (mm)
b : Shank width (mm): 〔B〕
h : Shank height (mm): 〔H〕
d : Shank diameter (mm): 〔DCONMS〕
E : Modulus of elasticity of shank material (MPa)

〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

(Ref.) Values of E

Material	MPa (N/mm²)	{kgf/mm²}
Steel	210,000	21,000
Cemented Carbide	560,000~620,000	56,000~62,000

User's Guide- Technical Reference

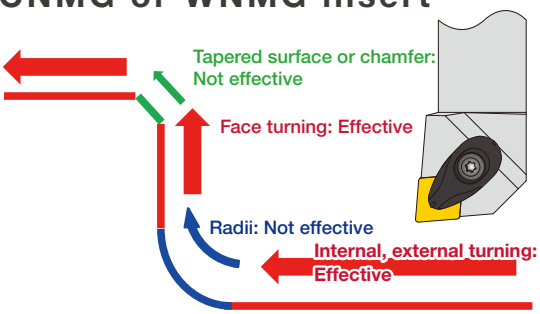
Turning Tools

Machining program compensation for wiper -SW / -FW insert

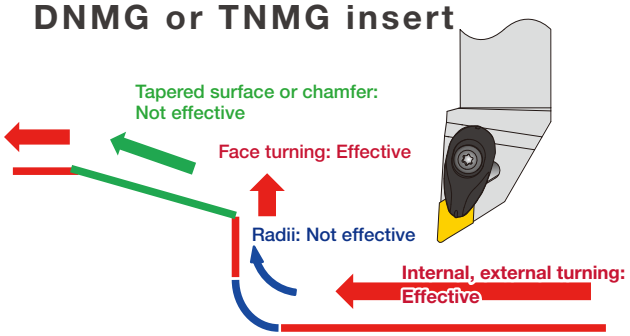
The nose radius on a wiper insert has a different configuration from that on standard ISO insert's. Machining program adjustments are, therefore, required to generate a correct offset for the wiper insert to machine the correct workpiece dimension. No compensation is needed, however, for the positive, CCMT-SW wiper insert.

Wiper effectiveness (surface finish quality improvement) by applications

CNMG or WNMG insert

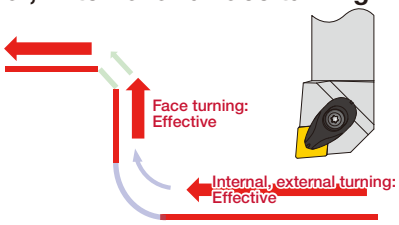
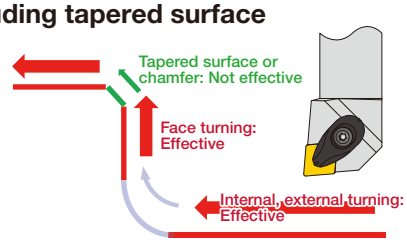
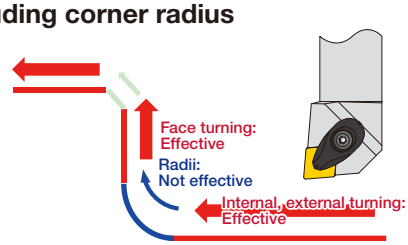
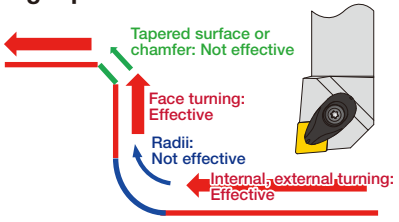


DNMG or TNMG insert



Program compensations by insert shapes and applications

Match your insert shape and application to find the proper compensation method.

Application \ Insert shape	CNMG/WNMG -SW/FW	DNMG/TNMG -SW/FW	CCMT-SW
	Type **L**	Type **J, G, F**	Type **L**
Internal, External and Face turning 	Proceed to Compensation ① (See Page L033)	Proceed to Compensation ④ (See Page L034)	No compensation needed
Including tapered surface 	Proceed to Compensation ①, ② (See Page L033)	Proceed to Compensation ④, ⑤ (See Page L034 - L035)	↑
Including corner radius 	Proceed to Compensation ①, ③ (See Page L033)	Proceed to Compensation ④ (See Page L034) Proceed to Compensation ⑥ (See Page L035)	↑
Including tapered surface and corner radius 	Proceed to Compensation ①, ②, ③ (See Page L033)	Proceed to Compensation ④, ⑤, ⑥ (See Page L034 - L035)	↑

Compensations for CNMG/WNMG -SW / -FW

Compensations ① Tool offsets (Compensations for X- and Z-axis)

Match the insert approach angle and the insert style to find the value and compensate the machining program for the insert radius.
*This compensation procedure will not be necessary if the insert is compensated with the built-in tool presetter after insert replacement.

CNMG/WNMG-SW/-FW(Type L)

Nose Radius	X-axis direction	Z-axis direction
R0.4	0.03	0.03
R0.8	0.05	0.05
R1.2	0.05	0.05

Compensations ② Program compensations for tapered surface (proceed after ①)

To machine tapered surfaces, compensate the nose radius position in the x-axis position to obtain the correct workpiece dimension.

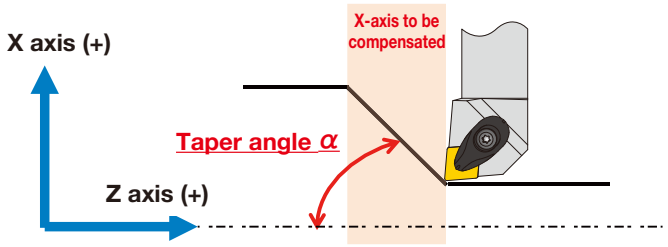
Compensations for x-axis when using CNMG or WNMG-SW/-FW (Tool approach angle: L) insert

Match the insert nose radius and the angle of the surface taper to find the value in Table 1 below to compensate the x-axis position.

For CNMG/WNMG-SW/-FW (Type L)

Compensation values for x-axis (mm)

Nose radius (mm)	Taper angle α (θ)																		
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
R0.4	0	0.01	0.02	0.03	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.09	0.10	0.11	0.11	0.11	0.11	0
R0.8	0	0.01	0.03	0.05	0.06	0.07	0.08	0.09	0.09	0.10	0.11	0.13	0.14	0.16	0.17	0.18	0.17	0.13	0
R1.2	0	0.01	0.03	0.05	0.06	0.07	0.08	0.09	0.10	0.10	0.11	0.13	0.14	0.16	0.17	0.18	0.18	0.16	0



Compensations ③ Program compensation for corner radii (proceed after ①)

To achieve the correct corner radius dimension on the workpiece, compensate the tool position, using the values listed below for respective insert styles.

CNMG/WNMG-SW/-FW(Type L)

Nose Radius	Deviation on the corner radius	Compensate radius by
R0.4	0.05	+0.12
R0.8	0.07	+0.17
R1.2	0.07	+0.18

User's Guide- Technical Reference

Turning Tools

Compensations for CNMG/WNMG -SW / -FW

Compensations ④ Tool offsets (Compensations for X- and Z-axis)

Match the insert approach angle and the insert style to find the value and compensate the machining program for the insert radius.
*This compensation procedure will not be necessary if the insert is compensated with the built-in tool presetter after insert replacement.

DNMG-SW/-FW (Type J)

Nose Radius	X-axis direction	Z-axis direction
R0.4	0.24	0.03
R0.8	0.23	0.04
R1.2	0.12	0.03

TNMG-SW/-FW (Type J)

Nose Radius	X-axis direction	Z-axis direction
R0.4	0.24	0.04
R0.8	0.21	0.05
R1.2	0.16	0.04

TNMG-SW/-FW (Type G)

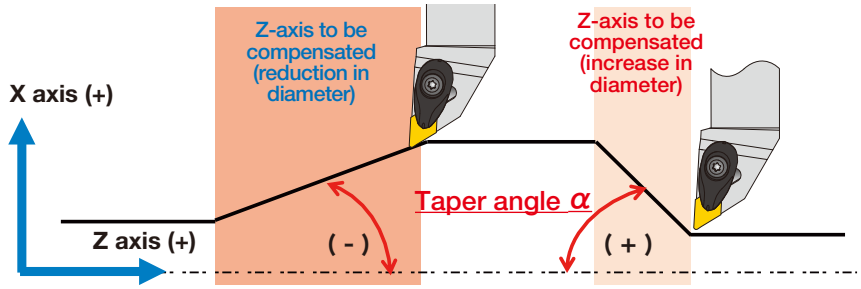
Nose Radius	X-axis direction	Z-axis direction
R0.4	0.24	0.02
R0.8	0.21	0.02
R1.2	0.15	0.02

TNMG-SW/-FW (Type F)

Nose Radius	X-axis direction	Z-axis direction
R0.4	0.02	0.24
R0.8	0.02	0.21
R1.2	0.02	0.15

Compensations ⑤ Program compensations for tapered surface (proceed after ④)

To machine tapered surfaces with DNMG or TNMG-SW/-FW insert, compensate both the x-axis and z-axis positions. Since these inserts are commonly used for profiling, to machine a tapered surface with a gradual reduction in diameter, the z-axis position has to be compensated in the negative direction.



Compensations for x- and z-axes when using DNMG or TNMG-SW/-FW

Match the insert nose radius and the angle of the surface taper to find the value in below to compensate the x-axis and/or z-axis positions.

For DNMG-SW/-FW (Type J)

X-axis compensation values for plus-tapered surface (increase in diameter)

Nose radius (mm)	Taper angle α (θ)																		
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
R0.4	0	-0.01	-0.01	-0.01	-0.01	-0.02	-0.03	-0.04	-0.06	-0.08	-0.10	-0.14	-0.19	-0.20	-0.20	-0.19	-0.19	-0.19	0
R0.8	0	0.01	0.02	0.02	0.03	0.03	0.02	0.01	-0.00	-0.02	-0.05	-0.09	-0.15	-0.17	-0.15	-0.13	-0.12	-0.11	0
R1.2	0	0.02	0.04	0.05	0.06	0.07	0.07	0.06	0.04	0.02	-0.02	-0.09	-0.17	-0.19	-0.16	-0.14	-0.13	-0.15	0

Z-axis compensation values for minus-tapered surface (reduction in diameter)

Nose radius (mm)	Taper angle α (θ)				
	-25	-20	-15	-10	-5
R0.4	0.33	0.34	0.34	0.34	0.34
R0.8	0.30	0.32	0.33	0.34	0.34
R1.2	0.33	0.35	0.38	0.40	0.40

* Match the taper angle and insert nose radius to find the value in Table 2 and compensate the NC program by either adding or deducting the value.

Example:
Tapering a surface of +45° (increase in diameter) with a R0.8 mm insert.
Current NC program: X100
Compensation value: -0.02
Parameter after compensation: X99.98

Compensations for DNMG / TNMG -SW / -FW

Compensations ⑤ Program compensations for tapered surface (proceed after ④)

For TNMG-SW/-FW (Type J)



X-axis compensation values for plus-tapered surface (increase in diameter)

Nose radius (mm)	Taper angle α (θ)																		
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
R0.4	0	0	0	-0.01	-0.01	-0.02	-0.03	-0.04	-0.05	-0.07	-0.10	-0.14	-0.18	-0.25	-0.28	-0.28	-0.27	-0.27	0
R0.8	0	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.00	-0.02	-0.06	-0.11	-0.19	-0.22	-0.20	-0.19	-0.21	0
R1.2	0	0.02	0.05	0.07	0.08	0.09	0.10	0.09	0.08	0.06	0.03	-0.02	-0.10	-0.22	-0.26	-0.25	-0.25	-0.31	0

Z-axis compensation value for minus-tapered surface (reduction in diameter)

Nose radius (mm)	Taper angle α(θ)				
	-25	-20	-15	-10	-5
R0.4	0.42	0.42	0.42	0.41	0.40
R0.8	0.35	0.32	0.33	0.34	0.33
R1.2	0.42	0.36	0.38	0.39	0.37

For TNMG-SW/-FW (Type G)



X-axis compensation values for plus-tapered surface (increase in diameter)

Nose radius (mm)	Taper angle α (θ)																		
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
R0.4	0	0.00	-0.01	-0.01	-0.02	-0.03	-0.04	-0.05	-0.07	-0.09	-0.12	-0.16	-0.22	-0.28	-0.29	-0.29	-0.29	-0.32	0
R0.8	0	0.01	0.02	0.02	0.03	0.02	0.02	0.01	-0.01	-0.03	-0.06	-0.10	-0.17	-0.25	-0.25	-0.25	-0.28	-0.40	0
R1.2	0	0.03	0.06	0.08	0.09	0.10	0.11	0.10	0.09	0.07	0.04	-0.01	-0.09	-0.18	-0.18	-0.18	-0.20	-0.34	0

For TNMG-SW/-FW (Type F)



X-axis compensation values for plus-tapered surface (increase in diameter)

Nose radius (mm)	Taper angle α (θ)																		
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
R0.4	0	-0.03	-0.05	-0.08	-0.10	-0.13	-0.13	-0.11	-0.10	-0.09	-0.08	-0.07	-0.06	-0.05	-0.05	-0.04	-0.03	-0.02	0
R0.8	0	-0.04	-0.05	-0.07	-0.09	-0.12	-0.10	-0.07	-0.05	-0.03	-0.01	0.01	0.03	0.05	0.07	0.09	0.11	0.13	0
R1.2	0	-0.03	-0.04	-0.05	-0.07	-0.09	-0.05	-0.01	0.03	0.07	0.11	0.15	0.18	0.22	0.25	0.28	0.32	0.35	0

Compensations ⑥ Program compensation for corner radii (proceed after ④)

To achieve the correct corner radius dimension on the workpiece, compensate the tool position, using the values listed below for respective insert styles.

DNMG-SW/-FW (Type J)

Nose Radius	Deviation on the corner radius	Compensate radius by
R0.4	0	0
R0.8	0.02	+0.20
R1.2	0.10	+0.34

TNMG-SW/-FW(Type J)

Nose Radius	Deviation on the corner radius	Compensate radius by
R0.4	0	0
R0.8	0.03	+0.13
R1.2	0.11	+0.36

TNMG-SW/-FW(Type G, Type F)

Nose Radius	Deviation on the corner radius	Compensate radius by
R0.4	0	0
R0.8	0.02	+0.15
R1.2	0.09	+0.38

User's Guide- Technical Reference

Turning Tools

Additional information on offsetting -SW / -FW wiper inserts

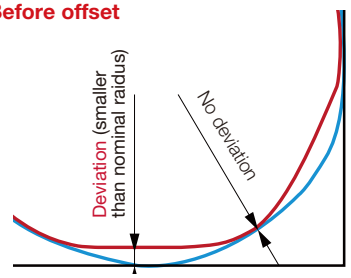
Compensations ① , ④ Tool offsets (Compensations for X- and Z-axis)

Why need to offset ?

Ex. When using DNMG150412

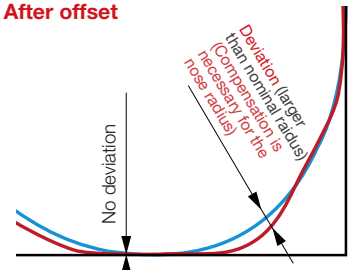
The wiper insert does not provide the exact corner radius. A deviation from the standard nose radius shape as shown below will always occur when going into a corner. An additional program adjustment is, therefore, required to achieve the correct corner radius or tapered surface dimension on the workpiece.

Before offset



Wiper nose radius' contour is slightly smaller than the nominal radius.
→ The nose radius profile deviates from the required corner radius, thus the actual corner profile will be incorrect.

After offset



Wiper nose radius' contour is partially larger than the nominal radius.
→ No compensations necessary for ID, OD, or face turning.
Meanwhile, due to these deviations, compensations to the NC program are necessary when turning corners and tapered surfaces for the correct workpiece dimensions.

Compensations ③ , ⑥ Program compensation for corner radii (proceed after ① , ④)

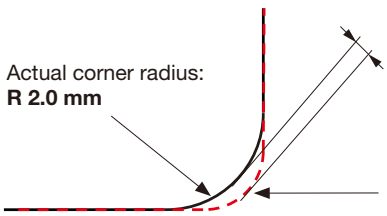
Compensation for corner radius

Ex. When using DNMG150412

Example: to machine a corner radius = R2.0 mm, using insert nose radius = R1.2 mm.

For standard ISO insert: DNMG150412-**
Input R0.8 for G2 or G3 (circular interpolation) to compensate the nose radius deviation.

Wiper insert
For wiper insert: DNMG150412-SW/-FW
Input **R1.14** (= R1.2 + 0.34 from the list) for the nose radius, instead of R0.8, to compensate the nose radius deviation.

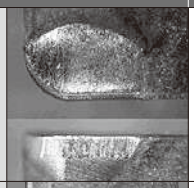
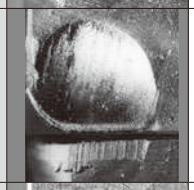
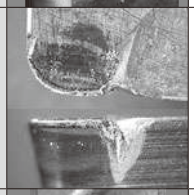
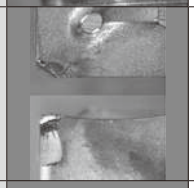
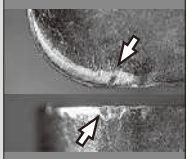
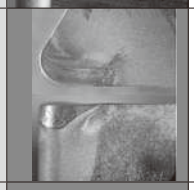
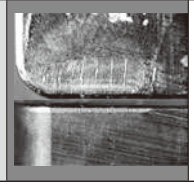


The deviation generated when using the ISO insert parameters for the wiper insert.
0.1 mm

Theoretical corner radius shape when R1.2 (=nominal nose radius) is programmed for the wiper insert
The actual corner radius becomes smaller than the required radius due to the insert radius deviation.
Corner radius = R1.66 mm
(R2.0 - 0.34)

Turning Tools

Troubleshooting in turning

Typical tool failure		Countermeasure		
		Tool grade	Cutting conditions	
Flank wear		• Change to more wear resistant grades **P, M, K30 → 20 → 10**	• Reduce cutting speed • Change to appropriate feed • Change to wet cutting	• Decrease honing width • Increase relief angle • Increase end cutting edge angle • Increase corner radius • Select free-cutting chipbreaker • Increase rake angle
Crater wear		• Change to more wear resistant grades **P, M, K30 → 20 → 10**	• Reduce cutting speed • Reduce feed • Reduce depth of cut • Change to wet cutting	• Increase rake angle • Select an appropriate chipbreaker • Increase side cutting edge angle • Increase corner radius
Notch wear		• Change to more wear resistant grades **P, M, K30 → 20 → 10**	• Reduce cutting speed • Reduce feed	• Increase rake angle • Increase side cutting edge angle
Fracture		• Change to tougher grades • Change to thermal-shock resistant grades **P, M, K10 → 20 → 30**	• Reduce feed • Reduce depth of cut • Improve holding rigidity of work and tool • Reduce overhang length of toolholder • Improve looseness in machine	• Reduce rake angle • Select a chipbreaker with high edge strength • Increase honing width • Increase side cutting edge angle • Select larger shank size • Increase corner radius
Chipping		• Change to tougher grades **P, M, K10 → 20 → 30**	• Reduce cutting speed • Reduce feed • Reduce depth of cut • Improve holding rigidity of work and tool • Reduce overhang length of toolholder • Improve looseness in machine	• Reduce rake angle • Select a chipbreaker with high edge strength • Increase honing width • Increase side cutting edge angle • Select larger shank size
Flaking		• Change to tougher grades **P, M, K10 → 20 → 30**	• Reduce cutting speed • Reduce feed	• Reduce rake angle • Increase corner radius • Increase honing width
Plastic deformation		• Change to more wear resistant grade **P, M, K30 → 20 → 10**	• Reduce cutting speed • Change to appropriate feed • Reduce depth of cut • Supply cutting fluid in adequate volume	• Increase relief angle • Increase rake angle • Reduce corner radius • Reduce side cutting edge angle • Select a free-cutting chipbreaker
Chip welding		• Use a grade which has a low tendency to adhere to Workpiece material **Cemented carbide → Coated carbide or cermet**	• Increase cutting speed • Increase feed • Change to water-insoluble cutting fluid • Change to wet cutting	• Increase rake angle • Select a free-cutting chipbreaker • Decrease honing width
Built-up edge				
Thermal cracking		• Change to tougher grades • Change to thermal-shock resistant grades **P, M, K10 → 20 → 30**	• Reduce cutting speed • Reduce feed • Change to dry cutting • Supply cutting fluid in adequate volume • Reduce depth of cut • Change to water-insoluble cutting fluid	• Increase rake angle • Select a free-cutting chipbreaker • Decrease honing width

User's Guide- Technical Reference

Turning Tools

Problem	Cause	Countermeasure	
		Tool	Cutting conditions and others
Deteriorated surface roughness	• Increased tool wear	• Select a more wear resistant grade • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Use an insert with a larger nose radius • Use a more lightly honed insert • Use an insert of closer tolerance (from M class to G class)	• Select a proper feed • Decrease the cutting speed • Use a cutting fluid
	• Edge chipping	• Use a tougher grade • Select a chipbreaker with strong cutting edges • Use a largely honed insert • Increase the side cutting edge angle • Use a larger shank size	• Decrease the depth of cut • Decrease the feed • Use a more rigid machine • Improve the holding rigidity of the tool and workpiece • Shorten the overhang of the toolholder • Improve the machine looseness
	• Chip welding • Built-up-edge	• Select a grade with less affinity with the Workpiece material • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Use a more lightly honed insert • Use an insert of closer tolerance (from M class to G class)	• Increase the cutting speed • Increase the feed • Use a water-insoluble cutting fluid • Use a cutting fluid
	• Vibration and chatter	• Use a tougher grade • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Use an insert with a smaller nose radius • Decrease the side cutting edge angle • Use a more lightly honed insert • Use a larger shank size	• Use a proper cutting speed • Decrease the feed • Decrease the depth of cut • Improve the holding rigidity of the tool and workpiece • Shorten the overhang of the toolholder • Improve the machine looseness
Deteriorated dimensional accuracy	• Improper insert accuracy	• Use an insert of closer tolerance (from M class to G class)	
	• Incomplete engagement of tool and workpiece	• Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Use an insert with a smaller nose radius • Use a more lightly honed insert	• Improve the holding rigidity of the tool and workpiece • Shorten the overhang of the toolholder • Improve the machine looseness
Burr occurrence	• Unsuitable cutting speed		• Decrease the cutting speed • Increase the feed • Use a cutting fluid
	• Worn tool or improper cutting edge geometry	• Use a harder grade • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Increase the relief angle • Use an insert with a smaller nose radius • Decrease the side cutting edge angle • Use a more lightly honed insert	
Edge breakout	• Improper cutting speed		• Decrease the feed • Decrease the depth of cut
	• Worn tool or improper cutting edge geometry	• Use a harder grade • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Increase the side cutting edge angle • Use an insert with a larger nose radius • Use a more lightly honed insert • Use a larger shank size	• Improve the holding rigidity of the tool and workpiece • Shorten the overhang of the toolholder • Improve the machine looseness
Fuzzy surface finish	• Improper cutting conditions		• Increase the cutting speed • Select a proper feed • Use a water-insoluble cutting fluid • Use a cutting fluid
	• Worn tool or improper cutting edge geometry	• Use a harder grade. • Select a grade with less affinity with the Workpiece material • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Use a more lightly honed insert	

Chipbreakers

Chip controllability

Necessity of chip control

①Why is chip control needed?
②Effect of improper chip control

Necessity of chip control (Problems and effects)

Problems	Effects
1. Scattering of chips and coolant. 2. Wrapping around the workpiece and the tool. 3. Accumulation on the tool, jig, and machining facilities.	1. Disturbs unmanned and automated machining. 2. Disturbs high-speed and high-efficiency machining. 3. Degrades finished surface. 4. Threatens operator's safety. 5. Reduced operation rate.

Additional problems when chips are not properly controlled

①Why is chip control needed?

What is chip?

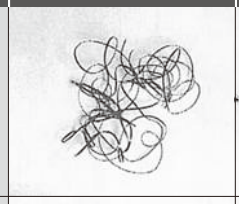
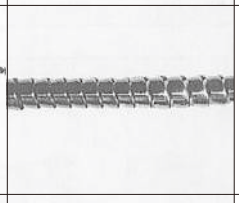
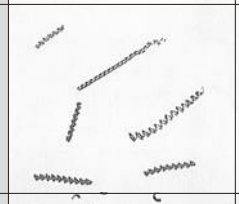
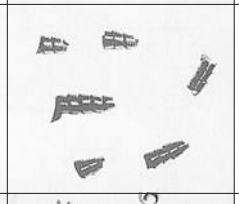
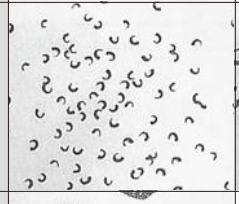
For making a product from a workpiece, removed objects produced by a tool which is set to cut to a specified depth with the relative motion of the tool and the workpiece.

Problems when chips are not properly controlled

②Effect of improper chip control

- Effects on quality
  - Defective work.
  - Defective surface finish
  - Chip entangling
- Effects on operation
  - Increased number of man-hours for handling.
  - Increased tool costs.
  - Troublesome chip handling.
  - Machine stoppage and reduced operation rate.
- Effect on safety and health.
  - Stain and damage on machine caused from improper carrying-out of chips.
  - Dangerous effects on the human body. (Injury and burns on hand, etc.)

Effective measures → **"Chipbreaker"**

Classi-fication	Chip shape: Depth of cut: small	Chip shape: Depth of cut: large	Description of chip shape	Acceptability	Effect
Shape A			Chips irregularly entangled	Not acceptable	• Wrapping around the tool or workpiece or accumulation around the cutting point, hindering cutting • Possible damage to the machined surface
Shape B			Long continuous spiral chips $\ell > 50$ mm	Acceptable	• Bulky during transport in the automatic line • May be preferred when one operator handles one machine
Shape C			Short spiral chips $\ell < 50$ mm	Acceptable	• Smooth chip flow • Difficult to scatter • Favorable shape
Shape D			"C" or "9" shaped chips (Around one coiling)	Acceptable	• Favorable shape if not scattering • Not bulky and easy to transport
Shape E			Excessively broken chips. Thin pieces or connected in a form of wave as shown in the figure left	Not acceptable	• Readily scattering. If scattering is the only trouble, it may be acceptable because the chip cover, etc. may be used. • Tend to cause chatter, causing harm on the finished surface roughness or tool life.

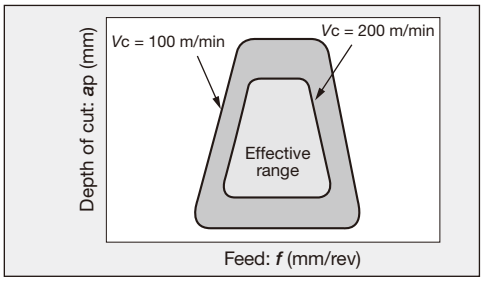
User's Guide- Technical Reference

Chipbreakers

Factors affecting chip control

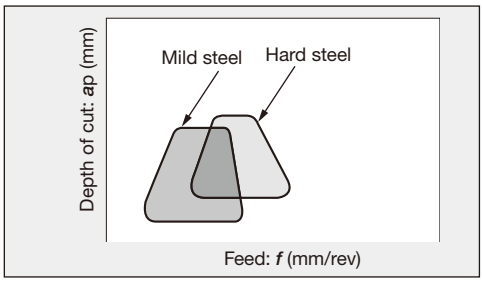
(1) Cutting conditions
1 Feed
2 Depth of cut
3 Cutting speed

- Of these, feed has the greatest effect followed by depth of cut and cutting speed in order listed.
- Feed is proportionate to the thickness of chips.
- Depth of cut is proportionate to the width of chips.
- There are optimum values (effective range) in feed and depth of cut.
- Cutting speed is in inverse proportion to chip thickness. Effective range becomes narrow at high speed.



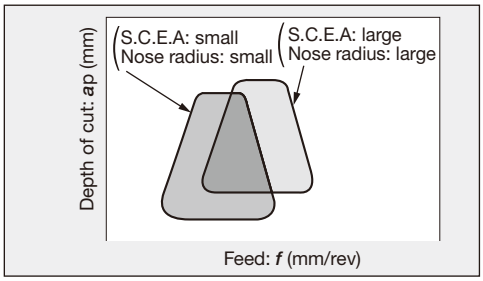
(2) Workpiece material
1 Alloy element
2 Hardness
3 Heat treatment condition

- These are related to thickness of chips and ease of curling.
- Mild steel chips are thicker than those of hard steel.
- Hard steel chips are liable to curl more than those of mild steel.
- Chips that do not curl are thin. As an exception, in case of mild steel even if thick, may not curl.



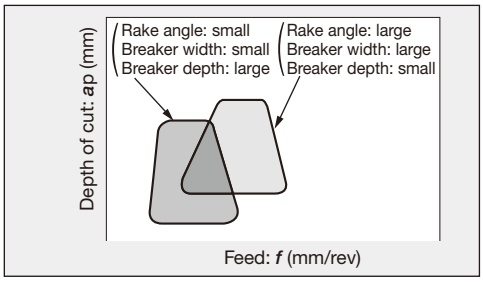
(3) Tool geometry
1 Side cutting edge angle
2 Nose radius

- Side cutting edge angle is relative to chip thickness and width
- Side cutting edge angle is preferably small.
- Nose radius is relative to thickness and width and the direction of flowing out.
- In finishing, small nose radius, whilst for rough cutting, large nose radius is better.



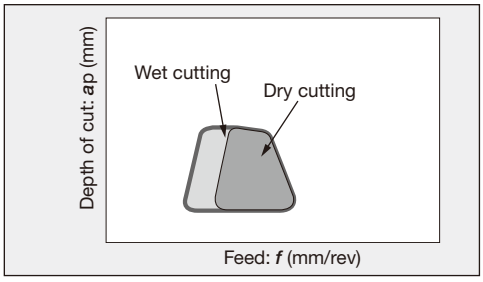
(4) Shape of chipbreaker
1 Rake angle
2 Chipbreaker width
3 Chipbreaker depth

- Rake angle is in inverse proportion to chip thickness.
- Depending on the Workpiece material, there is an optimum value.
- Chipbreaker width is selected proportionately to feed.
- Narrow at low feed and wide at high feed.
- Chipbreaker depth is to be selected so as to be inversely proportionate to feed.
- Deep at low feed and shallow at high feed.



(5) Coolant

- Effective range is wider with wet cutting.
- Especially at low feed range is liable to curl.



(6) Machine
1 Rigidity
2 Power limit

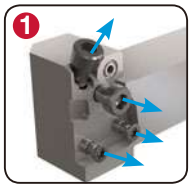
- The machine has enough power and mechanical strength.
- Select the machine consistent with the size of Workpiece material to be used.

Grooving and Parting Tools

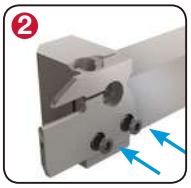
How to install and remove the blade and insert

TUNGMODULAR SYSTEM

●Assembly



Remove all 4 screws and ensure the O rings are all in place.



Place the blade and tighten 2 bottom clamping screws.



Place the insert in the pocket and tighten the fixing screw in the center.



Place the long screw in the angular direction and tighten to clamp the insert.

Please follow the installation order as shown above. When the screws are tightened in the ❹→❸ order, the insert clamping may be insufficient and unstable.

●Disassembly

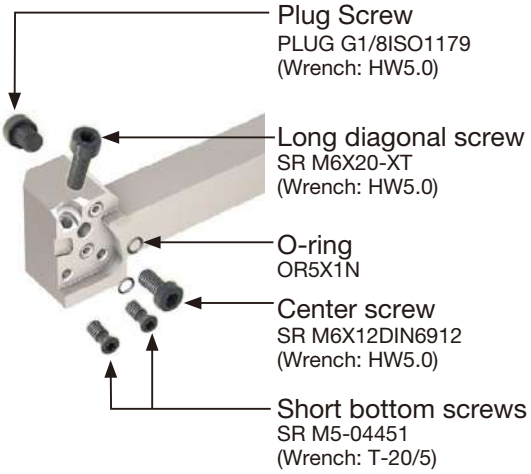


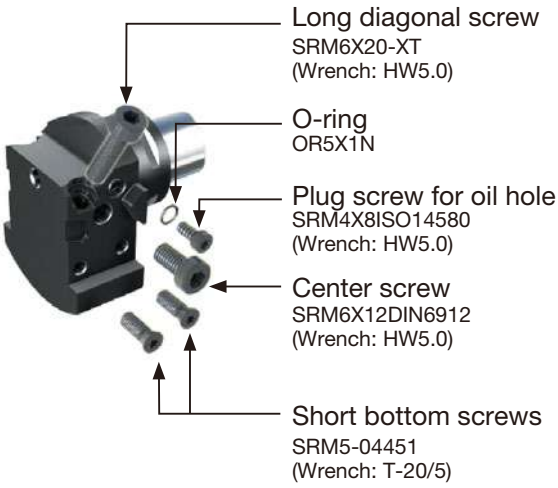
First loosen the long screw in the angular direction.



Loosen the Fixing screw in the center and remove the insert.

Loosing the long screw alone may not release the insert.



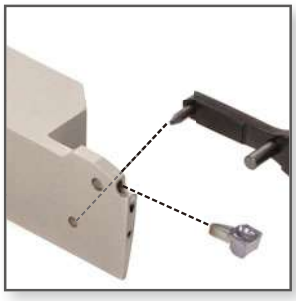


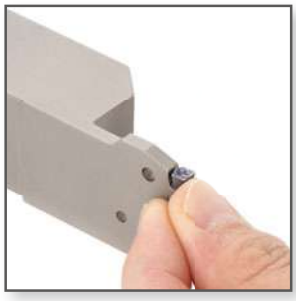
※ All parts listed here are included in the tool holder.

PROCEDURE TO CLAMP AND UNCLAMP INSERT

EASYMULTICUT

❶ Put the insert in the pocket

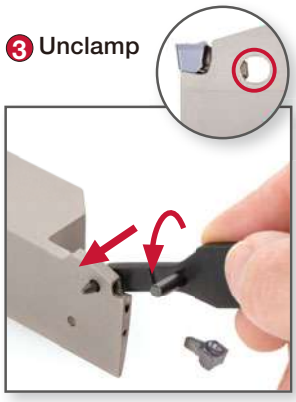




❷ Turn the wrench and push the insert into the pocket to clamp



❸ Unclamp

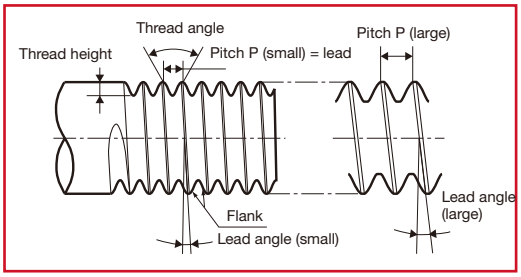


User's Guide- Technical Reference

Fundamentals of screw threads

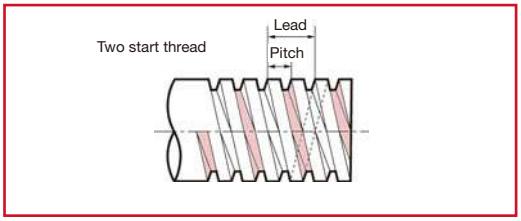
●Relationship between lead, lead angle and pitch

1. Lead is the axial distance a screw advances in one rotation. In single start screw, the lead is equal to the pitch.
2. The inclination angle of a threaded groove is called lead angle. In screws of the same diameter, the lead angle increases as the pitch increases.
3. The side face of a completed thread groove is called flank. The distance between the crest and the root is called thread height.



●Single and multi start thread

1. The single start thread has a single groove. Two start thread or three start thread has two grooves or three grooves respectively.
2. The pitch of multi start thread is the distance of adjoining groove.
3. When viewing the section of the multi start thread, the pitch is same as that of the single start thread. The lead of the two or three start thread is twice or three times the pitch. The multi start thread is mainly used for trapezoidal threads.



●Tolerance class of threads

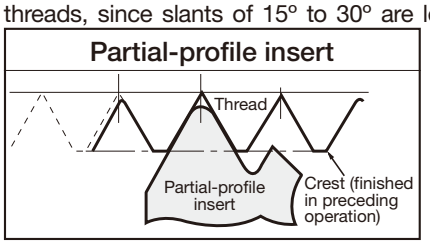
Tolerance classes of screw threads are expressed as follows:
Metric coarse external thread: 6h, 6g Metric coarse internal thread: 5H, 6H
These classes are ranked with tolerances of thread diameter, pitch, thread angle, etc. For fastening applications, 6H- and 6g-class (former JIS second class) threads, manufactured by cutting or rolling, are generally used. 5H- and 4h-class threads (former JIS first class) are generally finished by grinding.
For example, M8-6g means metric coarse external thread of 6g tolerance class.

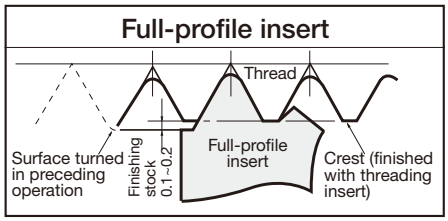
TAC threading insert

●Difference between full-profile and partial-profile insert

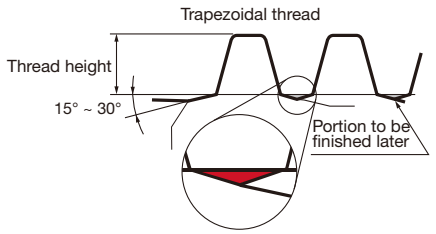
Full-profile insert

In the full-profile insert, the major diameter of the thread is finished by the profiled finishing edge as shown in Figure below. Therefore, about 0.1 mm of finishing stock must be left on the outer surface of the workpiece before threading. In trapezoidal threads, since slants of 15° to 30° are left on the crest of the thread as shown in Figure below, these portions must be finished by another tool later.
Full-profile insert could produce no burr and good thread by the profiled finishing edge.





When machining trapezoidal threads:



Partial-profile insert

Partial-profile inserts can not be used for finishing of the crest, but can be applied to a wide range of pitches.

For example

Designation	Pitch (mm)	TPI	Insert radius RE (mm)
16ERA60	0.5 ~ 1.5	48 ~ 16	0.06
16ERG60	1.75 ~ 3	14 ~ 8	0.22

Corner radii of inserts are fitted to the thread of the smallest pitch.

●Difference between external and internal use inserts

In full-profile inserts for metric and unified threads, the corner radius and thread height differ from those for the external and internal use insert respectively. Therefore, the right hand insert for external use and the left hand insert for internal use are not the same tool.
Since the rake angles of toolholders are -10° for external toolholders and -15° for internal toolholders, the external / internal toolholders can not be used for machining internal / external thread.
In Whitworth thread, though the external thread and internal thread have the same thread form, the external and internal toolholders are incompatible because of the different rake angle.

For example

Designation	Applicable inserts	Insert radius R RE (mm)	Thread hight (mm)	Rake angle of holders
16ER20ISO	External	0.25	1.52	-10°
16IL20ISO	Internal	0.14	1.3	-15°

Shim replacement method of ST-type tools

Compensation for the lead angle and tool relief angle

When the pitch is large or the screw diameter is small, the lead angle becomes large and the effective relief angle on the advance flank side β_2 becomes small. In particular, this will cause shorter life of the insert in the case of trapezoidal screw with small flank angle. It is ideal without any interference for the thread cutting insert to have an equal relief angle on both right and left. Replace the shim so that the rake face of insert faces the thread groove direction (that is, $\beta = \beta_3$).

Calculating the lead angle

The lead angle is calculated as follows:

$$\beta = \tan^{-1}(\ell / \pi d) = \tan^{-1}(nP/\pi d)$$

β : Lead angle
ℓ : Lead
n : No. of threads
P : Pitch
d : Pitch diameter

Calculating the relief angle

The relief angle β_1 is calculated as follows:

$$\beta_1 = \tan^{-1}(\tan\theta \cdot \tan\alpha)$$

The α of a standard toolholder is 10° for external threading and 15° for internal threading.

Included angle 2θ	θ	β_1	
		External threading tool	Internal threading tool
60°	30°	5.8°	8.8°
55°	27.5°	5.2°	7.9°
30°	15°	2.7°	4.1°
29°	14.5°	2.6°	4°

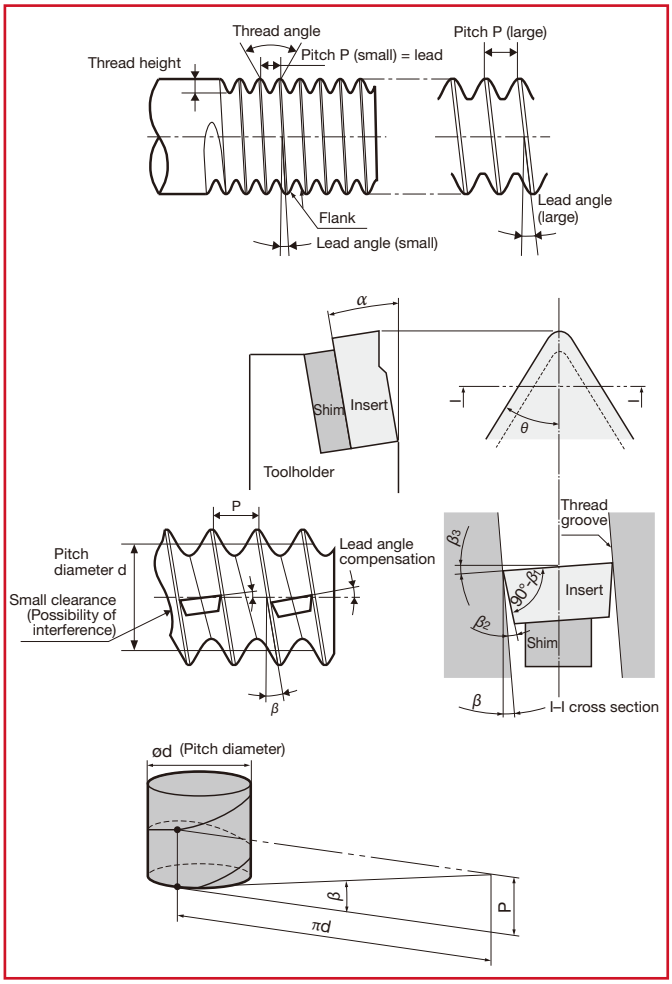
Accordingly, the effective relief angle is calculated as follows:

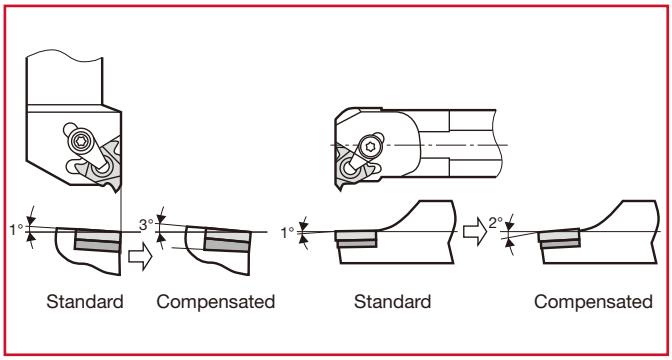
$$\beta_2 = \beta_1 + \beta_3 - \beta$$

β : Lead angle
β_2 : Effective relief angle
β_3 : Lead angle compensation value

In other words, $\beta_1 = \beta_2$ when the thread lead angle is equal to the compensation value. Namely, the relief angle of the tool itself is equal to the effective relief angle. If the wrong compensation value is used, $\beta_1 > \beta_2$. The effective relief angle becomes smaller and cause the interference between the frank side of insert and the thread groove. Therefore, carry out com-pensation of the lead angle so that the following range is obtained:

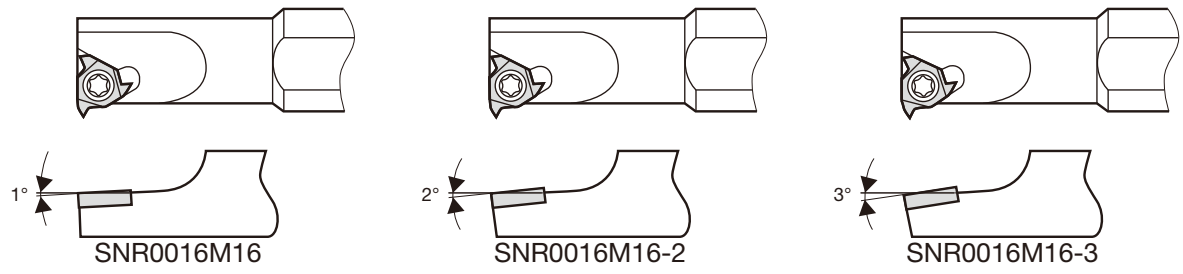
±1° when the thread angle is 60° and 55°
±30° when the thread angle is 30° and 29°





Compensation of lead angle for shim less internal toolholders

When using internal threading toolholders without shim, the above-mentioned method can not be applied for lead angle compensation. Therefore, special toolholders for large lead angles are available as shown below. The final figure of the designation (-2 or -3) indicates 2° or 3° lead angle to be used respectively. The toolholders without these figures are for 1° lead angle.



User's Guide- Technical Reference

Shim replacement method of ST-type tools

Type of shim and the compensation value of lead angle

The designation of the shim and compensated lead angles are shown in the table.

Compensated lead angles	-2°	-1°	0°	1°	2°	3°	4°
Shim	□□□-98	□□□-99	□□□-0	□□□-1	□□□-2	□□□-3	□□□-4

Note: The last numeral of the shim designation is the compensated lead angle.

■ Toolholders and applicable shims

Screw-on / clamp-on dual toolholders

Toolholder designation	Shim	
	R	L
CER/L□□□□□16DT	AE16-□DT	AN16-□DT
CER/L□□□□□22DT	GXE22-□DT	GXN22-□DT
TCNR/L□□□□□16DT	AN16-□DT	AE16-□DT
TCNR/L□□□□□22DT	GXN22-□DT	GXE22-□DT

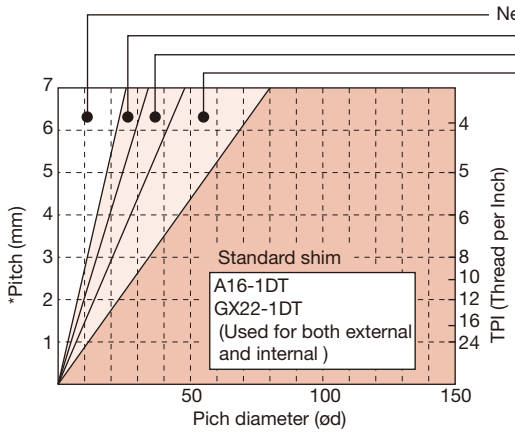
Note: Standard shim is AE16-1DT or GX22-1DT. Other types are optional.

Clamp-on type toolholders

Toolholder designation	Shim	
	R	L
CER/L□□□□□16-T	AE16-□	AN16-□
CER/L□□□□□22-T	NXE22-□	NXN22-□
CER/L□□□□□27-T	NXE27-□	NXN27-□
CNR/L□□□□□16	AN16-□	AE16-□
CNR/L□□□□□22	NXN22-□	NXE22-□
CNR/L□□□□□27	NXN27-□	NXE27-□
B-CER/L□□□16	AE16-□	AN16-□

Note: Standard shim is □□□□□-1. Other types are optional.

Shim selection guide for screw-on / clamp-on dual ST-type tools

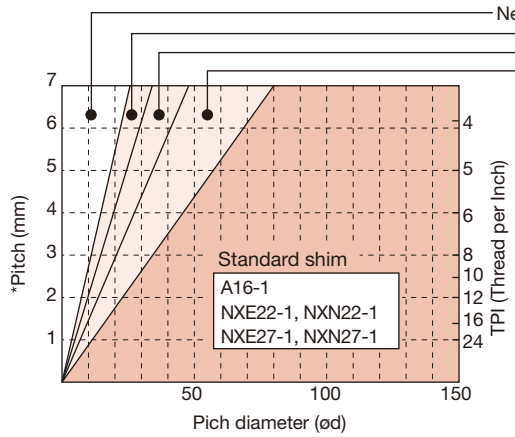


* For the multi start thread lead (multiplied by the pitch and No. of threads)

● List of exchangeable shims

	Designation	D30	Designation	D30	Designation	D30	Designation	D30
$\beta 3 = 4°$	AE16-4DT	●	AN16-4DT	●	GXE22-4DT	●	GXN22-4DT	●
$\beta 3 = 3°$	AE16-3DT	●	AN16-3DT	●	GXE22-3DT	●	GXN22-3DT	●
$\beta 3 = 2°$	AE16-2DT	●	AN16-2DT	●	GXE22-2DT	●	GXN22-2DT	●
$\beta 3 = 1°$ Standard shim	A16-1DT	●	A16-1DT	●	GX22-1DT	●	GX22-1DT	●
$\beta 3 = 0°$	AE16-0DT	●	AN16-0DT	●	GXE22-0DT	●	GXN22-0DT	●
$\beta 3 = -1°$	AE16-99DT	●	AN16-99DT	●	GXE22-99DT	●	GXN22-99DT	●
$\beta 3 = -2°$	AE16-98DT	●	AN16-98DT	●	GXE22-98DT	●	GXN22-98DT	●
Applicable toolholders	CER--16DT TCNL--16DT		CEL--16DT TCNR--16DT		CER--22DT TCNL--22DT		CEL--22DT TCNR--22DT	

Shim selection guide for clamp-on type ST-tools



* For the multi start thread lead (multiplied by the pitch and No. of threads)

● List of exchangeable shims

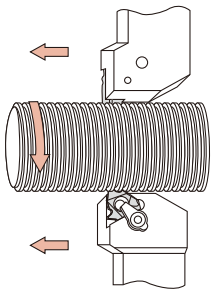
	Designation	D30	Designation	D30	Designation	D30	Designation	D30	Designation	D30	Designation	D30
$\beta 3 = 4°$	AE16-4	●	AN16-4	●	NXE22-4	●	NXN22-4	●	NXE27-4		NXN27-4	
$\beta 3 = 3°$	AE16-3	●	AN16-3	●	NXE22-3	●	NXN22-3	●	NXE27-3		NXN27-3	
$\beta 3 = 2°$	AE16-2	●	AN16-2	●	NXE22-2	●	NXN22-2	●	NXE27-2		NXN27-2	
$\beta 3 = 1°$ Standard shim	A16-1	●	A16-1	●	NXE22-1	●	NXN22-1	●	NXE27-1	●	NXN27-1	●
$\beta 3 = 0°$	AE16-0	●	AN16-0	●	NXE22-0	●	NXN22-0	●	NXE27-0		NXN27-0	
$\beta 3 = -1°$	AE16-99	●	AN16-99	●	NXE22-99	●	NXN22-99	●	NXE27-99		NXN27-99	
$\beta 3 = -2°$	AE16-98	●	AN16-98	●	NXE22-98	●	NXN22-98	●	NXE27-98		NXN27-98	
Applicable toolholders	CER--16T CNL--16 B-CER--16		CEL--16T CNR--16 B-CEL--16		CER--22T CNL--22		CEL--22T CNR--22		CER--27T CNL--27		CEL--27T CNR--27	

● : Line up

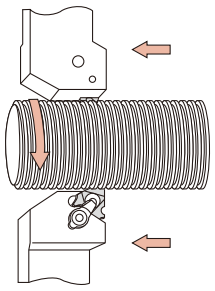
Threading Methods and Combinations

External threading

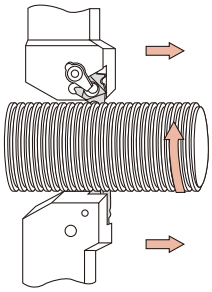
Right hand thread



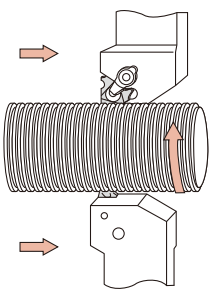
Work rotation	Regular
Feed direction	Push
Hand of toolholder	Right
Hand of insert	Right
Standard shim	①



Work rotation	Regular
Feed direction	Pull
Hand of toolholder	Left
Hand of insert	Left
Standard shim	④

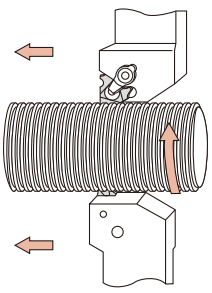


Work rotation	Reverse
Feed direction	Push
Hand of toolholder	Right
Hand of insert	Right
Standard shim	①

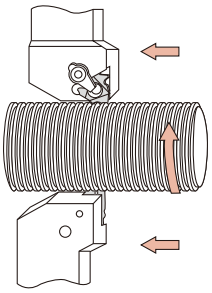


Work rotation	Reverse
Feed direction	Pull
Hand of toolholder	Left
Hand of insert	Left
Standard shim	④

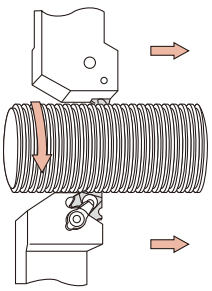
Left hand thread



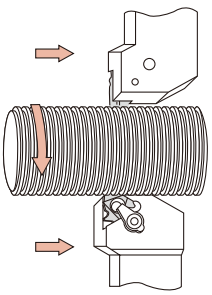
Work rotation	Reverse
Feed direction	Push
Hand of toolholder	Left
Hand of insert	Left
Standard shim	②



Work rotation	Reverse
Feed direction	Pull
Hand of toolholder	Right
Hand of insert	Right
Standard shim	③



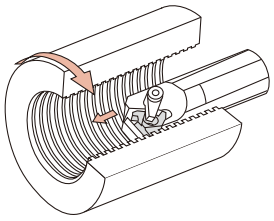
Work rotation	Regular
Feed direction	Push
Hand of toolholder	Left
Hand of insert	Left
Standard shim	②



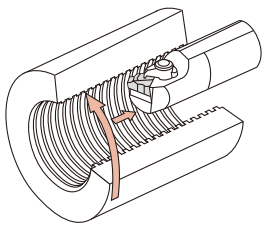
Work rotation	Regular
Feed direction	Pull
Hand of toolholder	Right
Hand of insert	Right
Standard shim	③

Internal threading

Right hand thread

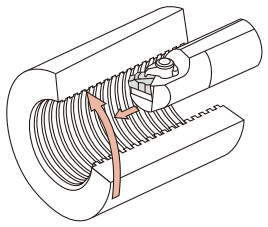


Work rotation	Regular
Feed direction	Push
Hand of toolholder	Right
Hand of insert	Right
Standard shim	②

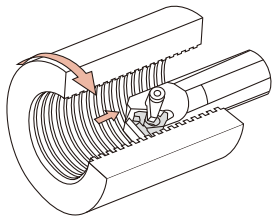


Work rotation	Reverse
Feed direction	Pull
Hand of toolholder	Left
Hand of insert	Left
Standard shim	③

Left hand thread



Work rotation	Reverse
Feed direction	Push
Hand of toolholder	Left
Hand of insert	Left
Standard shim	①



Work rotation	Regular
Feed direction	Pull
Hand of toolholder	Right
Hand of insert	Right
Standard shim	④

Standard shim

No.	New	No.	New
①	A16-1DT	②	A16-1DT
	A16-1		A16-1
	GX22-1DT		GX22-1DT
	NXE22-1		NXN22-1
	NXE27-1		NXN27-1
③	AE16-99DT	④	AN16-99DT
	AE16-99		AN16-99
	GXE22-99DT		GXN22-99DT
	NXE22-99		NXN22-99
	NXE27-99		NXN27-99

User's Guide- Technical Reference

Infeed per Pass and Number of Passes

ISO metric full-profile inserts (for external)

Pitch		0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5	5.5	6
Height of thread		0.32	0.47	0.63	0.79	0.95	1.11	1.27	1.58	1.9	2.21	2.53	2.85	3.16	3.48	3.8
Total depth of cut		0.42	0.57	0.73	0.89	1.05	1.21	1.37	1.68	2	2.31	2.63	2.95	3.26	3.58	3.9
Number of passes	1	0.15	0.18	0.25	0.25	0.3	0.3	0.3	0.3	0.35	0.35	0.4	0.4	0.45	0.5	0.5
	2	0.12	0.12	0.2	0.2	0.25	0.25	0.25	0.25	0.3	0.3	0.35	0.35	0.35	0.35	0.4
	3	0.1	0.12	0.13	0.15	0.2	0.2	0.2	0.25	0.25	0.3	0.3	0.3	0.3	0.3	0.3
	4	0.05	0.1	0.1	0.14	0.15	0.16	0.2	0.23	0.2	0.25	0.25	0.25	0.25	0.25	0.25
	5		0.05	0.05	0.1	0.1	0.15	0.15	0.2	0.2	0.21	0.2	0.2	0.25	0.23	0.25
	6				0.05	0.05	0.1	0.12	0.15	0.15	0.2	0.2	0.2	0.2	0.2	0.2
	7						0.05	0.1	0.15	0.15	0.15	0.15	0.2	0.2	0.2	0.2
	8							0.05	0.1	0.15	0.15	0.15	0.15	0.18	0.15	0.15
	9								0.05	0.1	0.15	0.15	0.15	0.15	0.15	0.15
	10									0.1	0.1	0.13	0.15	0.15	0.15	0.15
	11									0.05	0.1	0.1	0.15	0.13	0.15	0.15
	12										0.05	0.1	0.1	0.1	0.15	0.15
	13											0.1	0.1	0.1	0.15	0.15
	14											0.05	0.1	0.1	0.1	0.15
	15												0.1	0.1	0.1	0.1
	16												0.05	0.1	0.1	0.1
	17													0.1	0.1	0.1
	18													0.05	0.1	0.1
	19														0.1	0.1
	20														0.05	0.1
	21															0.1
	22															0.05
	23															
	24															

ISO metric full-profile inserts (for internal)

Pitch		0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5	5.5	6
Height of thread		0.29	0.43	0.58	0.72	0.87	1.01	1.16	1.45	1.74	2.03	2.32	2.61	2.9	3.19	3.48
Total depth of cut		0.39	0.53	0.68	0.82	0.97	1.11	1.26	1.55	1.84	2.13	2.42	2.71	3	3.29	3.58
Number of passes	1	0.08	0.1	0.14	0.15	0.2	0.2	0.2	0.25	0.25	0.3	0.3	0.35	0.35	0.4	0.4
	2	0.07	0.09	0.13	0.13	0.16	0.18	0.18	0.22	0.22	0.25	0.25	0.25	0.25	0.25	0.25
	3	0.07	0.08	0.11	0.12	0.14	0.16	0.17	0.2	0.2	0.22	0.22	0.22	0.22	0.22	0.22
	4	0.06	0.08	0.1	0.11	0.12	0.14	0.16	0.18	0.18	0.2	0.2	0.2	0.2	0.2	0.2
	5	0.06	0.07	0.08	0.1	0.12	0.12	0.14	0.16	0.16	0.18	0.18	0.18	0.2	0.2	0.19
	6	0.05	0.06	0.07	0.09	0.1	0.1	0.12	0.15	0.15	0.16	0.18	0.18	0.18	0.18	0.18
	7		0.05	0.05	0.07	0.08	0.09	0.1	0.1	0.14	0.14	0.16	0.16	0.16	0.16	0.17
	8				0.05	0.05	0.07	0.08	0.1	0.13	0.13	0.14	0.14	0.14	0.14	0.16
	9						0.05	0.06	0.08	0.12	0.12	0.14	0.14	0.14	0.14	0.15
	10							0.05	0.06	0.1	0.11	0.12	0.12	0.13	0.13	0.14
	11								0.05	0.08	0.1	0.12	0.12	0.13	0.13	0.14
	12									0.06	0.1	0.1	0.12	0.12	0.13	0.13
	13									0.05	0.07	0.1	0.11	0.12	0.12	0.13
	14										0.05	0.09	0.1	0.12	0.12	0.13
	15											0.07	0.1	0.11	0.12	0.12
	16											0.05	0.09	0.1	0.12	0.12
	17												0.08	0.1	0.1	0.12
	18												0.05	0.1	0.1	0.1
	19													0.08	0.1	0.1
	20													0.05	0.1	0.1
	21														0.08	0.1
	22														0.05	0.1
	23															0.08
	24															0.05

Unified full-profile inserts

		For external							For internal						
TPI		24	20	18	16	14	12	8	24	20	18	16	14	12	8
Height of thread		0.67	0.8	0.89	1.01	1.15	1.34	2.01	0.61	0.74	0.82	0.92	1.05	1.23	1.84
Total depth of cut		0.77	0.9	0.99	1.11	1.25	1.44	2.11	0.71	0.84	0.92	1.02	1.15	1.33	1.94
Number of passes	1	0.25	0.25	0.28	0.3	0.3	0.3	0.35	0.2	0.2	0.2	0.2	0.25	0.25	0.3
	2	0.22	0.2	0.23	0.25	0.25	0.25	0.3	0.16	0.16	0.18	0.18	0.2	0.2	0.25
	3	0.15	0.16	0.18	0.18	0.23	0.21	0.25	0.12	0.13	0.15	0.16	0.18	0.18	0.22
	4	0.1	0.14	0.15	0.15	0.18	0.18	0.22	0.1	0.12	0.14	0.14	0.16	0.16	0.2
	5	0.05	0.1	0.1	0.1	0.14	0.15	0.2	0.08	0.1	0.1	0.11	0.13	0.13	0.18
	6		0.05	0.05	0.08	0.1	0.12	0.2	0.05	0.08	0.1	0.1	0.1	0.1	0.16
	7				0.05	0.05	0.1	0.16		0.05	0.05	0.08	0.08	0.1	0.14
	8						0.08	0.16				0.05	0.05	0.08	0.12
	9						0.05	0.12						0.08	0.12
	10							0.1						0.05	0.1
	11							0.05							0.1
	12														0.05
	13														
	14														

Whitworth full-profile inserts

		For external									For internal								
TPI		20	19	18	16	14	12	11	10	8	20	19	18	16	14	12	11	10	8
Height of thread		0.83	0.88	0.92	1.04	1.19	1.39	1.51	1.66	2.08	0.83	0.88	0.92	1.04	1.19	1.39	1.51	1.66	2.08
Total depth of cut		0.93	0.98	1.02	1.14	1.29	1.49	1.61	1.76	2.18	0.93	0.98	1.02	1.14	1.29	1.49	1.61	1.76	2.18
Number of passes	1	0.25	0.28	0.3	0.3	0.3	0.3	0.3	0.35	0.35	0.2	0.2	0.22	0.22	0.25	0.25	0.25	0.3	0.35
	2	0.2	0.22	0.24	0.25	0.25	0.25	0.25	0.3	0.3	0.18	0.18	0.18	0.18	0.21	0.21	0.21	0.25	0.3
	3	0.18	0.18	0.18	0.18	0.23	0.2	0.2	0.23	0.25	0.16	0.16	0.17	0.17	0.2	0.2	0.2	0.22	0.25
	4	0.15	0.15	0.15	0.14	0.2	0.18	0.18	0.2	0.23	0.14	0.16	0.16	0.16	0.18	0.18	0.18	0.2	0.22
	5	0.1	0.1	0.1	0.12	0.16	0.15	0.15	0.15	0.22	0.12	0.13	0.14	0.14	0.16	0.16	0.16	0.16	0.2
	6	0.05	0.05	0.05	0.1	0.1	0.14	0.14	0.14	0.2	0.08	0.1	0.1	0.12	0.14	0.14	0.14	0.14	0.18
	7				0.05	0.05	0.12	0.12	0.12	0.18	0.05	0.05	0.05	0.1	0.1	0.1	0.12	0.12	0.16
	8						0.1	0.12	0.12	0.16				0.05	0.05	0.1	0.1	0.12	0.14
	9						0.05	0.1	0.1	0.14						0.1	0.1	0.1	0.12
	10							0.05	0.05	0.1						0.05	0.1	0.1	0.11
	11									0.05							0.05	0.05	0.1
	12																		0.05
	13																		
	14																		
	15																		

Infeed per Pass and Number of Passes

30° Trapezoidal (TR) inserts

		For external					For internal				
Pitch		2	3	4	5	6	2	3	4	5	6
Height of thread		1.25	1.75	2.25	2.75	3.5	1.25	1.75	2.25	2.75	3.5
Total depth of cut		1.35	1.85	2.35	2.85	3.6	1.35	1.85	2.35	2.85	3.6
Number of passes	1	0.25	0.25	0.3	0.3	0.3	0.2	0.22	0.25	0.25	0.25
	2	0.2	0.22	0.25	0.25	0.25	0.18	0.2	0.22	0.22	0.22
	3	0.2	0.2	0.22	0.2	0.23	0.18	0.18	0.2	0.2	0.21
	4	0.18	0.18	0.2	0.2	0.2	0.16	0.16	0.2	0.18	0.2
	5	0.15	0.17	0.18	0.18	0.18	0.15	0.16	0.17	0.18	0.18
	6	0.12	0.16	0.16	0.16	0.18	0.13	0.16	0.16	0.16	0.18
	7	0.1	0.14	0.15	0.16	0.16	0.1	0.14	0.16	0.16	0.16
	8	0.1	0.14	0.14	0.15	0.16	0.1	0.14	0.14	0.15	0.16
	9	0.05	0.12	0.14	0.14	0.16	0.1	0.12	0.14	0.14	0.16
	10		0.12	0.12	0.14	0.16	0.05	0.12	0.12	0.14	0.16
	11		0.1	0.12	0.14	0.16		0.1	0.12	0.14	0.16
	12		0.05	0.12	0.12	0.15		0.1	0.12	0.12	0.15
	13			0.1	0.12	0.15		0.05	0.1	0.12	0.15
	14			0.1	0.12	0.15			0.1	0.12	0.15
	15			0.05	0.12	0.14			0.1	0.12	0.14
	16				0.1	0.14			0.05	0.1	0.14
	17				0.1	0.12				0.1	0.12
	18				0.1	0.12				0.1	0.12
	19				0.05	0.12				0.1	0.12
	20					0.12				0.05	0.12
	21					0.1					0.1
	22					0.1					0.1
	23					0.05					0.1
	24										0.05
	25										
	26										

29° Trapezoidal (TR) inserts

		For external			For internal		
TPI		8	6	5	8	6	5
Height of thread		1.88	2.41	2.92	1.88	2.41	2.92
Total depth of cut		1.98	2.51	3.02	1.98	2.51	3.02
Number of passes	1	0.25	0.25	0.25	0.22	0.22	0.22
	2	0.22	0.22	0.22	0.2	0.2	0.2
	3	0.2	0.2	0.2	0.18	0.18	0.18
	4	0.18	0.18	0.18	0.16	0.18	0.18
	5	0.16	0.17	0.18	0.16	0.16	0.16
	6	0.16	0.16	0.16	0.16	0.15	0.16
	7	0.16	0.16	0.16	0.15	0.15	0.15
	8	0.14	0.14	0.14	0.14	0.14	0.14
	9	0.14	0.14	0.14	0.14	0.14	0.14
	10	0.12	0.14	0.14	0.12	0.14	0.14
	11	0.1	0.14	0.14	0.1	0.14	0.14
	12	0.1	0.12	0.14	0.1	0.12	0.14
	13	0.05	0.12	0.12	0.1	0.12	0.12
	14		0.12	0.12	0.05	0.12	0.12
	15		0.1	0.12		0.1	0.12
	16		0.1	0.12		0.1	0.12
	17		0.05	0.12		0.1	0.12
	18			0.12		0.05	0.12
	19			0.1			0.1
	20			0.1			0.1
	21			0.05			0.1
	22						0.05
	23						
	24						
	25						
	26						

PT full-profile inserts

		For external				For internal		
TPI		28	19	14	11	19	14	11
Height of thread		0.6	0.86	1.16	1.48	0.86	1.16	1.48
Total depth of cut		0.7	0.96	1.26	1.58	0.96	1.26	1.58
Number of passes	1	0.25	0.28	0.3	0.3	0.22	0.25	0.25
	2	0.2	0.2	0.25	0.25	0.2	0.22	0.22
	3	0.1	0.18	0.2	0.22	0.18	0.18	0.18
	4	0.1	0.15	0.15	0.18	0.16	0.14	0.18
	5	0.05	0.1	0.11	0.15	0.1	0.12	0.15
	6		0.05	0.1	0.12	0.05	0.1	0.13
	7			0.1	0.11	0.05	0.1	0.12
	8			0.05	0.1		0.1	0.1
	9				0.1		0.05	0.1
	10				0.05			0.1
	11							0.05
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							

NPT full-profile inserts

		For external				For internal		
TPI		18	14	11.5	8	14	11.5	8
Height of thread		1.14	1.47	1.79	2.58	1.47	1.79	2.58
Total depth of cut		1.24	1.57	1.89	2.68	1.57	1.89	2.68
Number of passes	1	0.2	0.25	0.25	0.3	0.22	0.22	0.25
	2	0.18	0.22	0.22	0.25	0.2	0.2	0.2
	3	0.17	0.2	0.2	0.2	0.18	0.18	0.2
	4	0.16	0.18	0.18	0.2	0.18	0.18	0.2
	5	0.14	0.17	0.18	0.2	0.16	0.16	0.2
	6	0.12	0.16	0.17	0.2	0.14	0.16	0.2
	7	0.12	0.12	0.16	0.18	0.12	0.16	0.18
	8	0.1	0.12	0.14	0.18	0.12	0.14	0.18
	9	0.05	0.1	0.12	0.16	0.1	0.12	0.16
	10		0.05	0.12	0.16	0.1	0.12	0.16
	11			0.1	0.14	0.05	0.1	0.14
	12			0.05	0.14		0.1	0.14
	13				0.12		0.05	0.12
	14				0.1			0.1
	15				0.1			0.1
	16				0.05			0.1
	17							0.05
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							

User's Guide- Technical Reference

Standard Cutting Conditions and Infeed Methods

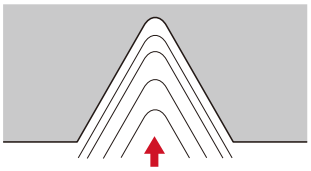
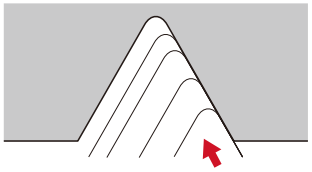
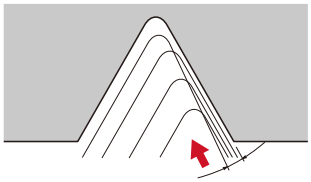
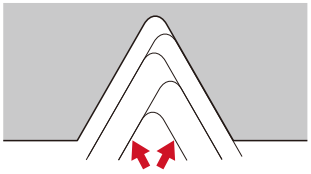
Threading guidelines

Determine the infeed per pass and number of threads whilst referring to the table and description below.

Pitch	0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5 ~
TPI	48	32	24	20	16	14	12	10	8	7	6	5.5	5 ~
No. of passes	4 ~ 6	4 ~ 7	4 ~ 8	5 ~ 9	6 ~ 10	7 ~ 12	7 ~ 12	8 ~ 14	10 ~ 16	11 ~ 18	11 ~ 18	11 ~ 19	12 ~ 24

Note:
- When using the full-profile insert, set the total infeed amount by taking the finish stock of 0.1mm into account.
- Set the first infeed to 150 ~ 200% of nose R and do not allow it to exceed 0.5 mm.
- The infeed amount during the final pass must be a minimum of 0.05 mm. No zero cuts should be made. (Extra small infeed or zero cutting of work hardened surfaces will reduce tool life.)
- The partial-profile insert or inside diameter insert has small nose R. Reduce the infeed per pass and increase the no. of passes.
- Regarding standard infeed per passes and no. of passes, please refer to our catalogue.

Infeed methods for threading tools

Infeed method	Features
 Straight infeed (radial infeed)	• Most simple and usual method Suitable for relatively small pitch threads of easily machinable material. • Chip contact length on right and left is longer, causing chattering, with increased load on the nose end. • When the half included angle is not symmetrical to the right and left, infeeding in the direction of 1/2 of the included angle will ensure equal machining with right and left cutting edges.
 Single edge infeed (flank infeed)	• Suitable for large pitch threads or easy to tear materials. Effectively prevents chattering. • Chips are discharged in one direction only. Satisfactory chip control. • Edge on the right (with zero infeed) tends to be worn heavily.
 Modified single-edge infeed (flank infeed)	• Suitable for large pitch threads or easy to tear materials. Effectively prevents chattering. • Chips are discharged in one direction only. Satisfactory chip control. • Edge on the right performs some cutting, therefore wear of this edge can thus be suppressed.
 Alternating flank infeed	• Suitable for large pitch threads or easy to tear material. Effectively prevents chattering. • Chips are discharged alternately in right and left directions, resulting possibly in entanglement. • Right and left edges are used alternately, ensuring uniform wear and extending tool life.

Selection of internal threading toolholders

Relation between internal toolholders and machinable threads

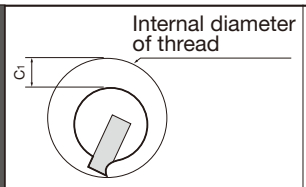
In the tables starting from next page, the relationships between toolholders, inserts, threads to be machined, and shims to be replaced are shown. In these tables, the criteria are set as follows.
- **The minimum machining diameter.**
- **The L/D ratio of the toolholder.**
- **The lead angle of the thread.**
- **Cutting conditions**

Especially when machining near the minimum machining diameter, the compensation for the lead angle should be done carefully.
Moreover, in threading, because chips generally can not be broken into small pieces, the shank size should be selected in consideration of adequate clearance (C_1).

Symbols

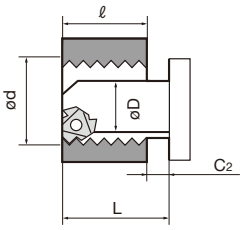
- ◯ Recommended
- • Usable
- 2 Needs replacing of the shim. "2" indicates "Change to the shim for 2° lead angle".
- Unusable

Clearance C_1

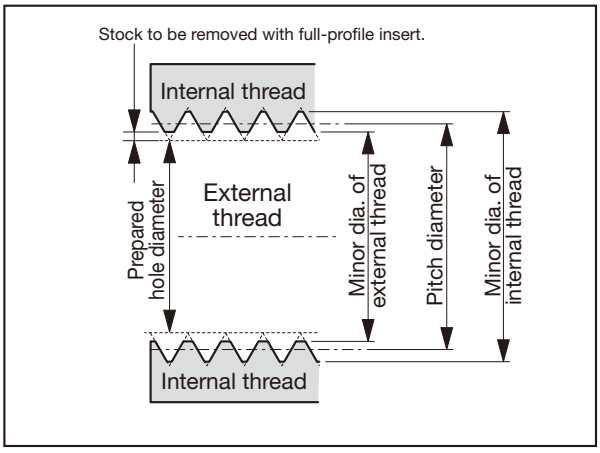


$C_1 \geq 3$ mm
(1 mm for 6IR insert holders)

Overhang ratio L/D



Steel shank	L/D ≤ 2→◯
Carbide shank	L/D ≤ 3→◯



How to use the tables

①Firstly, find the nominal thread diameter. Example: M35 X 1.5
②The table indicates that the lead angle is 0°48′.
③The Cat. No. of the insert to be used corresponds with IR15ISO.
④By following the row to the right, • and ◯ marks are found. The ◯ mark indicates the optimum toolholder type. The toolholders of • mark are usable, but less rigid because the shank diameter against the threading diameter is smaller than those of ◯ marked toolholder. In this example, CNR0025R16 and TCNR0020R16DT are the optimum toolholders. The insert Cat.No. is 16IR15ISO.
⑤In the case of M33 X 3 thread, the lead angle is 1°46′. By following the row to the right. 2 mark is found. This indicates that the shim should be replaced to 2° type. For calculation of the lead angle, refer to page B405.

Metric fine screw thread (ISO)

(For full size of this table, see page L051.)

Nominal size	Pitch	Effective diameter	Lead angle	Shank material	Steel shank																Carbide shank								"Tsuppari-Ichiban"					
				Insert size	6IR				11IR				16IR				22IR				6IR				11IR				16IR		16IR			22IR	
				Holder Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	SNR0020Q22	SNR0020Q22-2	CNR0025R22	CNR0032S22	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)	TSNR0020R22	TCNR0025S22DT
				Insert Cat. No.																															
M33×1.5	1.5	32.03	0°51′	IR15ISO					•		•		•		◯									•		•		•		•	◯				
M33×2	2	31.7	1°09′	IR20ISO	•		•		•		•		•		◯						•			•		•		•		•	◯				
M33×3	3	31.05	1°46′	IR30ISO											2																•	2				
M35×1.5	1.5	34.03	0°48′	IR15ISO					•		•		•		•	◯								•		•		•		•	◯				
M36×1.5	1.5	35.03	0°47′	IR15ISO					•		•		•		•	◯								•		•		•		•	◯				
M36×2	2	34.7	1°03′	IR20ISO											•	◯					•		•		•		•		•		•	◯				
M36×3	3	34.05	1°[illegible]																												•	2				
M38×1.5	1.5	[illegible]																						•		•		•		•	•	◯				

User's Guide- Technical Reference

Selection of ST-type Toolholders

Selection of Internal Toolholders—Relationship between thread sizes, toolholders, and inserts—Part 1

Metric coarse screw thread (ISO)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank																Carbide shank								"Tsuppari-Ichiban"	
				Insert size	6IR				11IR				16IR		22IR				27IR		6IR				11IR		16IR		22IR	
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11-2	SNR0010K11-3	SNR0013L11-2	SNR0013L11-3	SNR0016M16-2	SNR0016M16-3	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	(CNR0040T22)	CNR0040T27	(CNR0050U27)	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC-2	SNR0010M11SC-3	SNR0016R16SC-2	(SNR0016R16SC-3)	TCNR0025S22DT	(TCNR0032T22DT)
M10	1.5	9.03	3°02′	IR15ISO																										
M11	1.5	10.03	2°44′	IR15ISO		○																○								
M12	1.75	10.86	2°56′	IR175ISO		○																○								
M14	2	12.7	2°52′	IR20ISO		•		○														•		○						
M16	2	14.7	2°29′	IR20ISO	•		○														•		○							
M18	2.5	16.38	2°47′	IR25ISO																										
M20	2.5	18.38	2°29′	IR25ISO																										
M22	2.5	20.38	2°14′	IR25ISO																										
M24	3	22.05	2°29′	IR30ISO																										
M27	3	25.05	2°11′	IR30ISO									○														○			
M30	3.5	27.73	2°18′	IR35ISO																										
M33	3.5	30.73	2°05′	IR35ISO											○															
M36	4	33.4	2°11′	IR40ISO											○															
M39	4	36.4	2°00′	IR40ISO											•		2												2	
M42	4.5	39.08	2°06′	IR45ISO											•		2												2	
M45	4.5	42.08	1°57′	IR45ISO											•		2												2	
M48	5	44.75	2°02′	IR50ISO											•		2	2											2	2
M52	5	48.75	1°52′	IR50ISO											•		2	2											2	2
M56	5.5	52.43	1°55′	IR55ISO																										
M60	5.5	56.43	1°47′	IR55ISO																2										
M64	6	60.1	1°49′	IR60ISO																2										
M68	6	64.1	1°42′	IR60ISO																2	2									

2 : Change the shim to NXN22-2

2 : Change the shim to NXN27-2

2 : Change the shim to GXN22-2DT

Metric fine screw thread (ISO)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank										Carbide shank									
				Insert size	6IR				11IR						6IR				11IR					
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0010K11-3	SNR0013L11	SNR0013L11-2	SNR0013L11-3	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0010M11SC-3	SNR0012P11SC	SNR0012P11SC-2	SNR0012P11SC-3
M9×0.75	0.75	8.51	1°36′	IR075ISO																				
M9×1	1	8.32	2°11′	IR10ISO																				
M10×0.75	0.75	9.51	1°26′	IR075ISO																				
M10×1	1	9.35	1°57′	IR10ISO	○										○									
M10×1.25	1.25	9.19	2°29′	IR125ISO																				
M11×0.75	0.75	10.51	1°18′	IR075ISO																				
M11×1	1	10.35	1°46′	IR10ISO	○										○									
M12×1	1	11.35	1°36′	IR10ISO	•		○								•		○							
M12×1.25	1.25	11.19	2°02′	IR125ISO	○										○									
M12×1.5	1.5	11.03	2°29′	IR15ISO	○										○									
M14×1	1	13.35	1°22′	IR10ISO																				
M14×1.25	1.25	13.19	1°44′	IR125ISO	•		○								•		○							
M14×1.5	1.5	13.03	2°06′	IR15ISO	•		○								•		○							
M15×1	1	14.35	1°16′	IR10ISO																				
M15×1.5	1.5	14.03	1°57′	IR15ISO	•		○								•		○							
M16×1	1	15.35	1°11′	IR10ISO					○															
M16×1.5	1.5	15.03	1°49′	IR15ISO	•		○								•		○							
M17×1	1	16.35	1°07′	IR10ISO					○										○					
M17×1.5	1.5	16.03	1°42′	IR15ISO	•		•			○					•		○							
M18×1	1	17.35	1°03′	IR10ISO					○										○					
M18×1.5	1.5	17.03	1°36′	IR15ISO	•		•			○					•		•			○				
M18×2	2	16.7	2°11′	IR20ISO	•		•			○					•		•			○				
M20×1	1	19.35	0°57′	IR10ISO					•			○							•				○	
M20×1.5	1.5	19.03	1°26′	IR15ISO					•			○							•				○	
M20×2	2	18.7	1°57′	IR20ISO	•		•			○					•		•			•			○	

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

Metric fine screw thread (ISO)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank												Carbide shank												"Tsuppari-Ichiban"	
				Insert size	6IR				11IR					16IR					6IR				11IR					16IR				16IR	
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0013L11-3	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0010M11SC-3	SNR0012P11SC	SNR0012P11SC-2	SNR0012P11SC-3	SNR0016R16SC	SNR0016R16SC-2	(SNR0016R16SC-3)	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT
M22×1	1	21.35	0°51′	IR10ISO					•		○											•			○							
M22×1.5	1.5	21.03	1°18′	IR15ISO	•		•		•		○							•		•		•			○							
M22×2	2	20.7	1°46′	IR20ISO	•		•			•		○						•		•			•			○						
M24×1	1	23.35	0°47′	IR10ISO							○			•								•			○					•		
M24×1.5	1.5	23.03	1°11′	IR15ISO	•		•				○			•				•		•		•			○					•		
M24×2	2	22.07	1°39′	IR20ISO	•		•			•		○						•		•			•			○						
M25×1	1	24.35	0°45′	IR10ISO					•		○			•											○				•		•		
M25×1.5	1.5	24.03	1°08′	IR15ISO	•		•		•		○			•				•		•					○				•		•		
M25×2	2	23.7	1°32′	IR20ISO	•		•			•		○			•			•		•			•			○						
M26×1.5	1.5	25.03	1°06′	IR15ISO	•		•		•		•			○				•		•		•			•				•		○		
M27×1	1	26.35	0°42′	IR10ISO					•		•			○								•			•				•		○		
M27×1.5	1.5	26.03	1°03′	IR15ISO	•		•		•		•			○				•		•		•			•				•		○		
M27×2	2	25.7	1°25′	IR20ISO	•		•		•		•			○				•		•		•			•				•		○		
M28×1	1	27.35	0°40′	IR10ISO					•		•			○								•			•				•		○		
M28×1.5	1.5	27.03	1°01′	IR15ISO	•		•		•		•			○				•		•		•			•				•		○		
M28×2	2	26.7	1°22′	IR20ISO	•		•		•		•			○				•		•		•			•				•		○		
M30×1	1	29.35	0°37′	IR10ISO					•		•			○								•			•				•		○		
M30×1.5	1.5	29.03	0°57′	IR15ISO					•		•			○								•			•				•		○		
M30×2	2	28.7	1°16′	IR20ISO	•		•		•		•			○				•		•		•			•				•		○		
M30×3	3	28.05	1°57′	IR30ISO											○												○					
M32×1.5	1.5	31.03	0°53′	IR15ISO					•		•			○			○					•			•				•		○		
M32×2	2	30.07	1°11′	IR20ISO	•		•		•		•			○			○	•		•		•			•				•		○		

Metric fine screw thread (ISO)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank															Carbide shank									"Tsuppari-Ichiban"			
				Insert size	6IR				11IR				16IR				22IR			6IR				11IR			16IR		16IR			22IR	
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	SNR0020Q22	SNR0020Q22-2	CNR0025R22	CNR0032S22	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)	TSNR0020R22	TCNR0025S22DT
M33×1.5	1.5	32.03	0°51′	IR15ISO					•		•		•		○									•		•	•		•	○				
M33×2	2	31.7	1°09′	IR20ISO	•		•		•		•		•		•	○					•		•		•		•		•	○				
M33×3	3	31.05	1°46′	IR30ISO											[2]														•	[2]				
M35×1.5	1.5	34.03	0°48′	IR15ISO					•		•		•		•	○								•		•	•		•	○				
M36×1.5	1.5	35.03	0°47′	IR15ISO					•		•		•		•	○								•		•	•		•	○				
M36×2	2	34.7	1°03′	IR20ISO	•		•		•		•		•		•	○				•		•		•		•	•		•	○				
M36×3	3	34.05	1°36′	IR30ISO											[2]														•	[2]				
M38×1.5	1.5	37.03	0°44′	IR15ISO					•		•		•		•	○								•		•	•		•	•	○			
M39×1.5	1.5	38.03	0°43′	IR15ISO					•		•		•		•	○								•		•	•		•	•	○			
M39×2	2	38.7	0°58′	IR20ISO					•		•		•		•	○								•		•	•		•	•	○			
M39×3	3	37.05	1°29′	IR30ISO									•		•	○											•		•	•	○			
M40×1.5	1.5	39.03	0°42′	IR15ISO					•		•		•		•	○								•		•	•		•	•	○			
M40×2	2	37.8	0°57′	IR20ISO					•		•		•		•	○								•		•	•		•	•	○			
M40×3	3	38.05	1°26′	IR30ISO									•		•	○											•		•	•	○			
M42×1.5	1.5	41.03	0°40′	IR15ISO					•		•		•		•	○								•		•	•		•	•	○			
M42×2	2	40.7	0°54′	IR20ISO					•		•		•		•	○								•		•	•		•	•	○			
M42×3	3	40.05	1°22′	IR30ISO									•		•	○											•		•	•	○			
M42×4	4	39.4	1°51′	IR40ISO														[2]															•	[2]
M45×1.5	1.5	44.03	0°37′	IR15ISO					•		•		•		•	•	○							•		•	•		•	•	○	○		
M45×2	2	43.7	0°50′	IR20ISO					•		•		•		•	•	○							•		•	•		•	•	○	○		
M45×3	3	43.05	1°16′	IR30ISO									•		•	•	○					•		•		•	•		•	•	○	○		
M45×4	4	42.4	1°43′	IR40ISO														[2]															•	[2]
M48×1.5	1.5	47.03	0°35′	IR15ISO					•		•		•		•	•	○							•		•	•		•	•	○	○		
M48×2	2	46.7	0°47′	IR20ISO					•		•		•		•	•	○							•		•	•		•	•	○	○		
M48×3	3	46.05	1°11′	IR30ISO									•		•	•	○										•		•	•	○	○		
M48×4	4	45.4	1°36′	IR40ISO															[2]														•	[2]

[2] : Change the shim to AN16-2

[2] : Change the shim to NXN22-2

[2] : Change the shim to AN16-2DT

[2] : Change the shim to GXN22-2DT

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

User's Guide- Technical Reference

Selection of ST-type Toolholders

Metric fine screw thread (ISO)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank																	Carbide shank									"Tsuppari-Ichiban"					
				Insert size	6IR				11IR				16IR						22IR					6IR				11IR				16IR		16IR			22IR		
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	(CNR0040T16)	(CNR0050U16)	SNR0020Q22	SNR0020Q22-2	CNR0025R22	CNR0032S22	(CNR0040T22)	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)	TSNR0020R22	TCNR0025S22DT	(TCNR0032T22DT)
M50×1.5	1.5	49.03	0°33′	IR15ISO					•		•		•		•	•	○	•									•		•		•		•	•	○	○			
M50×2	2	48.7	0°45′	IR20ISO					•		•		•		•	•	○										•		•		•		•	•	○	○			
M50×3	3	48.05	1°08′	IR30ISO									•		•	•	○														•		•	•	○	○			
M52×1.5	1.5	51.03	0°32′	IR15ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M52×2	2	50.7	0°43′	IR20ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M52×3	3	50.05	1°06′	IR30ISO									•		•	•	○	•													•		•	•	○	○			
M52×4	4	49.4	1°29′	IR40ISO															•	•	•	•															•	•	○
M55×1.5	1.5	54.03	0°30′	IR15ISO					•		•		•		•	•	○	•									•		•		•		•	•	○	○			
M55×2	2	53.7	0°41′	IR20ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M55×3	3	53.05	1°02′	IR30ISO									•		•	•	•	○													•		•	•	○	○			
M55×4	4	52.4	1°24′	IR40ISO															•	•	•	•	○														•	•	○
M56×1.5	1.5	55.03	0°30′	IR15ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M56×2	2	54.7	0°40′	IR20ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M56×3	3	54.05	1°01′	IR30ISO									•		•	•	•	○													•		•	•	○	○			
M56×4	4	53.4	1°22′	IR40ISO															•	•	•	•	○														•	•	○
M58×1.5	1.5	57.03	0°29′	IR15ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M58×2	2	56.7	0°39′	IR20ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M58×3	3	56.05	0°59′	IR30ISO									•		•	•	•	○													•		•	•	○	○			
M58×4	4	55.4	1°19′	IR40ISO															•	•	•	•	○														•	•	○
M60×1.5	1.5	59.03	0°28′	IR15ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M60×2	2	58.7	0°37′	IR20ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M60×3	3	58.05	0°57′	IR30ISO									•		•	•	•	○													•		•	•	○	○			
M60×4	4	57.4	1°16′	IR40ISO															•	•	•	•	○														•	•	○

Unified coarse screw thread (UNC)

Nominal size	TPI	Pitch diameter	Lead angle	Shank material	Steel shank																		Carbide shank									"Tsuppari-Ichiban"	
				Insert size	11IR						16IR			22IR						27IR			11IR						16IR			22IR	
				Holder Cat. No. / Insert Cat. No.	SNR0010K11	SNR0010K11-2	SNR0010K11-3	SNR0013L11	SNR0013L11-2	SNR0013L11-3	SNR0016M16	SNR0016M16-2	SNR0016M16-3	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	(CNR0040T22)	CNR0040T27	(CNR0050U27)	(CNR0063V27)	SNR0010M11SC	SNR0010M11SC-2	SNR0010M11SC-3	SNR0012P11SC	SNR0012P11SC-2	SNR0012P11SC-3	SNR0016R16SC	SNR0016R16SC-2	(SNR0016R16SC-3)	TCNR0025S22DT	(TCNR0032T22DT)
7/16-14UNC	14	9.93	3°20′	(IR14UN)																													
1/2-13UNC	13	11.43	3°07′	(IR13UN)																													
9/16-12UNC	12	12.91	2°59′	IR12UN																													
5/8-11UNC	11	14.38	2°56′	(IR11UN)																													
3/4-10UNC	10	17.4	2°40′	(IR10UN)																													
7/8-9UNC	9	20.39	2°31′	IR9UN																													
1-8UNC	8	23.34	2°29′	IR8UN								○																					
1 1/8-7UNC	7	26.22	2°31′	(IR7UN)																													
1 1/4-7UNC	7	29.39	2°15′	(IR7UN)											○																			
1 3/8-6UNC	6	32.17	2°24′	(IR6UN)											○																			
1 1/2-6UNC	6	35.35	2°11′	(IR6UN)											○		2															2	
1 3/4-5UNC	5	41.15	2°15′	(IR5UN)											○		2															2	
2-4 1/2UNC	4.5	47.14	2°11′	(IR45UN)																													
2 1/4-4 1/2UNC	4.5	53.49	1°55′	(IR45UN)																2													
2 1/2-4UNC	4	59.38	1°57′	(IR4UN)																2													
2 3/4-4UNC	4	65.73	1°46′	(IR4UN)																2	2												
3-4UNC	4	72.08	1°36′	(IR4UN)																2	2												
3 1/4-4UNC	4	78.43	1°29′	(IR4UN)																•	•	○											
3 1/2-4UNC	4	84.78	1°22′	(IR4UN)																•	•	○											
3 3/4-4UNC	4	91.13	1°16′	(IR4UN)																•	•	○											
4-4UNC	4	97.48	1°11′	(IR4UN)																•	•	○											

2 : Change the shim to NXN22-2

2 : Change the shim to NXN27-2

2 : Change the shim to GXN22-2DT

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

Unified fine screw thread (UNF)

Nominal size	TPI	Pitch diameter	Lead angle	Shank material	Steel shank										Carbide shank										"Tsuppari-Ichiban"		
				Insert size	6IR				11IR		16IR				6IR				11IR				16IR		16IR		
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11-2	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT
3/8-24UNF	24	8.84	2°11′	(IR24UN)																							
				IRA60																							
7/16-20UNF	20	10.29	2°15′	(IR20UN)																							
				IRA60	○										○												
1/2-20UNF	20	11.87	1°57′	(IR20UN)																							
				IRA60	•		○								•		○										
9/16-18UNF	18	13.37	1°55′	(IR18UN)																							
				IRA60	•		○								•		○										
5/8-18UNF	18	14.96	1°43′	(IR18UN)																							
				IRA60	•		○								•		○										
3/4-16UNF	16	18.02	1°36′	IR16UN					○											○							
7/8-14UNF	14	21.05	1°34′	IR14UN					•	○										•		○					
1-12UNF	12	24.03	1°36′	IR12UN								○												○			
1 1/8-12UNF	12	27.2	1°25′	IR12UN							○												○		○		
1 1/4-12UNF	12	30.38	1°16′	IR12UN							•		○										○		•	○	
1 3/8-12UNF	12	33.55	1°09′	IR12UN							•		•	○									○		•	•	○
1 1/2-12UNF	12	36.73	1°03′	IR12UN							•		•	○									○		•	•	○

Unified extra fine screw thread (UNEF))

Nominal size	TPI	Pitch diameter	Lead angle	Shank material	Steel shank										Carbide shank								"Tsuppari-Ichiban"		
				Insert size	6IR		11IR				16IR				6IR		11IR				16IR		16IR		
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0008H06-2	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	SNR0006H06SC-2	SNR0008H06SC-2	SNR0010K11	SNR0010K11-2	SNR0012L11	SNR0012L11-2	SNR0016M16	SNR0016M16-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT
3/8	32	9.01	1°61′	IR32UN																					
7/16	28	10.52	1°57′	IR28UN	○										○										
1/2	28	12.11	1°37′	IR28UN																					
9/16	24	13.6	1°42′	IR24UN																					
5/8	24	15.19	1°27′	IR24UN																					
11/16	24	16.77	1°15′	IR24UN			○										○								
3/4	20	18.22	1°27′	IR20UN			○										○								
13/16	20	19.81	1°17′	IR20UN			•		○								•		○						
7/8	20	21.4	1°08′	IR20UN			•		○								•		○						
15/16	20	22.99	1°01′	IR20UN			•		•		○						•		○				○		
1	20	24.57	0°94′	IR20UN			•		•		○						•		•		○		○		
1 1/16	18	26.07	0°99′	IR18UN			•		•		○						•		•		○		○		
1 1/8	18	27.66	0°93′	IR18UN			•		•		○						•		•		○		○		
1 3/16	18	29.25	0°88′	IR18UN			•		•		•		○				•		•		○		•	○	
1 1/4	18	30.83	0°84′	IR18UN			•		•		•		○				•		•		○		•	○	
1 5/16	18	32.42	0°79′	IR18UN			•		•		•		○				•		•		○		•	○	
1 3/8	18	34.01	0°76′	IR18UN			•		•		•		•	○			•		•		○		•	•	○
1 7/16	18	35.6	0°72′	IR18UN			•		•		•		•	○			•		•		○		•	•	○
1 1/2	18	37.18	0°69′	IR18UN			•		•		•		•	○			•		•		○		•	•	○
1 9/16	18	38.77	0°66′	IR18UN			•		•		•		•	○			•		•		○		•	•	○
1 5/8	18	40.36	0°64′	IR18UN			•		•		•		•	•	○			•		•		○		•	•	○
1 11/16	18	41.95	0°61′	IR18UN			•		•		•		•	•	○			•		•		○		•	•	○

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

User's Guide- Technical Reference

Selection of ST-type Toolholders

Whitworth British Standard (BSW) (for pipe)

Nominal size	TPI	Pitch diameter	Lead angle	Shank material	Steel shank										Carbide shank		"Tsuppari-Ichiban"				
				Insert size	16IR						22IR				16IR		16IR			22IR	
				Holder Cat. No. / Insert Cat. No.	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	CNR0032S16	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	SNR0016M16	SNR0016M16-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	TSNR0020R22	TCNR0025S22DT
7/16	14	9.95	3°32′	IR14W																	
1/2	12	11.34	3°40′	IR12W																	
9/16	12	12.93	2°98′	IR12W																	
5/8	11	14.4	2°92′	IR11W																	
11/16	11	15.98	2°63′	IR11W																	
3/4	10	17.42	2°66′	IR10W																	
7/8	9	20.42	2°52′	IR9W																	
1	8	23.37	2°48′	IR8W																	
1 1/8	7	26.25	2°52′	IR7W																	
1 1/4	7	29.43	2°25′	IR7W								○									
1 1/2	6	35.39	2°18′	IR6W								○									
1 3/4	5	41.2	2°25′	IR5W								•		2							2

2 : Change the shim to NXN22-2

2 : Change the shim to GXN22-2DT

Whitworth British Standard Fine (BSF) (for pipe)

Nominal size	TPI	Pitch diameter	Lead angle	Shank material	Steel shank													Carbide shank				"Tsuppari-Ichiban"				
				Insert size	6IR		11IR		16IR					22IR				6IR		16IR		16IR			22IR	
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0008H06-2	SNR0010K11	SNR0010K11-2	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	SNR0006H06SC-2	SNR0008H06SC-2	SNR0016M16	SNR0016M16-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	TSNR0020R22	TCNR0025S22DT
7/16	18	10.21	2°52′	IR18W																						
1/2	16	11.68	2°48′	IR16W	○													○								
9/16	16	13.27	2°18′	IR16W	•	○												•	○							
5/8	14	14.71	2°25′	IR14W																						
11/16	14	16.3	2°03′	IR14W				○																		
3/4	12	17.69	2°18′	IR12W																						
7/8	11	20.75	2°03′	IR11W																						
1	10	23.77	1°95′	IR10W						○																
1 1/8	9	26.77	1°92′	IR9W						○											○					
1 1/4	9	29.94	1°72′	IR9W						•		2									○		2			
1 3/8	8	32.89	1°76′	IR8W						•		2									○		2			
1 1/2	8	36.07	1°61′	IR8W						•		•	2								○		•	2		
1 5/8	8	39.24	1°48′	IR8W					•			•	○							○		•	•	○		
1 3/4	7	42.13	1°57′	IR7W											○		2									2
2	7	48.48	1°37′	IR7W										•			•	○							•	○
2 1/4	6	54.44	1°42′	IR6W										•			•	○							•	○
2 1/2	6	60.79	1°27′	IR6W										•			•	○							•	○
2 3/4	6	67.14	1°15′	IR6W										•			•	○							•	○
3	5	72.95	1°27′	IR5W										•			•	○							•	○
3 1/4	5	79.3	1°17′	IR5W										•			•	○							•	○

2 : Change the shim to AN16-2

2 : Change the shim to NXN22-2

2 : Change the shim to AN16-2DT

2 : Change the shim to GXN22-2DT

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

30° trapezoidal thread (TR) (for machine parts)

1/2

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank														Carbide shank			"Tsuppari-Ichiban"						
				Insert size	16IR								22IR						27IR		16IR				16IR				22IR		
				Holder Cat. No. / Insert Cat. No.	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	CNR0032S16	CNR0040T16	CNR0050U16	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	CNR0040T27	(CNR0050U27)	SNR0016R16SC	SNR0016R16SC-2	(SNR0016R16SC-3)	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)	TSNR0020R22	TCNR0025S22DT	(TCNR0032T22DT)
TR22×3	3	20.5	2°40′	IR30TR																								
TR24×5	5	21.5	4°14′	IR50TR																								
TR24×3	3	22.5	2°26′	IR30TR																								
TR26×5	5	23.5	3°52′	IR50TR																								
TR26×3	3	24.5	2°14′	IR30TR		○																						
TR28×5	5	25.5	3°34′	IR50TR																								
TR28×3	3	26.5	2°04′	IR30TR		•														○								
TR30×6	6	27	4°03′	IR60TR																								
TR30×3	3	28.5	1°55′	IR30TR		•														○								
TR32×6	6	29	3°46′	IR60TR																								
TR32×3	3	30.5	1°48′	IR30TR		•		[2]												•				[2]				
TR34×6	6	31	3°32′	IR60TR																								
TR34×3	3	32.5	1°41′	IR30TR		•		[2]												•				[2]				
TR36×6	6	33	3°19′	IR60TR																								
TR36×3	3	34.5	1°35′	IR30TR		•		2	[2]											•				[2]	[2]			
TR38×3	3	36.5	1°30′	IR30TR		•		2	[2]											•				[2]	[2]			
TR40×3	3	38.5	1°25′	IR30TR	•			•	○											○				•	○			
TR42×3	3	40.5	1°21′	IR30TR	•			•	○											○				•	○			
TR44×3	3	42.5	1°17′	IR30TR	•			•	•	○										○				•	•	○		
TR46×3	3	44.5	1°14′	IR30TR	•			•	•	○										○				•	•	○		
TR48×3	3	46.5	1°11′	IR30TR	•			•	•	○										○				•	•	○		
TR50×3	3	48.5	1°08′	IR30TR	•			•	•	○										○				•	•	○		
TR52×3	3	50.5	1°05′	IR30TR	•			•	•	•	○									○				•	•	○		
TR55×3	3	53.5	1°01′	IR30TR	•			•	•	•	○									○				•	•	○		
TR60×3	3	58.5	0°56′	IR30TR	•			•	•	•	○									○				•	•	○		

[2] : Change the shim to AN16-2

[2] : Change the shim to AN16-2DT

30° trapezoidal thread (TR) (for machine parts)

2/2

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank																Carbide shank			"Tsuppari-Ichiban"						
				Insert size	16IR						22IR								27IR			16IR				16IR				22IR		
				Holder Cat. No. / Insert Cat. No.	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	CNR0032S16	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	(CNR0040T22)	(CNR0050U22)	(CNR0063V22)	CNR0040T27	(CNR0050U27)	(CNR0063V27)	SNR0016R16SC	SNR0016R16SC-2	(SNR0016R16SC-3)	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)	TSNR0020R22	TCNR0025S22DT	(TCNR0032T22DT)
TR65×4	4	63	1°09′	IR40TR							•			•	•	•	○										•	•	○
TR70×4	4	68	1°04′	IR40TR							•			•	•	•	○										•	•	○
TR75×4	4	73	1°00′	IR40TR							•			•	•	•	○										•	•	○
TR80×4	4	78	0°56′	IR40TR							•			•	•	•	•	○									•	•	○
TR85×4	4	83	0°53′	IR40TR							•			•	•	•	•	○									•	•	○
TR90×4	4	88	0°50′	IR40TR							•			•	•	•	•	○									•	•	○
TR95×4	4	93	0°47′	IR40TR							•			•	•	•	•	○									•	•	○
TR100×4	4	98	0°45′	IR40TR							•			•	•	•	•	○									•	•	○
TR105×4	4	103	0°42′	IR40TR							•			•	•	•	•	○									•	•	○
TR110×4	4	108	0°41′	IR40TR							•			•	•	•	•	○									•	•	○
TR115×6	6	112	0°59′	IR60TR															•	•	○								
TR120×6	6	117	0°56′	IR60TR															•	•	○								
TR125×6	6	122	0°54′	IR60TR															•	•	○								
TR130×6	6	127	0°52′	IR60TR															•	•	○								
TR135×6	6	132	0°50′	IR60TR															•	•	○								
TR140×6	6	137	0°48′	IR60TR															•	•	○								
TR145×6	6	142	0°46′	IR60TR															•	•	○								
TR150×6	6	147	0°45′	IR60TR															•	•	○								
TR155×6	6	152	0°43′	IR60TR															•	•	○								
TR160×6	6	157	0°42′	IR60TR															•	•	○								
TR165×6	6	162	0°41′	IR60TR															•	•	○								
TR170×6	6	167	0°39′	IR60TR															•	•	○								

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

User's Guide- Technical Reference

Selection of ST-type Toolholders

Parallel pipe thread (G) (for pipe) This table is also applied to PF, Rp, and PS type threads.

Nominal size	TPI	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank												Carbide shank								"Tsuppari-Ichiban"			
					Insert size	6IR		11IR				16IR						6IR				11IR				16IR		16IR			
					Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0008H06-2	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	(CNR0040T16)	(CNR0050U16)	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)
G1/4	19	1.34	12.30	1°59′	IR19W	•	○												•		○									
G3/8	19	1.34	15.81	1°33′	IR19W	•	•		○										•		○									
G1/2	14	1.81	19.79	1°40′	IR14W				•		○												•		○					
G5/8	14	1.81	21.75	1°31′	IR14W				•		○												•		○					
G3/4	14	1.81	25.28	1°18′	IR14W			•		•		○											•		•		○				
G7/8	14	1.81	29.04	1°08′	IR14W			•		•		•		○									•		•		○	•	○		
G1	11	2.31	31.77	1°20′	IR11W							•		○													○	•	○		
G1-1/8	11	2.31	36.42	1°09′	IR11W							•		•	○												○	•	•	○	
G1-1/4	11	2.31	40.43	1°02′	IR11W							•		•	○												○	•	•	○	
G1-1/2	11	2.31	46.32	0°55′	IR11W							•		•	•	○											○	•	•	•	○
G1-3/4	11	2.31	52.27	0°48′	IR11W							•		•	•	•	○										○	•	•	•	○
G2	11	2.31	58.14	0°43′	IR11W							•		•	•	•	○										○	•	•	•	○
G2-1/4	11	2.31	64.23	0°39′	IR11W							•		•	•	•	•	○									○	•	•	•	○
G2-1/2	11	2.31	73.71	0°34′	IR11W							•		•	•	•	•	○									○	•	•	•	○
G2-3/4	11	2.31	80.06	0°32′	IR11W							•		•	•	•	•	○									○	•	•	•	○
G3	11	2.31	86.41	0°29′	IR11W									0	0	0	0	[0]										0	0	[0]
G3-1/2	11	2.31	98.85	0°26′	IR11W									0	0	0	0	[0]										0	0	[0]
G4	11	2.31	111.55	0°23′	IR11W									0	0	0	0	[0]										0	0	[0]
G4-1/2	11	2.31	124.25	0°20′	IR11W									0	0	0	0	[0]										0	0	[0]
G5	11	2.31	136.95	0°18′	IR11W									0	0	0	0	[0]										0	0	[0]
G6	11	2.31	162.35	0°16′	IR11W									0	0	0	0	[0]										0	0	[0]

[0] : Change the shim to AN16-0 ←

[0] : Change the shim to AN16-0DT ←

Taper pipe thread (PT) (for pipe) This table is also applied to Rc type pipe thread.

Nominal size	TPI	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank													Carbide shank									"Tsuppari-Ichiban"			
					Insert size	6IR				11IR				16IR														16IR			
					Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	(CNR0040T16)	(CNR0050U16)	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)
PT1/4	19	1.34	12.30	1°59′	IR19PT	○													○												
PT3/8	19	1.34	15.81	1°33′	IR19PT	•		○											•		○										
PT1/2	14	1.81	19.79	1°40′	IR14PT						○													•		○					
PT3/4	14	1.81	25.28	1°19′	IR14PT									○									•		•		○		○		
PT1	11	2.31	31.77	1°20′	IR11PT									•		○											○		•	○	
PT1 1/4	11	2.31	40.43	1°02′	IR11PT									•		•	○										○		•	•	○
PT1 1/2	11	2.31	46.32	0°55′	IR11PT									•		•	•	○									○		•	•	○
PT2	11	2.31	58.14	0°43′	IR11PT									•		•	•	•	○								○		•	•	○
PT2 1/2	11	2.31	73.71	0°34′	IR11PT									•		•	•	•	•	○							○		•	•	○
PT3	11	2.31	86.41	0°29′	IR11PT											0	0	0	0	[0]									0	0	[0]
PT3 1/2	11	2.31	98.85	0°26′	IR11PT											0	0	0	0	[0]									0	0	[0]
PT4	11	2.31	111.55	0°23′	IR11PT											0	0	0	0	[0]									0	0	[0]
PT5	11	2.31	136.95	0°18′	IR11PT											0	0	0	0	[0]									0	0	[0]
PT6	11	2.31	162.35	0°16′	IR11PT											0	0	0	0	[0]									0	0	[0]
PT7	11	2.31	187.75	0°13′	IR11PT											0	0	0	0	[0]									0	0	[0]
PT8	11	2.31	213.15	0°12′	IR11PT											0	0	0	0	[0]									0	0	[0]
PT9	11	2.31	238.55	0°11′	IR11PT											0	0	0	0	[0]									0	0	[0]
PT10	11	2.31	263.95	0°10′	IR11PT											0	0	0	0	[0]									0	0	[0]
PT12	11	2.31	314.75	0°08′	IR11PT											0	0	0	0	[0]									0	0	[0]

[0] : Change the shim to AN16-0 ←

[0] : Change the shim to AN16-0DT ←

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

National taper pipe thread (NPT) (for pipe)

Nominal size	TPI	Pitch	Lead angle	Shank material	Steel shank											Carbide shank							"Tsuppari-Ichiban"			
				Insert size	6IR				16IR							6IR				16IR			16IR			
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	CNR0032S16	(CNR0040T16)	(CNR0050U16)	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0016R16SC	SNR0016R16SC-2	(SNR0016R16SC-3)	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)
3/8NPT	18	1.41	1°37′	IR18NPT	•		○										•		○								
1/2NPT	14	1.81	1°40′	IR14NPT																							
3/4NPT	14	1.81	1°19′	IR14NPT					○												○			○			
1NPT	11.5	2.21	1°17′	IR115NPT					○			○									○			•	○		
1 1/4NPT	11.5	2.21	1°00′	IR115NPT					○			•	•	○							○			•	•	•	○
1 1/2NPT	11.5	2.21	0°52′	IR115NPT					○			•	•	○							○			•	•	•	○
2NPT	11.5	2.21	0°41′	IR115NPT					○			•	•	•	•	○					○			•	•	•	○
2 1/2NPT	8	3.175	0°50′	IR8NPT					○			•	•	•	•	○					○			•	•	•	○
3NPT	8	3.175	0°40′	IR8NPT					○			•	•	•	•	○					○			•	•	•	○
3 1/2NPT	8	3.175	0°35′	IR8NPT					○			•	•	•	•	○					○			•	•	•	○
4NPT	8	3.175	0°31′	IR8NPT					○			•	•	•	•	○					○			•	•	•	○
5NPT	8	3.175	0°25′	IR8NPT								0	0	0	0	0									0	0	0
6NPT	8	3.175	0°21′	IR8NPT								0	0	0	0	0									0	0	0
8NPT	8	3.175	0°16′	IR8NPT								0	0	0	0	0									0	0	0
10NPT	8	3.175	0°13′	IR8NPT								0	0	0	0	0									0	0	0
12NPT	8	3.175	0°11′	IR8NPT								0	0	0	0	0									0	0	0
14NPT	8	3.175	0°10′	IR8NPT								0	0	0	0	0									0	0	0
16NPT	8	3.175	0°09′	IR8NPT								0	0	0	0	0									0	0	0
18NPT	8	3.175	0°08′	IR8NPT								0	0	0	0	0									0	0	0
20NPT	8	3.175	0°07′	IR8NPT								0	0	0	0	0									0	0	0
24NPT	8	3.175	0°06′	IR8NPT								0	0	0	0	0									0	0	0

0 : Change the shim to AN16-0 ←

0 : Change the shim to AN16-0DT ←

29° trapezoidal thread (ACME) (for machine parts, pipe)

Nominal size	TPI	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank												Carbide shank			"Tsuppari-Ichiban"			
					Insert size	16IR						22IR					27IR		16IR			16IR		22IR	
					Holder Cat. No. / Insert Cat. No.	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	CNR0032S16	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	CNR0040T27	(CNR0050U27)	SNR0016R16SC	SNR0016R16SC-2	SNR0016R16SC-3	TSNR0016Q16	TCNR0020R16DT	TCNR0025S22DT	(TCNR0032T22DT)
3/8	12	2.12	8.465	4°33′	IR12ACME																			
7/16	12	2.12	10.053	3°50′	IR12ACME																			
1/2	10	2.54	11.43	4°03′	IR10ACME																			
5/8	8	3.18	14.274	4°03′	IR8ACME																			
3/4	6	4.23	16.934	4°33′	IR6ACME																			
7/8	6	4.23	20.109	3°50′	IR6ACME																			
1	5	5.08	22.86	4°03′	IR5ACME																			
1-1/8	5	5.08	26.035	3°33′	IR5ACME																			
1-1/4	5	5.08	29.21	3°10′	IR5ACME																			
1-3/8	4	6.35	31.75	3°39′	IR4ACME																			
1-1/2	4	6.35	34.925	3°19′	IR4ACME																			
1-3/4	4	6.35	41.275	2°48′	IR4ACME																			
2	4	6.35	47.625	2°26′	IR4ACME																			

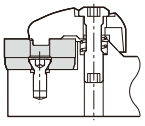
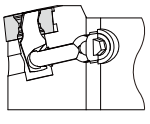
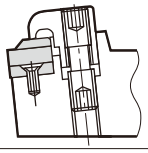
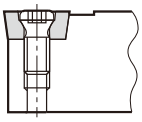
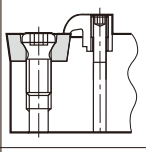
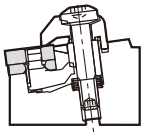
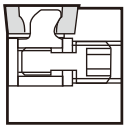
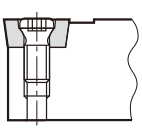
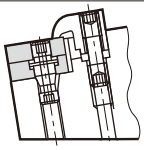
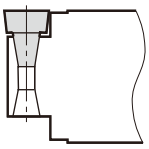
Because this thread standard is characterized with large pitch and small diameter, (that is a large lead angle) the standard inserts and toolholders can not be used for machining this thread type. The application is limited to outside of the standard.

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

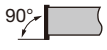
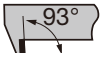
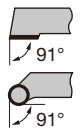
User's Guide- Technical Reference

Designation System for Toolholders

① Clamping system

A Double Clamping		JP Side lever clamping			
C Clamp-on		JS Screw-on		X Double Clamping	
D One-Double		JT Side clamping		S Screw-on	
P Lever-lock		M Multi clamping		T Taper-lock	

③ Cutting edge style

Symbol	Shape	Offset					
A		Without	H		With	P *		Without
			I		Without	Q *		With
			J		With	S		With
B		Without	J2 *		Without	V		Without
C		Without	K		With	U		With
D		Without	L		With	X		With
E		Without	L2 *		Without	Y		With
F		With	N		Without	Z		Without
G		With	N3 *		With	No mark: ISO symbol *mark: Tungaloy's symbol		
			P *		Without			

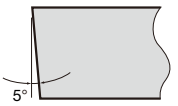
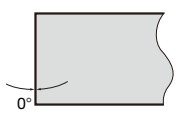
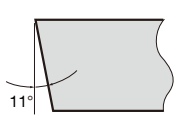
(Example)

①		②	③	④	⑤
A	W	L	N	R
P	T	G	N	R

② Insert shape

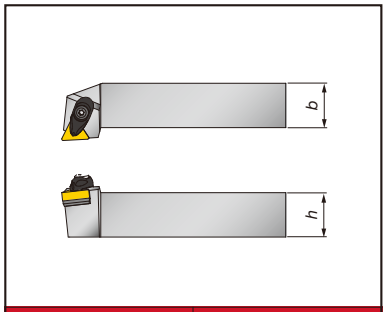
C	80° Rhombic
D	55° Rhombic
K	55° Parallelogram
R	Round
S	Square
T	Triangular
V	35° Rhombic
W	Trigon

④ Relief angle of insert

C	
B	
N	
P	

⑤ Hand of tool

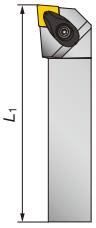
L	
N	
R	



⑥ Height *h* (mm) | ⑦ Width *b* (mm)

Shank size

F	80	*MiniForceTurn
F	85*	
H	100	
X	120	
K	125	
M	150	
P	170	
Q	180	
R	200	
S	250	
T	300	
U	350	



⑧ Holder length

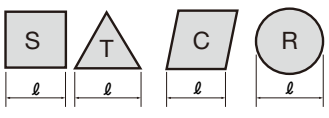
RD	Ceramic insert with dimple
C	M-type for ceramic insert
A	Turning A

⑪ Added symbol

⑥	⑦	⑧			⑪
25	25	M	08	-	A
20	20	K	3		3
			⑨		⑩

⑨ Insert size

Symbol	Inscribed circle (mm)
3	9.525
4	12.7
5	15.875
6	19.05
8	25.4



In the ISO metric system, edge length of inserts is expressed by ℓ in 2 digits.

⑩ Insert thickness

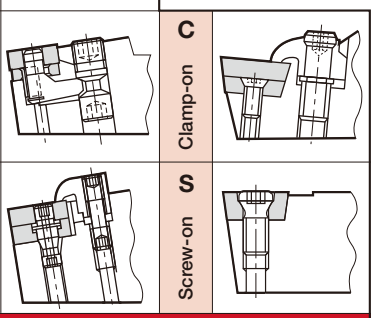
Symbol	Thickness (mm)
2	3.18
3	4.76



User's Guide- Technical Reference

Designation System for Internal Toolholders

A	Double clamping	C	Clamp-on
P	Lever-lock	S	Screw-on
M	Multi clamping		



❹ Clamping system

C	80° Rhombic
D	55° Rhombic
K	55° Parallelogram
R	Round
S	Square
T	Triangular
V	35° Rhombic
Y	25° Rhombic (Non ISO)
W	Trigon

❺ Insert shape

A 12 M - S T

❶ ❷ ❸ ❹ ❺

❶ Bar composition

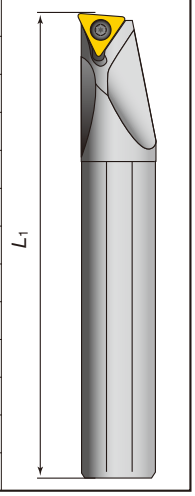
A	Steel shank with oil hole
E	Carbide shank with steel head & oil hole
C	Carbide shank with steel head
S	Steel shank
T	Steel shank reinforced with carbide plates ("Tsuppari-Ichiban")
JS	J series Steel shank

❷ Bar diameter

Bar diameter is shown in mm.

❸ Toolholder length (mm)

F	80
G	90
H	100
J	110
K	125
L	130
M	150
P	170
Q	180
R	200
S	250
T	300
U	350



Symbol	Style	Offset	Symbol	Style	Offset	Symbol	Style	Offset
A	90°	Without	G	91° / 91°	With	S	45°	With
B	75°	Without	J	93°	With	V	72.5°	Without
C	90°	Without	K	75°	With	U	93°	With
D	45°	Without	L	95° / 95°	With	X*	100°	With
E	60°	Without	N	63°	Without	Y	80°	With
F	91°	With	P*	62.5°	Without	Z	93°	Without
			Q*	45°	With			

Note
*mark: Tungaloy standard
No mark: ISO standard

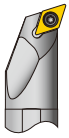
6 Cutting edge style

C	7°
B	5°
N	0°
P	11°
X	Special

7 Relief angle of insert

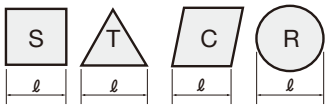
6	7						11
U	P	R	11	02	C	-	D140
		8	9		10		

8 Hand of tool

R	
L	

9 Insert size

For M, S, & C types conformed to ISO



"In ISO metric system, a two digit number indicates the edge length (ℓ) of the insert to be used in mm.
If the insert thickness is different for the same edge length, add the thickness symbol (s) (two digit number).

In above example, TP"□□1102□□

10 Oil hole

Only "Tsuppari-Ichiban" holder

11 Min. bore diameter (mm)

Stream Jet Bar		Tsuppari-Ichiban	
D140	ø14.0	D14	ø14.0

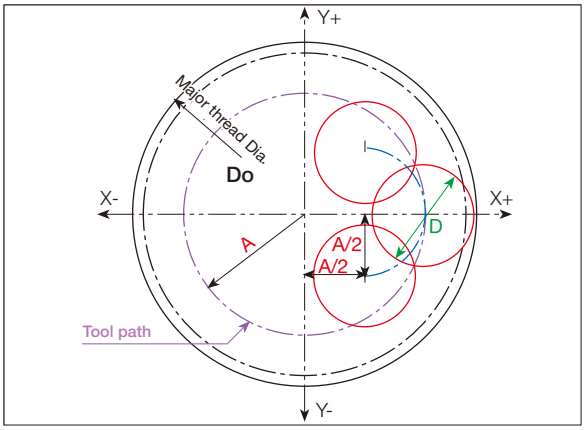
THREADMILLING

Thread Milling CNC Program for Internal Thread

Right-hand thread (climb milling) from bottom up. Program is based on tool center.
This method of programming needs no tool radius compensation value, other than an offset for wear.

$$A = \frac{Do - D}{2}$$

A = Radius of tool path
Do = Major thread diameter
D = Cutting diameter



General Program

G90 G00 G54 G43 H1X0 Y0 Z10 S (n : Number of revolutions)
G00 Z-(to thread depth)
G01 G91 G41 D1 X (A/2) Y-(A/2) Z0 F (Center of tool)
G03 X(A/2) Y(A/2) R (A/2) Z(1/8 pitch) F (Cutting edge)
G03 X0 Y0 I -(A) J0 Z (pitch)
G03 X-(A/2) Y(A/2) R (A/2) Z(1/8 pitch)
G01 G40 X -(A/2) Y-(A/2) Z0
G90 X0 Y0 Z0

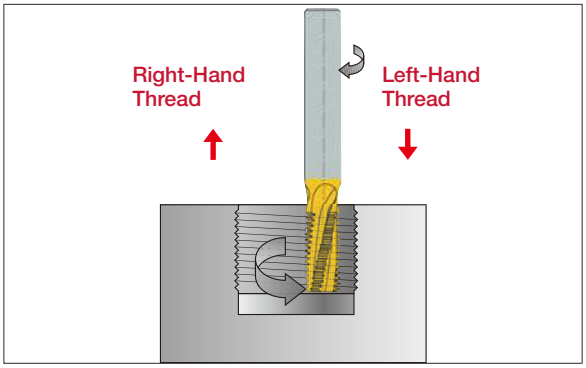
Internal Thread

Example: M20x2.0 **IN-RH** (Thread depth 20 mm)
Tool : **MTEC1010C27 2.0ISO**
(Cutting dia. 10 mm)
A=(**Do**-**D**)/2=(20-10)/2=5
A/2=2.5
(Tool compensation of radius=0)
G90 G0 G54 G43 G17 **H1X0 Y0 Z10 S**4000
G0 Z-20
G01 G91 G41 **D1X** 2.5 **Y**-2.5 **Z0 F**840
G03 **X**2.5 **Y**2.5 **R**2.5 **Z**0.25 F420
G03 **X0 Y0 I**-5.0 **J0 Z**2.0
G03 **X**-2.5 **Y**2.5 **R**2.5 **Z**0.25
G01 G40 **X**-2.5 **Y**-2.5 **Z0**
G90 G0 **X0 Y0 Z0**
M30
%

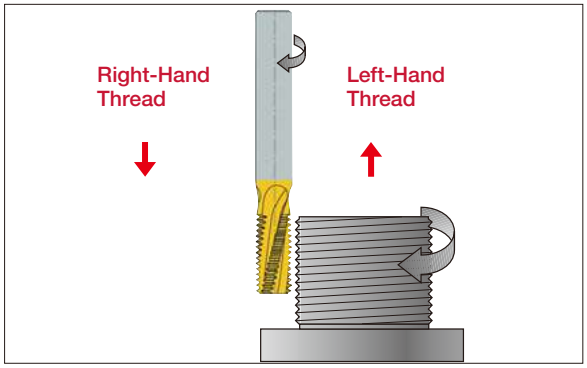
F (Center of tool) = n x *f* x z
F (Cutting edge) = $\frac{Do - D}{Do}$ x n x *f* x z

n : Number of revolutions
f : rev / tooth
z : Number of edge

Internal Thread



External Thread

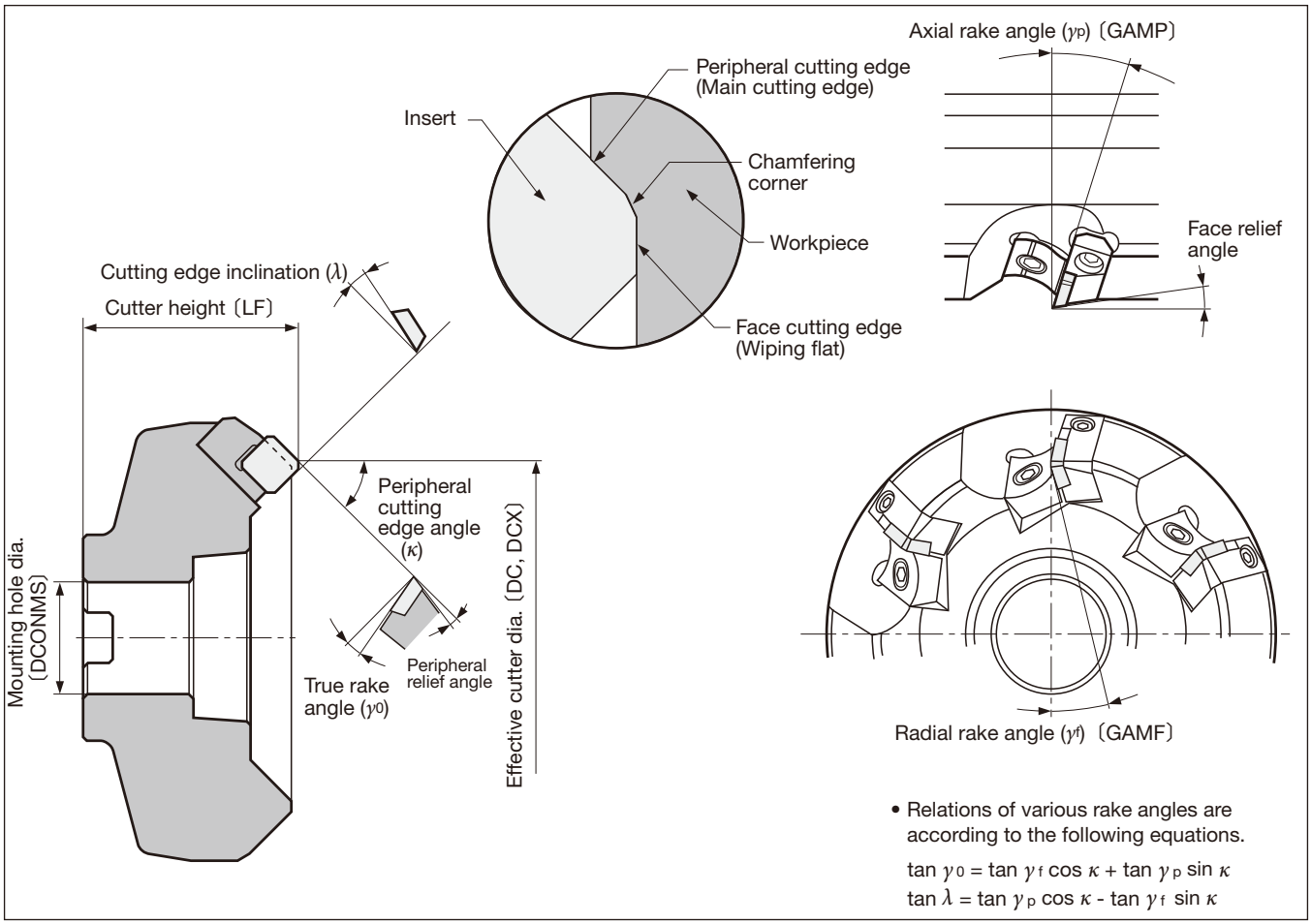


A thread milling operation is applicable for thread cutting in non-symmetrical parts utilizing the advantage of helical interpolation programs on modern machining centers.

For more details, please check ThreadMilling advisor.

Milling tools

Nomenclature for face milling cutter



- Relations of various rake angles are according to the following equations.

$\tan \gamma_0 = \tan \gamma_f \cos \kappa + \tan \gamma_p \sin \kappa$

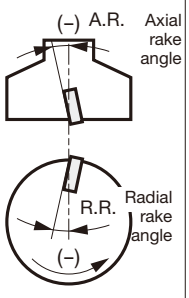
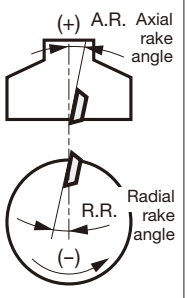
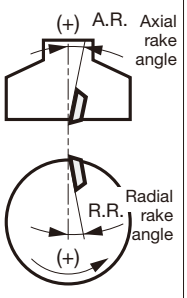
$\tan \lambda = \tan \gamma_p \cos \kappa - \tan \gamma_f \sin \kappa$

〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

Cutter geometry and applications

Condition		Rake angle combination and applicability		
		Negative-Negative	Negative-Positive	Positive-Positive
Shapes of cutting edge	γp 〔GAMP〕	-	+	+
	γf 〔GAMF〕	-	-	+
	γo	-	+	+
Workpiece material	Carbon steels, alloy steels (< 300HB)	△	◎	◎
	Stainless steels (< 300HB)	×	◎	○
	Die steels (< 300HB)	△	◎	○
	Cast irons Ductile cast irons	◎	○	○
	Aluminium alloys	×	○	◎
	Copper and its alloys	×	○	◎
	Titanium and its alloys	×	○	○
	Hardened steels (40 ~ 55HRC)	○	○	×
Features		· Higher cutting edge strength · Many usable corners of inserts	· Excellent chip removal · Higher cutting edge strength and Freer cutting action	· Most excellent cutting action
Typical examples of mills		DoPent	TungMill DoTripleMill	TFE12 DPD09

〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

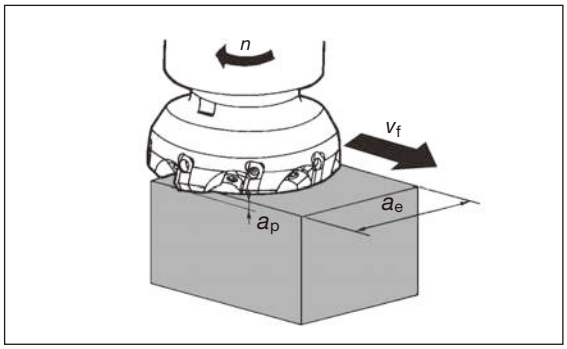
Rake angle combination		
Negative type (Negative-Negative)	Negative-Positive type	Positive type (Positive-Positive)
		

User's Guide- Technical Reference

Milling tools

Calculation formulas for milling

●Cutting speed



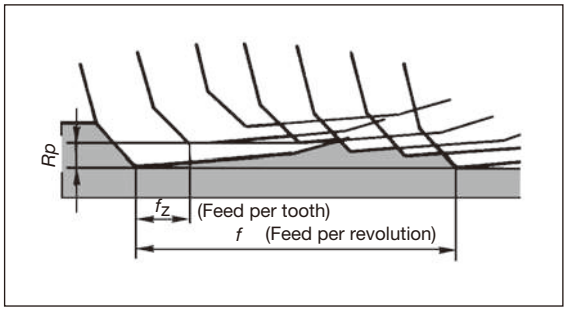
●Cutting speed (Calculated from number of revolutions)

$$v_c\ (\text{m/min}) = \frac{\pi \times D \times n}{1000}$$

v_c : Cutting speed (m/min)
D : Effective diameter (mm) (DC, DCX)
n : Number of revolutions (min^{-1})
$\pi \approx 3.14$

●Number of revolution (Calculated from cutting speed)

$$n\ (\text{min}^{-1}) = \frac{1000 \times v_c}{\pi \times D}$$



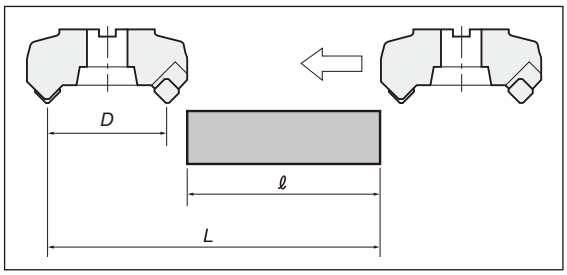
●Feed speed and feed per tooth

$$v_f\ (\text{mm/min}) = f_z \times z \times n$$

v_f : Feed speed (mm/min)
f_z : Feed per tooth (mm/t)
z : No. of teeth of the cutter
n : Number of revolutions (min^{-1})

Feed speed is relative speed of cutter and Workpiece material and in the normal milling machine, it is the table speed.
In milling, the feed per tooth is very important. The recommended cutting condition is expressed by v_c and f_z and using the above equation calculate n and v_f and input in the machine.

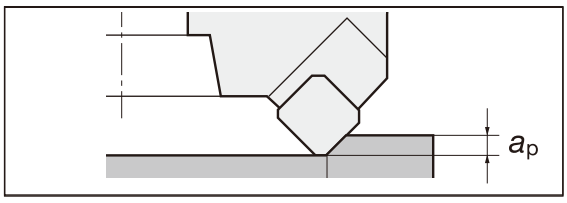
●Cutting time on face milling



$$T\ (\text{min}) = \frac{L}{v_f}$$

T : Cutting time (min)
L : Total table feed length.
(ℓ : Workpieces length (mm) + øD_c: Effective cutter diameter (mm) (DC, DCX))
v_f : Feed speed (mm/min)
( ) The notation in the brackets is the one used in the catalog (ISO compliant)

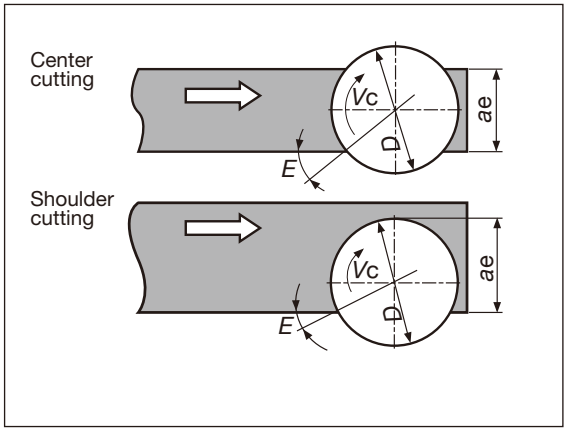
Depth of cut and width of cut



●Depth of cut

Determine by required allowance for machining and capacity of the machine. In case of mill, there are cutting limits according to shape and size of the insert. Please see spec in the catalogue.

a_p : Depth of cut (mm)



●Width of cut and engagement angle

There is an appropriate engage angle depending on the cutter diameter, cutting position, Workpiece material, etc., and ordinarily the values in the table below are used as a guide.

D : Cutter diameter (mm) (DC, DCX)
E : Engage angle
a_e : Width of cut (mm)
( ) The notation in the brackets is the one used in the catalog (ISO compliant)

Center cutting

Workpiece material	Appropriate E	Cutter dia. and a_e
Steel	~ 42°	$a_e \fallingdotseq \frac{2}{3} D$
Cast iron	~ 53°	$a_e \fallingdotseq \frac{4}{5} D$

Shoulder cutting

Workpiece material	Appropriate E	Cutter dia. and a_e
Steel	~ 30°	$a_e \fallingdotseq \frac{3}{5} D$
Cast iron	~ 40°	$a_e \fallingdotseq \frac{3}{4} D$

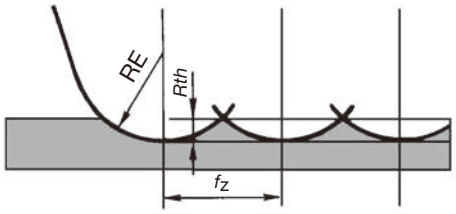
Milling tools

Roughness of finished surface

(1) Theoretical surface roughness
Theoretical roughness as shown below, is the same as for single point turning

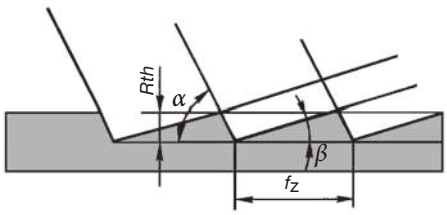
●With corner radius RE

$$Rth = \frac{fz^2}{8RE} \times 1000$$

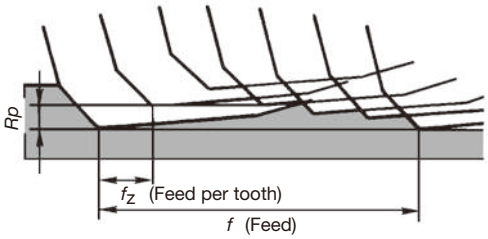


●Without corner radius RE

$$Rth = fz \left(\frac{\tan\alpha \cdot \tan\beta}{\tan\alpha + \tan\beta} \right) \times 1000$$

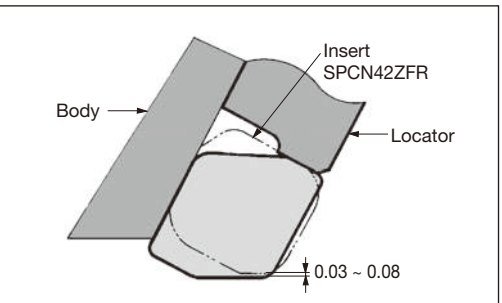


Rth : Theoretical roughness (μm)
f_z : Feed per tooth (mm/t)
RE : Corner radius (mm)
α : Corner angle
β : Face cutting edge angle



(2) Actual surface roughness
A facemill cutter in practice is composed of multiple point cutting edges and is prone to create uneven peaks, or an axial runout error (*Rp*) on cutting edges. One or two cutting edges being non-coplanar to the rest invariably create the dominant mark on a face-milled surface, producing periodic patterns corresponding to the feed per revolution *f* (mm/rev) superimposing on the feed per tooth *fz* (mm/t).

Improving surface roughness



Face run out must be minimized and a low feed and high speed should be used. Also, in order to attain good finished surface at high efficiency, there are the following methods:

(1) In case of ordinary mill
Use wiper insert as shown in the figure at left.

(2) Use of super finish mill for finishing.
- Use of combination mills with finishing insert such as TFD4400-A and TFP4000IA (a_p < 1.0 mm).
- Use of super finish mill for finishing such as NMS cutters and SFP4000 etc.

User's Guide- Technical Reference

Milling tools

Calculating power requirement

$$P_c \underset{(kW)}{=} \frac{k_c \times a_p \times a_e \times v_f}{60 \times 1000 \times 1000}$$

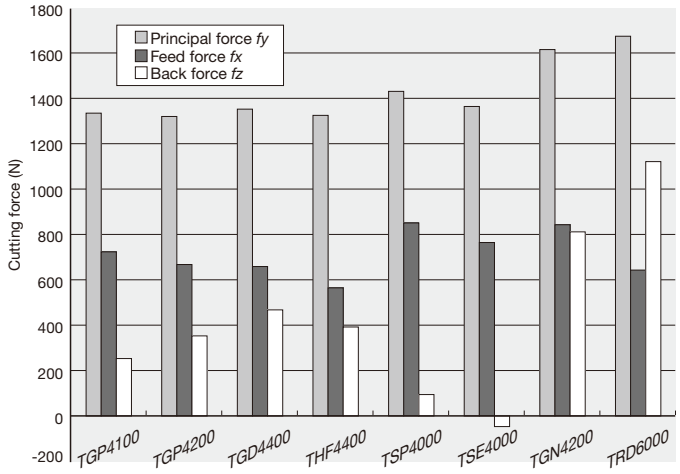
Because practical power requirements depend on the type of mill (proportional to the true rake angle) and the motor efficiency of the machine used, the result calculated from the above formula should be considered as a rough guide.

P_c : Net power requirement (kW)
k_c : Specific cutting force (N/mm^2)
[Refer to the Table below]
a_p : Depth of cut (mm)
a_e : Width of cut (mm)
v_f : Feed speed (mm/min)

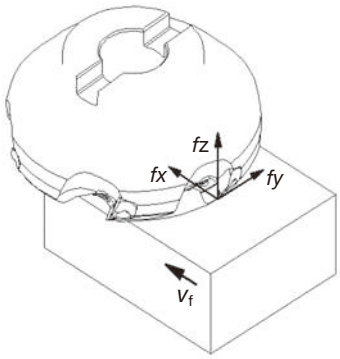
●Values of specific cutting force (k_c)

Workpiece material (JIS)	Tensile strength	Value of specific cutting force on feed per tooth k_c (N/mm^2)				
	MPa	0.1 (mm/t)	0.15 (mm/t)	0.2 (mm/t)	0.3 (mm/t)	0.4 (mm/t)
SS400	520	2150	2000	1900	1750	1650
S55C	770	1970	1860	1800	1760	1620
SCM435	730	2450	2350	2200	1980	1710
SKT4	(HB352)	2030	2010	1810	1680	1590
SC450	520	2710	2530	2410	2240	2120
FC250	(HB200)	1660	1450	1320	1150	1030
Al (Si)	200	660	580	522	460	410
Brass	500	1090	960	877	760	680

●Values of cutting force (k_c)



Workpiece material : S50C (210HB), Diameter of mill : ø160 mm
Cutting speed : V_c = 150 m/min, Feed per tooth: f_z = 0.20 mm/t
Depth of cut: a_p = 3 mm, Cutting by a single edge, dry



●Conversion from cutting speed to number of revolutions

(unit : min^{-1})

Cutter diameter DC, DCX (mm)	Cutting speed (v_c) m/min												
	10	30	50	100	125	150	200	300	500	800	1,000	2,000	4,000
10	318	955	1,592	3,184	3,980	4,777	6,369	9,554	15,923	25,477	31,847	63,694	127,388
12	265	796	1,326	2,653	3,317	3,980	5,307	7,961	13,269	21,231	26,539	53,078	106,157
16	199	597	995	1,990	2,488	2,985	3,980	5,971	9,952	15,923	19,904	39,808	79,617
20	159	477	796	1,592	1,990	2,388	3,184	4,777	7,961	12,738	15,923	31,847	63,694
25	127	382	636	1,273	1,592	1,910	2,547	3,821	6,369	10,191	12,738	25,477	50,955
30	106	318	530	1,061	1,326	1,592	2,123	3,184	5,307	8,492	10,615	21,231	42,462
32	99	298	497	995	1,244	1,492	1,990	2,985	4,976	7,961	9,952	19,904	39,808
35	90	272	454	909	1,137	1,364	1,819	2,729	4,549	7,279	9,099	18,198	36,396
40	79	238	398	796	995	1,194	1,592	2,388	3,980	6,369	7,961	15,923	31,847
50	63	191	318	636	796	955	1,273	1,910	3,184	5,095	6,369	12,738	25,477
63	50	151	252	505	631	758	1,011	1,516	2,527	4,044	5,055	10,110	20,220
80	39	119	199	398	497	597	796	1,194	1,990	3,184	3,980	7,961	15,923
100	31	95	159	318	398	477	636	955	1,592	2,547	3,184	6,369	12,738
125	25	76	127	254	318	382	509	764	1,273	2,038	2,547	5,095	10,191
160	19	59	99	199	248	298	398	597	995	1,592	1,990	3,980	7,961
200	15	47	79	159	199	238	318	477	796	1,273	1,592	3,184	6,369
250	12	38	63	127	159	191	254	382	636	1,019	1,273	2,547	5,095
315	10	30	50	101	126	151	202	303	505	808	1,011	2,022	4,044

Note: In this table, the effects of centrifugal force on the rotating balance of the tool and the toolholder, flying risk of cutter parts, and limited value of toolholder destruction are not considered. Therefore, when using the tool at high speeds, be sure to observe the specified condition range.

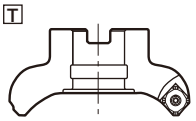
Milling tools

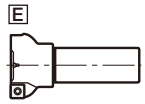
Trouble shooting in face milling

Trouble	Possible causes	Countermeasures
Rapid wear of cutting edge	• Improper insert grade selection (Insufficient wear resistance)	• Use a grade with high wear resistance P30 → P20
	• Excessive cutting speed	• Select cutting speed suited for Workpiece material and insert grade
	• Inadequate feed	• Use standard cutting condition in catalog as guide
Rapid chipping of cutting edge	• Improper Insert grade selection (Insufficient toughness)	• Use a grade with high fracture resistance P10 → P20
	• Cutting hard material and unfavorable surface condition	• Decrease cutting speed • Use cutter with strong cutting edge
	• Excessive feed	• Proper selection of feed conditions, using recommended cutting conditions in catalog as guide
	• Excessive pressure applied on cutting edge	• Proper selection of engaging angle
	• Machining superalloys	• Use a negative-positive type cutter with large corner angle
Fracturing	• Cracking due to thermal shock	• Select insert grade of stronger thermal shock resistance • Decrease cutting speed
	• Continuous use of excessively worn insert	• Shorten replacement standard time of insert
	• Cutting hard material	• Use cutter with stronger cutting edge • Use cutter of larger corner angle
	• Obstruction to chip flow • Recutting of chips after chip welding	• Use cutter with better chip expulsion • Select insert grades difficult for chips to adhere Cemented carbides → cermets, coated grades • Use air blow
	• Excessively slow cutting, too fine feed	• Select cutting speed and feed optimized for insert grade and Workpiece material
Excessive chip welding or build-up on cutting edge	• Cutting soft material such as aluminium, copper, mild steel	• Use cutter with large rake angle
	• Cutting stainless steel	• Coated grades (AH130、AH3135)
	• Use of cutter with negative rake or too small rake angle	• Use cutter with large rake angle
Rough finish	• Effect of built-up edge	• Increase cutting speed • Appropriate cutting depth (finish allowance) • Change insert grade For steels : P → coated → cermet For cast irons : K → coated
	• Effect of face cutting edge run out	• Proper installing of inserts • Use insert of high dimensional accuracy • Cleaning of insert pocket
	• Continuous use of excessively worn insert	• Shorten replacement standard time of insert
	• Remarkable feed marks	• Feed per revolution to be set within flatland width • Use wiper insert type cutter such as T/EAW13 • Use cutter exclusively for finishing
Chattering	• Unstable clamping of workpiece	• Check clamping method of workpiece
	• Cutting of welded construction of thin steel plate	• Use cutter of large rake angle and small corner angle
	• Excessive cutting condition	• Re-examine allowable chip removal rate according to motor HP
	• Face milling of narrow width workpiece	• Use cutter of small cutter diameter and with many teeth
	• Too many simultaneous cutting teeth engagement	• Reduce No. of teeth

User's Guide- Technical Reference

TAC Mills [New products]

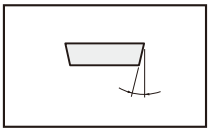
T

Bore type

E

Shank type

Symbol	Type
T	Bore type
E	Shank type

❶ Type

H Hybrid TAC Mill Series



Symbol	Relief angle
C	7°
P	11°
D	15°
E	20°
F	25°
N	0°
Others	Special

❸ Relief angle

Symbol	Hand
R	Right
L	Left

❺ Direction of cut

Symbol	Unit
M	mm
U	in

❼ Unit

Symbol	Type
T~: General type	
–	JIS
E	ISO
A	ANSI
E~: Shank type	
–	Cylindrical
W	Weldon
C	Combination

❾ Attachment specification

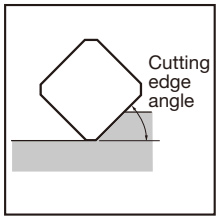
Symbol	Type
W	Wedge clamp
L	Long shank
LE	Long edge
CS	Carbide shank

⓫ Additional feature

❶	❷	❸	❹	❺	❻	❼	❽	❾	❿	⓫
T	A	W	13	R	080	M	25.4	-	06	--
E	V	H	07	R	012	M	12.0	-	02	L

❷ Angle, Category

Symbol	Cutting edge angle
P	90° ~ 80°
E	80° ~ 70°
D	60° ~ 50°
A	50° ~ 40°
L	With long cutting edge
Others	Special

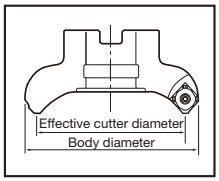


❹ Cutting edge length

Symbol	Size (ℓ)
S	
T	
R	
H	
A	

❻ Effective cutter diameter

Symbol	Size
M: Unit in mm	
080	80 mm
200	200 mm
I: Unit in inch	
200	2 in
10H	10 in



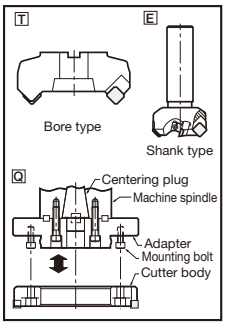
❽ Attachment size

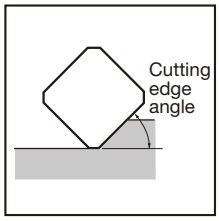
Symbol	Size
M: Unit in mm Hole diameter	
20.0	20 mm
25.4	25.4 mm
31.7	31.75 mm
47.6	47.625 mm
I: Unit in inch Hole diameter	
0075	0.75 in
0125	1.25 in
0200	2 in
E~: Shank type Shank diameter	
10.0	10 mm
12.0	12 mm
16.0	16 mm
25.0	25 mm
32.0	32 mm

❿ Number of inserts

User's Guide- Technical Reference

TAC Mills [Previous products]





Symbol	Type
V	Vertical insert
Q	Quick change
E	Shank
T	Bore
S	Special
D	All PCD tipped
Q	All PCBN tipped

① Type

Symbol	Cutting edge angle
X	Others
Z	Others
V	Others
P	90° ~ 80°
E	80° ~ 70°
D	60° ~ 50°
A	50° ~ 40°

② Angle

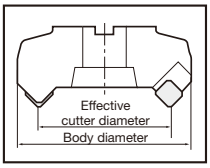
Symbol	Relief angle
C	7°
D	15°
E	20°
F	25°
N	0°
P	11°
X	Others



③ Relief angle

R Symbol	R Size	S Symbol	S Size	C Symbol	C Size	T Symbol	T Size	Inscribed circle dia. (mm)
		06	6.35	06	6.5	11	11	6.35
		07	7.94	08	8.1	13	13.8	7.94
09	9.525	09	9.525	09	9.7	16	16.5	9.525
10	10	–	–	–	–	–	–	10
12	12	–	–	–	–	–	–	12
12	12.7	12	12.7	12	12.9	22	22	12.7
15	15.875	15	15.875	16	16.1	27	27.5	15.875
16	16	–	–	–	–	–	–	16
19	19.05	19	19.05	19	19.3	33	33	19.05
20	20	–	–	–	–	–	–	20
25	25	–	–	–	–	–	–	25
25	25.4	25	25.4	25	25.8	44	44	25.4
31	31.75	31	31.75	32	32.2	55	55	31.75

④ Cutting edge length



Symbol	Effective diameter (mm)
050	50
063	63
080	80
100	100
125	125
160	160
200	200
250	250
315	315
355	355
400	400

⑤ Effective cutter diameter

Example

Metric system

①	②	③	④	⑤	⑥
T	F	E	12	063	R

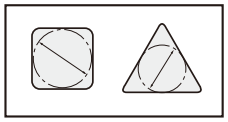
Example

Inch system

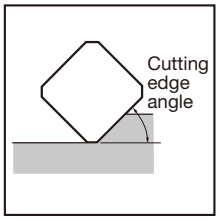
①	⑧	③	⑨	⑩	⑪	⑥	⑦
T	M	D	4	4	06	R	I

⑧ Application,etc.	
Symbol	Application, geometry etc.
M	For machining centers
F	For finishing
G	General purpose
S	For square shoulder milling
H	High rake geometry
P	Negative axial, positive radial rake geometry
R	Use round inserts
U	For difficult to cut materials
C	For chamfering
L	Long edge type
T	For threading

⑨ Size of applicable insert	
Symbol	I. C. (mm)
3	9.525
4	12.7
5	15.875
6	19.05
7	22.225
8	25.4
9	31.75

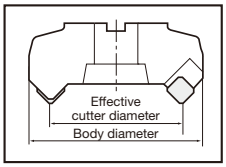


⑩ Angle	
Symbol	Cutting edge angle
0	90° ~ 80°
1	80° ~ 70°
2	70° ~ 60°
3	60° ~ 50°
4	50° ~ 40°
5	40° ~ 30°
6	30° ~ 20°
7	20° ~ 10°

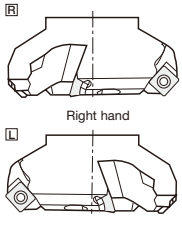


⑪ Effective cutter diameter	
Symbol	Effective diameter (mm)
50	50
63	63
03	80
04	100
05	125
06	160
08	200
10	250
12	315
14	355
16	400

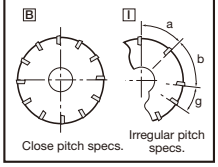
Note: For diameter of less than 80mm,nominal dimensions (mm) of effective diameter are shown



⑥ Direction of cut



⑦ Additional feature	
B	Close pitch
I	Irregular pitch
A(-A)	Modified type
S	For distinguishing shank size
L	Long shank

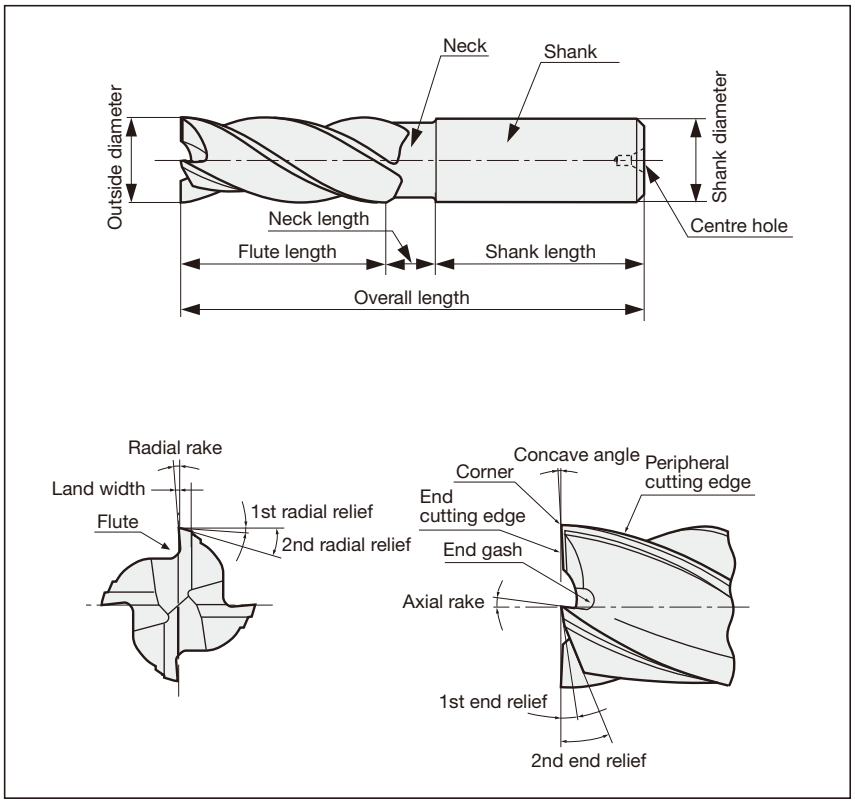


Note: The above nomenclature is not applicable for VSN6000I, MS cutter, TCB, PES1500 and TBN etc.

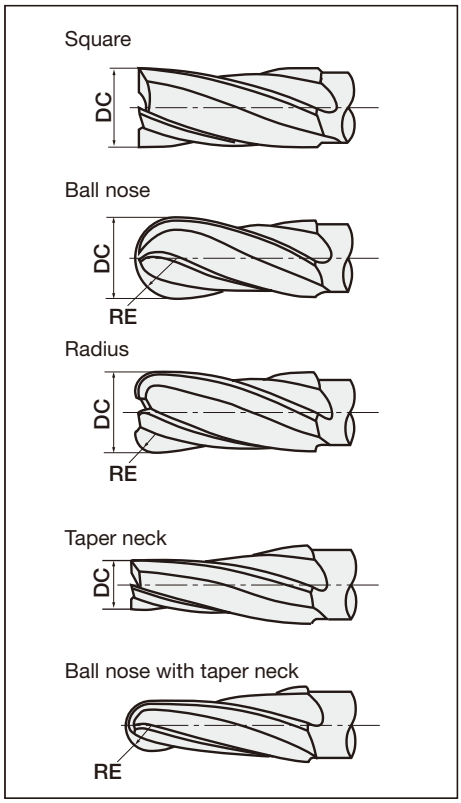
User's Guide- Technical Reference

Solid Carbide Endmills

Part details

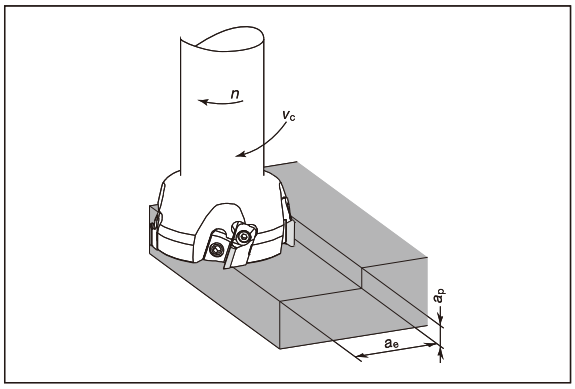


Types



Cutting condition of Endmills

● Cutting speed



● **Cutting speed** (Calculated from number of revolutions)

$$v_c\ (\text{m/min}) = \frac{\pi \times D \times n}{1000}$$

v_c : Cutting speed (m/min)
d : Effective diameter (mm) 〔DC〕
n : Number of revolutions (min^{-1})
$\pi \approx 3.14$

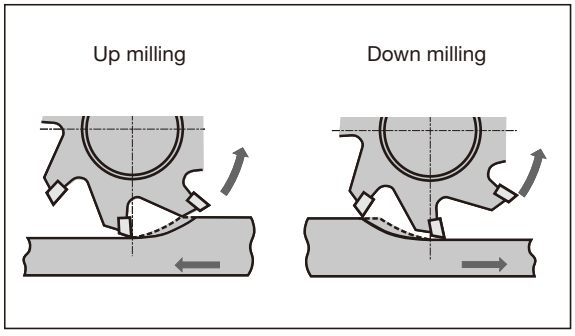
● **Number of revolution** (Calculated from cutting speed)

$$n\ (\text{min}^{-1}) = \frac{1000 \times v_c}{\pi \times D}$$

● **Feed speed and feed per tooth**

$$v_f\ (\text{mm/min}) = f_z \times z \times n$$

v_f : Feed speed (mm/min)
f_z : Feed per tooth (mm/t)
z : No. of teeth of the endmills
n : Number of revolutions (min^{-1})
〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)



● **Cutting**

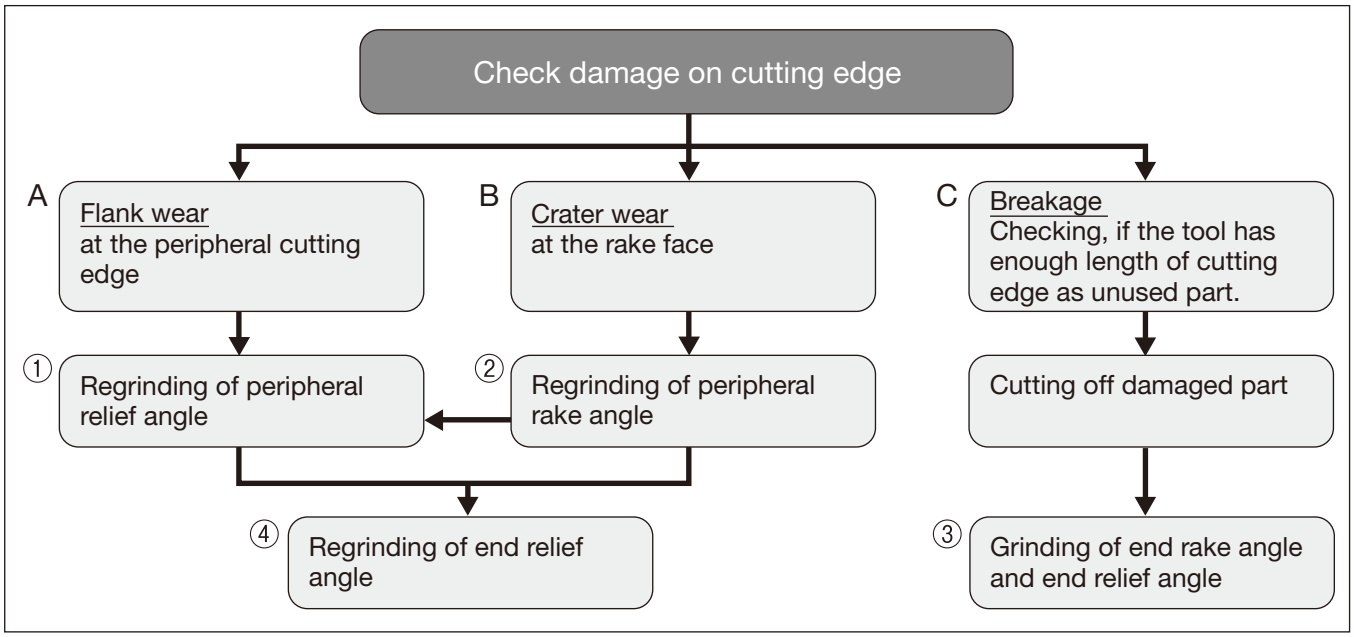
The necessary capacity of the machine is limited by the length of cut edge of the endmill.

● **Up milling and down milling**

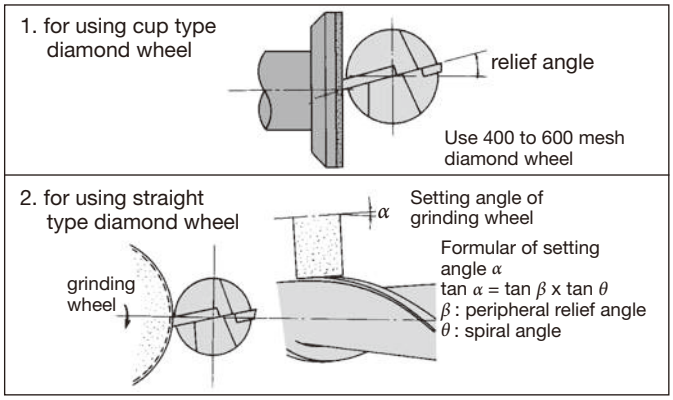
Down milling generally produces better tool life and surface roughness.
In case of cast iron sand inclusion or welding surface, up milling is recommended.

Solid Carbide Endmills

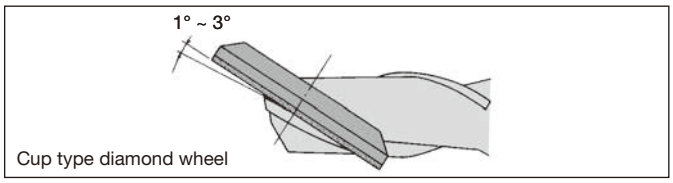
Regrinding procedures of solid carbide endmill



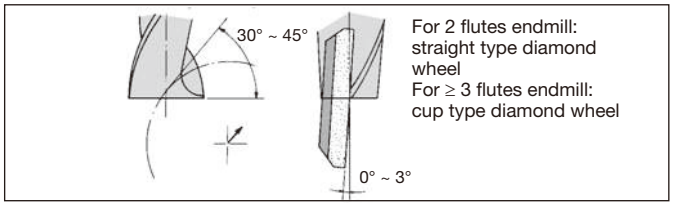
1 Regrinding of end relief angle



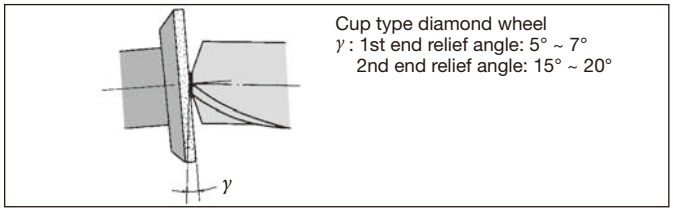
2 Regrinding of peripheral rake angle



3 Regrinding of end rake angle (End gash)



4 Regrinding of end relief angle



Notice of regrinding

(1) If, after checking the damage of the cutting edge, the damage is as case "A" or "B" of the flow chart, the tool must be reground.
Too much damage of the cutting edge requires too much stock removal and thus reduces tool life.

(2) Please use diamond grinding wheel.

(3) Peripheral relief angle must be ground between 18° and 10°.
Relief angle of small diameter cutters for aluminium machining must be a large degree.

(4) First check if "C" in flow chart can be adapted for the case of coated endmill or not.
If procedure "C" can be adapted for regrinding, tool life after the grinding would be more improved than new one. The reason is remaining coated layer of cutting edge and shorter tool length will keep much higher rigidity of the tool than before regrinding.

(5) Please check run out of peripheral cutting edge, face cutting edge, with Vee block after regrinding.
The value of the run out must be controlled within 0.01 mm.

Notice for regrinding of ball nose endmill

- Regrinding of relief angle only is available. The dimension of nose radius will be smaller after grinding.
- Honing of cutting edge is necessary after regrinding.

User's Guide- Technical Reference

Solid Carbide Endmills

Trouble shooting in Endmilling

Trouble	Possible causes	Countermeasures
Breakage	● At the start of machining ● At the end of machining	● Reduce feed. ● Reduce tool overhang length. ● Exchange to short cutting edge tool.
	When usual machining	● Reduce feed. ● Managing tool life → Exchange in shorter time. ● Replace chuck or collet to new one. ● Reduce tool overhang length. ● Make optimum honing on the edge. ● Reduce flutes. E.g. 4 flutes → 3flutes, or 2flutes. ● Use enough coolant. Change direction of supplying coolant.
	When change the direction of feed	● Use the circular interpolation in NC machine. Stop feed shortly before changing. ● Lower feed around changing part. ● Replace chuck or collet to new one.
Fracture on cutting edge	Chipping on corner edge	● Chamfer the corner with hand-stick grinder. ● Down cutting ⇒ Upward milling.
	Chipping on boundary part	● Change cutting direction, Down cutting → Upward milling. ● Reduce cutting speed.
	Chipping on central part or all edges.	● Make slight honing on the edge. Or make honing bigger. ● Change spindle revolution number. ● Increase cutting speed. ● If chattering, increase feed. ● Use coolant or air blast. ● Replace chuck or collet to new one. ● Decrease cutting speed.
	Fracture on cutting edge	● Decrease feed. ● Reduce flutes. E.g. 4 flutes → 3flutes, or 2flutes. ● Make slight honing on the edge. Or make honing bigger. ● Replace chuck or collet to new one. **【For Solid carbide endmill】** ● Decrease cutting speed. ● Use enough coolant. Change direction of supplying coolant.
Large wear in short time		● Decrease cutting speed. ● Change cutting direction, Upward milling → down cutting. ● Increase feed. ● Use coolant or air blast. ● In reground tool, grind flank face with FINER wheel.

(Continued on next page)

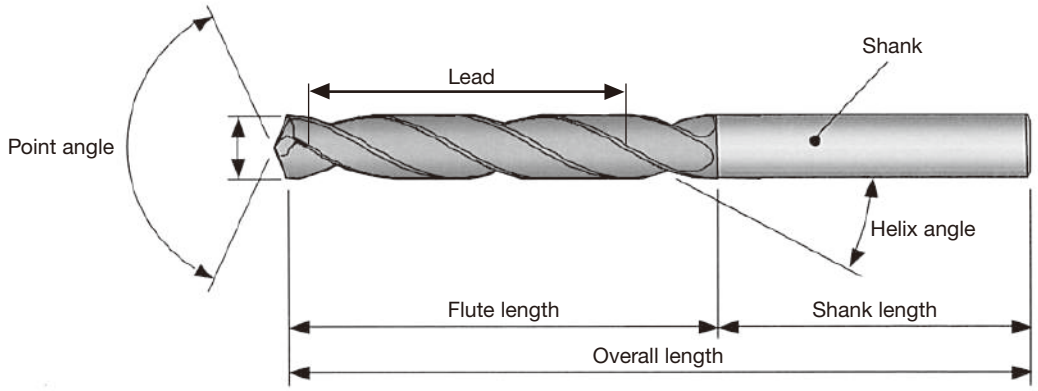
Solid Carbide Endmills

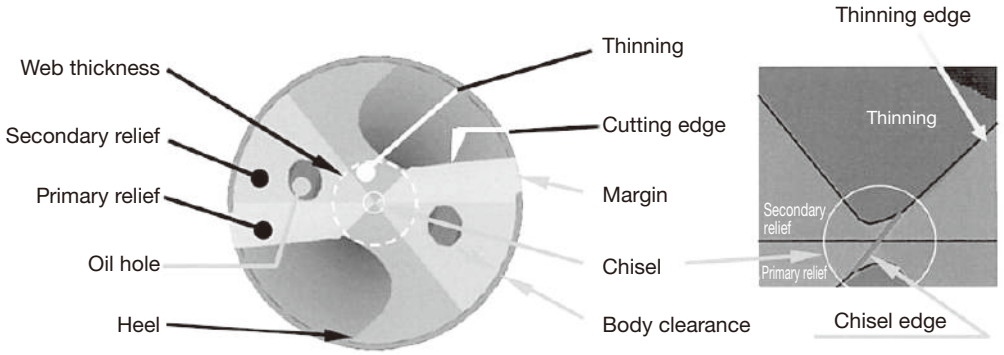
Trouble	Possible causes	Countermeasures
Poor surface finish	Bright, but Wavy surface	● Reduce feed per tooth. ● Increase flutes; E.g. 2 flutes → 3flutes, or 4flutes.
	Small chips are welded on surface.	● Increase cutting speed. ● Use coolant or air blast, or increase coolant. ● Make slight honing on the edge. ● Upward milling → Down cutting. ● Increase feed per tooth. Increase Depth of Cut.
	Scratches on the surface	● Make slight honing on the edge. ● Use non-water soluble coolant. ● Down cutting → Upward milling.
	Poor surface by over cutting	● Reduce depth of cut. ● Increase cutting speed. ● Reduce feed per tooth.
Poor accuracy	Finish size becomes a minus tendency.	● Upward milling → Down cutting. ● Reduce depth of cut. ● Replace chuck or collet to new one. ● Reduce overhang length. ● Increase cutting speed.
	Poor straightness	● Reduce depth of cut. ● Replace chuck or collet to new one. ● Reduce overhang length. ● Increase cutting speed. ● Increase flutes; E.g. 2 flutes → 4flutes. ● Reduce feed per tooth. ● Check the edge. Change tool, when needed.
Chattering		● Increase feed per tooth. Reduce feed per tooth, when current feed is more than 0.07 mm/t. ● Change cutting speed. ● Replace chuck or collet to new one. ● Reduce overhang length. ● Use 2 flutes tool in roughing. Use 4 flutes tool in finishing. ● Down cutting → Upward milling.

User's Guide- Technical Reference

Drilling Tools

Nomenclature for solid carbide drills





Cutting forces and power requirement

●Twist drill

Power requirement

$$P_C = KD^2n\ (0.647 + 17.29f) \times 10^{-6}\ \text{(kW)}$$

Thrust force

$$T_C = 570KDf^{0.85}\ \text{(N)}$$

Torque

$$M_C = \frac{KD^2\ (0.630 + 16.84f)}{100}\ \text{(N·m)}$$

P_C : Power requirement (kW)
T_C : Thrust force (N)
M_C : Torque (N·m)
D : Drill diameter (mm) 〔DC〕
f : Feed (mm/rev)
n : No. of revolutions (min^{-1})
K : Material constant···· Refer to the Table at right

〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

●Material constant compensating for power requirement and thrust force

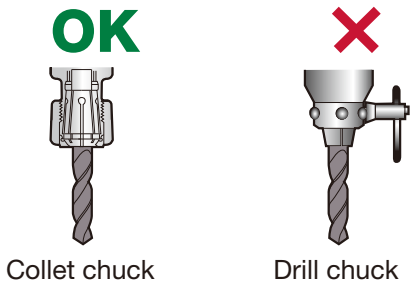
Workpiece material	Tensile strength MPa(N/mm^2)	Tensile strength {Kgf/mm^2}	Brinell hardness (HB)	Material constant (K)
Cast iron	210	21	177	1.00
Cast iron	280	28	198	1.39
Cast iron	350	35	224	1.88
Aluminium	250	25	100	1.01
Low carbon steel (JIS S20C)	550	55	160	2.22
Free cutting steel (JIS SUM32)	620	62	183	1.42
Manganese steel (JIS SMn438)	630	63	197	1.45
Nickel chromium steel (JIS SNC236)	690	69	174	2.02
4115 steel Cr0.5, Mo0.11, Mn0.8	630	63	167	1.62
Chromium molybdenum steel (JIS SCM430)	770	77	229	2.10
Chromium molybdenum steel (JIS SCM440)	940	94	269	2.41
Nickel chromium molybdenum steel (JIS SNCM420)	750	75	212	2.12
Nickel chromium molybdenum steel (JIS SNCM625)	1,400	140	390	3.44
Chromium vanadium steel				
Cr0.6, Mn0.6, V0.12	580	58	174	2.08
Cr0.8, Mn0.8, V0.1	800	80	255	2.22

Drilling Tools

Guidelines for correct usage of carbide drills

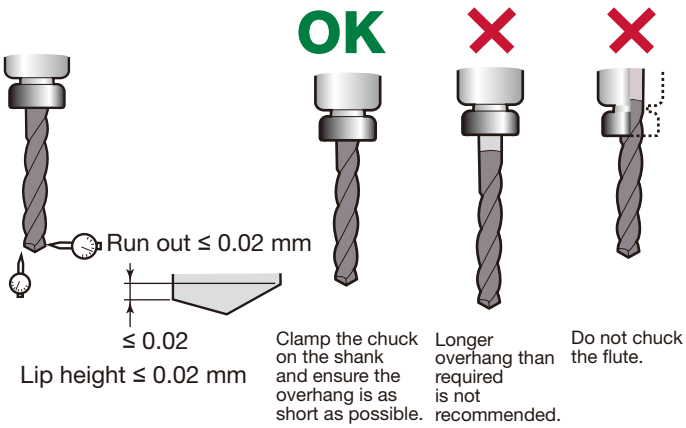
● Holders for solid carbide drills:

A collet chuck holder is recommended for use with carbide drills. When using a milling chuck holder, a collet chuck with a straight shank or straight collet should be used.



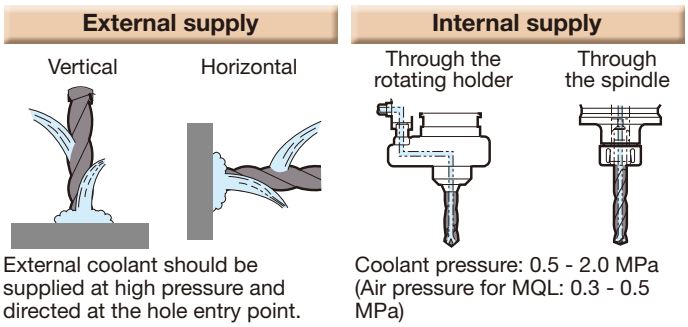
● Chucking drills:

- Radial run out and lip height should be less than 0.02mm. If run out or lip height is larger (close to 0.05mm), machining is possible. However, less accurate holes or short tool life may be a result.
- Overhang length should be as short as possible.



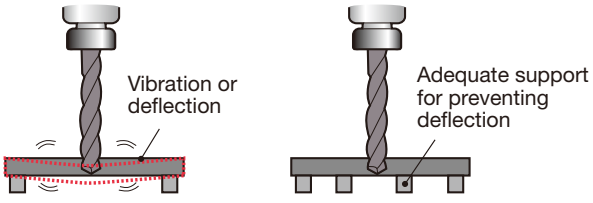
● Coolant Supply:

When using a drill without a coolant hole, such as the DSW-DE type, coolant should always be directed to the entrance of the hole. Maintaining this supplying is very important for stable drilling performance.



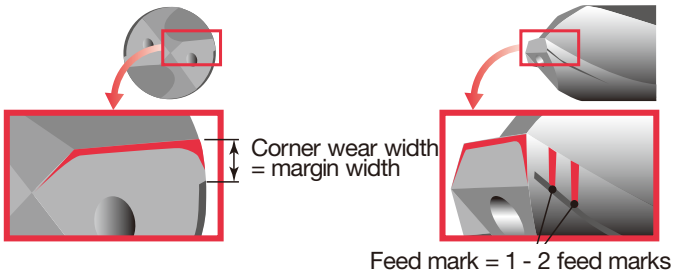
● Clamping workpieces:

As solid carbide drills have a higher thrust force, machining with low rigidity or inadequate support can cause fractures or breakages through vibration. It is important the workpiece is rigidly clamped and has adequate support.



● The criteria of tool life:

- Corner wear width: equal to margin width
- Feed mark: 1 - 2 feed marks on the margin
- Spindle load increase: 30% higher than starting level
- Irregular situation: worse chip control, hole diameter change, worse surface finish, larger burrs, bigger sound.



User's Guide- Technical Reference

Drilling Tools

Regrinding method [Applied to DSW]

Please refer to the following instructions prior to regrinding DSW type drills.

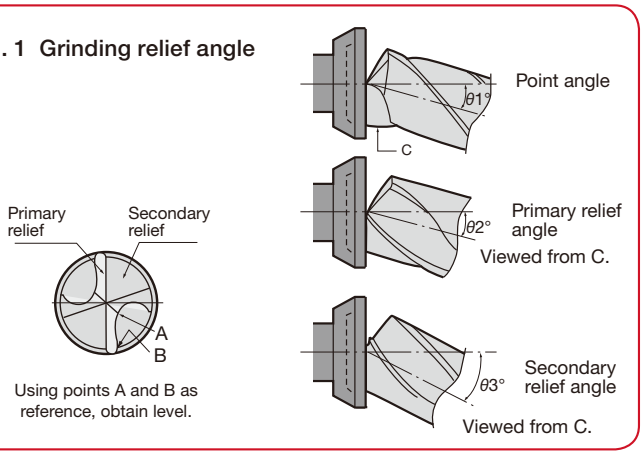
Before regrinding
Check the cutting edge for damage and wear. If any large fracture is found, remove with a silicon carbide wheel.

(1) Grinding the flank

● Use a 280 to 400 grit diamond cup type wheel of 100 ~ 200 mm in diameter.

1) Grind the relief surface so that primary relief angle (θ) of 2° can be formed as shown in Fig.1. After grinding the other side likewise, do sparkout grinding so that the difference of the lip height will be kept within 0.02 mm.
2) In the cases of DSW types: After grinding the primary relief angle (θ) 2°, without rotating the drill, grind the secondary relief surface so that the relief angle (θ) of 3° can be formed. In the same way as 2), take care to bring the ridge line formed between the primary and secondary relief surfaces to the drill center. (Values (θ) of 1° ~ 3° are shown in Table 1)

Fig. 1 Grinding relief angle



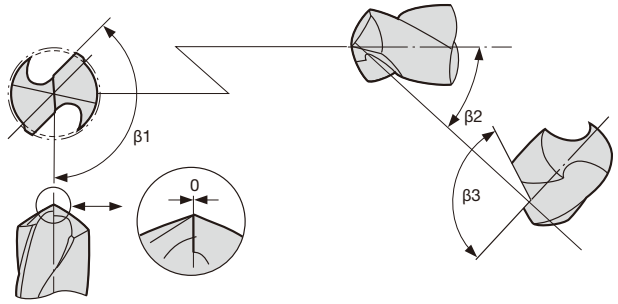
(2) Thinning

- Use a 280 ~ 400 grit diamond straight-type wheel of 100 ~ 200 mm in diameter.
- Conduct thinning in the same manner as cross thinning (X-type).
- Values of β1 to β3 written in the figures are given in the Table 2.

Table 1	θ1 (Point angle)	θ2 (Primary relief angle)	θ3 (Secondary relief angle)
DSW	–20°	–6° ~ –12°	–23° ~ –27°

Table 2	β1	β2	β3
DSW	147° ~ 153°	30° ~ 42°	95° ~ 110°

Fig. 2



(3) Honing

- The honing angle θ and width H should be varied depending on the drill type, diameter, and work material. Recommended honing specifications are given in the Table below.
- Honing procedures (refer to Fig.3)
  (1) Round the R portion shown in Fig.3 in large.
  (2) Then, roughly hone the cutting edge lines by using an electro-deposited diamond file of around 170 grit.
  (3) Carry out finish honing by using a diamond hand stick of 400 to 600 grit.
- The honing width should be changed depending on the drill diameter. For smaller side of diameters, the width should be in smaller side of values given in the Table.

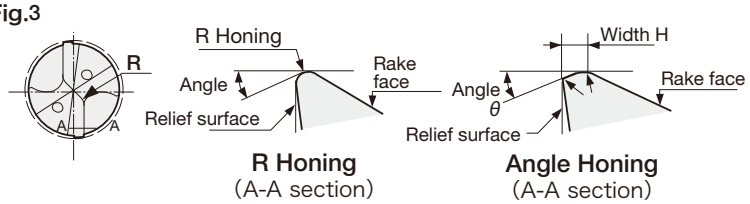
• Angle honing

	~ ø6 mm	ø6 ~ ø10 mm	ø10 ~ ø16 mm
θ	- 20°	- 20°	- 20°
H	0.03 ~ 0.05	0.05 ~ 0.08	0.08 ~ 0.1

• R Honing

Dimensions (mm)	R Honing R (mm)
DC ≤ ø6	0.02 ~ 0.04
ø6 < DC ≤ ø16	0.03 ~ 0.05

Fig.3



R Honing (A-A section)

Angle Honing (A-A section)

After regrinding, check the following before use.

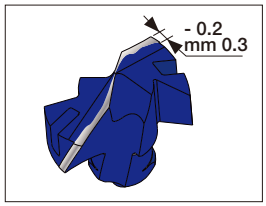
- The difference of the lip height is kept within 0.02 mm.
- Any damaged portion on the cutting edges is not left.
- Cutting edges are properly honed.
- Any grinding burr is not left.

Notes:
- For more details on regrinding, consult the nearest Tungaloy sales office.

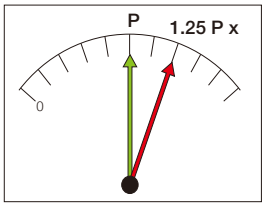
Technical guidelines

●When to change drill heads (Criteria for the end of tool life)

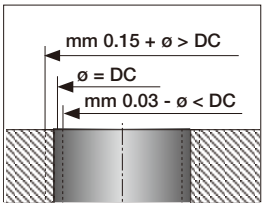
The criteria to identify the time for tool change are as follows:



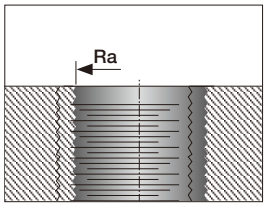
Width of corner wear reaches 0.2 – 0.3 mm.



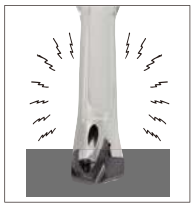
Spindle load exceeds 125% of the normal value.



Hole diameter is 0.15 mm larger or 0.03 mm smaller than the drill diameter.



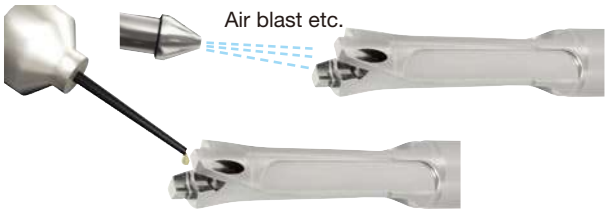
Surface roughness deteriorates.



Vibration or unusual noise occurs.

●How to clamp the drill head

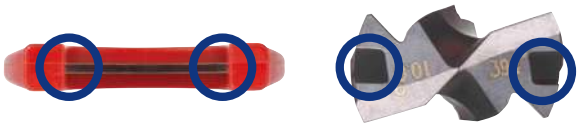
① Clean and lubricate the pocket.



② Set the drill head into the pocket.



③ Set the clamping key on the drill head

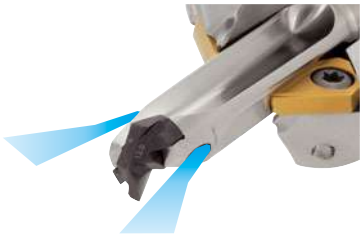


④ Clamp

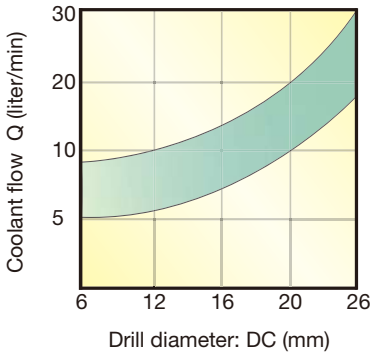


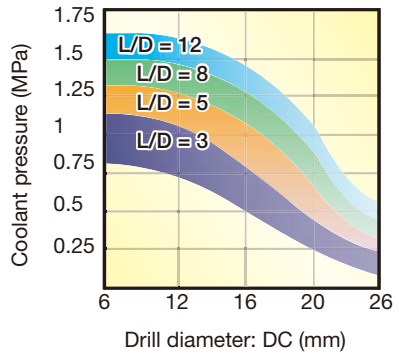
●Coolant supply

Internal coolant supply is recommended.



■ The required coolant flow and pressure

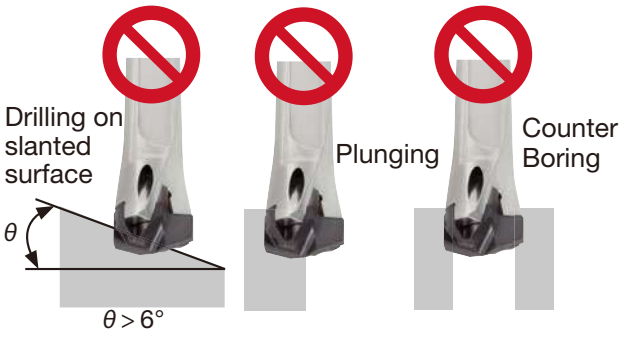




User's Guide- Technical Reference

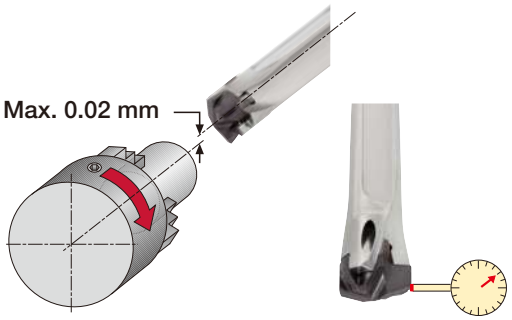
Drilling Tools

● Applications that are not recommended



● Run-out

Run-out should be less than 0.02 mm.



Ideal : ≤0.02mm
Acceptable : ≤0.05mm
Not acceptable: >0.05mm

Instruction of clamping head



Fig. #1



Fig. #2



Fig. #3

Procedure

① Clean the clamping areas on the drill body and the head with an air blast, lubricate them, and put the drill head in the pocket.
② Set the clamping key in the groove on the drill head. Push the head toward the pocket with equal torque on the right and the left sides, and turn the clamping key to clamp the head completely. (Fig. #1)
③ Be sure that there is no gap between the bottom of the head and the drill body. A shim in the thickness of around 0.01 mm is useful to check the gap. (Fig. #2)
④ If there is a gap thicker than 0.01 mm, unclamp the head and return to procedure No. ①
⑤ Check the run-out at the margin of the drill head. Run-out must be less than 0.05 mm. (Fig. #3) (Recommended value: less than 0.02 mm)
If the run-out exceeds 0.05 mm, unclamp the head and return to procedure No. ① .

Note #1: If the clamping torque is not equally applied on the right and the left sides of the drill head, there may be a gap between the head and the body, which increases the run-out of the head.
Note #2: Low accuracy in holding the drill body may affect the run-out. If the run-out is large, check the accuracy in holding the drill body.

KEY FOR MEASURING HEAD RELEASE TORQUE

The release torque in unclamping a head is measured with a torque driver to determine the body's tool life. Please refer to the below for the standard release torque value which indicates the end of tool life (The value less than the standard should be judged as the end of tool life).

Dedicated key designation :
KHS-TID10-19.99



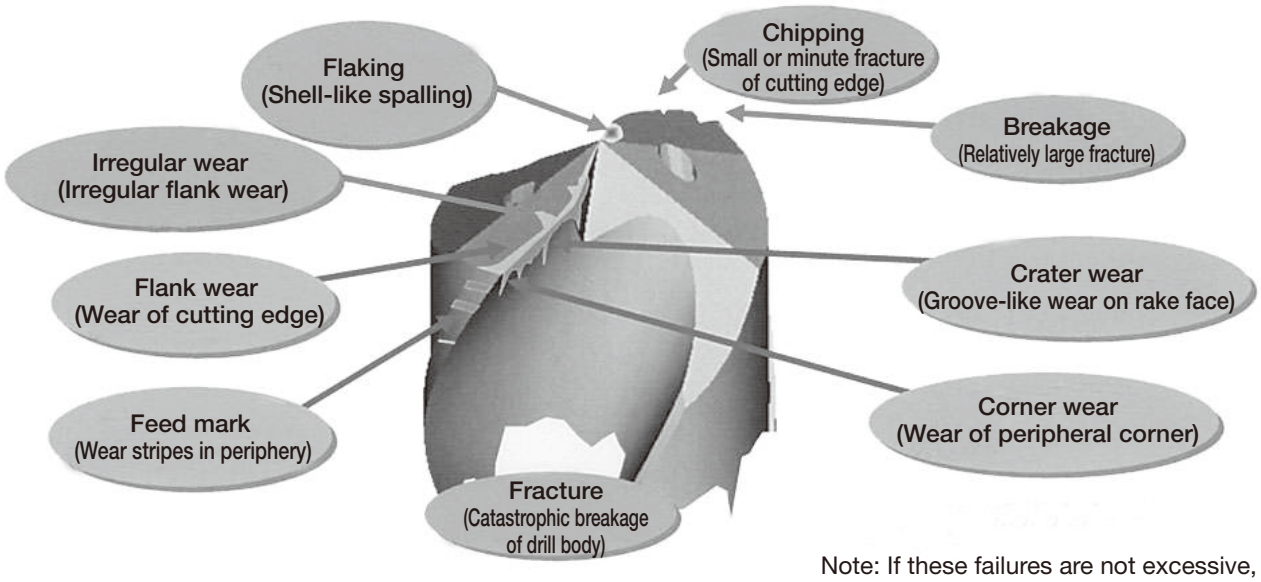
*Can be connected with a commercially available torque driver.



Head designation	Release torque value to indicate tool replacement (N・m)	(cN・M)
DMP100-109	0.2	20
DMP110-119	0.2	20
DMP120-129	0.25	25
DMP130-139	0.25	25
DMP140-149	0.3	30
DMP150-159	0.3	30
DMP160-169	0.35	35
DMP170-179	0.35	35
DMP180-189	0.4	40
DMP190-199	0.4	40

Drilling Tools

Cutting edge failure of solid carbide drills



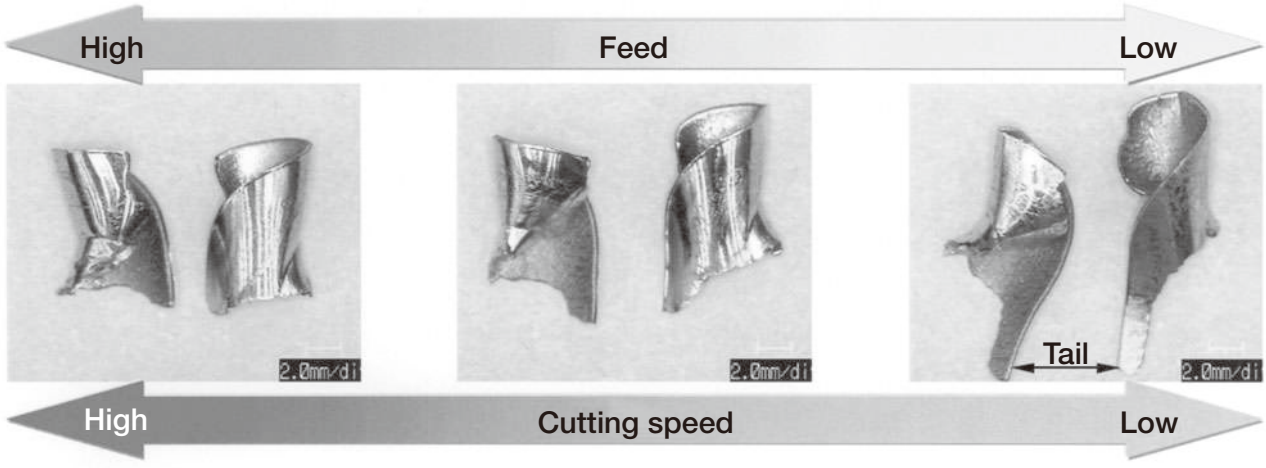
Note: If these failures are not excessive, the tool is in a normal condition.

Change of chip shapes in drilling

Change of chip shapes relating to cutting conditions

Photographs below show the change of chip shapes relating to change of the feed and the cutting speed. These chip shapes are all well controlled in a proper condition range.

When the speed and feed are low, the chip shows whitish color and the tail of the chip tends to lengthen gradually. In contrast, as the speed or the feed increases, the chip tends to increase in brightness and becomes a compact shape with a short tail. These changes in the shape depend on the cutting temperature. As the temperature increases, chips tend to be broken.



User's Guide- Technical Reference

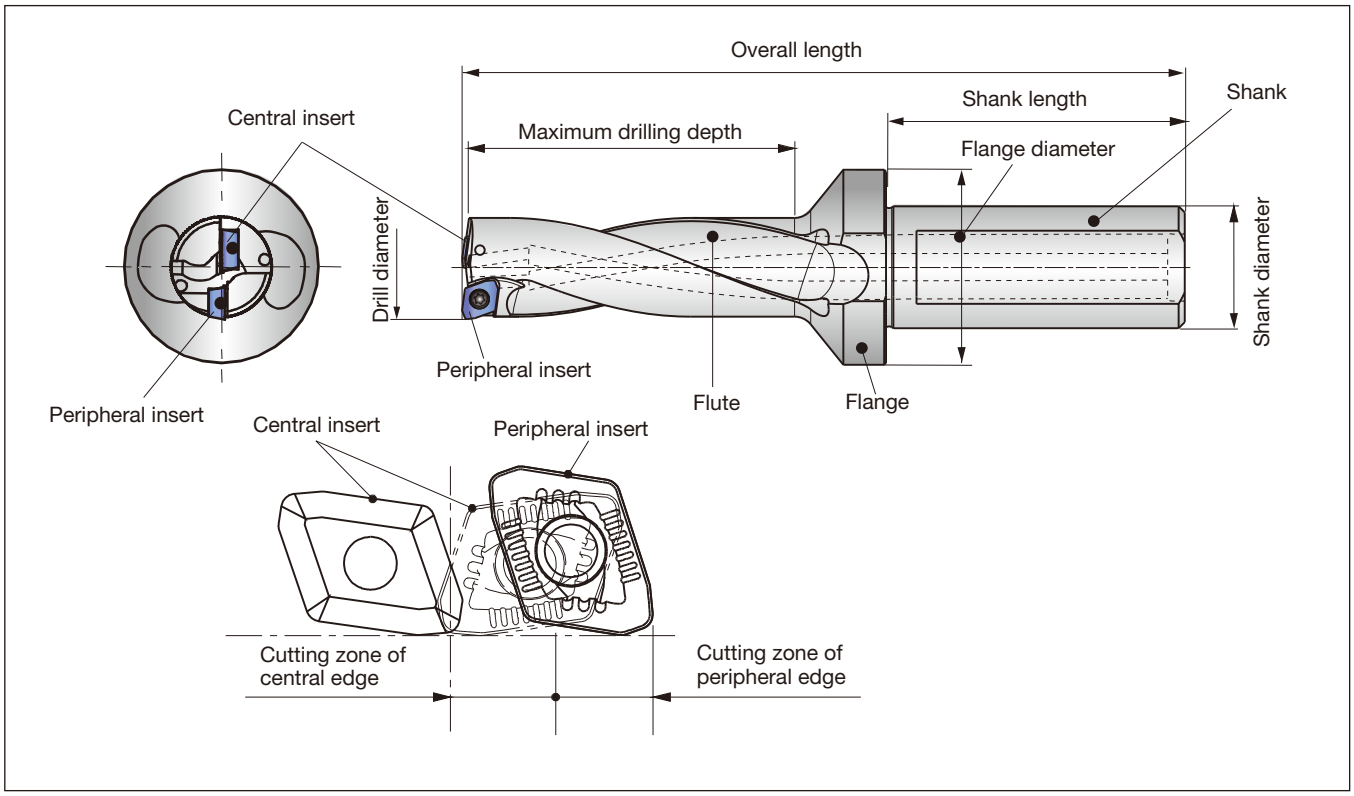
Drilling Tools

Troubleshooting for solid carbide drills

Problem		Cause	Countermeasure
Abnormal wear	Relief surface	Inappropriate cutting speed	•Increase the cutting speed by 10 % within standard conditions if abnormal wear is around center. •Lower the cutting speed by 10 % within standard conditions if abnormal wear is on the periphery.
		Inappropriate cutting fluid	•Check the filter. •Use the cutting fluid superior in lubricity. (Increase the dilution rate)
	Margin	Inappropriate cutting speed	•Lower the cutting speed by 10 %.
		Regrinding timing, insufficient reground amount	•Shorten the regrinding timing.
		Insufficient rigidity of the machine and workpiece	•Change the clamp method to the one with rigidity.
		Insufficient drill rigidity	•Use smallest possible overhang.
		Inappropriate cutting fluid	•Check the filter. •Use the cutting fluid superior in lubricity. (increase the dilution rate)
		Intermittent cutting when entering	•Avoid interruption at entry and exit. •Lower the feed by about 50 % during entering into and leaving from the workpiece.
Chipping and fracture	Chisel section (center of drill cutting edge)	Insufficient rigidity of the drill	•Reduce the drill overhang as much as possible. •Increase the feed at entry when the low speed feed is selected in standard cutting condition range. •Use a bushing or a center drill.
		Insufficient rigidity of the machine and workpiece	•Change the clamp method to the one with rigidity.
		Inappropriate entry into the workpiece	•Avoid interruption at entry into the workpiece. •Lower the feed by 10 % at entry.
		High workpiece hardness	•Lower the feed by 10 %.
		Inappropriate honing	•Check if honing has been made to the center of cutting edge.
	Peripheral cutting edge	Insufficient drill rigidity	•Lower the cutting speed by 10 %. •Increase the feed at entry when the low speed feed is selected in standard cutting condition range.
		Inappropriate drill mounting accuracy	•Check the run out accuracy after drill installation. (0.03 mm or less)
		Insufficient machinery and workpiece rigidity	•Change the clamp method to the one with rigidity. •Lower the feed during entering into and leaving from the workpiece.
		Inappropriate honing	•Check if honing has been made to the cutting edge periphery.
	Margin	Insufficient machine and workpiece rigidity	•Change the clamp method to the one with rigidity.
		Insufficient drill rigidity	•Use smallest possible overhang. •Use a bushing or center drill.
		Regrinding timing and insufficient amount of reground stock	•Shorten the regrinding timing.
		Intermittent cutting when entering or exiting the cut	•Avoid interruption at entry and exit. •Lower the feed by about 50 % during entering into and leaving from the workpiece.
Breakage		Tendency to cause chipping or develop abnormal wear	•Check the failure mode condition before breakage and find out the wear and chip countermeasures.
		Chip packing in the drill flutes	•Review the cutting conditions. •For internal coolant supply, raise the supply pressure of cutting fluid. •Use peck feed for deep holes.
		Insufficient machine output	•Review the cutting conditions. •Use the machine with high power.
Insufficient hole accuracy		Insufficient rigidity of the machinery and workpiece	•Change to the clamp method with rigidity
		Inappropriate drill installation accuracy	•Check the run out accuracy of drill mounting. (0.03 mm or less)
		Chip packing in the flutes.	•Review the cutting conditions. •Raise the cutting oil supply pressure. •Use peck-feed for deep holes.
		Inappropriate edge sharpening accuracy	•Check the edge shape accuracy.
Prolonged chips		Inappropriate cutting conditions	•Increase the feed by 10 % within standard conditions.
		Inappropriate honing	•Provide the appropriate honing.
		Cutting edge with chipping or breakage	•Lower the cutting speed by 10 %.

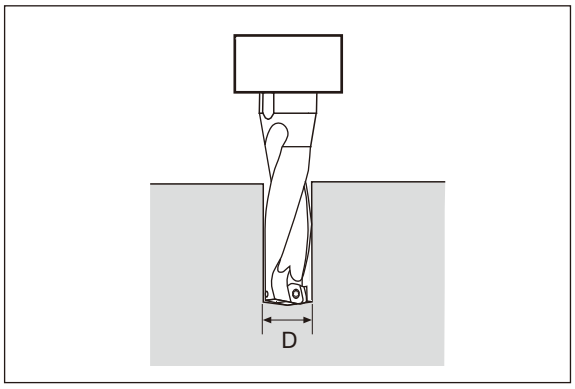
Drilling Tools

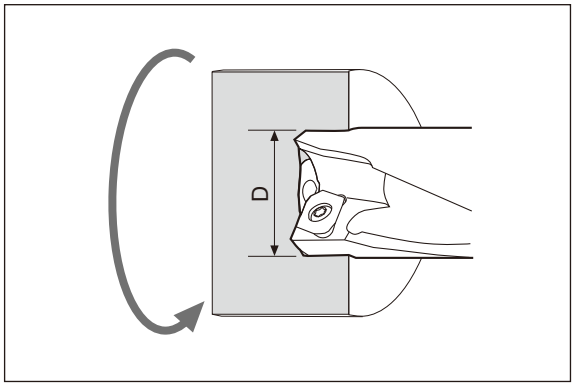
Nomenclature for Indexable drill



Calculation formulas for Indexable drill

●Cutting speed





●When calculating cutting speed from number of revolutions: (Drilling formulas)

$$v_c\ (\text{m/min}) = \frac{\pi \times D \times n}{1000}$$

v_c : Cutting speed (m/min)
D : Drill diameter (mm)〔DC〕
n : Number of revolution (min^{-1})
$\pi \approx 3.14$

●When calculating required number of revolutions from cutting speed: (Drilling formulas)

$$n\ (\text{min}^{-1}) = \frac{1000 \times v_c}{\pi \times D}$$

●When calculating cutting speed from number of revolutions: (Where the workpiece rotates.)

$$v_c\ (\text{m/min}) = \frac{\pi \times D \times n}{1000}$$

v_c : Cutting speed (m/min)
D : Drilling diameter (mm)〔DC〕
n : Number of revolution (min^{-1})
$\pi \approx 3.14$

●When calculating required number of revolutions from cutting speed: (Where the workpiece rotates.)

$$n\ (\text{min}^{-1}) = \frac{1000 \times v_c}{\pi \times D}$$

●Calculation of feed speed

$$v_f\ (\text{mm/min}) = f \times n$$

v_f : 送り速度 (mm/min)
f : 送り (mm/rev)
n : 回転数 (min^{-1})

〔 〕The notation in the brackets is the one used in the catalog (ISO compliant)

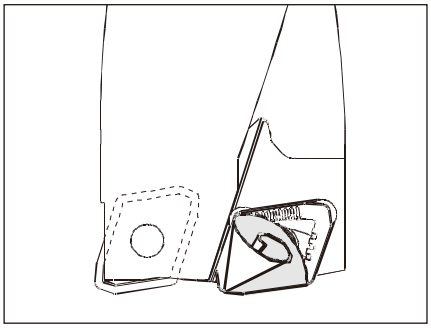
User's Guide- Technical Reference

Drilling Tools

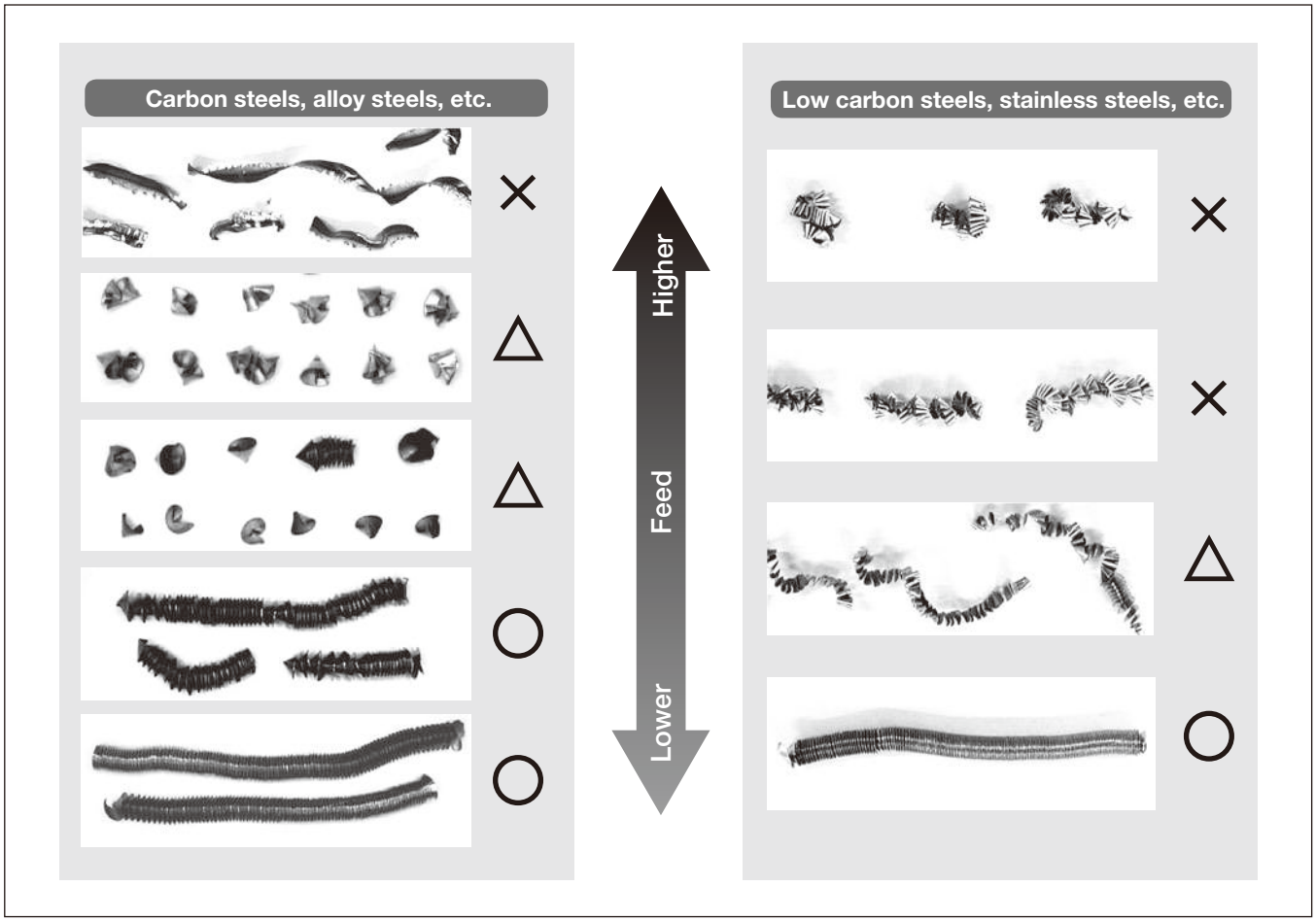
Chip shapes

Chip shape produced with central insert

- A conical coil shape whose apex point coincides with the rotating center of the drill is the basic shape. The chips are broken into small sections with increases in feed. However, excessively high feed causes the chip to increase in thickness and develops vibration which disturbs stable machining.
- In TDX drills, ○ marked chips shown below are the most preferable shapes. This type of chip is broken into adequate lengths by centrifugal forces when used in tool-rotating condition. On the other hand, when used in work-rotating condition such as on a lathe, a continuously long chip is often produced without entangling.

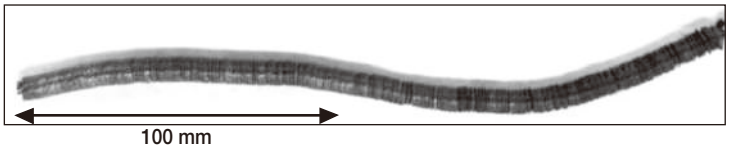


Relation between chip shapes and feeds (In the case of central insert)



Example of chip shape in work-rotating applications (In the case of central insert)

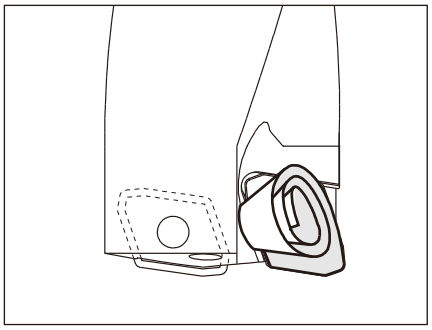
(ø26, JIS S45C, V_c = 100 m/min, f = 0.1 mm/rev)



Drilling Tools

Chip shape produced with peripheral insert

- Chip problems such as entangling are mainly caused by chips produced with the peripheral insert. These problems are dependent on the types of Workpiece material and the cutting conditions.
- As shown below, when the feed is extremely low, the chips jump over the chipbreaker groove and the continuously long chips may wrap around the drill body.
- When the feed is too high, the chips increase in thickness and can not be curled.
- Therefore, it is important to select proper cutting conditions to suit the machining so that well controlled chips will be formed.



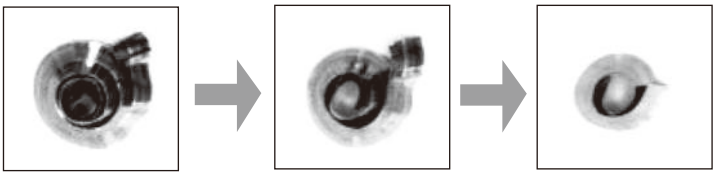
Medium to high carbon steels, alloy steels, etc.

As shown below, several turns of coil are an ideal shape.
As the feed increases, the curl radius and the number of turns tend to decrease.

Typical chip shapes of general steels



Variation of chip shapes relating to feeds



f = 0.07 mm/rev　　*f* = 0.1 mm/rev　　*f* = 0.13 mm/rev

Stainless steels, low-carbon steels, low-alloy steels, etc.

- When machining long-chip materials such as stainless steels and mild steels, the wrong selection of cutting conditions results in chip entangling and tool breakage at worst. Therefore, cutting conditions should be carefully selected.
- "C" shaped, continuous coils of several to ten turns having adequately divided lengths are the ideal shape.

Ideal chip shapes

	Stainless steel (JIS SUS 304) (ø22, *Vc* = 100 m/min, *f* = 0.1 mm/rev)	Mild steel (JIS SS400) (ø22, *Vc* = 160 m/min, *f* = 0.08 mm/rev)
DS chipbreaker		
DJ chipbreaker		

For machining stainless steels or low carbon steels, DS chipbreaker is recommended.
When using a TDX drill in tool-rotating condition, DS chipbreaker produces compact chips and allows more stable machining than DJ chipbreaker. When using it in work-rotating condition, DS chipbreaker provides outstanding affect on chip control.

User's Guide- Technical Reference

Drilling Tools

● Chip shapes which tend to entangle and remedies against them

① Apple-peel-like chips

These chips are often produced in machining mild steels or low-carbon steels at low-speeds and low-feeds.

Remedies

Increase the cutting speed in stages by 20% within the range of standard cutting conditions. If there is no effect, increase the feed by about 10 % as the cutting speed is raised by 20%.



Apple-peel-like chips (Without curling)

② Short-lead chips

These chips are often produced in machining stainless steels at low-feeds and tend to entangle to the tool in spite of short length.

Remedies

Increase the feed by about 10 %. If there is no effect, increase the cutting speed in stages by 10% within the range of standard cutting conditions.



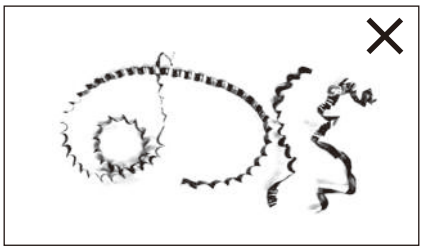
Continuously curled "C" shape chips with short lead (P).

③ Very long chips

Often produced in machining mild steels or low-carbon steels under improper cutting conditions.

Remedies

Increase the cutting speed in stages by 20% within the range of standard cutting conditions. If there is no effect, decrease the feed by about 10 % as the cutting speed is raised by 20%.

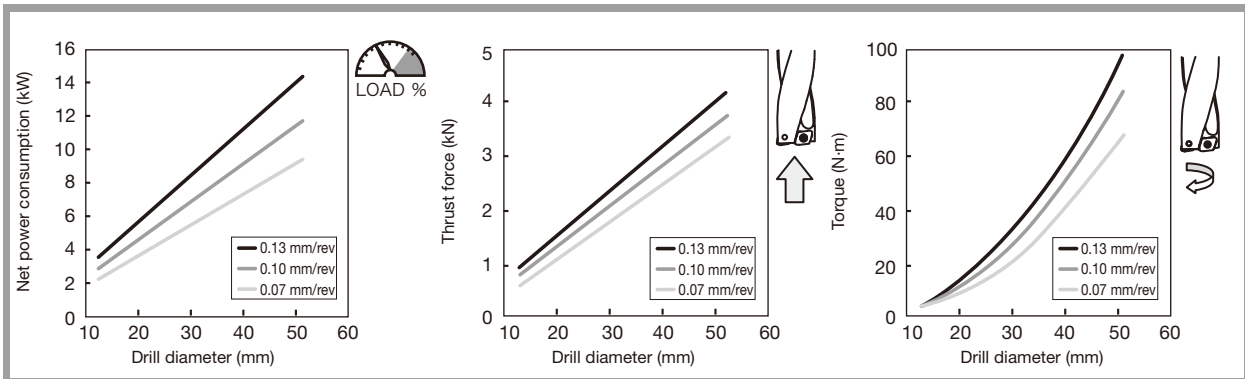


Continuously coiled long chips

Cutting forces

The charts below show a guideline for cutting forces. Use TDX drills on a machine with ample power and sufficient rigidity.

● Guidelines for cutting forces



Cutting speed: V_c = 100 m/min
Workpiece material: Alloy steel (JIS SCM440), 240HB
Cutting fluid: Used

Drilling Tools

Troubleshooting for indexable drills

Problem			Cause	Countermeasure
Abnormal wear	Central cutting edge	Relief surface	Inappropriate cutting conditions	● Increase the cutting speed by 10 % within standard conditions. ● Lower the feed by 10 %.
	Peripheral cutting edge	Relief surface	Inappropriate cutting conditions	● Increase the cutting speed by 10 % within standard conditions. ● When the feed is extremely low or high, set up it within standard conditions.
	Common	Relief surface	Varieties and supply of cutting fluid	● Confirm that the cutting fluid flow is higher than 7 liter/min. ● The concentration of cutting fluid must be higher than 5 %. ● Use the cutting fluid superior in lubricity. ● Change to internal cutting fluid supply from external one.
			Vibration in drilling	● Change to the machine with higher torque. ● Change to the clamp method with rigidity. ● Change the drill setting method.
			Unsuitable for selection of grade	● Change the grade to high wear resistant.
			Looseness of screws	● Tighten the screw.
		Crater	Cutting heat is too high	● Change to internal cutting fluid supply from external one. ● Increase the supply rate of the cutting fluid. (Higher than 10 liter/min.) ● Lower the feed by 20 % within standard conditions. ● Lower the cutting speed by 20 % within standard conditions.
			Excessive chip welding	● Lower the feed by 20 % within standard conditions. ● Lower the cutting speed by 20 % within standard conditions.
		Chipbreaker	Chip packing	● Increase the cutting speed by 20% and lower the feed by 20% within standard conditions. ● Raise the fluid pressure (for higher than 1.5 MPa).
Chipping and fracture	Central cutting edge	The rotation center of drill	Misalignment for workpiece rotation	● Set the misalignment to 0 ~ 0.2 mm.
			Large offset	● Check the manual and use the tool in the allowable offset range.
			No flatness of machined surface	● Flatten the entry surface in pre-machining. ● Set the feed for lower than 0.05 mm/rev in rough surface area.
			High feed	● Lower the feed by 20 ~ 50 % within standard conditions.
			Using a chipping corner	● Confirm the corner when exchanging inserts.
	Peripheral cutting edge	Peripheral corner area	Using inserts in excess of tool-life	● Exchange the corner or the insert before the nose wear reaches 0.3 mm.
			No flatness of machined surface	● Flatten the entry surface in pre-machining. ● Set the feed for lower than 0.05 mm/rev at rough surface area.
			The existence of interrupted area	● Set the feed for lower than 0.05 mm/rev in interrupted area.
			Using a chipped corner	● Confirm the corner when exchanging inserts.
	Common	The unused corner area and cutting edge	High hardness of workpiece	● Increase the cutting speed by 20 % and lower the feed by 20 % within standard conditions. ● Raise the fluid pressure (for higher than 1.5 MPa).
			Chip packing	● Lower the feed by 20 % within standard conditions.
			Machinery impact	● Change to continuous feed in case of pick feeding.
		Contact boundary	Using inserts in excess of tool-life	● Exchange the corner or the insert before the nose wear reaches 0.3 mm.
			Vibration in drilling	● Change to the machine with higher rigidity. ● Change to the clamp method with rigidity. ● Change the drill setting method.
		Flaking	High hardness of workpiece	● Set the feed for lower than 0.05 mm/rev.
			Thermal impact	● Change to internal cutting fluid supply from external one. ● Lower the feed by 20 % within standard conditions.
		Common	Unsuitable for selection of grade	● Change the grade to toughness.
			Looseness of screws	● Tighten the screw.

User's Guide- Technical Reference

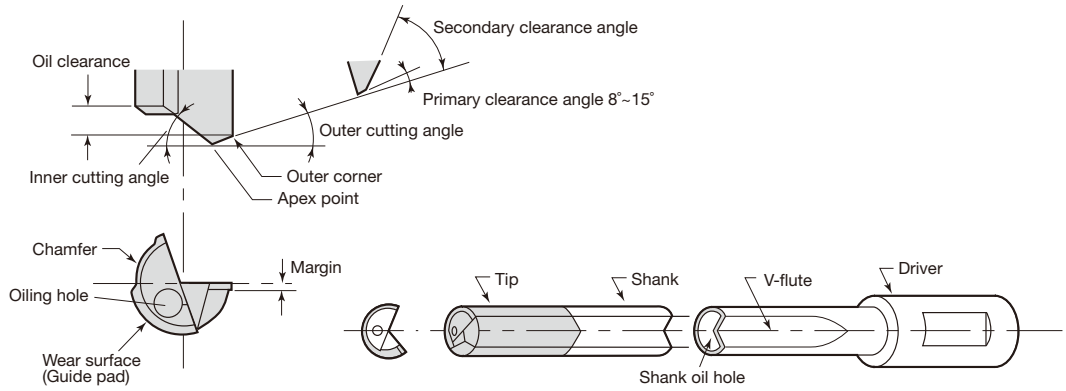
Drilling Tools

Troubleshooting for indexable drills

Problem		Cause	Countermeasure
Scratch marks on the tool	The tool periphery	Misalignment of workpiece rotation	● Set the misalignment to 0 ~ 0.2 mm.
		Offset machining in excess of allowable range	● Use the tool in the allowable offset range.
		Offset direction reduced diameter of workpiece	● Set offset direction extended diameter of workpiece
		No flatness of the entry surface	● Flatten the entry surface in pre-machining. ● Set the feed for lower than 0.05 mm/rev in rough surface area.
		Chipping of peripheral cutting edge	● Exchange the insert.
		Bend of workpiece	● Change to the clamp method with rigidity.
		Chip packing	● Increase the cutting speed by 20 % and lower the feed by 20 % within standard conditions. ● Raise the fluid pressure (for higher than 1.5 MPa).
Inappropriate hole accuracy	Hole diameter	Misalignment for workpiece rotation	● Set the misalignment to 0 ~ 0.2 mm.
		Inappropriate offset contents	● Adjust offset contents.
		No flatness of the entry surface	● Flatten the entry surface in pre-machining. ● Set the feed for lower than 0.05 mm/rev at rough surface area.
		Bend of workpiece	● Change to the clamp method with rigidity.
	Roughness	Varieties and supply of cutting fluid	● The concentration of cutting fluid must be higher than 5 %. ● Use the cutting fluid superior in lubricity. ● Change to internal cutting fluid supply from external one.
		Inappropriate cutting conditions	● Increase the cutting speed by 20 % within standard conditions. ● Lower the feed by 20 % within standard conditions.
	Common	Failures of inserts	● Exchange the insert.
		Chip packing	● Increase the cutting speed by 20 % and lower the feed by 20 % within standard conditions. ● Raise the fluid pressure (for higher than 1.5 MPa).
		Looseness of screws	● Tighten the screw.
Chip control	Prolonged and twisted of chips	Inappropriate cutting conditions	● Work within standard conditions. ● Increase the cutting speed by 10 % within standard conditions. ● Increase the feed by 10 % within standard conditions.
		Failures of inserts	● Exchange inserts.
		Machining by external fluid supply	● Change to internal cutting fluid supply from external one. ● Work by step feed. ● Use dwell function for 0.1 sec approximately.
		Chips around the central cutting edge	● There is a tendency to shorten the chips when shifting to higher speed and feed.
	Chip packing	Fluid supply	● Change to internal cutting fluid supply from external one. ● Raise the fluid pressure (for higher than 1.5 MPa).
		Inappropriate cutting conditions	● Increase the cutting speed by 20 % and lower the feed by 20 % within standard conditions. ● Raise the fluid pressure (for higher than 1.5 MPa).
	Common	Large failure of drill holders	● Exchange the drill holder.
		Looseness of screws	● Tighten the screw.
Others	Chatter	Inappropriate cutting conditions	● Lower the cutting speed by 20 % within standard conditions. ● Increase the feed by 10 % within standard conditions.
		Large wear of inserts	● Exchange the insert.
		Vibration in drilling	● Change to the machine with higher torque rigidity. ● Change to the clamp method with rigidity. ● Change the drill setting method.
		Looseness of screws	● Tighten the screw.
	Machine stop	Insufficient machine power and torque	● Use the range of number of revolutions suited machine spec. Lower the feed by 20 ~ 50%.
		Burned inserts	● Exchange inserts before the failure becomes larger. ● Check the oil-hole plug screw is tightly screwed in place. ● Check that the fluid flows powerfully from the drill. ● Lower the cutting speed and the feed by 20 % within standard conditions.
	Large burr	Failures of inserts	● Exchange the insert.
		Inappropriate cutting conditions	● Lower the feed by 20 ~ 50% just before leaving from the workpiece.

Drilling Tools

Nomenclature for gun drill



Troubleshooting in gun drilling

Problem		Cause	Trigger	Countermeasure
Breaking of drill	At entry into workpiece	Machine	Clamping the workpiece is unstable.	Clamp the workpiece firmly.
			The guide bush is apart from the workpiece surface at the entry.	Contact the guide bush closely with the workpiece.
			The machine's rapid feed is used.	Use cutting feed.
			Whipping effect occurs.	Place a whip guide at the appropriate position.
			The shape of the guide bush is not suitable.	Use the guide bush in the shape suitable for the workpiece.
		Drill	The drill is not set properly.	Set the drill with an appropriate torque, hydraulic pressure, etc.
			Regrinding is in poor quality.	Make sure no damage is left on the drill and that the cutting edge geometry is not changed.
		Cutting condition	The feed (*f*) is too high.	Use low feed.
		Workpiece	The workpiece surface is slanted.	Use low feed.
	During drilling	Machine	Clamping the workpiece is unstable.	Clamp the workpiece firmly.
			The shape of the guide bush is not suitable.	Modify the shape of the guide bush. See "Chip packing" for the details.
			The feed speed (*Vf*) varies.	Use mechanical feed.
			The number of revolutions varies (decreases).	Increase the machine power or adjust the cutting conditions.
		Drill	Abnormal damage occurs.	See "Short tool life" for the details.
		Cutting condition	The feed (*f*) is not suitable.	Use an appropriate feed.
		Workpiece	Interrupted or cross drilling is required.	Change the tool to a standard gundrill.
		Others	Chip packing occurs.	See "Chip packing" for the details.
	At exit from workpiece	Drill	The tip is too long.	Make the tip length short.
			The selection of the guide pads is not suitable.	Use 2 guide pads instead of 3.
			The clearance of the coolant hole is too large.	Reduce the clearance of the coolant hole.
		Cutting condition	The feed (*f*) is too high.	Use low feed.
		Workpiece	The workpiece surface is slanted.	Use low feed.
	During retracting	Machine	Clamping the workpiece is unstable.	Clamp the workpiece firmly.
		Cutting condition	Burnishing torque (cutting power) is increased due to reduced hole diameter.	Reduce cutting speed (*Vc*).

User's Guide- Technical Reference

Drilling Tools

Troubleshooting in gun drilling

Problem		Cause	Trigger	Countermeasure
Hole accuracy	Rough surface finish	Machine	Clamping the workpiece is unstable.	Clamp the workpiece firmly.
			The type of coolant is not appropriate.	Use water-insoluble coolant.
			Foreign material is in the coolant.	Thoroughly filtrate the coolant (Use a filter with the filtration accuracy in 10μm or less).
			The run-out of the spindle is too large.	Minimize the run-out of the spindle.
			The clearance between the guide bush and the drill is not appropriate.	Replace the guide bush (The clearance should be between +0.003 and +0.008).
			The feed speed (*Vf*) varies.	Use mechanical feed.
			The number of revolutions varies (decreases).	Increase the machine power or adjust the cutting conditions.
		Drill	Abnormal damage occurs.	See "Short tool life" for the details.
			Regrinding is in poor quality.	Make sure no damage is left on the drill and that the cutting edge geometry is not changed.
		Cutting condition	The feed (*f*) is too high.	Reduce the feed.
		Others	Chip packing occurs.	See "Chip packing" for the details.
	Unacceptable circularity, cyndricity, and oversize	Machine	The clearance between the guide bush and the drill is not appropriate.	Replace the guide bush (The clearance should be between +0.003 and +0.008).
			The guide bush is apart from the workpiece surface at the entry.	Contact the guide bush closely with the workpiece.
			The type of coolant is not appropriate.	Use water-insoluble coolant.
			The concentricity of the guide bush and the spindle is too large.	Decrease the concentricity of the guide bush and the spindle.
		Drill	Abnormal damage occurs.	See "Short tool life" for the details.
			Regrinding is in poor quality.	Make sure no damage is left on the drill and that the cutting edge geometry is not changed.
		Cutting condition	The feed (*f*) is not suitable.	Use an appropriate feed.
		Workpiece	Interrupted or cross drilling is required.	Change the tool to a standard gundrill.
		Others	Chip packing occurs.	See "Chip packing" for the details.
	Bending of hole	Machine	Clamping the workpiece is unstable.	Clamp the workpiece firmly.
			The guide bush is apart from the workpiece surface at the entry.	Contact the guide bush closely with the workpiece.
			The concentricity of the guide bush and the spindle is too large.	Decrease the concentricity of the guide bush and the spindle.
			The clearance between the guide bush and the drill is not appropriate.	Replace the guide bush (The clearance should be between +0.003 and +0.008).
		Drill	The selection of the guide pads is not suitable.	Use 2 guide pads instead of 3.
			Regrinding is in poor quality.	Make sure no damage is left on the drill and that the cutting edge geometry is not changed.
		Cutting condition	The feed (*f*) is too high.	Reduce the feed.
		Workpiece	The workpiece has blow holes or unevenness.	Use the workpiece without defect.
			The workpiece surface is slanted at the entry.	Use low feed.
			Interrupted or cross drilling is required.	Change the tool to a standard gundrill.

Drilling Tools

Troubleshooting in gun drilling

Problem		Cause	Trigger	Countermeasure
Short tool life	Abnormal wear	Machine	The type of coolant is not appropriate.	Use water-insoluble coolant.
			Foreign material is in the coolant.	Thoroughly filtrate the coolant (Use a filter with the filtration accuracy in 10μm or less).
			The clearance between the guide bush and the drill is not appropriate.	Replace the guide bush (The clearance should be between +0.003 and +0.008).
			Whipping effect occurs.	Place a whip guide at the appropriate position.
			The concentricity of the guide bush and the spindle is too large.	Decrease the concentricity of the guide bush and the spindle.
			The coolant temperature is too high.	Increase the capacity of the tank.
		Drill	The selection of the guide pads is not suitable.	Use 2 guide pads instead of 3.
			Regrinding is in poor quality.	Make sure no damage is left on the drill and that the cutting edge geometry is not changed.
			The drill's overall length is excessive.	Reduce the drill's overall length.
			Excessive wear occurs and the chip shape changes.	Regrind the gundrill (ease the tool life criteria).
		Cutting condition	The cutting speed (*Vc*) is too high.	Reduce the cutting speed.
			The feed (*f*) is too high.	Reduce the feed.
			The coolant pressure is not high enough.	Increase the coolant pressure.
		Workpiece	The material quality varies.	Reduce the cutting speed (*Vc*).
Chip control	Chip packing	Machine	The shape of the guide bush is not suitable.	Modify the tip of the guide bush to match the shape of the workpiece surface at the entry.
			The number of revolutions varies (decreases).	Increase the machine power or adjust the cutting conditions.
			The chip box is too small for smooth chip evacuation.	Enlarge the chip box.
		Cutting condition	The feed (*f*) is not suitable.	Use an appropriate feed.
			The coolant pressure is not high enough.	Increase the coolant pressure.
		Workpiece	Interrupted or cross drilling is required.	Change the tool to a standard gundrill.
			The operation is for stacked plates.	Change the cutting edge shape so that the cores become small.
			The material quality varies.	Increase the feed.
	Chip entanglement	Drill	The cutting edge is fractured or chipped.	See "Breakage" for the details.
			Wear on the outer corner is excessive.	Regrind the gundrill (ease the tool life criteria).
		Cutting condition	The feed (*f*) is too low.	Increase the feed.
		Workpiece	Drilling a center hole is required.	Make the center hole as small as the drill diameter and increase the coolant pressure.

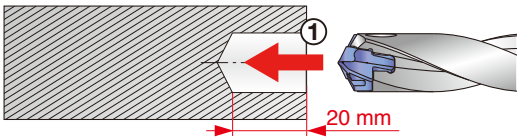
User's Guide- Technical Reference

Drilling Tools

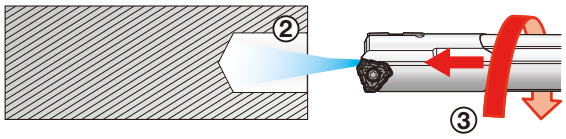
Drilling procedure on machining centers and lathes

DEEPTRIDRILL

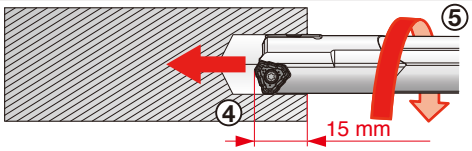
Proceed as instructed below in order to maximize the tool performance.



① Drill a pilot hole
Hole diameter tolerance: +0.01 - +0.1 mm
Hole depth: H = 20 mm
Please use DrillMeister or DrillForce-Meister for a pilot hole
Use a drill with 3xD or smaller

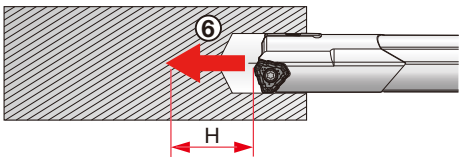


② Start coolant
③ Slowly insert DeepTri-Drill into the pilot hole
No. of revolution: n = 50 - 100 min^{-1}
Feed speed: Vf = 100 - 300 mm/min
Caution: Do not rotate the drill at a full machining speed before engaging the pilot hole.

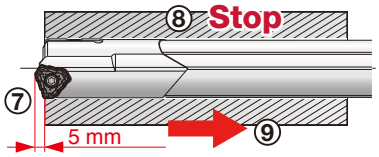


④ Stop the drill at 15 mm depth

⑤ Start rotating at full machining speed



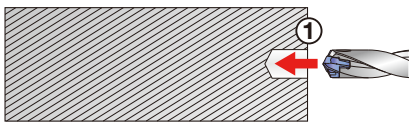
⑥ Start feeding
At the entry (H = 15 - 25 mm):
→ Feed: f = 80% of programmed feed
Hole depth:
H ≥ 25 mm → Feed: f = 100%



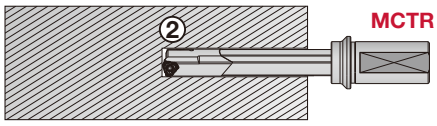
⑦ For a through hole
Continue drilling until the drill head passes through the workpiece by 5 mm
⑧ Stop the rotation and coolant
⑨ Return the drill

How to use a trlg type deeptri-drill on a horizontal machining center or boring machine

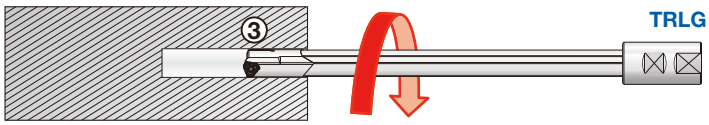
When using the TRLG drill on a conventional machining center or horizontal boring machine where there are no drilling-bush supports available, a pilot hole needs to be further deepened with a MCTR drill to better support the long gundrill. A long gundrill such as the TRLG type drill tends to "whip" when the pilot hole is too short to support the gundrill.



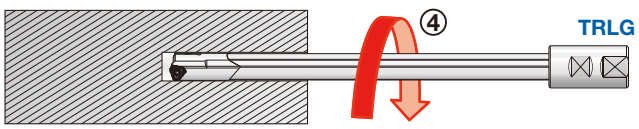
① Drill a pilot hole



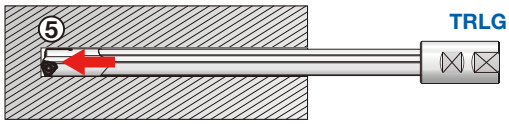
② Expand the pilot hole deeper using a MCTR drill



③ Drill with a TRLG drill at a reduced rotation and feed. Use the following parameters:
No. of revolution: n = 50 - 100 min^{-1}
Feed speed: Vf = 100 - 300 mm/min



④ When DeepTri-Drill reaches all the way to the end of the pilot hole, increase drill rotation to full machining speed.

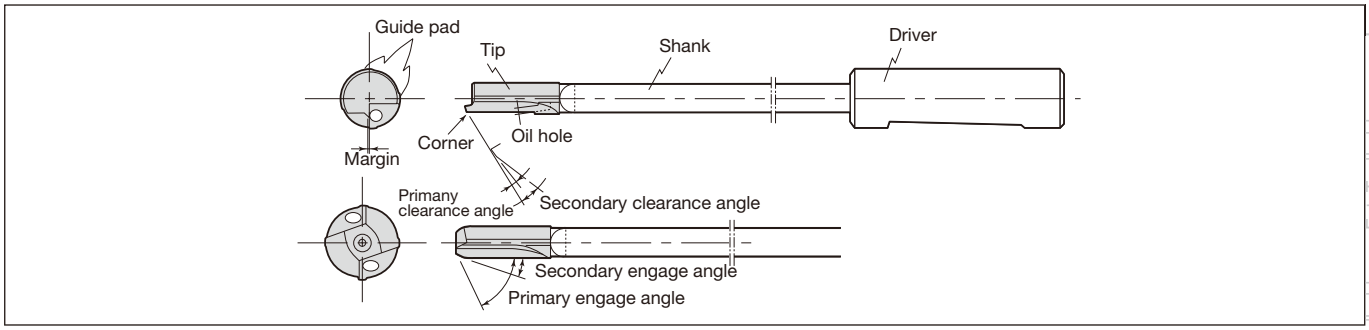


⑤ Start feeding to complete the drilling

(Caution)
Always use Step ② to prevent the gundrill from whipping, which may lead to drill breakage and a possible superfluous injury.

Drilling Tools

Nomenclature for gun reamer



Troubleshooting in gun reaming

Trouble		Possible cause		Countermeasure
Breaking of reamer		Increased burnishing torque due to excessively small stock allowance	● Chamfer angle small	● Enlarge chamfer angle and increase stock allowance
			● Excessive wear in peripheral cutting edge.	● Reduce cutting speed to prevent peripheral wear of edge ● Increase lubricity of cutting fluid
		Sticking	● Faulty filtering of cutting fluid ● Incorrect selection of cutting fluid ● Insufficient cutting fluid pressure	● Improve filtering accuracy ● Change to fluid with higher lubricity ● Increase fluid pressure
		Mechanical trouble		● Repair electrical system ● Improve clamping method of workpiece
Faulty machining accuracy	Unacceptable surface roughness Too large and inconsistent over size	Excessive feed rate per tooth		● Reduce fluid pressure ● Increase number of teeth
		Improper tool specifications	● Excessive chamfer angle ● Excessive back taper ● Peripheral run out excessive	● Reduce chamfer angle ● Reduce back taper ● Improve run out accuracy
		Faulty regrinding	● Cutting edge run out is large ● Residual damage of preceding process	● Improve run out accuracy ● Remove residual damage completely
		Improper cutting fluid	● Excessive fluid pressure ● Improper selection of cutting fluid	● Reduce fluid pressure ● Increase activity and lubricity of the fluid
		Faulty machine accuracy		● Correct spindle run out and bushing clearance and alignment
		Faulty clamping of workpiece	● Clamping position wrong ● Clamping force inadequate	● Improper clamping position ● Increase clamping force
	Defective out-of-roundness	Faulty machine accuracy	● Excessive bushing clearance ● Faulty spindle run out and alignment	● Correct bushing clearance ● Correct spindle run out and alignment
		Improper tool specifications	● Outer run out of reamer large ● Insufficient reamer rigidity	● Correct peripheral run out ● Increase reamer rigidity
		Faulty clamping position of workpiece		● Change clamping position
		Unevenness in wall thickness of workpiece		● Reduce reamer guide width (margin width)
	Insufficient oversize allowance	Chamfer angle small		● Increase chamfer angle
		Excessive wear in peripheral cutting edge	● Too high cutting speed ● Faulty lubricity of cutting fluid	● Decrease cutting speed ● Increase lubricating capacity
		Faulty regrinding (residual damage)		● Increase regrinding stock amount

User's Guide- Technical Reference

International Tolerance (IT Grade)

International Tolerance (IT Grade)

IT grades shows a tolerance allowable for difference of the diameters of a hole and a shaft. As the number added after IT increases, the tolerance becomes rough. Depending on the basic size, the tolerance value in each grade varies.
In the catalog, IT grades are shown as a guide of dimensional dispersion in the diameters of holes machined with the drill. For information, H8 tolerance for a ø8.0 hole is 0 to + 0.022 mm, the width of the value is the same as that of IT 8.
In the Table shown below, tolerance areas attainable with typical drilling tools are distinguished by using different colors. Solid drills are generally used for machining holes of IT 9 to 12. For machining a hole of better than IT 8, finishing process such as reaming is required. For a hole better than IT 5, high-precision finishing is required. Above description is based on machining of general steel. In practice, the IT grade attained with the tool varies widely depending on the hardness and the composition of the work material.

● IT (International Tolerance) Grades

Basic size (mm)		International tolerance grade																
		IT1	IT2	IT3	IT4	IT5	IT6	IT7	IT8	IT9	IT10	IT11	IT12	IT13	IT14	IT15	IT16	IT17	IT18
>	≤						(μm)									(mm)			
-	3	0.8	1.2	2	3	4	6	10	14	25	40	60	0.1	0.14	0.25	0.4	0.6	1	1.4
3	6	1	1.5	2.5	4	5	8	12	18	30	48	75	0.12	0.18	0.3	0.48	0.75	1.2	1.8
6	10	1	1.5	2.5	4	6	9	15	22	36	58	90	0.15	0.22	0.36	0.58	0.9	1.5	2.2
10	18	1.2	2	3	5	8	11	18	27	43	70	110	0.18	0.27	0.43	0.7	1.1	1.8	2.7
18	30	1.5	2.5	4	6	9	13	21	33	52	84	130	0.21	0.33	0.52	0.84	1.3	2.1	3.3
30	50	1.5	2.5	4	7	11	16	25	39	62	100	160	0.25	0.39	0.62	1	1.6	2.5	3.9
50	80	2	3	5	8	13	19	30	46	74	120	190	0.3	0.46	0.74	1.2	1.9	3	4.6
80	120	2.5	4	6	10	15	22	35	54	87	140	220	0.35	0.54	0.87	1.4	2.2	3.5	5.4
120	180	3.5	5	8	12	18	25	40	63	100	160	250	0.4	0.63	1	1.6	2.5	4	6.3
180	250	4.5	7	10	14	20	29	46	72	115	185	290	0.46	0.72	1.15	1.85	2.9	4.6	7.2
250	315	6	8	12	16	23	32	52	81	130	210	320	0.52	0.81	1.3	2.1	3.2	5.2	8.1
315	400	7	9	13	18	25	36	57	89	140	230	360	0.57	0.89	1.4	2.3	3.6	5.7	8.9
400	500	8	10	15	20	27	40	63	97	155	250	400	0.63	0.97	1.55	2.5	4	6.3	9.7
500	630	9	11	16	22	32	44	70	110	175	280	440	0.7	1.1	1.75	2.8	4.4	7	11
630	800	10	13	18	25	36	50	80	125	200	320	500	0.8	1.25	2	3.2	5	8	12.5
800	1000	11	15	21	28	40	56	90	140	230	360	560	0.9	1.4	2.3	3.6	5.6	9	14
1000	1250	13	18	24	33	47	66	105	165	260	420	660	1.05	1.65	2.6	4.2	6.6	10.5	16.5
1250	1600	15	21	29	39	55	73	125	195	310	500	780	1.25	1.95	3.1	5	7.8	12.5	19.5
1600	2000	18	25	35	46	65	92	150	230	370	600	920	1.5	2.3	3.7	6	9.2	15	23
2000	2500	22	30	41	55	78	110	175	280	440	700	1100	1.75	2.8	4.4	7	11	17.5	28
2500	3150	26	36	50	68	96	135	210	330	540	860	1350	2.1	3.3	5.4	8.6	13.5	21	33

Tolerance area requiring finishing process such as with a reamer.

Tolerance area attainable with a solid drill.

Tolerance area attainable with an indexable drill.

Deviations of Shafts to be Used in Commonly Used Fits

Deviations of Shafts to be Used in Commonly Used Fits (JIS B0401 extrac)

Basic size step (mm)		Tolerance zone class of shaft (μm)															
>	≤	e9	f6	f7	f8	g5	g6	h5	h6	h7	h8	h9	js5	js6	js7	k5	k6
–	3	−14 −39	−6 −12	−6 −16	−6 −20	−2 −6	−2 −8	0 −4	0 −6	0 −10	0 −14	0 −25	±2	±3	±5	+4 0	+6 0
3	6	−20 −50	−10 −18	−10 −22	−10 −28	−4 −9	−4 −12	0 −5	0 −8	0 −12	0 −18	0 −30	±2.5	±4	±6	+6 +1	+9 +1
6	10	−25 −61	−13 −22	−13 −28	−13 −35	−5 −11	−5 −14	0 −6	0 −9	0 −15	0 −22	0 −36	±3	±4.5	±7	+7 +1	+10 +1
10	14	−32 −75	−16 −27	−16 −34	−16 −43	−6 −14	−6 −17	0 −8	0 −11	0 −18	0 −27	0 −43	±4	±5.5	±9	+9 +1	+12 +1
14	18																
18	24	−40 −92	−20 −33	−20 −41	−20 −53	−7 −16	−7 −20	0 −9	0 −13	0 −21	0 −33	0 −52	±4.5	±6.5	±10	+11 +2	+15 +2
24	30																
30	40	−50 −112	−25 −41	−25 −50	−25 −64	−9 −20	−9 −25	0 −11	0 −16	0 −25	0 −39	0 −62	±5.5	±8	±12	+13 +2	+18 +2
40	50																
50	65	−60 −134	−30 −49	−30 −60	−30 −76	−10 −23	−10 −29	0 −13	0 −19	0 −30	0 −46	0 −74	±6.5	±9.5	±15	+15 +2	+21 +2
65	80																
80	100	−72 −159	−36 −58	−36 −71	−36 −90	−12 −27	−12 −34	0 −15	0 −22	0 −35	0 −54	0 −87	±7.5	±11	±17	+18 +3	+25 +3
100	120																

In every step given in the table, the value on the upper side shows the upper deviation and the value on the lower side, the lower deviation.

Deviations of Holes to be Used in Commonly Used Fits. (JIS B0401 extrac)

Basic size step (mm)		Tolerance zone class of hole (μm)															
>	≤	E7	E8	E9	F6	F7	F8	G6	G7	H6	H7	H8	H9	H10	JS6	JS7	K6	K7
–	3	+24 +14	+28 +14	+39 +14	+12 +6	+16 +6	+20 +6	+8 +2	+12 +2	+6 0	+10 0	+14 0	+25 0	+40 0	±3	±5	0 −6	0 −10
3	6	+32 +20	+38 +20	+50 +20	+18 +10	+22 +10	+28 +10	+12 +4	+16 +4	+8 0	+12 0	+18 0	+30 0	+48 0	±4	±6	+2 −6	+3 −9
6	10	+40 +25	+47 +25	+61 +25	+22 +13	+28 +13	+35 +13	+14 +5	+20 +5	+9 0	+15 0	+22 0	+36 0	+58 0	±4.5	±7	+2 −7	+5 −10
10	14	+50 +32	+59 +32	+75 +32	+27 +16	+34 +16	+43 +16	+17 +6	+24 +6	+11 0	+18 0	+27 0	+43 0	+70 0	±5.5	±9	+2 −9	+6 −12
14	18																	
18	24	+61 +40	+73 +40	+92 +40	+33 +20	+41 +20	+53 +20	+20 +7	+28 +7	+13 0	+21 0	+33 0	+52 0	+84 0	±6.5	±10	+2 −11	+6 −15
24	30																	
30	40	+75 +50	+89 +50	+112 +50	+41 +25	+50 +25	+64 +25	+25 +9	+34 +9	+16 0	+25 0	+39 0	+62 0	+100 0	±8	±12	+3 −13	+7 −18
40	50																	
50	65	+90 +60	+106 +60	+134 +60	+49 +30	+60 +30	+76 +30	+29 +10	+40 +10	+19 0	+30 0	+46 0	+74 0	+120 0	±9.5	±15	+4 −15	+9 −21
65	80																	
80	100	+107 +72	+126 +72	+159 +72	+58 +36	+71 +36	+90 +36	+34 +12	+47 +12	+22 0	+35 0	+54 0	+87 0	+140 0	±11	±17	+4 −18	+10 −25
100	120																	

In every step given in the table, the value on the upper side shows the upper deviation and the value on the lower side, the lower deviation.

User's Guide- Technical Reference

Symbols of Metals

● Carbon steel and alloy steel for structural use

Type	Japan	International	Other countries				
			U.S.A.	Great Britain	Germany	France	Russia
	JIS	ISO	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Carbon steel	S10C	C10	1010	C10 C10E C10R	C10E C10R	C10E C10R	–
	S15C	C15E4 C15M2	1015	C15 C15E C15R	C15E C15R	C15E C15R	–
	S20C	–	1020	C22, C22E C22R	C22 C22E C22R	C22 C22E C22R	–
	S25C	C25 C25E4 C25M2	1025	C25 C25E C25R	C25 C25E C25R	C25 C25E C25R	–
	S30C	C30 C30E4 C30M2	1030	C30 C30E C30R	C30 C30E C30R	C30 C30E C30R	30Г
	S35C	C35 C35E4 C35M2	1035	C35 C35E C35R	C35 C35E C35R	C35 C35E C35R	35Г
	S40C	C40 C40E4 C40M2	1039 1040	C40 C40E C40R	C40 C40E C40R	C40 C40E C40R	40Г
	S43C	–	1042 1043	080A42	–	–	40Г
	S45C	C45 C45E4 C45M2	1045 1046	C45 C45E C45R	C45 C45E C45R	C45 C45E C45R	45Г
	S48C	–	–	–	–	–	45Г
	S50C	C50 C50E4 C50M2	1049	C50 C50E C50R	C50 C50E C50R	C50 C50E C50R	50Г
	S53C	–	1050 1053	–	–	–	50Г
	S55C	C55 C55E4 C55M2	1055	C55 C55E C55R	C55 C55E C55R	C55 C55E C55R	–
	S58C	C60 C60E4 C60M2	1059 1060	C60 C60E C60R	C60 C60E C60R	C60 C60E C60R	60Г

Type		Japan	International	Other countries				
				U.S.A.	Great Britain	Germany	France	Russia
		JIS	ISO	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Alloy steel	Nickel chromium steel	SNC236	–	–	–	–	–	40XH
		SNC415(H)	–	–	–	–	–	–
		SNC631(H)	–	–	–	–	–	30XH3A
		SNC815(H)	15NiCr13	–	15NiCr13	15NiCr13	15NiCr13	–
		SNC836	–	–	–	–	–	–
	Nickel chromium molybdenum steel	SNCM220	20NiCrMo2 20NiCrMoS2	8615 8617(H) 8620(H) 8622(H)	20NiCrMo2-2 20NiCrMoS2-2	20NiCrMo2-2 20NiCrMoS2-2	20NiCrMo2-2 20NiCrMoS2-2	–
		SNCM240	41CrNiMo2 41CrNiMoS2	8637 8640	–	–	–	–
		SNCM415	–	–	–	–	–	–
		SNCM420(H)	–	4320(H)	–	–	–	20XH2M(20XHM)
		SNCM431	–	–	–	–	–	–
		SNCM439	–	4340	–	–	–	–
		SNCM447	–	–	–	–	–	–
		SNCM616	–	–	–	–	–	–
		SNCM625	–	–	–	–	–	–
		SNCM630	–	–	–	–	–	–
		SNCM815	–	–	–	–	–	–

Note: The above chart is based on published data and not authorized by each manufacturer.

Symbols of Metals

● Alloy steel

Type		Japan	International	Other countries				
				U.S.A.	Great Britain	Germany	France	Russia
		JIS	ISO	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Alloy steel	Chromium steel	SCr415(H)	–	–	17Cr3 17CrS3	17Cr3 17CrS3	17Cr3 17CrS3	15X 15XA
		SCr420(H)	20Cr4(H) 20CrS4	5120(H)	–	–	–	20X
		SCr430(H)	34Cr4 34CrS4	5130(H) 5132(H)	34Cr4 34CrS4	34Cr4 34CrS4	34Cr4 34CrS4	30X
		SCr435(H)	34Cr4 34CrS4 37Cr4 37CrS4	5132	37Cr4 37CrS4	37Cr4 37CrS4	37Cr4 37CrS4	35X
		SCr440(H)	37Cr4 37CrS4 41Cr4 41CrS4	5140(H)	530M40 41Cr4 41CrS4	41Cr4 41CrS4	41Cr4 41CrS4	40X
		SCr445(H)	–	–	–	–	–	45X
	Chromium molybdenum steel	SCM415(H)	–	–	–	–	–	–
		SCM418(H)	18CrMo4 18CrMoS4	–	18CrMo4 18CrMoS4	18CrMo4 18CrMoS4	18CrMo4 18CrMoS4	20XM
		SCM420(H)	–	–	708M20(708H20)	–	–	20XM
		SCM430	–	4130	–	–	–	30XM 30XMA
		SCM432	–	–	–	–	–	–
		SCM435(H)	34CrMo4 34CrMoS4	4137(H)	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	35XM
		SCM440(H)	42CrMo4 42CrMoS4	4140(H) 4142(H)	42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	–
		SCM445(H)	–	4145(H) 4147(H)	–	–	–	–
	Manganese steel and manganese chromium steel	SMn420(H)	22Mn6(H)	1522(H)		–	–	–
		SMn433(H)	–	1534	–	–	–	30Г2 35Г2
		SMn438(H)	36Mn6(H)	1541(H)	–	–	–	35Г2 40Г2
		SMn443(H)	42Mn6(H)	1541(H)	–	–	–	40Г2 45Г2
		SMnC420(H)	–	–	–	–	–	–
		SMnC443(H)	–	–	–	–	–	–
	Aluminium chromium molybdenum steel	SACM645	41CrAlMo74	–	–	–	–	–

● Stainless steel

Type		Japan	International	Other countries					
				U.S.A.		Great Britain	Germany	France	Russia
		JIS	ISO	UNS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Stainless steel	Austenitic	SUS201	X12CrMnNiN17-7-5	S20100	201			Z12CMN17-07Az	
		SUS202	X12CrMnNiN18-9-5	S20200	202	284S16			12Х17Г9АН4
		SUS301	X10CrNi18-8	S30100	301	301S21	X12CrNi17-7	Z11CN17-08	07Х16Н6
		SUS301L	X2CrNiN18-7				X2CrNiN18-7		
		SUS301J1					X12CrNi17-7		
		SUS302		S30200	302	302S25		Z12CN18-09	12Х18Н9
		SUS302B	X12CrNiSi18-9-3	S30215	302B				
		SUS303	X10CrNiS18-9	S30300	303	303S21	X10CrNiS18-9	Z8CNF18-09	
		SUS303Se		S30323	303Se	303S41			12Х18Н10Е
		SUS303Cu							
		SUS304	X5CrNi18-9	S30400	304	304S31	X5CrNi18-10	Z7CN18-09	08Х18Н10
		SUS304L	X2CrNi18-9	S30403	304L	304S11	X2CrNi19-11	Z3CN19-11	03Х18Н11
		SUS304N1	X5CrNiN18-8	S30451	304N			Z6CN19-09Az	
		SUS304N2		S30452					
		SUS304LN	X2CrNiN18-9	S30453	304LN		X2CrNiN18-10	Z3CN18-10Az	
		SUS304J1							
		SUS304J2							
		SUS304J3		S30431	S30431				
		SUS305	X6CrNi18-12	S30500	305	305S19	X5CrNi18-12	Z8CN18-12	06Х18Н11

Note: The above chart is based on published data and not authorized by each manufacturer.

User's Guide- Technical Reference

Symbols of Metals

● Stainless steel

Type		Japan	International	Other countries					
				U.S.A.		Great Britain	Germany	France	Russia
		JIS	ISO	UNS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Stainless steel	Austenitic	SUS305J1							
		SUS309S		S30908	309S			Z10CN24-13	
		SUS310S	X6CrNi25-21	S31008	310S	310S31		Z8CN25-20	10X23H18
		SUS315J1							
		SUS315J2							
		SUS316	X5CrNiMo17-12-2 X3CrNiMo17-12-3	S31600	316	316S31	X5CrNiMo17-12-2 X5CrNiMo17-13-3	Z7CND17-12-02 Z6CND18-12-03	
		SUS316F							
		SUS316L	X2CrNiMo17-12-2 X2CrNiMo17-12-3 X2CrNiMo18-14-3	S31603	316L	316S11	X2CrNiMo17-13-2 X2CrNiMo17-14-3	Z3CND17-12-02 Z3CND17-12-03	03X17H14M3
		SUS316N		S31651	316N				
		SUS316LN	X2CrNiMoN17-11-2 X2CrNiMoN17-12-3	S31653	316LN		X2CrNiMoN17-12-2 X2CrNiMoN17-13-3	Z3CND17-11Az Z3CND17-12Az	
		SUS316Ti	X6CrNiMoTi17-12-2	S31635			X6CrNiMoTi17-12-2	Z6CNDT17-12	08X17H13M2T
		SUS316J1							
		SUS316J1L							
		SUS317		S31700	317	317S16			
		SUS317L	X2CrNiMo19-14-4	S31703	317L	317S12	X2CrNiMo18-16-4	Z3CND19-15-04	
		SUS317LN	X2CrNiMoN18-12-4	S31753				Z3CND19-14Az	
		SUS317J1							
		SUS317J2							
		SUS317J3L							
		SUS836L		N08367					
		SUS890L	X1CrNiMoCu25-20-5	N08904	N08904	904S14		Z2NCDU25-20	
		SUS321	X6CrNiTi18-10	S32100	321	321S31	X6CrNiTi18-10	Z6CNT18-10	08X18H10T
		SUS347	X6CrNiNb18-10	S34700	347	347S31	X6CrNiNb18-10	Z6CNNb18-10	08X18H12Б
		SUS384	X3NiCr18-16	S38400	384			Z6CN18-16	
		SUSXM7	X3CrNiCu18-9-4	S30430	304Cu	394S17		Z2CNU18-10	
		SUSXM15J1		S38100				Z15CNS20-12	
	Austenitic Ferritic	SUS329J1		S32900	329				
		SUS329J3L	X2CrNiMoN22-5-3	S31803	31803			Z3CNDU22-05Az	08X21H6M2T
		SUS329J4L	X2CrNiMoCuN25-6-3	S32250	32250			Z3CNDU25-07Az	
	Ferritic	SUS405	X6CrAl13	S40500	405	405S17	X6CrAl13	Z8CA12	
		SUS410L						Z3C14	
		SUS429		S42900	429				
		SUS430	X6Cr17	S43000	430	430S17	X6Cr17	Z8C17	12X17
		SUS430F	X7CrS17	S43020	430F		X7CrS18	Z8CF17	
		SUS430LX	X3CrTi17 X3CrNb17	S43035			X6CrTi17	Z4CT17	
		SUS430J1L	X2CrTi17				X6CrNb17	Z4CNb17	
		SUS434	X6CrMo17-1	S43400	434	434S17	X6CrMo17-1	Z8CD17-01	
		SUS436L	X1CrMoTi16-1	S43600	436				
		SUS436J1L							
		SUS444	X2CrMoTi18-2	S44400	444			Z3CDT18-02	
		SUS445J1							
		SUS445J2							
		SUS447J1		S44700					
		SUSXM27		S44627				Z1CD26-01	
	Martensitic	SUS403		S40300	403				
		SUS410	X12Cr13	S41000	410	410S21	X10Cr13	Z13C13	
		SUS410S	X6Cr13	S41008	410S	403S17	X6Cr13	Z8C12	08X13
		SUS410F2							
		SUS410J1		S41025					
		SUS416	X12CrS13	S41600	416	416S21		Z11CF13	
		SUS420J1	X20Cr13	S42000	420	420S29	X20Cr13	Z20C13	20X13
		SUS420J2	X30Cr13	S42000	420	420S37	X30Cr13	Z33C13	30X13
		SUS420F	X29CrS13	S42020	420F			Z30CF13	
		SUS420F2							
		SUS429J1							
		SUS431	X19CrNi16-2	S43100	431	431S29	X20CrNi17-2	Z15CN16-02	20X17H2
		SUS440A	X70CrMo15	S44002	440A			Z70C15	
		SUS440B		S44003	440B				
		SUS440C	X105CrMo17	S44004	440C			Z100CD17	95X18
		SUS440F		S44020	S44020				
	Precipitation hardening type	SUS630	X5CrNiCuNb16-4	S17400	S17400			Z6CNU17-04	
		SUS631	X7CrNiAl17-7	S17700	S17700		X7CrNiAl17-7	Z9CNA17-07	09X17H7Ю
		SUS631J1							

Note: The above chart is based on published data and not authorized by each manufacturer.

Symbols of Metals

● Heat resistant steel

Type		Japan	International	Other countries					
				U.S.A.		Great Britain	Germany	France	Russia
		JIS	ISO	UNS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Heat resistant steel	Austenitic	SUH31				331S42		Z35CNWS14-14	45X14H14B2M
		SUH35		S63008		349S52		Z52CMN21-09Az	
		SUH36				349S54	X53CrMnNi21-9	Z55CMN21-09Az	55X20Г9 AH4
		SUH37		S63017		381S34			
		SUH38							
		SUH309		S30900	309	309S24		Z15CN24-13	
		SUH310		S31000	310	310S24	CrNi2520	Z15CN25-20	20X25H20C2
		SUH330		N08330	N08330			Z12NCS35-16	
		SUH660		S66286				Z6NCTV25-20	
		SUH661		R30155					
	Ferritic	SUH21					CrAl1205		
		SUH409	X6CrTi12	S40900	409	409S19	X6CrTi12	Z6CT12	
		SUH409L	X2CrTi12					Z3CT12	
		SUH446		S44600	446			Z12C25	15X28
	Martensitic	SUH1		S65007		401S45	X45CrSi9-3	Z45CS9	
		SUH3						Z40CSD10	40X10C2M
		SUH4				443S65		Z80CSN20-02	
		SUH11							40X9C2
		SUH600							20X12ВНМБФР
		SUH616		S42200					

● Tool steel

Type	Japan	International	U.S.A.
	JIS	ISO	AISI ASTM
Carbon tool steel	SK140	–	–
	SK120	C120U	W1-11 1/2
	SK105	C105U	W1-10
	SK95	–	W1-9
	SK90	C90U	–
	SK85	–	W1-8
	SK80	C80U	–
	SK75	–	–
	SK70	C70U	–
	SK65	–	–
	SK60	–	–
High speed steel	SKH2	HS18-0-1	T1
	SKH3	–	T4
	SKH4	–	T5
	SKH10	–	T15
	SKH40	HS6-5-3-8	–
	SKH50	HS1-8-1	–
	SKH51	HS6-5-2	M2
	SKH52	HS6-6-2	M3-1
	SKH53	HS6-5-3	M3-2
	SKH54	HS6-5-4	M4
	SKH55	HS6-5-2-5	–
	SKH56	–	M36
	SKH57	HS10-4-3-10	–
	SKH58	HS2-9-2	M7
	SKH59	HS2-9-1-8	M42
Alloy tool steel	SKS11	–	F2
	SKS2	–	–
	SKS21	–	–

Type	Japan	International	U.S.A.
	JIS	ISO	AISI ASTM
Alloy tool steel	SKS5	–	–
	SKS51	–	L6
	SKS7	–	–
	SKS81	–	–
	SKS8	–	–
	SKS4	–	–
	SKS41	–	–
	SKS43	105V	W2-9 1/2
	SKS44	–	W2-8 1/2
	SKS3	–	–
	SKS31	–	–
	SKS93	–	–
	SKS94	–	–
	SKS95	–	–
	SKD1	X210Cr12	D3
	SKD2	X210CrW12	–
	SKD10	X153CrMoV12	–
	SKD11	–	D2
	SKD12	X100CrMoV5	A2
	SKD4	–	–
	SKD5	X30WCrV9-3	H21
	SKD6	–	H11
	SKD61	X40CrMoV5-1	H13
	SKD62	X35CrWMoV5	H12
	SKD7	32CrMoV12-28	H10
	SKD8	38CrCoWV18-17-17	H19
	SKT3	–	–
	SKT4	55NiCrMoV7	–
	SKT6	45NiCrMo16	–

● Special use steel

Type	Japan	International	U.S.A.
	JIS	ISO	AISI ASTM
Free cutting carbon steels	SUM11	–	1110
	SUM12	–	1109
	SUM21	9S20	1212
	SUM22	11SMn28	1213
	SUM22L	11SMnPb28	–
	SUM23	–	1215
	SUM23L	–	–
	SUM24L	11SMnPb28	12L14
	SUM25	12SMn35	–
	SUM31	–	1117
	SUM31L	–	–

Type	Japan	International	U.S.A.
	JIS	ISO	AISI ASTM
Free cutting carbon steels	SUM32	–	–
	SUM41	–	1137
	SUM42	–	1141
	SUM43	44SMn28	1144
High carbon chromium	SUJ1	–	–
	SUJ2	B1	52100
	SUJ3	B2	ASTM A 485 Grade 1
	SUJ4	–	–
	SUJ5	–	–

Note: The above chart is based on published data and not authorized by each manufacturer.

User's Guide- Technical Reference

Symbols of Metals

● Casting or forging steel

Type		Japan	International	Other countries				
				U.S.A.	Great Britain	Germany	France	Russia
		JIS	ISO	AISI ASTM	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Casting steel	Carbon steel casting	SC	200-400, 230-450, 270-480	U-	A1, A2	GS-	GE230, GE280, GE320	–
	Steel casting for welded structure	SCW	200-400W, 230-450W, 270-480W, 340-550W	WCA, WCB, WCC	A4	–	GE230, GE280	–
	Heat resisting steel casting	SCH	GX40CrSi24, GX40CrNiSi22-10, GX40NiCrSi38-19	Grade HC, HD, HF	309C30, 310C45, 330C12	–	GX40NiCrNb45-35, GX50NiCrCoW35-25-15-5	–
	Steel casting for high temperature and high pressure service	SCPH	–	Grade WC1, WC6, WC9	A1, A2, B1, B2, B3, B4, B5, B7	G20Mo5, G17CrMo5-5, G17CrMo5-10	G17CrMo9-10, GX15CrMo5, GP240GH, GP280GH	–
	Steel casting for low temperature and high pressure service	SCPL	–	Grade LCB, LC1, LC2, LC3	AL1, BL2	–	FB-M, FC1-M, FC2-M,FC3-M	–
Casting iron	Grey iron casting	FC	100,150,200,250, 300,350	No.20,25,30,35, 40,45,50	EN-GJL-	EN-GJL-	EN-GJL-	–
	Spheroidal graphite iron casting	FCD	700-2, 600-3, 500-7, 450-10, 400-15, 400-18, 350-22	60-40-18, 65-45-12, 8-55-06, 100-70-03, 120-90-02	EN-GJS-	EN-GJS-	EN-GJS-	ВЧ
	Austempered spheroidal graphite iron casting	FCAD	–	–	EN-GJS-	EN-GJS-	EN-GJS-	–
	Austenitic iron casting	FCA- FCDA-	L-, S-	Type 1, 2, Type D-2, D-3A Class 1, 2	F1, F2, S2W, S5S	GGL-, GGG-	L-, S-	–
Forging steel	Carbon steel forging for general use	SF	–	Class A, B, C, D, E, F	C22, C25, C30, C35, C40, C45, C50, C55, C60	P285, P355	P245, P280, P305	–
	Chromium molybdenum steel forgings for general use	SFCM	–	Class E, F, G, I Grade 3A, 4 Class G, J, K, L, M	–	–	–	–
	Nickel Chromium molybdenum steel forgings for general use	SFNCM	–	Class G, H, I, J Class 3A, 4, 5, 6 Class K, L, M	–	–	–	–

● Non-ferrous alloy

Type		Japan	International	Other countries			
				U.S.A.		Great Britain	Germany
		JIS	ISO	ASTM SAE		BS BS/EN	DIN DIN/EN
Copper alloy, Nickel alloy	Copper alloy casting	CAC101	–	–	–	–	
		CAC102	–	–	–	Cu-C(CC040AgrodeC)	
		CAC103	–	–	–	Cu-C(CC040AgrodeA,B)	
	Brass casting	CAC201	–	–	–	CuZn15As-C(CC760S)	
		CAC202	–	C85400	–	CuZn33Pb2-C(CC750S)	
		CAC203	–	C85700	–	CuZn39Pb1-C(CC754S)	
	High strength brass casting	CAC301	–	C86500	–	CuZn35Mn2Al1Fe-C(CC765S)	
		CAC302	–	C86400	–	CuZn34Mn3Al2Fe1-C(CC764S)	
		CAC303	–	C86200	–	CuZn25Al5Mn4Fe3-C(CC762S)	
		CAC304	–	C86300	–	CuZn25Al5Mn4Fe3-C(CC762S)	
	Bronze casting	CAC401	–	C84400	–	CuSn3Zn8Pb5-C(CC490K)	
		CAC402	–	C90300	–	–	
		CAC403	–	C90500	–	–	
		CAC406	–	C83600	–	CuSn5Zn5Pb5-C(CC490K)	
		CAC407	–	C92200	–	–	
	Phosphor bronze casting	CAC502A	–	C90700 C90800	–	CuSn10-C(CC480K) CuSn12-C(CC483K)	
		CAC502B	–		–		
		CAC503A	–		–		
		CAC503B	–		–		
	Aluminium bronze casting	CAC701	–	C95200	–	CuAl10Fe2-C(CC331G)	
		CAC702	–	C95400	–	CuAl10Ni3Fe2-C(CC332G)	
			–	C95410	–		
		CAC703	–	C95800	–	CuAl10Fe5Ni5-C(CC333G)	
		CAC704	–	C95700	–	–	
	Silicon bronze castings	CAC801	–	–	–	–	
		CAC802	–	C87500	–	–	
		CAC803	–	C87400	–	CuZn16Si4-C(CC761S)	

Note: The above chart is based on published data and not authorized by each manufacturer.

Symbols of Metals

● Non-ferrous alloy

Type		Japan	International	Other countries			
				U.S.A.	Great Britain	Germany	France
		JIS	ISO	ASTM SAE	BS BS/EN	DIN DIN/EN	NF NF/EN
Aluminium alloy	Aluminium alloy ingots for casting	AC1B	Al-Cu4MgTi	204.0	EN AC-2100		
		AC2A	–	–	–		
		AC2B	–	319.0	–		
		AC3A	–	–	EN AC-44100		
		AC4A	–	–	–		
		AC4B	Al-Si8Cu3	333.0	EN AC-46200		
		AC4C	Al-Si7Mg(Fe)	356.0	EN AC-42000		
		AC4CH	Al-Si7Mg0.3	A356.0	EN AC-42100		
		AC4D	–	355.0	EN AC-45300		
		AC5A	Al-Cu4Ni2Mg2	242.0	–		
		AC7A	–	514.0	–		
		AC8A	Al-Si12CuNiMg	–	EN AC-48000		
		AC8B	–	–	–		
		AC8C	–	332.0	–		
		AC9A	–	–	–		
		AC9B	–	–	–		
	Aluminium alloy die casting	ADC1	–	A413.0	–		
		ADC3	–	A360.0	–		
		ADC5	–	518.0	–		
		ADC6	–	–	–		
		ADC10	–	–	–		
		ADC10Z	–	A380.0	–		
		ADC12	–	–	–		
		ADC12Z	–	383.0	–		
		ADC14	–	B390.0	–		
Magnesium alloy	Magnesium alloy casting	MC5	–	AM100A	–		
		MC6	–	ZK51A	–		
		MC7	–	ZK61A	–		
		MC8	MgRE3Zn2Zr	EZ33A	EN MC65120		
		MC9	MgAg3RE2Zr	QE22A	EN MC65210		
		MC10	MgZn4RE1Zr	ZE41A	EN MC35110		
	Magnesium alloy die casting	MD1A	–	AZ91A	G-A9Z1Y4		
		MDC1B	–	AZ91B	–		
		MDC1D	MgAl9Zn1(A)	AZ91D	EN MC21120		
		MDC2B	MgAl6Mn	AM60B	EN MC21320		

Type		Japan	International	Other countries			
				U.S.A.	Great Britain	Germany	France
		JIS	ISO	ASTM AA	BS BS/EN	DIN DIN/EN	NF NF/EN
Aluminium alloy	Aluminium alloy extruded shapes	A5052S	–	5052	EN AW-5052		
		A5454S	–	5454	EN AW-5454		
		A5083S	AlMg4.5Mn0.7	5083	EN AW-5083		
		A5086S	–	5086	EN AW-5086		
		A6061S	AlMg1SiCu	6061	EN AW-6061		
		A6063S	AlMg0.7Si	6063	EN AW-6063		
		A7003S	–	–	EN AW-7003		
		A7N01S	–	–	–		
		A7075S	AlZn5.5MgCu	7075	EN AW-7075		

Note: The above chart is based on published data and not authorized by each manufacturer.

User's Guide- Technical Reference

Approximate Conversion Table of Hardness

● Approximate conversion value for Brinell hardness. *1

(The source: JIS HB Ferrous Materials and Metallurgy I -2005)

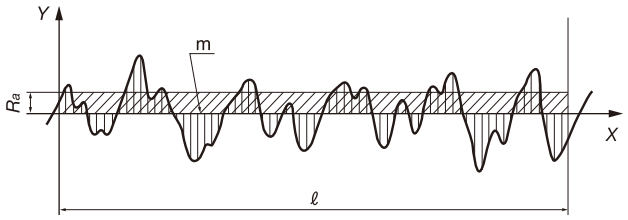
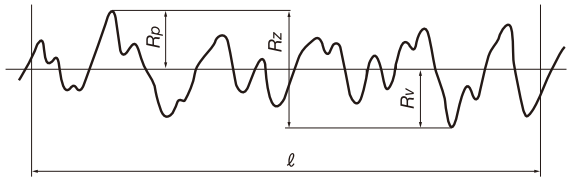
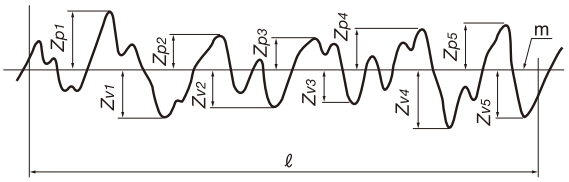
HB		HV	Rockwell *3				HS	Approx. tensile strength (MPa) *2
Brinell, 10mm ball, Load 3000kg		Vickers	HRA	HRB	HRC	HRD	Shore	
Standard ball	Tungsten carbide ball		A Scale, Load 60kg, Brale Diamond	B Scale, Load 100kg, Diameter 1/16 in. Steel ball	C Scale, Load 150kg, brale diamond	D Scale, Load 100kg, Brale Diamond		
–	–	940	85.6	–	68.0	76.9	97	–
–	–	920	85.3	–	67.5	76.5	96	–
–	–	900	85.0	–	67.0	76.1	95	–
–	(767)	880	84.7	–	66.4	75.7	93	–
–	(757)	860	84.4	–	65.9	75.3	92	–
–	(745)	840	84.1	–	65.3	74.8	91	–
–	(733)	820	83.8	–	64.7	74.3	90	–
–	(722)	800	83.4	–	64.0	73.8	88	–
–	(712)	–	–	–	–	–	–	–
–	(710)	780	83.0	–	63.3	73.3	87	–
–	(698)	760	82.6	–	62.5	72.6	86	–
–	(684)	740	82.2	–	61.8	72.1	–	–
–	(682)	737	82.2	–	61.7	72.0	84	–
–	(670)	720	81.8	–	61.0	71.5	83	–
–	(656)	700	81.3	–	60.1	70.8	–	–
–	(653)	697	81.2	–	60.0	70.7	81	–
–	(647)	690	81.1	–	59.7	70.5	–	–
–	(638)	680	80.8	–	59.2	70.1	80	–
–	630	670	80.6	–	58.8	69.8	–	–
–	627	667	80.5	–	58.7	69.7	79	–
–	–	677	80.7	–	59.1	70.0	–	–
–	601	640	79.8	–	57.3	68.7	77	–
–	–	640	79.8	–	57.3	68.7	–	–
–	578	615	79.1	–	56.0	67.7	75	–
–	–	607	78.8	–	55.6	67.4	–	–
–	555	591	78.4	–	54.7	66.7	73	2055
–	–	579	78.0	–	54.0	66.1	–	2015
–	534	569	77.8	–	53.5	65.8	71	1985
–	–	553	77.1	–	52.5	65.0	–	1915
–	514	547	76.9	–	52.1	64.7	70	1890
(495)	–	539	76.7	–	51.6	64.3	–	1855
–	–	530	76.4	–	51.1	63.9	–	1825
–	495	528	76.3	–	51.0	63.8	68	1820
(477)	–	516	75.9	–	50.3	63.2	–	1780
–	–	508	75.6	–	49.6	62.7	–	1740
–	477	508	75.6	–	49.6	62.7	66	1740
(461)	–	495	75.1	–	48.8	61.9	–	1680
–	–	491	74.9	–	48.5	61.7	–	1670
–	461	491	74.9	–	48.5	61.7	65	1670
444	–	474	74.3	–	47.2	61.0	–	1595
–	–	472	74.2	–	47.1	60.8	–	1585
–	444	472	74.2	–	47.1	60.8	63	1585

HB		HV	Rockwell *3				HS	Approx. tensile strength (MPa) *2
Brinell, 10mm ball, Load 3000kg		Vickers	HRA	HRB	HRC	HRD	Shore	
Standard ball	Tungsten carbide ball		A Scale, Load 60kg, Brale Diamond	B Scale, Load 100kg, Diameter 1/16 in. Steel ball	C Scale, Load 150kg, brale diamond	D Scale, Load 100kg, Brale Diamond		
429	429	455	73.4	–	45.7	59.7	61	1510
415	415	440	72.8	–	44.5	58.8	59	1460
401	401	425	72.0	–	43.1	57.8	58	1390
388	388	410	71.4	–	41.8	56.8	56	1330
375	375	396	70.6	–	40.4	55.7	54	1270
363	363	383	70.0	–	39.1	54.6	52	1220
352	352	372	69.3	(110.0)	37.9	53.8	51	1180
341	341	360	68.7	(109.0)	36.6	52.8	50	1130
331	331	350	68.1	(108.5)	35.5	51.9	48	1095
321	321	339	67.5	(108.0)	34.3	51.0	47	1060
311	311	328	66.9	(107.5)	33.1	50.0	46	1025
302	302	319	66.3	(107.0)	32.1	49.3	45	1005
293	293	309	65.7	(106.0)	30.9	48.3	43	970
285	285	301	65.3	(105.5)	29.9	47.6	–	950
277	277	292	64.6	(104.5)	28.8	46.7	41	925
269	269	284	64.1	(104.0)	27.6	45.9	40	895
262	262	276	63.6	(103.0)	26.6	45.0	39	875
255	255	269	63.0	(102.0)	25.4	44.2	38	850
248	248	261	62.5	(101.0)	24.2	43.2	37	825
241	241	253	61.8	100.0	22.8	42.0	36	800
235	235	247	61.4	99.0	21.7	41.4	35	785
229	229	241	60.8	98.2	20.5	40.5	34	765
223	223	234	–	97.3	(18.8)	–	–	–
217	217	228	–	96.4	(17.5)	–	33	725
212	212	222	–	95.5	(16.0)	–	–	705
207	207	218	–	94.6	(15.2)	–	32	690
201	201	212	–	93.8	(13.8)	–	31	675
197	197	207	–	92.8	(12.7)	–	30	655
192	192	202	–	91.9	(11.5)	–	29	640
187	187	196	–	90.7	(10.0)	–	–	620
183	183	192	–	90.0	(9.0)	–	28	615
179	179	188	–	89.0	(8.0)	–	27	600
174	174	182	–	87.8	(6.4)	–	–	585
170	170	178	–	86.8	(5.4)	–	26	570
167	167	175	–	86.0	(4.4)	–	–	560
163	163	171	–	85.0	(3.3)	–	25	545
156	156	163	–	82.9	(0.9)	–	–	525
149	149	156	–	80.8	–	–	23	505
143	143	150	–	78.7	–	–	22	490
137	137	143	–	76.4	–	–	21	460
131	131	137	–	74.0	–	–	–	450
126	126	132	–	72.0	–	–	20	435
121	121	127	–	69.8	–	–	19	415
116	116	122	–	67.6	–	–	18	400
111	111	117	–	65.7	–	–	15	385

Note :
*1: This table is based on AMS Metals Handbook, the 8th Edition, Volume 1, and includes some information added to "Approx. tensile strength (MPa)," such as the values calculated in metric; and Brinell hardness that exceeds recommended values.
*2: 1 MPa = 1 N/mm^2
*3: Figures in ( ) are not commonly used. It's just reference.

Surface Roughness

(According to JIS B 0601, 2001 and its explanation.)

Type	Symbol	How to determine	Example (Fig.)
Arithmetic mean roughness	*Ra*	*Ra* means the value obtained by the following formula and expressed in micrometer (μm) when sampling only the reference length from the roughness curve in the direction of mean line, taking X-axis in the direction of mean line and Y-axis in the direction of longitudinal magnification of this sampled part and the roughness curve is expressed by $y = f(x)$: $Ra = \frac{1}{\ell}\int_0^{\ell} \lvert f(x) \rvert dx$ where, ℓ : reference length	
Maximum height	*Rz*	*Rz* shall be that only the reference length is sampled from the roughness curve in the direction of mean line, the distance between the top of profile peak line and the bottom of profile valley line on this sampled portion is measured in the longitudinal magnification direction of roughness curve and the obtained value is expressed in micrometer (μm). $Rz = Rp + Rv$	
Ten point mean roughness	Rz_{JIS}	Rz_{JIS} shall be that only the reference length is sampled from the roughness curve in the direction of its mean line, the sum of the average value of absolute values of the heights of five highest profile peaks (*Zp*) and the depths of five deepest profile valleys (*Zv*) measured in the vertical magnification direction from the mean line of this sampled portion and this sum is expressed in micrometer (μm) $Rz_{JIS} = \frac{\lvert Zp1+Zp2+Zp3+Zp4+Zp5 \rvert + \lvert Zv1+Zv2+Zv3+Zv4+Zv5 \rvert}{5}$	 where, $Zp_1, Zp_2, Zp_3, Zp_4, Zp_5$: altitudes of the heights of five highest profile peaks of the sampled portion corresponding to the reference length ℓ where, $Zv_1, Zv_2, Zv_3, Zv_4, Zv_5$: altitudes of the depths of five deepest profile valleys of the sampled portion corresponding to the reference length ℓ

Alphanumeric Index



Alphanumeric Index

Designation	Product name	Page
1/4HEX	Wrench / Driver	L024
1/8-28	Screw	L007
1/8HEX	Wrench / Driver	L024
1□D.RINGSEMC	Driving ring	K156
10ER/L□□□...	10E insert	G050
10ER/L□□□B	Positive insert for back turning	B163
10ER/L300	Positive insert for back turning	B163
1123-□□R/L	Unidex insert, G-type chipbreaker	J150
1123-□□R/LB	Unidex insert, B-type chipbreaker	J150
1123-□□R/LS	Unidex insert, S-type chipbreaker	J150
1123-□□RBR1	Unidex insert, BR1-type chipbreaker	J150
11IR/L□□□ISO	Threading insert, ISO metric	E016
11IR/L□□ISO	Threading insert, ISO metric	E016
11IR/LA60	Threading insert, 60° thread angle	E010
11IR□□□ISO-B	Threading insert, ISO metric	E017
11IR□□□ISO-M	Threading insert, ISO metric	E017
11IR□□ISO-B	Threading insert, ISO metric	E017
11IR□□ISO-M	Threading insert, ISO metric	E017
11IR□□PT	Threading insert, BSPT	E021
11IR□□UN	Threading insert, Unified	E018
11IR□□W	Threading insert, Whitworth	E020
11IR10MJ	Threading insert, MJ	E025
11IRA55	Threading insert, 55° thread angle	E014
11IRA60-B	Threading insert, 60° thread angle	E010
11IRA60-M	Threading insert, 60° thread angle	E010
134...	SwissBore master shank for MAS-BT	K174
15GR/L...	Internal grooving insert	F128
164...	SwissBore extension adapter	K175
16ER/L□□W	Threading insert, Whitworth	E020
16ER/L□60	Threading insert, 60° thread angle	E010
16ER/L□□□ISO	Threading insert, ISO metric	E016
16ER/L□□ISO	Threading insert, ISO metric	E016
16ER□□□ISO-B	Threading insert, ISO metric	E017
16ER□□□ISO-M	Threading insert, ISO metric	E017
16ER□□ACME	Threading insert, 29° Trapezoidal	E026
16ER□□ISO-B	Threading insert, ISO metric	E017
16ER□□ISO-M	Threading insert, ISO metric	E017
16ER□□NPT	Threading insert, NPT	E022
16ER□□NPT-B	Threading insert, NPT	E022
16ER□□NPTF	Threading insert, NPTF	E023
16ER□□NPT-M	Threading insert, NPT	E022
16ER□□PT	Threading insert, BSPT	E021
16ER□□PT-B	Threading insert, BSPT	E021
16ER□□PT-M	Threading insert, BSPT	E021
16ER□□TR	Threading insert, 30° Trapezoidal	E024
16ER□□UN	Threading insert, Unified	E018
16ER□□UN-B	Threading insert, Unified	E019
16ER□□UNJ	Threading insert, UNJ	E025
16ER□□UN-M	Threading insert, Unified	E019
16ER□□W-B	Threading insert, Whitworth	E020
16ER□□W-M	Threading insert, Whitworth	E020
16ER□RD-B	Threading insert, Round	E024
16ER□UN	Threading insert, Unified	E018
16ER□W	Threading insert, Whitworth	E020
16ER10RAPI	Threading insert API Round	E027
16ER10RD-CB	Threading insert API Round	E027
16ER115NPT	Threading insert, NPT	E022
16ER115NPT-B	Threading insert, NPT	E022
16ER115NPTF	Threading insert, NPTF	E023
16ER115NPT-M	Threading insert, NPT	E022
16ER8ACME	Threading insert, 29° Trapezoidal	E026
16ER8NPT	Threading insert, NPT	E022
16ER8NPT-B	Threading insert, NPT	E022
16ER8NPTF	Threading insert, NPTF	E023
16ER8RAPI	Threading insert API Round	E027
16ER8RD-CB	Threading insert API Round	E027
16ER8UN-B	Threading insert, Unified	E019
16ER8UNJ	Threading insert, UNJ	E025
16ER8UN-M	Threading insert, Unified	E019
16ERA55	Threading insert, 55° thread angle	E014
16ERA60-B	Threading insert, 60° thread angle	E010
16ERA60-M	Threading insert, 60° thread angle	E010
16ERAG55	Threading insert, 55° thread angle	E014
16ERAG55-B	Threading insert, 55° thread angle	E014
16ERAG60	Threading insert, 60° thread angle	E010
16ERAG60-B	Threading insert, 60° thread angle	E010
16ERAG60-M	Threading insert, 60° thread angle	E010
16ERG55	Threading insert, 55° thread angle	E014
16ERG55-B	Threading insert, 55° thread angle	E014

Designation	Product name	Page
16ERG60-B	Threading insert, 60° thread angle	E010
16ERG60-M	Threading insert, 60° thread angle	E010
16IR/L□□□ISO	Threading insert, ISO metric	E016
16IR/L□□ISO	Threading insert, ISO metric	E016
16IR/LA60	Threading insert, 60° thread angle	E010
16IR/LG60	Threading insert, 60° thread angle	E010
16IR□□□ISO-B	Threading insert, ISO metric	E017
16IR□□□ISO-M	Threading insert, ISO metric	E017
16IR□□ACME	Threading insert, 29° Trapezoidal	E026
16IR□□ISO-B	Threading insert, ISO metric	E017
16IR□□ISO-M	Threading insert, ISO metric	E017
16IR□□NPT	Threading insert, NPT	E022
16IR□□NPT-M	Threading insert, NPT	E022
16IR□□PT	Threading insert, BSPT	E021
16IR□□PT-B	Threading insert, BSPT	E021
16IR□□PT-M	Threading insert, BSPT	E021
16IR□□TR	Threading insert, 30° Trapezoidal	E024
16IR□□UN	Threading insert, Unified	E018
16IR□□UN-B	Threading insert, Unified	E019
16IR□□UN-M	Threading insert, Unified	E019
16IR□□W	Threading insert, Whitworth	E020
16IR□□W-B	Threading insert, Whitworth	E020
16IR□□W-M	Threading insert, Whitworth	E020
16IR□UN	Threading insert, Unified	E018
16IR□W	Threading insert, Whitworth	E020
16IR10RAPI	Threading insert API Round	E027
16IR10RD-CB	Threading insert API Round	E027
16IR115NPT	Threading insert, NPT	E022
16IR115NPT-B	Threading insert, NPT	E022
16IR115NPTF	Threading insert, NPTF	E023
16IR115NPT-M	Threading insert, NPT	E022
16IR14NPT-B	Threading insert, NPT	E022
16IR14NPTF	Threading insert, NPTF	E023
16IR6RD-B	Threading insert, Round	E024
16IR8ACME	Threading insert, 29° Trapezoidal	E026
16IR8NPT	Threading insert, NPT	E022
16IR8NPT-B	Threading insert, NPT	E022
16IR8NPTF	Threading insert, NPTF	E023
16IR8RAPI	Threading insert API Round	E027
16IR8RD-CB	Threading insert API Round	E027
16IR8UN-B	Threading insert, Unified	E019
16IR8UN-M	Threading insert, Unified	E019
16IRA55	Threading insert, 55° thread angle	E014
16IRA60-B	Threading insert, 60° thread angle	E010
16IRA60-M	Threading insert, 60° thread angle	E010
16IRAG55	Threading insert, 55° thread angle	E014
16IRAG55-B	Threading insert, 55° thread angle	E014
16IRAG60	Threading insert, 60° thread angle	E010
16IRAG60-B	Threading insert, 60° thread angle	E010
16IRAG60-M	Threading insert, 60° thread angle	E010
16IRG55	Threading insert, 55° thread angle	E014
16IRG55-B	Threading insert, 55° thread angle	E014
16IRG60-B	Threading insert, 60° thread angle	E010
16IRG60-M	Threading insert, 60° thread angle	E010
184...	SwissBore reduction adapter	K176
1QP-CCGW...	CBN insert, mini, positive	B180
1QP-EPGW...	CBN insert, mini, positive	B182
1QP-SECW12X4ZETR-B	TFE insert	H080
1QP-SECW12X4ZETR-W	TFE insert	H080
2□D.RINGSEMC	Driving ring	K156
206.064.025.045	SwissBore digital fine boring head	K169
22ER/LN60	Threading insert, 60° thread angle	E010
22ER□□ISO	Threading insert, ISO metric	E017
22ER□□ISO-B	Threading insert, ISO metric	E017
22ER□□TR	Threading insert, 30° Trapezoidal	E024
22ER□ACME	Threading insert, 29° Trapezoidal	E026
22ER□UN	Threading insert, Unified	E018
22ER□W	Threading insert, Whitworth	E020
22ER5BAPI	Threading insert API Buttress	E029
22ERN55	Threading insert, 55° thread angle	E014
22ERN60-B	Threading insert, 60° thread angle	E010
22IR/LN60	Threading insert, 60° thread angle	E010
22IR□□ISO	Threading insert, ISO metric	E017
22IR□□TR	Threading insert, 30° Trapezoidal	E024
22IR□ACME	Threading insert, 29° Trapezoidal	E026
22IR□UN	Threading insert, Unified	E018
22IR□W	Threading insert, Whitworth	E020
22IR5BAPI	Threading insert API Buttress	E029
22IR8RAPI-2T	Threading insert API Round	E027

Alphanumeric Index

Designation	Product name	Page
22IRN55	Threading insert, 55° thread angle	E014
22IRN60-B	Threading insert, 60° thread angle	E010
254...	TungCap boring bar	K047, K169
256...	TungCap boring bar	K048, K170
27ER60ISO	Threading insert, ISO metric	E017
27ER60TR	Threading insert, 30° Trapezoidal	E024
27ERZ60	Threading insert, 60° thread angle	E010
27IR60ISO	Threading insert, ISO metric	E017
27IRZ60	Threading insert, 60° thread angle	E010
2CT75...	PINZBOHR cartridge, 75° approach angle	K183
2CT75□□□N	PINZBOHR cartridge, 75° approach angle	K183
2CT90...	PINZBOHR cartridge, 90° approach angle	K183
2CT90□□□N	PINZBOHR cartridge, 90° approach angle	K183
2QP-CCGT□□-HP	CBN insert, multi-corner type, G-class	B180
2QP-CCGT□□WL-HP	CBN insert, multi-corner type, G-class	B180
2QP-CCGW...	CBN insert, multi-corner type, G-class	B180
2QP-CCMW...	CBN insert, multi-corner type, M-class	B180
2QP-CNGA...	CBN insert, multi-corner type	B170
2QP-CNGA□□F	CBN insert, multi-corner type	B170
2QP-CNGA□□-H	CBN insert, multi-corner type	B170
2QP-CNGA□□-L	CBN insert, multi-corner type	B170
2QP-CNGA□□WL	CBN insert, multi-corner type	B170
2QP-CNGM□□-HF	CBN insert, multi-corner type	B171
2QP-CNGM□□-HM	CBN insert, multi-corner type	B171
2QP-CNGM□□-HP	CBN insert, multi-corner type	B171
2QP-CNGM□□WL-HP	CBN insert, multi-corner type	B171
2QP-CNMA□□W	CBN insert, multi-corner type	B170
2QP-DCG□□F	CBN insert, multi-corner type, G-class	B181
2QP-DCGT□□-HP	CBN insert, multi-corner type, G-class	B181
2QP-DCGW...	CBN insert, multi-corner type, G-class	B181
2QP-DCGW11T...	CBN insert, multi-corner type, G-class	B181
2QP-DCMW...	CBN insert, multi-corner type, M-class	B181
2QP-DNG□□-H	CBN insert, multi-corner type	B172
2QP-DNGA...	CBN insert, multi-corner type	B172
2QP-DNGA□□-L	CBN insert, multi-corner type	B172
2QP-DNGA□□WJ	CBN insert, multi-corner type	B172
2QP-DNGM□□-HF	CBN insert, multi-corner type	B172
2QP-DNGM□□-HM	CBN insert, multi-corner type	B172
2QP-DNGM□□-HP	CBN insert, multi-corner type	B172
2QP-GNGA...	CBN insert, multi-corner type	B174
2QP-GNGG□□-HP	CBN insert, multi-corner type	B174
2QP-SECW12X412ZETR	TFE insert	H080
2QP-SNGA...	CBN insert, multi-corner type	B175
2QP-SNGA□□-H	CBN insert, multi-corner type	B175
2QP-SNGA□□-L	CBN insert, multi-corner type	B175
2QP-SNGN...	CBN insert, multi-corner type	B175
2QP-SPGN...	CBN insert, multi-corner type, G-class	B182
2QP-SPGW...	CBN insert, multi-corner type, G-class	B182
2QP-SPMN...	CBN insert, multi-corner type, M-class	B182
2QP-VBGW...	CBN insert, multi-corner type, G-class	B186
2QP-VBMW...	CBN insert, multi-corner type, M-class	B186
2QP-VCGW...	CBN insert, multi-corner type, G-class	B186
2QP-VCMW...	CBN insert, multi-corner type, M-class	B186
2QP-VNGA...	CBN insert, multi-corner type	B178
2QP-VNGA□□-H	CBN insert, multi-corner type	B178
2QP-VNGA□□-L	CBN insert, multi-corner type	B178
2QP-VNGM□□-HF	CBN insert, multi-corner type	B178
2QP-VNGM□□-HM	CBN insert, multi-corner type	B178
2QP-VNGM□□-HP	CBN insert, multi-corner type	B178
3/32HEX	Wrench / Driver	L024
305...	SwissBore digital fine boring head	K171
30S□□□□□R/L	My-T Series face grooving and turning blade	F158, F159
314...	SwissBore insert holder, 90° corner	K049 K172, K173
32D.RINGSEMC	Driving ring	K156
3CT75...	PINZBOHR cartridge, 75° approach angle	K183
3CT75□□□N	PINZBOHR cartridge, 75° approach angle	K183
3CT90...	PINZBOHR cartridge, 90° approach angle	K183
3CT90□□□N	PINZBOHR cartridge, 90° approach angle	K183
3QP-TNGA...	CBN insert, multi-corner type	B176
3QP-TNGA□□F	CBN insert, multi-corner type	B176
3QP-TNGA□□-H	CBN insert, multi-corner type	B176
3QP-TNGA□□-L	CBN insert, multi-corner type	B176
3QP-TNGA□□WG	CBN insert, multi-corner type	B176
3QP-TNGM□□-HF	CBN insert, multi-corner type	B176
3QP-TNGM□□-HM	CBN insert, multi-corner type	B176
3QP-TNGM□□-HP	CBN insert, multi-corner type	B176
3QP-TPGN...	CBN insert, multi-corner type, G-class	B183
3QP-TPGT...	CBN insert, multi-corner type, G-class	B184
3QP-TPGW...	CBN insert, multi-corner type, G-class	B184
3QP-TPGW□□F	CBN insert, multi-corner type, G-class	B184
3QP-TPMN...	CBN insert, multi-corner type, M-class	B183
3QP-TPMW...	CBN insert, multi-corner type, M-class	B184
3QP-WNGA...	CBN insert, multi-corner type	B179
3QP-WNGA□□WL	CBN insert, multi-corner type	B179
40D□□□□□R/L	My-T Series face grooving and turning blade	F158, F159
40S □□□□□R/L	My-T Series face grooving and turning blade	F158, F159
40D.RINGSEMC	Driving ring	K156
4QP-CNGA...	CBN insert, multi-corner type	B171
4QP-CNMA□□W	CBN insert, multi-corner type	B171
4QP-DNGA...	CBN insert, multi-corner type	B173
4QP-SNGA...	CBN insert, multi-corner type	B175
4QP-VNGA...	CBN insert, multi-corner type	B178
4QP-VNGA□□-H	CBN insert, multi-corner type	B178
4QS-CNGA...	CBN insert, multi-corner type	B171
4QS-CNGA□□-H	CBN insert, multi-corner type	B171
4QS-CNGG□□-HM	CBN insert, multi-corner type	B171
4QS-DNGA...	CBN insert, multi-corner type	B173
4QS-DNGA□□-H	CBN insert, multi-corner type	B173
4QS-DNGG□□-HM	CBN insert, multi-corner type	B173
4QS-VNGA	CBN insert, multi-corner type	B178
4QS-VNGA□□-H	CBN insert, multi-corner type	B178
4QS-VNGG□□-HM	CBN insert, multi-corner type	B178
5/32HEX	Wrench / Driver	L024
50D□□□□□R/L	My-T Series face grooving and turning blade	F158, F159
50S□□□□□R/L	My-T Series face grooving and turning blade	F158, F159
508-05R	Unidex insert, G-type chipbreaker	J150
508-05RBR1	Unidex insert, BR1-type chipbreaker	J150
50D.RINGSEMC	Driving ring	K156
6□GR/L...	Internal grooving insert	F128
6IR□□□ISO	Threading insert, ISO metric	E016
6IR□□ISO	Threading insert, ISO metric	E016
6IR18NPT	Threading insert, NPT	E022
6IR19PT	Threading insert, BSPT	E021
6IR19W	Threading insert, Whitworth	E020
6IRA55	Threading insert, 55° thread angle	E014
6IRA60	Threading insert, 60° thread angle	E010
6QP-TNGA...	CBN insert, multi-corner type	B177
6QP-WNGA...	CBN insert, multi-corner type	B179
6QS-TNGA...	CBN insert, multi-corner type	B177
6QS-TNGA□□-H	CBN insert, multi-corner type	B177
6QS-TNGG□□-HM	CBN insert, multi-corner type	B177
6QS-WNGA	CBN insert, multi-corner type	B179
6QS-WNGA□□-H	CBN insert, multi-corner type	B179
7□GR/L...	Internal grooving insert	F128
8□GR/L...	Internal grooving insert	F128
9□GR/L...	Internal grooving insert	F128

A

A□□□□	PINZBOHR finishing head	K183
A□□□90□CT□□□	PINZBOHR finishing head	K182
A□□□90□CT□□□N	PINZBOHR finishing head	K182
A□□90□CT□□□	PINZBOHR finishing head	K182
A□□90□CT□□□N	PINZBOHR finishing head	K182
A□□□-ACLNR/L0904...	ISOEco-Turn boring bar, steel shank	D020
A□□□-ACLNR/L12...	TurningA boring bar, steel shank	D023
A□□□-ADUNR/L1104-...	ISO-EcoTurn boring bar, steel shank	D052
A□□□-ADUNR/L15-...	TurningA boring bar, steel shank	D055
A□□□-ASKNR/L12-...	TurningA boring bar, steel shank	D039
A□□□-ATFNR/L16-...	TurningA boring bar, steel shank	D045
A□□□-AVUNR/L16-...	TurningA boring bar, steel shank	D072
A□□□-AWLNR/L□□-...	TurningA boring bar, steel shank	D030
A□□□-AWLNR/L0604-...	ISO-EcoTurn boring bar, steel shank	D028
A□□□-PCLNR/L□□-...	StreamJet-Bar boring bar, steel shank	D021
A□□□-PCLNR/L0904-...	ISOEco-Turn boring bar, steel shank	D019
A□□□-PDUNR/L...	StreamJet-Bar boring bar, steel shank	D053
A□□□-PDZNR/L15-...	StreamJet-Bar boring bar, steel shank	D085
A□□□-PSKNR/L12-...	StreamJet-Bar boring bar, steel shank	D038
A□□□-PTFNR/L16-...	StreamJet-Bar boring bar, steel shank	D044
A□□□-PTFNR/L1104-...	ISO-EcoTurn boring bar, steel shank	D043
A□□□-PTUNR/L□□-...	StreamJet-Bar boring bar, steel shank	D060
A□□□-PTUNR/L1104-...	ISO-EcoTurn boring bar, steel shank	D059
A□□□-PVUNR/L1204-...	ISO-EcoTurn boring bar, steel shank	D070
A□□□-PVUNR/L16-...	StreamJet-Bar boring bar, steel shank	D071
A□□□-PWLNR/L□□-...	StreamJet-Bar boring bar, steel shank	D029
A□□□-PWLNR/L0604-...	ISO-EcoTurn boring bar, steel shank	D027
A□□□-SCLCR/L□□-...	StreamJet-Bar boring bar, steel shank	D014
A□□□-SCLPR/L□□-...	StreamJet-Bar boring bar, steel shank	D017

Alphanumeric Index

Designation	Product name	Page
A□□□-SDQCR/L□□-...	StreamJet-Bar boring bar, steel shank	D075
A□□□-SDQPR/L07-...	StreamJet-Bar boring bar, special alloy steel	D077
A□□□-SDUCR/L...	StreamJet-Bar boring bar, steel shank	D048
A□□□-SDUPR/L07-...	StreamJet-Bar boring bar, special alloy steel	D049
A□□□-SDXXR/L07-...	MiniForce-Turn boring bar, steel shank	D033
A□□□-SDZCR/L□□-...	StreamJet-Bar boring bar, steel shank	D084
A□□□-SDZXR/L07-...	MiniForce-Turn boring bar, steel shank	D083
A□□□-SEXPR/L□□-...	StreamJet-Bar boring bar, steel shank	D031
A□□□-SEZPR/L03-...	StreamJet-Bar boring bar, steel shank	D086
A□□□-SSKPR□□-...	StreamJet-Bar boring bar, steel shank	D036
A□□□-STFCR/L1103-...	StreamJet-Bar boring bar, steel shank	D040
A□□□-STFPR/L...	StreamJet-Bar boring bar, steel shank	D041
A□□□-STUPR/L...	StreamJet-Bar boring bar, steel shank	D056
A□□□-SVJBR/L-11-...	StreamJet-Bar boring bar, steel shank	D034
A□□□-SVJCR/L08-...	StreamJet-Bar boring bar, steel shank	D035
A□□□-SVQBR/L□□-...	StreamJet-Bar boring bar, steel shank	D078
A□□□-SVQCR/L□□-...	StreamJet-Bar boring bar, steel shank	D080
A□□□-SVUBR/L□□-...	StreamJet-Bar boring bar, steel shank	D062
A□□□-SVUCR/L□□-...	StreamJet-Bar boring bar, steel shank	D066
A□□□-SVZBR/L□□-...	StreamJet-Bar boring bar, steel shank	D087
A□□□-SWLXR/L□□-...	MiniForce-Turn boring bar, steel shank	D026
A□□□-SWUBR/L03-...	StreamJet-Bar boring bar, steel shank	D073
A□□□-SYQBR/L11-...	Y-Pro Series boring bar, steel shank	D082
A□□90□□□	PINZBOHR finishing head	K182
A□□90□□□N	PINZBOHR finishing head	K182
A□□M-FLER/L3	TungT-Clamp internal grooving and threading toolholder	E045, F120
A12M-SVZCR/L08-D160	StreamJet-Bar boring bar, steel shank	D088
A16-1	Shim	L012
A16-1DT	Shim	L012
A16Q-SYUBR/L11-D200	Y-Pro Series boring bar, steel shank	D074
A20Q-PDUNR/L11-D250	StreamJet-Bar boring bar, steel shank	D053
A300903CT300	PINZBOHR finishing head	K182
A300903CT402N	PINZBOHR finishing head	K182
A32S-PTUNR/L16	boring bar, steel shank	D061
ACLNR/L□□□...	ISO-EcoTurn / TurningA external toolholder	C014, C016
ACP...	Clamp	L014
ACP□S	Clamp	L014
ACP3S-E	Clamp	L014
ACS...	Screw	L007
ACS-□W	Screw	L007
ADJBT□□D70ER32	ER collet chuck holder with center alignment	K104
ADJC□ER32	TungCap ER collet chuck holder with center alignment	K034
ADJDIN69871□□D70ER32	ER collet chuck holder with center alignment	K067
ADJHSKA□□D70ER32	ER collet chuck holder with center alignment	K086
ADJNR/L...	ISO-EcoTurn/TurningA toolholder	C035, C040
ADJST□□D70ER32	ER collet chuck holder with center alignment	K118
ADPNN...	TurningA external toolholder	C070
ADQNR/L...	ISO-EcoTurn/TurningA toolholder	C116, C117
ADT10050	PINZBOHR adapter for large diameter head	K186
AE16-...	Shim	L012
AE16-□□DT	Shim	L012
AE16-□DT	Shim	L012
AH110	PVD coated grade	A003
AH120	PVD coated grade	A003
AH130	PVD coated grade	A003
AH140	PVD coated grade	A003
AH170	PVD coated grade	A003
AH180	PVD coated grade	A003
AH3035	PVD coated grade	A004
AH3135	PVD coated grade	A004
AH3225	PVD coated grade	A004
AH330	PVD coated grade	A003
AH4035	PVD coated grade	A004
AH6030	PVD coated grade	A004
AH630	PVD coated grade	A003
AH645	PVD coated grade	A003
AH7025	PVD coated grade	A003
AH710	PVD coated grade	A003
AH725	PVD coated grade	A003
AH730	PVD coated grade	A003
AH740	PVD coated grade	A003
AH750	PVD coated grade	A003
AH8005	PVD coated grade	A003
AH8015	PVD coated grade	A003
AH9030	PVD coated grade	A004
AH905	PVD coated grade	A003
AH9130	PVD coated grade	A004
AJM...	Screw	L004, L027
AJM5	Fine adjusting screw	L027

Designation	Product name	Page
AN16-...	Shim	L012
AN16-□□DT	Shim	L012
AN16-□DT	Shim	L012
AOGT□□□□□□PDFR-AJ	TungRec insert	H152
AOGT070204PDFR-AJ	TungRec insert	H142
AOMT□□□□□□PDPR-MJ	TungRec insert	H152
AOMT030204-N-□□DT	DrillMeister insert for special chamfering tool	J019
AOMT060204-45DT	DrillMeister insert for special chamfering tool	J019
AOMT070□□□PDPR-MJ	TungRec insert	H142
AOMT070208PDPR-HJ	TungRec insert	H142
AP...	Shim	L022
APMR190616PR-MJ	TZP19 insert	H230
APMT120416PR-MJ	Z-FeedMill insert	H227
ARGNR/L...	TurningA external toolholder	C078
ASGT11T□□□PDFR-AJ	TungRec insert	H147
ASMT11T□□□PDPR-MJ	TungRec insert	H147
ASBNR/L...	TurningA external toolholder	C091
ASC...	Shim	L009
ASD...	Shim	L010
ASDNN...	TurningA external toolholder	C100
ASG□□N...	TungMini-Slit side cutter	H188
ASKNR/L...	TurningA external toolholder	C107
ASM...	Screw	L004, L027
ASMT11T304PDPR-MS	TungRec insert	H147
ASN□□R□□□M...	TecTangential-Slot axial drive slot mill	H197
ASR420	Shim	L011
ASS...	Shim	L009
ASSNR/L...	TurningA external toolholder	C104
AST...	Shim	L008
ASV□□N...	TungThin-Slit axial drive slot mill	H192
ASV322	Shim	L011
ASW□22	Shim	L011
ASW□□N...	TungUniversal-Slot axial drive slot mill	H194
AT□-0 R/L	Cartridge, A-type	K208
AT9530	Cermet grade	A005
ATFNR/L...	TurningA external toolholder	C113
ATGNR/L...	TurningA external toolholder	C085
ATJNR/L...	TurningA external toolholder	C051
ATQNR/L...	TurningA external toolholder	C120
AVGT060□□□PBER-MJ	TungForce-Rec insert	H139
AVGT060□□□PBFR-AJ	TungForce-Rec insert	H139
AVJNR/L...	ISO-EcoTurn/TurningA external toolholder	C052, C057
AVQNR/L...	ISO-EcoTurn/TurningA external toolholder	C121, C122
AVVNN...	ISO-EcoTurn/TurningA external toolholder	C065, C067
AWLNR/L...	ISO-EcoTurn/TurningA external toolholder	C028, C032

B		
B11 R/L-5	Chipbreaker piece	L019
BBB...	BBB2000 CBN ball nose endmill	H234
B-CER/L□□□16	External threading toolholder for Swiss lathes	E033, F070, G081
BC-SER12K16	External threading toolholder for Swiss lathes	E035, G082
BH□-10-A	Screw	L007
BH-40050-A	Screw	L007
BHM...	Screw	L004
BLC□□-...	Round shank sleeve for boring bar	D092
BLD IP□□/M7	Wrench / Driver	L024
BLD IP□□/S7	Wrench / Driver	L024
BLD T10/S7	Wrench / Driver	L024
BLM□□□-...	Round shank sleeve for boring bar	D090, D091
BLM□□-...	Standard sleeve for boring bar	D090, D091
BLS16-...	Standard sleeve for boring bar	D091
BP-...	Pin	L018
BP-5-A	Spring	L020
B-SER□□□16	External threading toolholder for Swiss lathes	E033, G081
BSP-1	Spring	L020
BT□□CF4-□	Quick change holder	K105
BT□□DCB1...	Drill chuck (Jacobs taper)	K102
BT□□EM□□X...	Side lock holder (weldon)	K094
BT□□EM□□X□□□E...	Side lock holder (whistle notch)	K095
BT□□ER□□SHORT...	ER collet chuck holder	K091
BT□□ER□□X□□...	ER collet chuck holder	K090
BT□□ER□□X□□□BIN	ER collet chuck holder with adjustable dynamic balance	K092
BT□□ER32CLICK-IN	Quick change holder	K105
BT□□FC-C□-...	TungCap basic holder with dual contact	K042
BT□□FC-C□-□□□T	TungCap basic holder with dual contact	K042
BT□□FM...	Face mill holder	K099
BT□□-FMA...	Face mill holder	K100
BT□□-FMC...	Face mill holder	K100

Alphanumeric Index

Designation	Product name	Page
BT□□HYDRO□□X...	Hydraulic endmill chuck holder	K093
BT□□HYDRO□X...	Hydraulic endmill chuck holder	K093
BT□□M	Wrench/Driver	L024
BT□□MAXIN□□X...	Power chuck holder	K092
BT□□MAXIN□□X□□□BIN	Power chuck holder with adjustable dynamic balance	K092
BT□□MT□DRW	Morse taper holder with draw bar	K103
BT□□MT□X...	Morse taper holder	K103
BT□□ODP□□X...	Modular system	K106
BT□□S	Wrench/Driver	L024
BT□□SEM□□.□X□□V1	Shell mill holder	K098
BT□□SEM□□X...	Shell mill holder	K098
BT□□SEM□□X□□□C	Shell mill holder with coolant hole, long type	K099
BT□□SEM□□X□□X...	Shell mill holder	K098
BT□□SEM□□X□□X□□□C	Shell mill holder, long type	K099
BT□□SEMC□□X...	Combination holder for slot mill and shell mill	K101
BT□□SRK□□X...	Thermal shrinking holder	K097
BT□□SRKIN□□□X...	Thermal shrinking holder	K096
BT340...	Arbor with BT40 taper	K184
BT350...	Arbor with BT50 taper	K185
BT40EM□□X45C	Side lock holder with coolant nozzle	K095
BT4-FBHO-DE-1690	TungCap digital boring head	K047
BT50AD...	Conversion adapter	K102
BT50-FMA...	Arbor for TXP mill	H052
BT50-FMA31.75...	Arbor for Z-FeedMill	H228, H231, H233
BT50-FMA38.1-375-98	Arbor for TZP19	H231
BT50-FMC...	Arbor for TXP	H052
BT50-FMC22...	Arbor for Z-FeedMill	H228, H233,
BT550160	PINZBOHR arbor with BT50 taper for large diameter	K185
BTU-...	Brazed drill head for STS	J154
BTU-00...	Brazed drill head for STS	J154, J155
BW-DF...	BeamWrench double flag	K165
BW-SF□	BeamWrench BeamWrench double flag	K165
BW-TX□SET5	BeamWrench torx bits set	K165
BX310	CBN grade	A006
BX330	CBN grade	A006
BX360	CBN grade	A006
BX380	CBN grade	A006
BX470	CBN grade	A006
BX480	CBN grade	A006
BX530	CBN grade	A006
BX850	CBN grade	A006
BX870	CBN grade	A006
BX910	CBN grade	A006
BX930	CBN grade	A006
BXA20	CBN grade	A006
BXC50	CBN grade	A006
BXC90 (BX90S)	CBN grade	A006
BXM10	CBN grade	A006
BXM20	CBN grade	A006
C		
C□□□55-SEXPR04	Top borer tool	K213
C□□□-CTFPR/L...	Boring bar, carbide shank	D042
C□□08-SWUBR03	Top borer tool	K213
C□□10-STUPR08	Top borer tool	K213
C□ABB□□-...	TungCap adapter for boring bar	K029
C□ACLNN□□□□□-12	TungCap external/facing toolholder	K009
C□ACLNN□□□□□-12N	TungCap external/facing toolholder	K009
C□ACLNR/L□□□□-0904N	TungCap external/facing toolholder	K008
C□ACLNR/L□□□□-12N	TungCap external/facing toolholder	K008
C□ADCATI□□X□□	TungCap CAT basic holder	K043
C□ADCATI□□X□□ADB	TungCap CAT basic holder	K043
C□ADE-□□R/L	TungCap adapter for external square shank	K027
C□ADES-20	TungCap adapter for external square shank	K028
C□ADI...	TungCap adapter for boring bar	K030
C□ADJNR/L□□□□□-1104N	TungCap external/profiling toolholder	K012
C□ADJNR/L□□□□□-15N	TungCap external/profiling toolholder	K012
C□ADNNN□□□□□-15	TungCap external/profiling toolholder	K016
C□ADSKA□□X...	TungCap TungCap basic holder with dual contact	K043
C□ADSKA□□X□□ADB	TungCap TungCap basic holder with dual contact	K043
C□ASHA...	TungCap adapter for external square shank	K027
C□ASHR/L...	TungCap adapter for external square shank	K027
C□ASHR/L20-45	TungCap adapter for external square shank with 45° slanted	K028
C□AVJNR/L□□□□□-1204N	TungCap external/profiling toolholder	K015
C□AVJNR/L□□□□□-16N	TungCap external/profiling toolholder	K015
C□AWLNR/L□□□□-08N	TungCap external/facing toolholder	K011
C□-C□RE-□□□	TungCap reduction adapter	K045
C□CER/L□□□□□-16ER	TungCap external threading toolholder	E034, K021
C□CER/L□□□□□-16ERN	TungCap External threading toolholder	E034, K021
C□CHFVN□□□□□-CHP	TungCut TungCap adapter for high pressure coolant	F017, F039, F049, K024
C□CHFVR/L□□□□□N	TungCut adapter for blade	F020, F142, K022
C□CHSN□□□□□-CHP	TungCut adapter for blade	F017, F038, F048, K024
C□CHSR/L□□□□□N	TungCut adapter for blade	F020, F142, K022
C□-DTIR-□□□□□-D...	TungCap manual clamping unit	K051
C□-DTOFR/L...	TungCap manual clamping unit	K051
C□-DTOS□□□□R/L	TungCap manual clamping unit	K051
C□EM□□X...	TungCap Side lock holder for endmill	K031
C□EM□□X□□E	TungCap Side lock holder for endmill	K032
C□EPA□□M□□□R03L...	TungCap Tung-Tri square shoulder mill	K026
C□ER□□X...	TungCap collet chuck holder	K033
C□ER□□X□□□M	TungCap ER Mini collet chuck holder	K034
C□EX-...	TungCap Extension adapter	K044
C□MAXIN□□X...	TungCap power chuck holder	K038
C□ODP□□X...	TungCap modular system	K037
C□PCLNR/L□□□□□-0904-CHP	TungCap external/facing toolholder with high pressure coolant nozzle	K009, C019
C□PCLNR/L□□□□□-12-CHP	TungCap external/facing toolholder with high pressure coolant nozzle	K009, C019
C□PCLNR/L□□□□□-12N	TungCap external/facing toolholder	K008
C□PCLNR□□□□□-0904	TungCap internal/facing toolholder	K018
C□PCLNR□□□□□-12	TungCap internal/facing toolholder	K018
C□PDJNR/L□□□□□-1104-CHP	TungCap external/profiling toolholder with high pressure coolant nozzle	C043, K013
C□PDJNR/L□□□□□-15-CHP	TungCap external/profiling toolholder with high pressure coolant nozzle	C043, K013
C□PDJNR/L□□□□□-15N	TungCap external/profiling toolholder	K012
C□PVJNR/L□□□□□-16-CHP	TungCap external/profiling toolholder with high pressure coolant nozzle	C059, K015
C□PWLNR/L□□□□□-08-CHP	TungCap external/facing toolholder with high pressure coolant nozzle	C033, K011
C□SCA□□-□□	TungCap slot milling holder	K041
C□SCLCR□□□□□-09	TungCap internal/facing toolholder	K017
C□SDXXR□□□□□-07	TungCap internal/facing toolholder	K020
C□SEM□□X□□C	TungCap shell mill holder	K036
C□SRKIN□□X□□	TungCap Thermal shrinking holder	K040
C□SVJCR/L□□□□□-11N	TungCap external/profiling toolholder	K016
C□SVJCR/L□□□□□-16	TungCap external/profiling toolholder	K016
C□SVJCR/L□□□□□-16N	TungCap external/profiling toolholder	K016
C□SVQBR□□□□□-11	TungCap internal/facing toolholder	K021
C□SVQBR□□□□□-16	TungCap internal/facing toolholder	K021
C□SVVCN□□□□□-16	TungCap external/profiling toolholder	K017
C□SVVCN□□□□□-16N	TungCap external/profiling toolholder	K017
C□-TB-□□□	TungCap test bar	K045
C□TDX□□□L□□□-3	TungCap TungDrill-Twisted drill	K025
C□TLA15M□□□R□□L...	TungCap Tung-Tri square shoulder mill	K026
C0.□□□X□□□□H	Screw	L005
C11R/L-5	Clamp	L015
C4ADUNR□□□□□-15	TungCap Boring bar	K019
C4ATJNR/L27050-16N	TungCap external toolholder	K014
C4AWLNR/L27050-0604N	TungCap external/facing toolholder	K011
C4PDUNR/L17080-11	TungCap Boring bar	K019
C4PTJNR/L27050-1104N	TungCap external toolholder	K014
C4PWLNR/L27050-0604-CHP	TungCap lever-lock external/facing toolholder with high pressure coolant nozzle	K011
C4SWLXR11070-04	TungCap internal/facing toolholder	K018
C5PCLNR/L35060-12	TungCap external/facing toolholder	K008
C6ACMNN□□□□-0904N	TungCap external/facing toolholder	K010
C6ACMNN□□□□-12N	TungCap external/facing toolholder	K010
C6PCLNL17100-12-CHP	TungCap internal toolholder with high pressure coolant nozzle	D023
C6PCLNL17100-12-CHP	TungCap internal/facing toolholder with high pressure coolant nozzle	K018
C6PCMNN00130-12-CHP	TungCap lever-lock external/facing toolholder with high pressure coolant nozzle	C130, K010
C6PDMNL00130-1104-CHP	TungCap external/profiling toolholder with high pressure coolant nozzle	K013
C6PDUNL17100-1104-CHP	TungCap internal/profiling toolholder with high pressure coolant nozzle	K020, D055
C6TBK-32R/L	TungCap adapter for parting blade	K030
C8FM60X60	TungCap face mill holder	K037
CA-...	Coolant supply attachment	L021
CABM□□M...	TungFlex extension	K122
CAER/L-□T...	TungCut external grooving and turning blade	F018, K023
CAER/L□T□□-CHP	TungCut external grooving and parting blade for high pressure coolant	F015, K024
CAFR/L-□T□□-...	TungCut face grooving and turning blade	F140, K023
CAP-CM...	Screw	L005
CBC-4□N	Chipbreaker piece	L019
CBD-4□N	Chipbreaker piece	L019
CBD-4□R/L	Chipbreaker piece	L019
CBR-4□N	Chipbreaker piece	L019
CBS-...	Chipbreaker piece	L019
CBS-4□N	Chipbreaker piece	L019
CBT-...	Chipbreaker piece	L019
CC44-A	Shim	L009
CCBS□□-32	My-T Series tool block for CCH blade	F184, F188

Alphanumeric Index

Designation	Product name	Page
CCGT...	ISO insert, 80° rhombic, positive	B113
CCGT□□-01	ISO insert, 80° rhombic, positive	B109
CCGT□□-AL	ISO insert, 80° rhombic, positive	B113
CCGT□□F-01	ISO insert, 80° rhombic, positive	B109
CCGT□□F-JS	ISO insert, 80° rhombic, positive	B114
CCGT□□FN-JS	ISO insert, 80° rhombic, positive	B114
CCGT□□FR/L-J10	ISO insert, 80° rhombic, positive	B115
CCGT□□FR/L-W08	ISO insert, 80° rhombic, positive	B112
CCGT□□-JS	ISO insert, 80° rhombic, positive	B114
CCGT□□N-JS	ISO insert, 80° rhombic, positive	B114
CCGT□□R/L	ISO insert, 80° rhombic, positive	B113
CCGT□□R/L-W08	ISO insert, 80° rhombic, positive	B111
CCGT□□R/L-W15	ISO insert, 80° rhombic, positive	B112
CCGT□□R/L-W20	ISO insert, 80° rhombic, positive	B112
CCGW...	ISO insert, 80° rhombic, positive	B113
CCGW□□-DIA	PCD insert, positive with rake	B191
CCH32-...	My-T Seires external grooving and parting blade	F188
CCH32-W□□	My-T Series external grooving and parting blade	F184
CCLNR/L□□□...	DimpleFX external toolholder	C020
CCMT□□-23	ISO insert, 80° rhombic, positive	B111
CCMT□□-24	ISO insert, 80° rhombic, positive	B111
CCMT□□-CM	ISO insert, 80° rhombic, positive	B112
CCMT□□-DIA	PCD insert, positive with rake	B190
CCMT□□-PF	ISO insert, 80° rhombic, positive	B109
CCMT□□-PM	ISO insert, 80° rhombic, positive	B112
CCMT□□-PS	ISO insert, 80° rhombic, positive	B110
CCMT□□-PSF	ISO insert, 80° rhombic, positive	B109
CCMT□□-PSS	ISO insert, 80° rhombic, positive	B110
CCMT□□-SW	ISO insert, 80° rhombic, positive	B110
CCMT□□-TM	ISO insert, 80° rhombic, positive	B110
CCMT□□-TSF	ISO insert, 80° rhombic, positive	B110
CCMW...	ISO insert, 80° rhombic, positive	B113
CCP4-A	Clamp	L015
CCR/L...	Clamp	L014
CCS4-A	Screw	L007
CD44-A	Shim	L010
CDJNR/L□□□...	DimpleFX external/profiling toolholder	C044
CDNNN□□□...	DimpleFX external toolholder	C063
CDPER□□M□□	TungFlex ER collet chuck holder	K123
CDPER□□M□□M	TungFlex ER collet chuck holder	K123
CDPM□□SRK□□X□□	TungFlex thermal shrinking holder (for carbide shank)	K123
CDPM□□SRK□X□□	TungFlex thermal shrinking holder (for carbide shank)	K123
CDS-□□□	Solid drill for cast iron and aluminium alloy	J070, J071
CDS-□□□□	Solid drill for cast iron and aluminium alloy	J070, J071
CDW6	Washer	L023
CER/L□□□□□□□□DT	External threading toolholder	E034, F070
CER□□□□□□□□T	External threading toolholder	E034, F070
CFG-□DR/L	Clamp	L015
CFG-□SR/L	Clamp	L015
CGD□□□	My-T Series grooving insert	F095
CGER/L□□□□-□T...	TungCut external deep grooving and parting tolholder	F015, G095
CGEUR/L□□□□-□T...	TungCut 45° external undercutting toolholder	F194
CGIUR/L□□-□T□□-D□□□	TungCut 45° internal undercutting toolholder	F097
CGIUR/L□□-□T□□-D□□□-15A	TungCut toolholder for aluminium wheel profiling	F097
CGP□□-□D	TungCut external deep grooving and parting blade	F168
CGP□□-□S	TungCut external deep grooving and parting blade	F168
CGP32-8S-CL	TungCut external deep grooving and parting blade	F168
CGSSR/L□□□□-□□	My-T Series monoblock toolholder for external grooving and parting	F057
CGSSR/L□□□□-□□D	My-T Series monoblock toolholder for external deep grooving and parting	F057
CGWSR/L	My-T Series toolholder for blade	F058, F158
CGWSR/L□□□□-□□GR/L	My-T Series blade set for external grooving and parting	F056
CGWSR/L□□□□-CGDR/L...	My-T Series external grooving and parting toolholder	F094
CGWSR/L□□□□-FLR/L□GP	My-T Series external grooving toolholder	F091
CGWSR/L□□□□-FLR/L5TP	My-T Series face grooving and turning	F167
CGWSR/L□□□□-W□□	My-T Series monoblock toolholder for external grooving and parting	F054
CGWSR/L□□□□-W□□GR/L	My-T Series blade set for external grooving and parting	F055
CGWSR/L□□□□-W□□GR/L-L	My-T Series blade set for external grooving and parting	F055
CGWSR/L□□□□-W□□-L	My-T Series monoblock toolholder for external deep grooving and parting	F054
CGWSR□□□□-8	My-T Series external grooving and parting toolholder	F094
CGWTR/L	My-T Series toolholder for blade	F058, F160
CGWTR/L□□□□-□□GL/R	My-T Series blade set for external grooving and parting	F056
CGWTR/L0040-FLL/R3NP	internal grooving and turning toolholder	F132
CGXR/L□□□□	internal grooving toolholder	F129
CGXR/L16SC	internal grooving toolholder	F129
CH□□	PINZBOHR chamfering tool	K184
CH44-A	Shim	L011
CHFVR/L□□□□	TungCut shank for blade	F019, F141
CHFVR/L□□□□-CHP	TungCut shank for blade for high pressure coolant	F016, F038, F048

Designation	Product name	Page
CHHM...	Screw	L004
CHP-HOSE-□□□□-...	TungTurn-Jet connecting hose	C132, F198
CHSNR□□□...	DimpleFX external toolholder	C103
CHSR/L□□□□	TungCut shank for blade	F019, F141
CHSR/L□□□□-CHP	TungCut shank for blade for high pressure coolant	F016, F037, F047
CLVOR-□□M□	external threading toolholder for chaser	E041
CM□X□□□X...	Screw	L004, L005
CM□X□□□X□□-A	Screw	L004, L005
CM4X0.7X20-M0-A	Screw	L004
CNGA...	ISO insert, 80° rhombic, negative	B063
CNGA□□-DIA	PCD insert, negative	B189
CNGA□□-QBN	CBN insert, single-corner type	B171
CNGA-10R-3E	Chaser insert, API Round	E028
CNGA-5B75-3E	Chaser insert, API Round	E030
CNGA-8R-3E	Chaser insert, API Round	E028
CNGD...	ISO insert, 80° rhombic, negative	B064
CNGG□□-01	ISO insert, 80° rhombic, negative	B054
CNGG□□R/L-C	ISO insert, 80° rhombic, negative	B054
CNGG□□R/L-P	ISO insert, 80° rhombic, negative	B060
CNGN...	ISO insert, 80° rhombic, negative	B064
CNGN□□-□□-W	ISO insert, 80° rhombic, negative	B064
CNGR/L□□□15	internal grooving toolholder	F127
CNMA...	ISO insert, 80° rhombic, negative	B063
CNMA□□W	ISO insert, 80° rhombic, negative	B063
CNMG...	ISO insert, 80° rhombic, negative	B058
CNMG□□-11	ISO insert, 80° rhombic, negative	B055
CNMG□□-17	ISO insert, 80° rhombic, negative	B055
CNMG□□-27	ISO insert, 80° rhombic, negative	B059
CNMG□□-28	ISO insert, 80° rhombic, negative	B059
CNMG□□-33	ISO insert, 80° rhombic, negative	B059
CNMG□□-37	ISO insert, 80° rhombic, negative	B059
CNMG□□-38	ISO insert, 80° rhombic, negative	B059
CNMG□□-AFW	ISO insert, 80° rhombic, negative	B054
CNMG□□-AM	ISO insert, 80° rhombic, negative	B057
CNMG□□-AS	ISO insert, 80° rhombic, negative	B056
CNMG□□-ASW	ISO insert, 80° rhombic, negative	B056
CNMG□□-CB	ISO insert, 80° rhombic, negative	B056
CNMG□□-CF	ISO insert, 80° rhombic, negative	B055
CNMG□□-CH	ISO insert, 80° rhombic, negative	B062
CNMG□□-CM	ISO insert, 80° rhombic, negative	B060
CNMG□□-DM	ISO insert, 80° rhombic, negative	B058
CNMG□□E-FW	ISO insert, 80° rhombic, negative	B054
CNMG□□E-SM	ISO insert, 80° rhombic, negative	B060
CNMG□□E-SS	ISO insert, 80° rhombic, negative	B057
CNMG□□E-SW	ISO insert, 80° rhombic, negative	B056
CNMG□□E-TM	ISO insert, 80° rhombic, negative	B057
CNMG□□E-TSF	ISO insert, 80° rhombic, negative	B054
CNMG□□E-ZF	ISO insert, 80° rhombic, negative	B055
CNMG□□E-ZM	ISO insert, 80° rhombic, negative	B058
CNMG□□-FW	ISO insert, 80° rhombic, negative	B054
CNMG□□-HMM	ISO insert, 80° rhombic, negative	B060
CNMG□□-HRF	ISO insert, 80° rhombic, negative	B056
CNMG□□-HRM	ISO insert, 80° rhombic, negative	B060
CNMG□□-NM	ISO insert, 80° rhombic, negative	B057
CNMG□□-NS	ISO insert, 80° rhombic, negative	B056
CNMG□□R/L-S	ISO insert, 80° rhombic, negative	B060
CNMG□□-SA	ISO insert, 80° rhombic, negative	B060
CNMG□□-SF	ISO insert, 80° rhombic, negative	B055
CNMG□□-SH	ISO insert, 80° rhombic, negative	B062
CNMG□□-SM	ISO insert, 80° rhombic, negative	B060
CNMG□□-SS	ISO insert, 80° rhombic, negative	B057
CNMG□□-SW	ISO insert, 80° rhombic, negative	B056
CNMG□□-TA	ISO insert, 80° rhombic, negative	B058
CNMG□□-TF	ISO insert, 80° rhombic, negative	B054
CNMG□□-TH	ISO insert, 80° rhombic, negative	B061
CNMG□□-THS	ISO insert, 80° rhombic, negative	B061
CNMG□□-TM	ISO insert, 80° rhombic, negative	B057
CNMG□□-TQ	ISO insert, 80° rhombic, negative	B058
CNMG□□-TS	ISO insert, 80° rhombic, negative	B056
CNMG□□-TSF	ISO insert, 80° rhombic, negative	B054
CNMG□□-ZF	ISO insert, 80° rhombic, negative	B055
CNMG□□-ZM	ISO insert, 80° rhombic, negative	B058
CNMM□□-57	ISO insert, 80° rhombic, negative	B061
CNMM□□-65	ISO insert, 80° rhombic, negative	B062
CNMM□□-DIA	PCD insert, 80° rhombic, negative	B188
CNMM□□-TRS	ISO insert, 80° rhombic, negative	B062
CNMM□□-TU	ISO insert, 80° rhombic, negative	B062
CNMM□□-TUS	ISO insert, 80° rhombic, negative	B062

Alphanumeric Index

Designation	Product name	Page
CNMN...	ISO insert, 80° rhombic, negative	B064
CNR/L...	Internal grooving and threading toolholder	E037, F122
CNZ125	Coolant parts	L021
COOLINGTUBEHSKA□□	Cooling tube for HSK	K156
CP...	Clamp	L015
CP81A	Clamp	L014
CP81B	Clamp	L014
CPGA□□-DIA	PCD insert, 80° rhombic, positive	B191
CPGA□□-QBN	CBN insert, single-corner type	B180
CPGT□□R/L-W15	ISO insert, 80° rhombic, positive	B117
CPGT□□R/L-W20	ISO insert, 80° rhombic, positive	B117
CPK5R/L	Clamp	L015
CPMT...	ISO insert, 80° rhombic, positive	B118
CPMT□□-24	ISO insert, 80° rhombic, positive	B117
CPMT□□-CM	ISO insert, 80° rhombic, positive	B118
CPMT□□-PF	ISO insert, 80° rhombic, positive	B116
CPMT□□-PM	ISO insert, 80° rhombic, positive	B118
CPMT□□-PS	ISO insert, 80° rhombic, positive	B116
CPMT□□-PSF	ISO insert, 80° rhombic, positive	B116
CPMT□□-PSS	ISO insert, 80° rhombic, positive	B116
CPMT□□-TM	ISO insert, 80° rhombic, positive	B116
CPMT□□-TSF	ISO insert, 80° rhombic, positive	B116
CPMW...	ISO insert, 80° rhombic, positive	B118
CPW5	Washer	L023
CQ-1	Clamp	L015
CR-10R-3E	Chaser insert, API Round	E028
CR-10R-3I	Chaser insert, API Round	E028
CR-11.5NPT-4E	Chaser insert, NPT	E023
CR-11.5NPT-4I	Chaser insert, NPT	E023
CR-5B75-3E #□	Chaser insert, API Buttress	E031
CR-5B75-3I	Chaser insert, API Buttress	E030
CR-5B75-4E	Chaser insert, API Buttress	E030
CR-8NPT-4E	Chaser insert, NPT	E023
CR-8NPT-4I	Chaser insert, NPT	E023
CR-8R-3E	Chaser insert, API Round	E028
CR-8R-3E #□	Chaser insert, API Round	E029
CR-8R-3I	Chaser insert, API Round	E028
CRW...	Wrench/Driver	L023
CS44-A	Shim	L009
CSG-□L	Clamp set	L016
CSG-□S	Clamp set	L016
CSG-5T	Clamp set	L016
CSHB-...	Screw	L004
CSHB-□-A	Screw	L004
CSHM-3-8	Screw	L004
CSK54R/L	Shim	L011
CSKER10CA-09	Cartridge	K198
CSKPR/L□□CA...	Cartridge	K197
CSL-4	Clamp set	L016
CSP...	Clamp set	L016
CSP-2L033	Screw	L002
CSPA-...	Screw	L002
CSPB-...	Screw	L002, L003
CSPD-...	Screw	L003
CSSER12CA-12	Cartridge	K202
CSSNR/L□□□...	DimpleFX external toolholder	C106
CSSPR/L□□CA...	Cartridge	K201
CST-...	Screw	L003
CSTA-...	Screw	L002
CSTA-NO...	Screw	L002
CSTB-...	Screw	L002
CSTB-4.5L110P	Screw	L003
CSTC-2	Screw	L003
CSTC-4L□□□DR/L	Screw	L002
CSTD-3T	Screw	L003
CSTF-2L055-S	Screw	L003
CSTR-4L100	Screw	L003
CSW-...	Clamp set	L016
CSW-0T	Clamp set	L016
CSX20	Clamp set	L016
CSY-...	Clamp set	L016
CSYPR/L□□CA...	Cartridge	K207
CTBF□□-...	TungCut tool block for CGP blade	F169
CTBU□□-...	TungCut tool block for CGP/EGP blade	F169
CTBU□□-□□□-□-CHP	EasyMulti-Cut tool block with high pressure coolant nozzle	F135
CTC-□R/L	Clamp	L014
CTD□	Grooving insert	F093
CTEFR/L□□□□-□T04	TungCut external face grooving toolholder	F013, F139
CTER/L□□□□-□T...	TungCut external grooving and parting toolholder	F010
CTER/L□□□□-□T□□-CHP	TungCut external grooving toolholder for high pressure coolant	F012
CTER/L□□□□-6T□□-15A	TungCut toolholder for aluminium wheel profiling	F194
CTFER/L□□CA...	Cartridge	K194
CTFPR/L□□CA...	Cartridge	K193
CTFR/L2525-□T□□-...	TungCut face grooving and turning toolholder	F137
CTFVR/L2525-□T□□-...	TungCut toolholder for face grooving and turning, perpendicular	F138
CTGER/L□□CA...	Cartridge	K196
CTGPR/L□□CA...	Cartridge	K195
CTIFR/L□□-□T05-D...	TungCut face grooving toolholder	F143
CTIR/L□□-□T□□-D□□□	TungCut internal grooving toolholder	F096
CTSER10CA-11	Cartridge	K203
CTS-M6	Screw	L005
CTSPR/L□□CA...	Cartridge	K203
CTTER□□CA...	Cartridge	K205
CTTPR/L□□CA...	Cartridge	K205
CTWPR□□CA...	Cartridge	K200
CTWR/L□□□□-...	external grooving and parting toolholder	F093
CU-CW-CHP	Coolant unit	L021
CU-D-CHP	Coolant unit	L021
CU-V-CHP	Coolant unit	L021
CV34-A	Shim	L011
CVVNN□□□...	DimpleFX external toolholder	C068
CX710	Ceramic grade	A005
D		
D□□□75□CT□□□	PINZBOHR roughing head	K180
D□□□75□CT□□□N	PINZBOHR roughing head	K180
D□□□90□CT□□□	PINZBOHR roughing head	K181
D□□□90□CT□□□N	PINZBOHR roughing head	K181
D□□75□□□	PINZBOHR roughing head	K180
D□□75□□□N	PINZBOHR roughing head	K180
D□□75□CT□□□	PINZBOHR roughing head	K180
D□□75□CT□□□N	PINZBOHR roughing head	K180
D□□90□□□	PINZBOHR roughing head	K181
D□□90□□□N	PINZBOHR roughing head	K181
D□□90□CT□□□	PINZBOHR roughing head	K181
D□□90□CT□□□N	PINZBOHR roughing head	K181
D□□-D□□-□□□R	Indexable threading cutter	I126
D□□-D□□-□□R	Indexable threading cutter	I126
D□□-L□□□-...	BoreMeister anti-vibration bar	D013, D025, D047, D051, D065, D069
D300753CT300	PINZBOHR roughing head	K180
D300753CT402N	PINZBOHR roughing head	K180
D300903CT300	PINZBOHR roughing head	K181
D300903CT402N	PINZBOHR roughing head	K181
DCET□□MFN-JSP	ISO insert, 55° rhombic, positive	B124
DCET□□MFR/L-JPP	ISO insert, 55° rhombic, positive	B123
DCET□□MFR/L-JRP	ISO insert, 55° rhombic, positive	B124
DCGT...	ISO insert, 55° rhombic, positive	B122
DCGT□□-01	ISO insert, 55° rhombic, positive	B119
DCGT□□-AL	ISO insert, 55° rhombic, positive	B122
DCGT□□F-01	ISO insert, 55° rhombic, positive	B119
DCGT□□FN-JS	ISO insert, 55° rhombic, positive	B123
DCGT□□FR/L-J10	ISO insert, 55° rhombic, positive	B124
DCGT□□N-JS	ISO insert, 55° rhombic, positive	B123
DCGT□□R/L	ISO insert, 55° rhombic, positive	B122
DCGT□□R/L-W10	ISO insert, 55° rhombic, positive	B121
DCGT□□R/L-W15	ISO insert, 55° rhombic, positive	B121
DCGT□□R-J10	ISO insert, 55° rhombic, positive	B124
DCGW...	ISO insert, 55° rhombic, positive	B122
DCGW□□-DIA	PCD insert, 55° rhombic, positive	B191
DCLNR/L□□□...	External toolholder, D-type	C021
DCMT□□-23	ISO insert, 55° rhombic, positive	B120
DCMT□□-24	ISO insert, 55° rhombic, positive	B120
DCMT□□-CM	ISO insert, 55° rhombic, positive	B121
DCMT□□-DIA	PCD insert, 55° rhombic, positive	B190
DCMT□□-PF	ISO insert, 55° rhombic, positive	B119
DCMT□□-PM	ISO insert, 55° rhombic, positive	B121
DCMT□□-PS	ISO insert, 55° rhombic, positive	B120
DCMT□□-PSF	ISO insert, 55° rhombic, positive	B119
DCMT□□-PSS	ISO insert, 55° rhombic, positive	B120
DCMT□□-TM	ISO insert, 55° rhombic, positive	B120
DCMT□□-TSF	ISO insert, 55° rhombic, positive	B120
DCMW...	ISO insert, 55° rhombic, positive	B122
DCMW□□□□04TN	EBP insert	H223
DCPM-...	Clamp	L014
DDJNR/L□□□...	External toolholder, D-type	C045
DDQNR/L□□□...	External toolholder, D-type	C118

Alphanumeric Index

Designation	Product name	Page
DEB□□□□	DEB1000 shouldering endmill	H186
DGE□□□-...	TungCut grooving insert	F025, G100
DGG□□□-...	TungCut grooving insert	F025, F105, F149, F173, G101
DGIM2-020	TungCut grooving insert	F101
DGIS2-020	TungCut grooving insert	F101
DGL□-...	TungCut grooving insert	F024, F106, F150, F174, G101
DGM□-...	TungCut grooving insert	F021, F102, F146, F170, G099
DGM□-□□□-□R/L	TungCut grooving insert	F021, F102, F146, F170, G099
DGS□-...	TungCut grooving insert	F023, F104, F148, F172, G098
DGS□-□□□-□R/L	TungCut grooving insert	F023, F104, F148, F172, G098
DIN2080□□CP□□	Center plug	K112
DIN2080□□DCB□□X□□	Drill chuck (Jacobs taper)	K110
DIN2080□□EM...	Side lock holder (weldon)	K108
DIN2080□□ER□□X...	ER collet chuck holder	K107
DIN2080□□FM□□	Face mill holder	K109
DIN2080□□MT□DRW	Morse taper holder with draw bar	K111
DIN2080□□MT□X...	Morse taper holder	K112
DIN2080□□SEM□□X□□	Face mill holder	K109
DIN2080□□SEMC□□X□□	Combination holder for slot mill and shell mill	K110
DIN208050AD40	Conversion adapter	K111
DIN69871□□CF4...	TungFit quick change holder	K068
DIN69871□□DCB□□X□□	DIN69871 Drill chuck (Jacobs taper)	K065
DIN69871□□EM□□X□□□E...	DIN69871 Side lock holder (whistle notch)	K060
DIN69871□□EM□□X□□...	DIN69871 Side lock holder (weldon)	K059
DIN69871□□ER□□SHORT	DIN69871 ER collet chuck holder	K056
DIN69871□□ER□□X□□□...	DIN69871 ER collet chuck holder	K055
DIN69871□□ER32CLICK-IN	Quiick change holder (DIN69871) (TungClick)	K068
DIN69871□□FM□□	DIN69871 Face mill holder	K063
DIN69871□□HYDRO□□X□□□	DIN69871 Hydraulic endmill chuck holder	K058
DIN69871□□MAXIN□□X□□□...	DIN69871 endmill holder	K057
DIN69871□□MAXIN□□X□□□BIN	DIN69871 endmill holder	K057
DIN69871□□ODP□□X□□	TungFlex modular system	K069
DIN69871□□SEM□□X□□	DIN69871 Shell mill holder	K063
DIN69871□□SEM□□X□□X□□□	DIN69871 Shell mill holder	K063
DIN69871□□SEM□□X□□X□□□C	DIN69871 Shell mill holder, long type	K064
DIN69871□□SEMC□□X□□□	DIN69871 Combination holder for slot mill and shell mill	K064
DIN69871□□SRK□□X□□	DIN69871 Thermal shrinking holder	K061
DIN69871□□SRKIN□□X□□□	DIN69871 Thermal shrinking holder	K062
DIN6987140ADDIN208030	DIN69871 Conversion adapter	K065
DIN6987150ADBT/SK40	DIN69871 Conversion adapter	K065
DIN69880 □□ HYDRO □□X...	DIN69880 hydraulic chuck holder	K117
DLCL...	Lever	L017
DLCS...	Screw	L007
DMC□□□	DrillMeister head for high precision machining	J024
DMD-□□□S	Solid drill for high hardened material	J062, J063
DMP□□□	DrillMeister general purpose head	J020 - J023
DMX□□□□FL	Solid drill for cast iron and aluminium alloy, L/D=5	J066, J067
DMX□□□□FM	Solid drill for cast iron and aluminium alloy, L/D=3	J065
DMX□□□□FS	Solid drill for cast iron and aluminium alloy, L/D=2	J064
DMX□□□M	Solid drill for steel, L/D=3	J060, J061
DMX□□□S	Solid drill for steel, L/D=2	J058, J059
DNGA...	ISO insert, 55° rhombic, negative	B073
DNGA□□-DIA	PCD insert, 55° rhombic, negative	B189
DNGA□□-QBN	CBN insert, 55° rhombic, negative	B173
DNGD...	ISO insert, 55° rhombic, negative	B073
DNGG□□-01	ISO insert, 55° rhombic, negative	B065
DNGG□□R/L	ISO insert, 55° rhombic, negative	B070
DNGG□□R/L-P	ISO insert, 55° rhombic, negative	B071
DNGN...	ISO insert, 55° rhombic, negative	B073
DNGN□□-□□-W	ISO insert, 55° rhombic, negative	B073
DNMA...	ISO insert, 55° rhombic, negative	B072
DNMG...	ISO insert, 55° rhombic, negative	B069
DNMG□□-11	ISO insert, 55° rhombic, negative	B066
DNMG□□-17	ISO insert, 55° rhombic, negative	B066
DNMG□□-27	ISO insert, 55° rhombic, negative	B069
DNMG□□-28	ISO insert, 55° rhombic, negative	B070
DNMG□□-33	ISO insert, 55° rhombic, negative	B070
DNMG□□-37	ISO insert, 55° rhombic, negative	B070
DNMG□□-38	ISO insert, 55° rhombic, negative	B070
DNMG□□-AM	ISO insert, 55° rhombic, negative	B068
DNMG□□-AS	ISO insert, 55° rhombic, negative	B067
DNMG□□-CB	ISO insert, 55° rhombic, negative	B067
DNMG□□-CF	ISO insert, 55° rhombic, negative	B066
DNMG□□-CH	ISO insert, 55° rhombic, negative	B072
DNMG□□-CM	ISO insert, 55° rhombic, negative	B070
DNMG□□-DM	ISO insert, 55° rhombic, negative	B069
DNMG□□E-FW	ISO insert, 55° rhombic, negative	B065
DNMG□□E-SM	ISO insert, 55° rhombic, negative	B070
DNMG□□E-SS	ISO insert, 55° rhombic, negative	B068
DNMG□□E-SW	ISO insert, 55° rhombic, negative	B067
DNMG□□E-TM	ISO insert, 55° rhombic, negative	B068
DNMG□□E-TSF	ISO insert, 55° rhombic, negative	B065
DNMG□□E-ZF	ISO insert, 55° rhombic, negative	B066
DNMG□□E-ZM	ISO insert, 55° rhombic, negative	B069
DNMG□□-FW	ISO insert, 55° rhombic, negative	B065
DNMG□□-HMM	ISO insert, 55° rhombic, negative	B071
DNMG□□-HRF	ISO insert, 55° rhombic, negative	B066
DNMG□□-HRM	ISO insert, 55° rhombic, negative	B071
DNMG□□L/R-S	ISO insert, 55° rhombic, negative	B071
DNMG□□-NM	ISO insert, 55° rhombic, negative	B068
DNMG□□-NS	ISO insert, 55° rhombic, negative	B067
DNMG□□-SA	ISO insert, 55° rhombic, negative	B071
DNMG□□-SF	ISO insert, 55° rhombic, negative	B066
DNMG□□-SH	ISO insert, 55° rhombic, negative	B072
DNMG□□-SM	ISO insert, 55° rhombic, negative	B070
DNMG□□-SS	ISO insert, 55° rhombic, negative	B068
DNMG□□-SW	ISO insert, 55° rhombic, negative	B067
DNMG□□-TF	ISO insert, 55° rhombic, negative	B065
DNMG□□-TH	ISO insert, 55° rhombic, negative	B072
DNMG□□-THS	ISO insert, 55° rhombic, negative	B072
DNMG□□-TM	ISO insert, 55° rhombic, negative	B068
DNMG□□-TQ	ISO insert, 55° rhombic, negative	B069
DNMG□□-TS	ISO insert, 55° rhombic, negative	B067
DNMG□□-TSF	ISO insert, 55° rhombic, negative	B065
DNMG□□-ZF	ISO insert, 55° rhombic, negative	B066
DNMG□□-ZM	ISO insert, 55° rhombic, negative	B069
DNMM□□-57	ISO insert, 55° rhombic, negative	B072
DNMM□□-DIA	PCD insert, 55° rhombic, negative	B188
DP□□	Pilot drill for TDP	J102
DPCW11T3ZFR	TZF11 insert	H232
DPD09...	DPD09 face mill	H082
DPIS...	Piston	L021
DPMT□□-PS	ISO insert, 55° rhombic, positive	B125
DRGNR/L□□□...	External toolholder, D-type	C080
DS-...	Screw	L006
DS1100	PVD coated grade	A004
DS1200	PVD coated grade	A004
DSBNR/L□□□...	External toolholder, D-type	C093
DSDNN□□□...	External toolholder, D-type	C101
DSE□□□□F02	GigaPowerDrill solid drill without coolant hole L/D=2	J050, J051
DSE□□□□F03	GigaPowerDrill solid drill without coolant hole L/D=3	J052, J053
DSKNR/L□□□...	External toolholder, D-type	C109
DSM□□□□G□□	GigaMiniDrill small diameter solid drill	J054, J055
DSM-CP140	GigaMiniDrill centering drill	J057
DSM-CP90	GigaMiniDrill centering drill	J057
DSSNR/L□□□...	External toolholder, D-type	C107
DSW□□□-□□□-□□DE3	SolidDrill without coolant hole L/D=3	J034, J035
DSW□□□-□□□-□□DE5	SolidDrill without coolant hole L/D=5	J036, J037
DSW□□□-□□□-□□DI5	SolidDrill with coolant hole L/D=5	J038, J039
DSW□□□-□□□-□□DI8	SolidDrill with coolant hole L/D=8	J040
DSX□□□□F03	GigaJetDrill solid drill with coolant hole L/D=3	J044, J045
DSX□□□□F05	GigaJetDrill solid drill with coolant hole L/D=5	J046, J047
DSX□□□□F08	GigaJetDrill solid drill with coolant hole L/D=8	J048, J049
DTA□□□-...	TungCut grooving insert	F029, F108, F152, F178, F195
DTE□-...	TungCut grooving insert	F027, F100, F145, F175
DTE□□□-...	TungCut grooving insert	F026, F100, F145, F175
DTF□-040-R/L	TungCut grooving insert	F144
DTFNR/L□□□...	External toolholder, D-type	C115
DTGNR/L□□□...	External toolholder, D-type	C088
DTI□□□-...	TungCut grooving insert	F098
DTI□-040	TungCut grooving insert	F098

Alphanumeric Index

Designation	Product name	Page
DTIU□□□-...	TungCut grooving insert	F029, F107, F151, F177, F195
DTM□-...	TungCut grooving insert	F026, F099, F144, F174
DTR□-...	TungCut grooving insert	F028, F107, F151, F172
DTR□□□-...	TungCut grooving insert	F028, F106, F150, F176
DTS□-...	Screw	L007
DTX□-...	TungCut grooving insert	F027, F099, F143, F176
DWLNR/L□□□□...	TungTurn external/facing toolholder	C034
DX110	PCD (T-DIA) grade	A007
DX120	PCD (T-DIA) grade	A007
DX140	PCD (T-DIA) grade	A007
DX160	PCD (T-DIA) grade	A007
DX180	PCD (T-DIA) grade	A007
DXGU□□MFR/LE-JRP	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B125
DXGU□□MFR/L-JS	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B125
DXGU□□MFR/L-JSS	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B126
DXGU□□MFR/L-JTS	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B126
DXGU□□MR/L-JSS	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B126
DXGU□□MR/L-JTS	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B126
DXGU□□R/L-SS	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B126
DXGU□□R/L-TS	MiniForce-Turn insert, 55° rhombic, positive, double-sided	B126
E		
E□□□-SCLCR/L□□-...	StreamJet-Bar boring bar, carbide shank	D014
E□□□-SCLPR/L□□-...	StreamJet-Bar boring bar, carbide shank	D017
E□□□-SDQCR/L□□-...	StreamJet-Bar boring bar, carbide shank	D075
E□□□-SDQPR/L07-...	StreamJet-Bar boring bar, carbide shank	D077
E□□□-SDUCR/L...	StreamJet-Bar boring bar, carbide shank	D048
E□□□-SDUPR/L07-...	StreamJet-Bar boring bar, carbide shank	D049
E□□□-SDXXR/L07-...	MiniForce-Turn boring bar, carbide shank	D033
E□□□-SDZCR/L□□-...	StreamJet-Bar boring bar, carbide shank	D084
E□□□-SDZXR/L07-...	MiniForce-Turn boring bar, carbide shank	D083
E□□□-SEXPR/L□□-...	StreamJet-Bar boring bar, carbide shank	D031
E□□□-SEZPR/L03-...	StreamJet-Bar boring bar, carbide shank	D086
E□□□-STFCR/L1103-...	StreamJet-Bar boring bar, carbide shank	D040
E□□□-STFPR/L...	StreamJet-Bar boring bar, carbide shank	D041
E□□□-STUPR/L...	StreamJet-Bar boring bar, carbide shank	D056
E□□□-SVQBR/L□□-...	StreamJet-Bar boring bar, carbide shank	D078
E□□□-SVQCR/L□□-...	StreamJet-Bar boring bar, carbide shank	D080
E□□□-SVUBR/L□□-...	StreamJet-Bar boring bar, carbide shank	D062
E□□□-SVUCR/L□□-...	StreamJet-Bar boring bar, carbide shank	D066
E□□□-SWLXR/L□□-...	MiniForce-Turn boring bar, carbide shank	D026
E□□□-SWUBR/L03-...	StreamJet-Bar boring bar, carbide shank	D073
E□□□-SYQBR/L11-...	Y-Pro Series boring bar, carbide shank	D082
E□□□-SYUBR/L11-...	Y-Pro Series boring bar, carbide shank	D074
EA-...	Coolant supply attachment	L021
EASD05M□□□C...	TungQuad chamfering cutter	H156
EASYLOCKT.CEU	Electrical nut-clamp torque control device	K158
EAW13R□□□M...	TungMill face endmill, shank type	H070
EBB□□□MS	EBB radius ball nose endmill	H224
EBD□□□...	EBD radius ball nose endmill	H225
EBFM□□□□□C...	BallFinishNose endmill, shank type	H204
EBFM□□□□□S...	BallFinishNose endmill, shank type	H204
EBP□□□...	EBP radius ball nose endmill	H221
EBRM□□T...	BallRoughNose endmill, shank type	H202
ECC31005R-...	chamfering cutter	I094
ECP4...	chamfering cutter	I096
ECW-456EF	Wrench/Driver	L025
ECW-456I	Wrench/Driver	L025
EDPD09063R	EDPD09 endmill, shank type	H082
EEN09R□□□M...	DoPent endmill, shank type	H067
EFE12050R	TFE endmill, shank type	H078
EFP40□□R	EFP4000R endmill, shank type	H116
EFPR/L-□-...	EasyMulti-Cut face grooving blade	F134
EGD44□□R	EGD4400 endmill, shank type	H099
EGM4-030	EasyMulti-Cut grooving insert	F136
ELD05R□□□M...	TungQuad roughing endmill, shank type	H156
ELS11R□□□M...	TungRec roughing endmill, shank type	H146
ELSC...	Shim	L010
ELSD...	Shim	L010
ELSD317BR/L	Shim	L010
ELSS...	Shim	L009
ELST...	Shim	L008
ELST□□□BR/L	Shim	L008

Designation	Product name	Page
EM10	Cemented carbide grade	A007
EMD4403RI-S32	EMD4400RI endmill, shank type	H093
EME44□□R	EME4400 face endmill, shank type	H087
EME44□□RI	EME4400 face endmill, shank type	H087
EMS09080R	EMS09 endmill, shank type	H112
EPA06R□□□M...	Tung-Tri endmill, shank type	H123
EPA10R□□□M...	Tung-Tri endmill, shank type	H125
EPA15R□□□M...	Tung-Tri endmill, shank type	H128
EPAV06M□□□C...	TungForce-Rec endmill, shank type	H136
EPD05R□□□M...	TungQuad endmill, shank type	H155
EPGT□□F-JS	ISO insert, 75° rhombic, positive	B128
EPGT□□FL-J08	ISO insert, 75° rhombic, positive	B128
EPGT□□FR/L-W08	ISO insert, 75° rhombic, positive	B127
EPGT□□-JS	ISO insert, 75° rhombic, positive	B128
EPGT□□L-J08	ISO insert, 75° rhombic, positive	B128
EPGT□□R/L-W08	ISO insert, 75° rhombic, positive	B127
EPGW□□-DIA	PCD insert, 75° rhombic, positive	B191
EPM11R□□□M...	TecMill endmill, shank type	H170
EPO07R□□□M...	TungRec endmill, shank type	H141
EPO11R□□□M...	TungRec endmill, shank type	H145
EPO18R□□□M...	TungRec endmill, shank type	H151
EPQ11R□□□M...	DoRec endmill, shank type	H166
EPQ18R□□□M...	DoRec endmill, shank type	H166
EPTC16M□□□C...	TungTri-Shred endmill, shank type	H134
EPTN12M0□□C...	DoForce-Tri endmill, shank type	H120
EPV16R□□□M...	Tung-AluMill endmill, shank type	H172
EPW13R□□□M...	TungMill endmill, shank type	H161
EPYD06M050C32.0R08	TungSpeed-Mill endmill, shank type	H076
EPYP12M□□□C...	TungSpeed-Mill PCD cutter	H074
ER-□□	ER collet	K126
ER□□CF4-□	TungFit ER collet chuck adapter	K124
ER□□SEAL□□-□□	ER spring collet	K129
ER□□SEAL□□-□□JET2	ER spring collet	K130
ER□□SPR□.□-□	ER spring collet	K127
ER□□SPR□.□-□AA	ER spring collet	K128
ER□□SPR□-□	ER spring collet	K127
ER□□SPR□-□□	ER spring collet	K127
ER□□SPR□□-□□	ER spring collet	K127
ER□□SRK□□X□□JET2	TungShrink ER collet type	K143
ER11SPR□-□AA	SpinJet ER11 collet	K163
ER11SRK□X□□	SpinJet thermal shrinking ER collet	K163
ER32ODPM□□X□□	TungFlex collet for ER collet chuck	K141
ER32SRF□□X□□	TungShrink -quick change type	K146
ER32SRF□□X□□JET2	Thermal shrinking holder adapter	K146
ERC□□R0□□M...	RoundSplit endmill, shank type	H216
ERP□□R□□□M...	FixRMill endmill, shank type	H210
ESE30□□R	ESE3000R endmill, shank type	H176
ESE40□□R...	ESE4000R endmill, shank type	H180
ETFR/L□□□□-□T□□-...	EasyMulti-Cut face grooving and turning toolholder	F133
ETFR□□□□-□T□□-□□□□□□-CHP	EasyMulti-Cut face grooving toolholder for high pressure coolant	F133
ETLN...	Indexable threading cutter	I124
ETU-□□□	Brazed drill head for DTS	J156
ETX□-...	EasyMulti-Cut grooving and turning insert	F136
EVX...	Endmill with central cutting edge, shank type	I092
EWD□□□□□R	EWD05/07/10 endmill, shank type	H219
EXCF4-□	TungFit extension adapter	K124
EXLN□□M□□□C...	DoTwist-Ball endmill, shank type	H035
EXLS02M□□□C...	TungForce-Feed endmill, shank type	H020
EXN03R□□□M...	DoFeed endmill, shank type	H024, H025
EXN06R□□□M...	DoFeed endmill, shank type	H031
EXP□□□□□R...	MillFeed endmill, shank type	H048
EXTRACTOR SC COLLETS	SC collet extracting hook	K040, K153
EZ□□□□	TungDrill-Twisted · TungSix-Drill eccentric sleeve	J094
F		
F	Cemented carbide grade	A007
FBH□□□□□□R-HF-P	FineBeam insert for peripheral cutting edge	J143, J144
FBH□□□□□RG-P	DeepTri-Drill insert for peripheral cutting edge	J125
FBH□□□□□RG-P	FineBeam insert for peripheral cutting edge	J144
FBM□□□□□□L-HF-C	FineBeam insert for central cutting edge	J143
FBM□□□□□□R-HF-I	FineBeam insert for intermediate cutting edge	J143
FBM□□□□□LG-C	FineBeam insert for central cutting edge	J143
FBM□□□□□RG-I	DeepTri-Drill insert for intermediate cutting edge	J125
FBM□□□□□RG-I	FineBeam insert for intermediate cutting edge	J143
FBM□□□04LG-C	DeepTri-Drill insert for central cutting edge	J124
FCL...	Lever	L017
FCS...	Screw	L005
FDC□□□□L	Solid drill for cast iron and aluminium alloy, L/D=8	J068
FDC□□□□S	Solid drill for cast iron and aluminium alloy, L/D=5	J068

Alphanumeric Index

Designation	Product name	Page
FDS-...	Screw	L006
FDS-8SST	Insert clamp	L026
FDS-8ST	Screw	L006
FDS-8ST-18	Screw	L006
FLASR/L-1616M3	TungT-Clamp external groovingand threading toolholder	F068, E045
FLG-3M□□□R/L-CB	TungT-Clamp grooving insert	F069, F121
FLEX□□R/L	My-T Series grooving insert	F092, F132, F167
FLSR/L-□□□□M3	TungT-Clamp external groovingand threading toolholder	E045, F068
FLT-3R/L-CB	Threading insert, 60° thread angle	E012
FLT-3R/L-CB	TungT-Clamp threading insert	F069, F121
FLT-3R/LC-HCB	Threading insert, 60° thread angle	E012
FLT-3R/LC-HCB	TungT-Clamp threading insert	F069, F121
FLT-3R/L-HCB	Threading insert, 60° thread angle	E012
FLT-3R/L-HCB	TungT-Clamp threading insert	F069, F121
FNBM-□□D-xx.xx	FineBeam drill head for DTS, external quadruple thread	J142
FNBM-□□N-xx.xx	FineBeam drill head for STS, internal single thread	J141
FNBM-□□S-xx.xx	FineBeam drill head for STS, internal quadruple thread	J140
FNTR-□□D-xx.xx	Tri-Fine drill head for DTS, external quadruple thread	J137
FNTR-□□N-□□.00	Tri-Fine drill head for STS, internal single thread	J136
FNTR-□□N-□-□□.00	Tri-Fine drill head for STS, internal single thread	J136
FNTR-□□S-□□.□□	Tri-Fine drill head for STS, internal quadruple thread	J136
FNTR-00□□S-□□.00	Tri-Fine drill head for STS, internal quadruple thread	J136
FPGN□□□□□-□□T...	TungHeavyGroove external wide profile grooving toolholder	F072, G078
FPGR□□□□□-□□T...	TungHeavyGroove external grooving toolholder	F072
FSHM10-...	Screw	L005
FSHM8-...	Screw	L005
FSSA1102	Shim	L009
FSSP1102	Shim	L009
FW-□□□R/L	Insert clamp	L026
FW304R/L-D	Insert clamp	L026
FW-305	Adjusting wedge	L027
FW325R/L-D	Adjusting wedge	L027
FX105	Ceramic grade	A005
FX510	Ceramic grade	A005
G		
G□□-L□□□-...	BoreMeister anti-vibration bar, carbide shank	D013, D025, D047, D051, D065, D069
G16EL/IR...	Shim	L011
G16ER/IL...	Shim	L011
G1F	Cemented carbide grade	A007
G2	Cemented carbide grade	A007
GBR/L32...	External grooving insert	F077, F124
GBR/L43...	External grooving insert	F078, F125
GBR/L43□□□R	External grooving insert	F079, F126
GE□□	My-T Series grooving insert	F062, F115, F161, F189
GE□□-AL	My-T Series grooving insert	F065, F117, F163, F191
GE□□R/L	My-T Series grooving insert	F064, F189
GF□□	My-T Series grooving insert	F063, F116, F162, F190
GFIMT□ER□□	collet chuck	K120
GFIST□□ER□□	collet chuck	K120
GH110	PVD coated grade	A004
GH130	PVD coated grade	A004
GH1-DA2.BG0.077	TungCap / SwissBore digital display unit	K049, K168
GH330	PVD coated grade	A004
GH730	PVD coated grade	A004
GIR/L□□□□-02	Internal grooving insert	F130
GLR/L...	External grooving insert	F081
GN...	My-T Series grooving insert	F064, F117, F163, F190
GOR/L...	External grooving insert	F080
GP...	Guide pad	J126, J139, J145
GR...	My-T Series grooving insert	F063, F116, F162
GT...	My-T Series grooving insert	F062, F115, F161, F191
GT720	Cermet grade	A005
GT9530	Cermet grade	A005
GTGN-16...	Grooving insert	F071, F123
GTIBT□□ER□□	Tapping holder	K105
GTIDIN69871□□ER□□	TungGTI tapping holder	K068
GTIER□□ST□□X...	TungGTI tapping holder	K117
GTINER32DIN□□.□□X...	Tapping attachment	K147
GTINER32ISO□□.□□X...	Tapping attachment	K147
GTINER32JIS□□.□□X...	Tapping attachment	K148
GX-□□□□R/LE	External wide grooving toolholder	F082
GX□□-1DT	Shim	L012
GX-2525R/LF	My-T Series face grooving toolholder	F166
GX-2525R/LI	internal grooving toolholder	F131
GXE16-...	Shim	L012
GXE16-□□DT	Shim	L012
GXE16-□DT	Shim	L012
GXE22-□□DT	Shim	L012
GXE22-□DT	Shim	L012
GXN16-...	Shim	L012
GXN16-□□DT	Shim	L012
GXN16-□DT	Shim	L012
GXN22-□□DT	Shim	L012
GXN22-□DT	Shim	L012
GYRODIN69880□□ER...	TungGyro collet holder for lathes	K119
GYROST□□ER...	TungGyro collet holder for lathes	K118
H		
HA6-FBHO-DE-1695	TungCap digital boring head	K047
HBFM□□M...	BallFinishNose cutter head	H205
HBRM□□M...	BallRoughNose cutter head	H202
HFWX04M□□□M...	DoMiniMill modular head	H209
HNGD...	ISO insert, hexagonal, negative	B108
HPA06R□□□MM...	Tung-Tri cutter head	H124
HPA10R□□□MM...	Tung-Tri cutter head	H126
HPAV06M□□□M...	TungForce-Rec cutter head	H137
HPAV06M□□□S...	TungForce-Rec cutter head	H138
HPO07R□□□MM...	TungRec cutter head	H142
HPO11R□□□MM...	TungReccutter head	H146
HRP□□R□□□MM...	FixRMill cutter head	H211
HS□□-FLER3W	TungT-Clamp internal grooving and threading head	E046, F106
HS□□-LNFR-53	Head exchangeable internal threading head	E038
HS□□-LNFR-54API	Head exchangeable internal threading head	E039
HS□□-MTHOR-□	Head exchangeable internal threading head	E040
HSK□□A-C□-...	TungCap basic holder for HSK	K043
HSKA□□MAXIN□□X□□□BIN	TungMax endmill holder	K075
HSKA□□B16MN□□□	Blank	K089
HSKA□□CF4-S	TungFit quick change holder	K087
HSKA□□EM□□X□□	Side lock holder (weldon)	K078
HSKA□□EM□□X□□E	Side lock holder (whistle notch)	K079
HSKA□□ER□□SHORT	ER collet chuck holder	K074
HSKA□□ER□□X...	ER collet chuck holder	K072
HSKA□□ER□□X□□□M	ERMini collet chuck holder	K071
HSKA□□ER32CLICK-IN	Quick change holder	K087
HSKA□□HYDRO□□X...	TungHydro hydraulic endmill holder	K076, K077
HSKA□□MAXIN□□X...	TungMax endmill holder	K074
HSKA□□MT□X...	Morse taper holder	K086
HSKA□□ODP□□X...	modular system	K088
HSKA□□SEM□□X...	Shell mill holder	K084
HSKA□□SEMC□□X...	Combination holder for slot mill and shell mill	K085
HSKA□□SRK□□X...	TungShrink Thermal shrinking holder	K083
HSKA□□SRKIN□□X...	TungShrink Thermal shrinking holder	K080
HSKA100FM60X70	Face mill holder	K085
HSKA63ER□□X□□□BIN	ER collet chuck holder	K074
HSKE□□ER□□X...	ER collet chuck holder	K070
HSKE□□ODP□□X...	modular system	K088
HSKE□□SEM□□X...	Shell mill holder	K083
HSKE□□SRK□□X...	TungShrink Thermal shrinking holder	K082
HSKFM□□ER□□X...	ER collet chuck holder	K073
HSKFM□□SRKIN□□X...	TungShrink Thermal shrinking holder	K081
HSKFM63SEM□□X...	Shell mill holder	K084
HSRNR/L...	External toolholder. H-type	C093
H-TB	Wrench/Driver	L024
H-TB2W	Wrench/Driver	L024
H-TBS	Wrench/Driver	L024
HW2.0/5RED	Wrench/Driver	L023
HWD07R□□□MM...	cutter head	H219
HXLN□□M□□□M...	DoTwist-Ball cutter head	H036
HXLS02M□□□M...	TungForce-Feed cutter head	H020
HXN03R□□□MM...	DoFeed cutter head	H026
I		
IND SHRINK IN UNIT EUR	Induction heating unit for shrink tool chucking	K144
IND SHRINK START UNIT EUR	Induction heating unit for shrink tool chucking	K144
INDER11TOOLADAPTER	Thermal shrinking collet	K163
IP-□□D	Wrench/Driver	L024
IP-20T	Wrench/Driver	L024

Alphanumeric Index

Designation	Product name	Page
IP-6DB	Wrench/Driver	L024
IP-6F	Wrench/Driver	L023
IT□□	DTS inner tube	J162
	J	
J10ER/L...	J10E insert (edge preparation)	B162, G050
J10ER/L□□□F	J10E insert (shrap edge)	B162, G050
J740	PVD coated grade	A004
J9530	Cermet grade	A005
JBBR...	TinyMiniTurn solid carbide bar	G056
JBBS□□□...C	TinyMiniTurn sleeve for internal coolant supply	G059
JBBS...	TinyMiniTurn sleeve for external coolant supply	G059
JBCR...	TinyMiniTurn solid carbide bar	G055
JBFR/L...	TinyMiniTurn solid carbide bar	G058
JBGR/L...	TinyMiniTurn solid carbide bar	G057
JBIR...	TinyMiniTurn solid carbide bar	E048, G056
JBPR...	TinyMiniTurn solid carbide bar	G055
JBRR...	TinyMiniTurn solid carbide bar	G058
JBSR...	TinyMiniTurn solid carbide bar	G058
JBTR/L...	TinyMiniTurn solid carbide bar	G054
JBUR...	TinyMiniTurn solid carbide bar	G055
JCCN200F...	J-Series grooving insert	F086
JCCR/L200F...	J-Series grooving insert	F086
JCCWSR/L□□□□K2	J-Series external deep grooving and parting tolholder	F086
JCGN200F	J-Series grooving insert	F087
JCGN200FR/L	J-Series grooving insert	F087
JCGSSR/L...	My-T Series external grooving and parting toolholder	F058
JCGWSR/L□□□□K2	J-Series grooving and parting toolholder	F087
JCP-...	Clamp	L015
JCP-3N	Clamp	L015
JCTER/L□□□□□□T...	TungCut external grooving and parting toolholder	F014, G095
JCTER/L□□□□X2T□□-CHP	TungCut external grooving and parting toolholder for high pressure coolant	F014, G096
JDS-...	Screw	L006
JM10	PVD coated grade	A004
JPDJ2XR/L...	MiniForce-Turn external/profiling toolholder	C038, G023
JPVJ2XR/L...	MiniForce-Turn external/profiling toolholder	C055, G030
JPWL2XR/L...	MiniForce-Turn external/facing toolholder	C030, G017
JS□□□□-SDUXL07	MiniForce-Turn external/profiling toolholder	C127, G025
JS□□□□-SVUXL09	MiniForce-Turn external/profiling toolholder	C128, G032
JS□□□□-SXXL09	DuoJust-Cut threading toolholder	E044
JS□□□□□-SEL16	TungThread External threading toolholder for Swiss lathes	G081
JS□□□□□-STCL18	TetraMini-Cut external grooving and threading toolholder	F036, G063
JS□□□□-SEL16	External threading toolholder for Swiss lathes	E033
JS□□H-SEXPR...	Boring bar, steel shank	D032
JS□□K-SDUCL...	J-Series external toolholder	G053
JS□□K-TBL3	J-Series external toolholder	G046
JS□□K-TGL3	J-Series external grooving toolholder	F088, G074
JS□□K-TTL3	J-Series external toolholder	E047, G084
JS□□-SEL16	TungThread External threading toolholder	E033, G081
JSCGCR/L□□□...	J-Series external toolholder	G041
JSCL2CR□□□□X09B-CHP	TungTurn-Jet toolholder with high pressure coolant nozzle	G020
JSCL2CR□□□□X09-CHP	TungTurn-Jet toolholder with high pressure coolant nozzle	G020
JSCL2CR...	J-Series external toolholder	G019
JSCLCR/L...	J-Series external toolholder	C022, G021
JSCLCR□□□□□09-F15	J-Series stepped head toolholder	G021
JSDFCR/L...	J-Series external toolholder	G043
JSDJ2CR/L...	J-Series external toolholder	G026
JSDJ2CR/L1212□□□-CHP	TungTurn-Jet toolholder with high pressure coolant nozzle	C046, G027
JSDJ2CR□□□□X11-CHP	TungTurn-Jet toolholder with high pressure coolant nozzle	C046, G027
JSDJ2XR/L□□□□□07-CHP	TungTurn-Jet toolholder with high pressure coolant nozzle	C038, G024
JSDJ2XR/L...	MiniForce-Turn external toolholder	C037, G023
JSDJCR/L...	J-Series external toolholder	G028
JSDJCR□□□□X□□-F15	J-Series stepped head toolholder	C048, G028
JSDJXR/L...	MiniForce-Turn external toolholder	C037
JSDJXR□□□□□07-F15	MiniForce-Turn stepped head toolholder	G025
JSDN3CR...	J-Series external toolholder	G036
JSDNCN...	J-Series external toolholder	G036
JSE2R□□□□□16-CHP	TungTurn-Jet threading toolholder for high pressure coolant	E032, G080
JSEGR/L...	J-Series external toolholder	G050
JSTACR/L...	J-Series external toolholder	C074, G039
JSTBR/L□□□...	J-Series external toolholder	G048
JSTGR/L...	J-Series external grooving toolholder	G074, F088
JSTTR/L□□□□□3	Screw-on external threading toolholder, for Swiss lathes	E046, G084
JSVABR/L...	J-Series external toolholder	G040
JSVGR/L□□□□K-C	J-Series external grooving toolholder	F084, G077
JSVGR/L1616K	J-Series external grooving toolholder	F084, G077
JSVJ2BR/L...	J-Series external toolholder for high pressure coolant	G034
JSVJ2BR/L1212□□□-CHP	TungTurn-Jet external toolholder for high pressure coolant	C060, G034
JSVJ2XR/L□□□□□09-CHP	TungTurn-Jet external toolholder for high pressure coolant	C055, G031
JSVJ2XR/L...	MiniForce-Turn external toolholder	C054, G030
JSVJBR/L...	J-Series external toolholder	G035
JSVJBR□□□□□11-F15	J-Series stepped head toolholder	G035
JSVJXR/L...	MiniForce-Turn external toolholder	C054
JSVJXR□□□□X09-F15	MiniForce-Turn stepped head toolholder	G032
JSVL2PR/L...	J-Series external toolholder	G022
JSVNBN...	J-Series external toolholder	G037
JSVP2PR/L...	J-Series external toolholder	G036
JSWL2XR/L□□□□F04-CHP	TungTurn-Jet external toolholder for high pressure coolant	C030, G018
JSWL2XR□□□□X04-CHP	TungTurn-Jet external toolholder for high pressure coolant	C030, G018
JSWL2XR/L...	MiniForce-Turn external toolholder	C029, G017
JSWLXR/L...	MiniForce-Turn external toolholder	C029
JSWLXR□□□□□□04-F15	MiniForce-Turn stepped-head toolholder	G018
JSXBR/L...	J-Series external toolholder	G052
JSXBR□□□□K...	External threading toolholder	E047, G083
JSXGR/L□□□□K8	J-Series toolholder for front/back turning, external grooving	F085, G076
JSXGR/L□□□□K8-C	J-Series toolholder for front/back turning, external grooving	F085, G076
JSXGR/L...	J-Series external toolholder	G041
JSXXR/L□□□□□09	DuoJustCut parting toolholder	E043, G086
JSXXR/L□□□□□09-S	DuoJustCut parting toolholder for subspindle	G086
JSXXR/L□□□□F09B-S-CHP	TungTurn-Jet parting toolholder for high pressure coolant for subspindle	G088
JSXXR/L□□□□F09-S-CHP	TungTurn-Jet parting toolholder for high pressure coolant for subspindle	G088
JSXXR/L□□□□X09B-S-CHP	TungTurn-Jet parting toolholder for high pressure coolant for subspindle	G088
JSXXR/L□□□□X09-CHP	TungTurn-Jet parting toolholder for high pressure coolant	E044, G087
JSXXR/L□□□□X09-S-CHP	TungTurn-Jet parting toolholder for high pressure coolant for subspindle	G088
JSXXR/L1212F09-CHP	TungTurn-Jet parting toolholder for high pressure coolant	G087
JTBR/L...	JTB insert (edge preparation)	G049
JTBR/L□□□□F	JTB insert (shrap edge)	G049
JTCL2CR/L...	J-Series toolholder	C023, G020
JTDJ2CR/L...	J-Series toolholder	C047, G026
JTGR/L...	J-Series JTG grooving insert (sharp edge)	F090
JTGR/L□□□□F...	J-Series JTG grooving insert (sharp edge)	F090, G075
JTTACR/L...	J-Series toolholder	C074, G039
JTTANR/L...	J-Series toolholder	C073, G047
JTTLNR/L...	J-Series toolholder	C026, G045
JTTR/L30□□F	Threading insert, 60° thread angle (sharp edge)	E012, G085
JTTR/L3005F-55	Threading insert, 55° thread angle (sharp edge)	E015, G085
JVGR/L□□□F	J-Series external grooving insert with hand	F084, G077
JXBR/L...	Positive insert for back turning	B161
JXBR/L...	JXB insert (edge preparation)	B161, G049
JXBR/L□□□□F	JXB insert (shrap edge)	B161, G049
JXFR□□□□F	Positive insert for front turning	B160
JXGR/L□□□□FA...	J-Series grooving insert	F085, G076
JXGR/L8200FN...	J-Series grooving insert	F085, G076
JXPG□□R/L□□F...	DuoJustCut insert	G091
JXRR□□□□F	Positive insert for reverse turning	B161
JXT□R6000F	Threading insert, 60° thread angle	E013, G083
JXTG12FR/L-□□□-...	DuoJustCut insert	G092
JXTG12FR/L-60□-0□□	Threading insert, 60° thread angle	E011
	K	
KEYV-...	Wrench/Driver	L025
KEYV-T...	Wrench/Driver	L023
KEYV-W20	Wrench/Driver	L025
KGDT-...	Wrench/Driver	L025
KHS-TID10-19.99	DrillMeister head clamping key	J026
KITBT□□MAXIN□□X...	TungMax milling kit	K140
KITBT40HYDRO□□X...	TungHydro hydraulic chuck kit	K137
KITDIN2080□□□□ER...	ER collet type taper shank & collet (kit)	K133
KITDIN6987140HYDRO□□X...	TungHydro hydraulic chuck kit	K137
KITGTIER□□ST□□X...	Tapping attachment kit	K117
KITGYRO□□D69880ER...	TungGyro	K119
KITGYROST□□ER...	TungGyro	K119
KITHSKA□□□MAXIN□□X...	TungMax milling kit	K140
KITHSKA63HYDRO□□X...	TungHydro hydraulic chuck kit	K137
KITMT□□□ER□□	ER collet type taper shank & collet (kit)	K134
KITR-81□ER□□	ER collet type taper shank & collet (kit)	K133
KITSK□□MAXIN□□X...	TungMax milling kit	K139
KITST□□X□□□□ER□□M	ER collet straight shank kit	K134
KITST□□X□□□□□ER...	ER collet straight shank kit	K135
KNMX□□L/R-S1	Negative insert, parallelogram	B108
KS-...	Wrench/Driver	L024
KS05F	Cemented carbide grade	A007
KS15F	Cemented carbide grade	A007
KS20	Cemented carbide grade	A007
KUDTS□□E-xx.xx	Unidex adjustable diameter drill head for DTS, external quadruple thread	J148
KUSTS□□E-xx.xx	Unidex adjustable diameter drill head for STS, external quadruple thread	J146
KUSTS□□-xx.xx	Unidex adjustable diameter drill head for STS, external single thread	J146

Alphanumeric Index

Designation	Product name	Page
	L	
L535B75EXT-FC	Threading insert	E029
L535B75INT-FC	Threading insert	E029
L535B1EXT-FC	Threading insert	E029
L535B1INT-FC	Threading insert	E029
LCL...	Lever	L017
LCS...	Screw	L007
LD□□□R/L	Locator	L026
LDS54□□□FT-CB #□	Threading insert	E031
LE□□□R/L	Locator	L026
LF□□□R/L	Locator	L026
LHM12x1.75x30-C	Screw	L005
LMEU□□□□□□ZNEN-MJ	TecTangential-Slot insert	H199
LMMU□□□□□□PNER-MJ	TecMill insert	H170
LN□□□R/L	Locator	L026
LN25...	Insert for ETLN	I124
LNCQ0906□-50□	NMS09 / EMS09 insert	H113
LNCQ0906N-100L	NMS09 / EMS09 insert	H113
LNGN□□-T□□-W	ISO insert, rectangular, negative	B108
LNGU0303ZER-MH	DoFeed 03insert	H027
LNGU0605ZER-MH	DoFeed 06insert	H031
LNGU06X5ZER-W	DoFeed 06insert	H031
LNMU0303ZER-MJ	DoFeed 03insert	H027
LNMU0303ZER-ML	DoFeed 03insert	H027
LNMU0303ZER-MS	DoFeed 03insert	H027
LNMU06X5ZER-MJ	DoFeed 06insert	H031
LNMU06X5ZER-ML	DoFeed 06insert	H031
LNMX□□□□□□R/L-...	TurnTec insert	C077, C090 C111, D089
LNMX□□□□R□-MJ	DoTwist-Ball insert	H036
LNMX□□□□R□-ML	DoTwist-Ball insert	H036
LNMX□□□□ZER-HJ	DoTwist-Ball insert	H036
LP□□□R/L	Locator	L026
LPMT03X206R-D4	Drilling insert	J103
LPMT05X204-D4	Drilling insert	J103
LPP16R	Locator	L026
LPTC16J□□□B...	TungTri-Shred roughing cutter	H133
LQMU□□□□□□P□ER-MJ	DoRec insert	H166
LR□□□R/L	Locator	L026
LS-8	Screw	L007
LSC...	Shim	L010
LSD...	Shim	L010
LSMT0202R2-MM	TungForce-Feed insert	H021
LSMT0202ZER-HM	TungForce-Feed insert	H021
LSP...	Spring for shim	L020
LSR...	Shim	L011
LSS...	Shim	L009
LST...	Shim	L008
LSW...	Shim	L011
LSZ42BR/L	Shim	L011
LV□□□R/L	Locator	L026
LW□□□R/L	Locator	L026
LX11	Ceramic grade	A005
LX21	Ceramic grade	A005
	M	
M□×...	Screw	L006
M□□CLAMPSCREWSEM...	Clamp screw for shell mill holder	K154
M-1000	Lubricant	L024
M714B	CBN grade	A006
MBU-□□□□	Brazed drill head for STS, external single thread	J152
MCL-...	Clamp	L014
MCPM-...	Clamp	L014
MCS□□□-...	Screw	L006
MCTR□□.□□XFU□□.75-10	DeepTri-Drill for lathes and machining centers L/D=10	J114
MCTR□□.□□XFU□□.75-15	DeepTri-Drill for lathes and machining centers L/D=15	J115
MCTR□□.□□XFU□□.75-25	DeepTri-Drill or lathes and machining centers L/D=25	J116
MCTR□□.□□XM□□-10	DeepTri-Drill or lathes and machining centers L/D=10	J108
MCTR□□.□□XM□□-15	DeepTri-Drill or lathes and machining centers L/D=15	J109
MCTR□□.□□XM□□-25	DeepTri-Drill or lathes and machining centers L/D=25	J111
MCTR□□.□□XM□□A-15	DeepTri-Drill or lathes and machining centers L/D=15	J109
MCTR□□.□□XM25-20	DeepTri-Drill or lathes and machining centers L/D=20	J110
MCTR□□.□□XM25A-10	DeepTri-Drill or lathes and machining centers L/D=10	J108
MCTR□□.□□XM25A-25	DeepTri-Drill or lathes and machining centers L/D=25	J111
MCTR□□.00XFM40-10	DeepTri-Drill or lathes and machining centers L/D=10	J114
MCTR□□.00XFM40-15	DeepTri-Drill or lathes and machining centers L/D=15	J115
MCTR□□.10XFM40-8	DeepTri-Drill or lathes and machining centers L/D=8	J113
MCTR30.00XFM40-25	DeepTri-Drill or lathes and machining centers L/D=25	J116
MCTRCH□□.□□XU25.4-25	DeepTri-Drill for lathes and machining centers. cross hole, L/D=25	J112
MCTRCH□□.00XM□□-25	DeepTri-Drill for lathes and machining centers. cross hole, L/D=25	J112
MCTRCH□□.00XM25A-25	DeepTri-Drill for lathes and machining centers. cross hole, L/D=25	J112
MCTRCH23.80XU31.75-25	DeepTri-Drill for lathes and machining centers. cross hole, L/D=25	J112
MD10	Cemented carbide grade	A007
MD20	Cemented carbide grade	A007
MLP...	Pin	L018
MS□□R/L	MS face mill	H114
MSC-...	Shim	L010
MSD-...	Shim	L010
MSP-...	Screw	L004
MSR-...	Shim	L011
MSS-4□2	Shim	L009
MST-...	Shim	L008
MSV-322	Shim	L011
MSW-...	Shim	L011
MT□ER□□X...	ER collet chuck holder	K118
MTEC□□□□□□□□.□□ISO	Solid carbide internal threading endmill	I103
MTEC□□□□□□□□.□ISO	Solid carbide internal threading endmill	I103
MTEC□□□□□□□□.□ISO	Solid carbide internal threading endmill	I103
MTEC□□□□□□□□.□NPT	Solid carbide internal and external threading endmill	I116
MTEC□□□□□□□□□□UN	Solid carbide internal threading endmill	I109
MTEC□□□□□□□□□BSPT	Solid carbide internal and external threading endmill	I115
MTEC□□□□□□□□□NPT	Solid carbide internal and external threading endmill	I116
MTEC□□□□□□□□□UN	Solid carbide internal threading endmill	I109
MTEC□□□□□□□□□W	Solid carbide internal and external threading endmill	I114
MTEC□□□□□□□□NPT	Solid carbide internal and external threading endmill	I116
MTEC□□□□□□□□W	Solid carbide internal and external threading endmill	I114
MTECB□□□□□□□□.□□ISO	Solid carbide internal threading endmill, with coolant hole	I104
MTECB□□□□□□□□.□ISO	Solid carbide internal threading endmill, with coolant hole	I104
MTECB□□□□□□□□.□ISO	Solid carbide internal threading endmill, with coolant hole	I104
MTECB□□□□□□□□□□NPT	Solid carbide internal and external threading endmill, with coolant hole	I116
MTECB□□□□□□□□□□UN	Solid carbide internal threading endmill, with coolant hole	I110
MTECB□□□□□□□□□□UN	Solid carbide internal threading endmill, with coolant hole	I110
MTECB□□□□□□□□□W	Solid carbide internal and external threading endmill, with coolant hole	I114
MTECD□□□□□□□□.□ISO	Solid carbide thread mill for boring, internal threading, chamfering	I108
MTECE□□□□□□□□.□□ISO	Solid carbide external threading endmill	I108
MTECE□□□□□□□□□□UN	Solid carbide external threading endmill	I113
MTECQ□□□□□□□□.□ISO	Solid carbide deep internal threading endmill, with internal coolant hole, with coolant hole	I105
MTECS□□□□□□□□.□□ISO	Small diameter solid carbide internal threading endmill, short edge type	I106
MTECS□□□□□□□□.□ISO	Small diameter solid carbide internal threading endmill, short edge type	I106
MTECS□□□□□□□□.□□MJ	Small diameter solid carbide internal threading endmill, short edge type, with coolant hole	I117
MTECS□□□□□□□□□□UN	Small diameter solid carbide internal threading endmill, short edge type	I111
MTECS□□□□□□□□□□UNJ	Small diameter solid carbide internal threading endmill, short edge type, with coolant hole	I117
MTECS□□□□□□□□□□UN	Small diameter solid carbide internal threading endmill, short edge type	I111
MTECS□□□□□□□□□□UNJ	Small diameter solid carbide internal threading endmill, short edge type, with coolant hole	I117
MTECS□□□□□□□□□W	Solid carbide thread mill for internal/external threading, short edge type	I115
MTECS06047C1920UN-L	Small diameter solid carbide internal threading endmill, short edge type	I111
MTECSH□□□□□□□.□□ISO	Solid carbide thread mill for internal machining, short edge type, left hand	I107
MTECSH□□□□□□□.□ISO	Solid carbide thread mill for internal machining, short edge type, left hand	I107
MTECSH□□□□□□□□□□UN	Solid carbide thread mill for internal machining, short edge type, left hand	I112
MTECSH□□□□□□□□□□UN	Solid carbide thread mill for internal machining, short edge type, left hand	I112
MTECZ□□□□□□□□.□□ISO	Solid carbide internal threading endmill, with coolant hole	I105
MTECZ□□□□□□□□.□ISO	Solid carbide internal threading endmill, with coolant hole	I105
MTECZ□□□□□□□□.□ISO	Solid carbide internal threading endmill, with coolant hole	I105
MTECZ□□□□□□□□□□UN	Solid carbide internal threading endmill, with coolant hole	I110
MTECZ□□□□□□□□□W	Solid carbide internal and external threading endmill, with coolant hole	I115
MTECZ08076C1027NPTF	Solid carbide internal and external threading endmill, with coolant hole	I116
MTECZ1010D1618NPTF	Solid carbide internal and external threading endmill, with coolant hole	I116
MTVNR-□□□□M5	External threading toolholder	E037
MTVNR-3232M54	External threading toolholder	E038
MTVOR-□□□□M□	External threading toolholder	E039
MULTICLAMP□□□□/□	Multi-clamp fixture for HSK shank	K157
MULTICLAMPC□	TungCap multi-clamp fixture	K045
	N	
N308	Cermet grade	A005
NAS-...	Shim	L009
NAT-...	Shim	L008
NCS-3...	Chipbreaker piece	L019
NCT-...	Chipbreaker piece	L019
NDS-...	Screw	L006
NF-84A	Clamp	L015
NMS09□□□R	NMS09 face mill	H112
NS520	Cermet grade	A005
NS740	Cermet grade	A005
NS9530	Cermet grade	A005
NUTER...	UM/Mini nut for ER collet chuck	K151
NUTER□□SHORT	Nut for ER collet chuck	K151
NUTER□□TOP	Nut for ER collet chuck	K150

Alphanumeric Index

Designation	Product name	Page
NUTER□□TOPBIN	Balanceable nut for ER collet chuck	K151
NUTER11GHS	SpinJet Nut for Spinjet collet	K164
NXE□□-...	Shim	L013
NXN□□-...	Shim	L013
O		
ON□U0507ANEN-MJ	DoTriple-Mill insert	H057
ON□U0705AN□N-ML	DoOcto insert	H061
ON□U0705ANPN-MJ	DoOcto insert	H061
ONGU0507ANEN-W	DoTriple-Mill insert	H057
ONHU0705ANPR-W	DoOcto insert	H061
OR14X2.5NN	TungTurn-Jet O-ring	L021
OR6.4X0.9N	TungTurn-Jet O-ring	L021
OT□□	DTS outer tube	J156
OWMT0807AAER-ML	DoOcto insert	H061
OWMT0807ZNER-HJ	DoOcto insert	H061
P		
P-...	Wrench/Driver	L024
P□□□□	PINZBOHR extension adapter	K186
P-□F	Wrench/Driver	L023
P-2.5T	Wrench/Driver	L023
PAS-...	Shim	L009
PAT-...	Shim	L008
PCBNR/L2525	External toolholder, P-type	C089
PCFNR/L...	External toolholder, P-type	C110
PCL2NR...	External toolholder, P-type	G044
PCLNR/L□□□□K0904-CHP	TungTurn-Jet external toolholder for high pressure coolant	C015
PCLNR/L□□□□K12-CHP	TungTurn-Jet external toolholder for high pressure coolant	C017
PCLNR/L□□□...	ISO-EcoTurn external toolholder	C014, K199 G044
PCLNR/L□□CA...	Cartridge	K199
PDJNR/L□□□□□1104-CHP	TungTurn-Jet external toolholder for high pressure coolant	C036
PDJNR/L□□□□□15-CHP	TungTurn-Jet external toolholder for high pressure coolant	C041
PDJNR/L□□□...	ISO-EcoTurn external toolholder	C035
PDJNR□□□...	External toolholder, P-type	G046
PDPNN...	External toolholder, P-type	C071
PDQNR/L...	External toolholder, P-type	C118
PN□U0905GNE□-MJ	DoPent insert	H067
PNCU0905GNEN-ML	DoPent insert	H067
PNCU0905GNER-W	DoPent insert	H067
PNCU0905GNFR-AJ	DoPent insert	H067
PNZ5	Coolant pipe and nozzle	L021
POMG□□□□□□-MNW	TurnTenFeed insert	C095
PPXOR/L...	TurnTenFeed external toolholder	C094
PRDCN...	External toolholder, P-type	C097
PRESETER-JET□□X...	Preset screw for ER collet	K035, K153
PRESETMAXIN□□X...	Preset screw for power chuck holder	K040, K154
PRESETSCCAP□□X...	Preset screw for straight collet	K039, K136
PRESETSCREWHYDROM...	Preset screw for hydraulic chuck	K139
PRESETSCREWM□□X□□B	Preset screw with coolant hole for EME/SRKIN	K155
PRGCR/L...	External toolholder, P-type	C081
PRGNR/L...	External toolholder, P-type	C079
PSBNR/L...	External toolholder, P-type	C092
PSBT□□□□M□□MAS...	Pull stud for BT with MAS knob	K149
PSBT□□□□M...	Pull stud for BT with JIS/ANSI (MAZAK) knob	K148
PSC□□-FBHO-DE-16...	SwissBore digital boring head	K047
PSC□□-FBHS-DE-...	SwissBore fine boring head for digital display	K049
PSCAT□□□□M□□ISOB	Pull stud	K150
PSDNN...	External toolholder, P-type	C100
PSGB...	TungHeavyGroove wide grooving insert	F074, G079
PSGM...	TungHeavyGroove wide profile grooving insert	F074
PSKNR/L...	External toolholder, P-type	C108, K197
PSKNR□□CA...	Cartridge	K197
PSOTTBT□□M...	Pull stud	K150
PSP-...	Spring for shim	L020
PSP-16	Spring for shim	L020
PSP301	Spring for shim	L020
PSSK□□□□M□□DIN...	Pull stud	K149
PSSNR/L□□CA...	Cartridge	K201
PSSNR/L...	External toolholder, P-type	C105, K201
PSTR/L...	Shim	L022
PSYNR□□CA...	Cartridge	K206
PT1/4GN	Screw	L007
PTFNR/L□□CA...	Cartridge	K193
PTFNR/L...	ISO-EcoTurn / External toolholder, P-type	C112, C114 K193
PTGNR/L□□□□K1104-CHP	TungTurn-Jet external toolholder for high pressure coolant	C086
PTGNR/L□□□□K16-CHP	TungTurn-Jet external toolholder for high pressure coolant	C086
PTGNR/L□□□□M□	External toolholder, P-type	C087
PTGNR/L...	ISO-EcoTurn external toolholder	C084, CO87 K195
PTGNR/L□□CA...	Cartridge	K195
PTJNR/L...	ISO-EcoTurn external toolholder	C050
PTL2NR/L...	J-Series external toolholder	C025, G045
PTTNR/L□□CA...	Cartridge	K204
PVJNR/L□□□□□16-CHP	TungTurn-Jet external toolholder for high pressure coolant	C058
PVJNR/L...	ISO-EcoTurn external toolholder	C053
PVQNR/L□□□□□16-CHP	TungTurn-Jet external toolholder for high pressure coolant	C123
PVQNR/L...	ISO-EcoTurn external toolholder	C121
PVVNN...	ISO-EcoTurn external toolholder	C066
PWLNR/L□□□□□0604	TungTurn-Jet external toolholder for high pressure coolant	C028
PWLNR/L□□□□□08-CHP	TungTurn-Jet external toolholder for high pressure coolant	C032
PWLNR/L□□□...	ISO-EcoTurn external toolholder	C027
Q		
QA□□K/M	Adapter for TAC mill/QC system	H110
QACB-□□MR/L	A-type set bolt for TAC mill/QC system	H111
Q-CCMW...	CBN insert, 80° rhombic, positive	B180
Q-DCMW...	CBN insert, 55°rhombic, positive	B181
Q-SPGN...	CBN insert, square, positive	B182
Q-TPGN...	CBN insert, traiangular, positive	B183
Q-TPMW...	CBN insert, traiangular, positive	B185
R		
R□□□□□	PINZBOHR reduction adapter	K187
R1.00-46	TungMini-Slit flange set for side cutter	H190
R1.25-55	TungMini-Slit flange set for side cutter	H190
R-8ER□□X...	ER collet chuck holder	K113
RCGN□□-□□-W	ISO insert, round, positive	B131
RCGT□□□□M0-AL	ISO insert, round, positive	B129
RCGX...	ISO insert, round, positive	B131
RCMM□□□□M0-61	ISO insert, round, positive	B130
RCMT□□□□EN-MJ	RoundSplit insert	H217
RCMT□□□□EN-NMJ	RoundSplit insert	H217
RCMT□□□□FN-NAJ	RoundSplit insert	H217
RCMT□□□□M0-61	ISO insert, round, positive	B130
RCMT□□□□M0-6RM	ISO insert, round, positive	B129
RCMT□□□□M0-6RS	ISO insert, round, positive	B129
RCMT□□□□M0-CM	ISO insert, round, positive	B129
RCMT□□□□M0-RS	ISO insert, round, positive	B129
RCMT1204M0-6R□	FixR-Turn insert	C099
RDMW□□□□M0	Insert for radius cutter	H220
RNGA120400	ISO insert, round, negative	B074
RNGN120...	ISO insert, round, negative	B074
RNGN□□□□□-□□-W	ISO insert, round, negative	B074
RNMG□□□□□-61	ISO insert, round, negative	B074
RNMU1307ZNER-MJ	DoTriple-Mill insert	H057
RPGN□□-□□-W	ISO insert, round, positive	B132
RPMT□□□□EN-MJ	FixRMill insert	H211
RPMT□□□□EN-ML	FixRMill insert	H211
RSFTC10...	Adjusting wedge	L027
RSFTS-050M	Screw	L005
RSFTS6...	Cover	L027
RSRGR5M40	Screw	L006
RT-...	Screw	L004
RT□□	ISO insert, round, positive	B130
S		
S□□□55-SEXPR04	Top borer tool	K213
S□□□-CGTR/L...	My-T Series internal grooving toolholder	F114
S□□□-CSKPR/L...	boring bar, steel shank	D037
S□□□-CTFPR/L...	boring bar, steel shank	D042
S□□□-PCLNR/L...	boring bar, steel shank	D022
S□□□-PDUNR/L...	boring bar, steel shank	D054
S□□□-PDZNR/L15	boring bar, steel shank	D085
S□□□-PSKNR12	boring bar, steel shank	D038
S□□□-PTFNR/L16	boring bar, steel shank	D044
S□□□-PTUNR/L...	boring bar, steel shank	D061
S□□□-PWLNR/L06	boring bar, steel shank	D030
S□□□-TLANR/L□□-...	TurnTec boring bar, steel shank	D089
S□□08-SWUBR03	Top borer tool	K213
S□□10	Shim seat	L022
S□□10-STUPR08	Top borer tool	K213
S□□-DDUNR/L□□T-H	BoreMeister boring head	D050
S□□R-SGTR/L...	internal grooving toolholder	F124
S□□-SCLCR/L...	BoreMeister exchangeable boring head	D012
S□□-SDUCR/L...	BoreMeister exchangeable boring head	D046

Alphanumeric Index

Designation	Product name	Page
S□□-SVLCR/L16T-H	BoreMeister exchangeable boring head	D024
S□□-SVUCR/L11-H	BoreMeister exchangeable boring head	D064
S08...	Shim seat	L022
S10...	Shim seat	L022
S40-DVUNR/L16T-H	BoreMeister boring head	D068
S-412	Screw	L006
S-570-□□M-...	Shank for internal grooving and threading head	E038, E039, E040, E046 F106
SC□□SEAL...	SC straight collet	K038, K136
SC□□SHYDR...	Sealed collet for hydraulic chuck	K138
SC□□SPR...	SC straight collet	K039, K135
SC□□T□A/B	TungCap sleeve for C-ABB adapter	K029
SCA□□□-02	Collar for slot mill	K041
SCFPR/L□□CA...	Cartridge	K194
SCLCR/L...	External toolholder, S-type	C024
SCLPR/L06CA-05	Cartridge	K199
SCMT□□□□08-23	EBD insert	H225
SCMT□□-23	ISO insert, square, positive	B133
SCMT□□-24	ISO insert, square, positive	B133
SCMT□□-CM	ISO insert, square, positive	B133
SCMT□□-PM	ISO insert, square, positive	B133
SCMT□□-PS	ISO insert, square, positive	B133
S-CNGN...	CBN insert, 80° rhombic, negative	B171
SCSPR/L□□CA...	Cartridge	K204
SCTPR□□CA...	Cartridge	K206
S-CU-CHP	Coolant unit	L021
SD□□42Z□N...	TGD4400-A,EGD4400 insert	H094, H100
SD□□42Z...	TMD4400R/LI, EMD4400RI insert	H094, H100
SD□N42ZTNCR	TGD4400-A, EGD4400 insert	H094, H100
SD□N53Z□N...	TMD5401RI insert	H097
SD□R1203AETN-MJ	TMD4400R/LI, EMD4400RI, TGD4400-A, EGD4400 insert	H094, H100
SD□R42ZSR-MJ	TMD4400R/LI, EMD4400RI, TGD4400-A, EGD4400 insert	H094, H100
SD0□-...	Screw	L005
SDCN42ZFN-DIA	TMD4400R/LI, EMD4400RI insert	H094, H100
SDHT050204FN-AJ	TungQuad insert	H157
SDJCR...	External toolholder, S-type	C049
SDKR42ZPN-MS	TMD4400R/LI, EMD4400RI, TGD4400-A, EGD4400 insert	H094, H100
SDKR53ZSR-MJ	TMD5401RI insert	H097
SDMT050204PN-MJ	TungQuad insert	H157
SDNCN...	External toolholder, S-type	C064
SDQCR/L...	External toolholder, S-type	C119
SE□N1203AG□N	TME4400R/LI, TME4400RB, EME4400 insert	H088
SE□N1203AG□N-T	TME4400R/LI, TME4400RB, EME4400 insert	H088
SE□N1203AGTNCR	TME4400R/LI, TME4400RB, EME4400 insert	H088
SE□N1504AG□N	TME5400RI insert	H091
SE□N42ZFR	THE4000RIA insert	H175
SECN42ZFR-DIA	THE4000RIA insert	H175
SEEN1203AGTNCR-14	TME4400R/LI, TME4400RB, EME4400 insert	H088
SEGT12X4ZEFR-AJ	TFE insert	H080
SEGW12X4ZE□R	TFE insert	H080
SEGW12X4ZEFR-BD	TFE insert	H080
SEGW12X4ZEFR-D	TFE insert	H080
SEGW12X4ZEFR-WD	TFE insert	H080
SEKN1504AGTN-T	TME5400RI insert	H091
SEKR1203AGPN-MS	TME4400R/LI, TME4400RB, EME4400 insert	H088
SEKR1203AGSR-MJ	TME4400R/LI, TME4400RB, EME4400 insert	H088
SEKR1504AGSR-MJ	TME5400RI insert	H091
SEM22CF4C	TungFit shell mill adapter	K124
SET T-15/5	Wrench/Driver	L023
SETER□□□SEAL□□JET2	Set of collets for external coolant supply	K132
SETER□□SEAL...	Set of collets for internal coolant supply	K131
SETER□□SEAL□EM	Set of collets for external coolant supply (for endmill)	K132
SETER□□SEAL□EMJET2	Set of collets for external coolant supply (for endmill)	K133
SETER□□SPR□□	Set of ER spring collets	K131
SETER□□SPR□□AA	Set of AA ER spring collets	K131
SETER□□SPR□EM	Set of ER spring collets	K132
SETER32SRK□6EUR	Set of ER collets with thermal shrink chuck	K145
SETSC□□SEAL□	Straight collet with coolant hole	K141
SETSC□□SPR□	Straight collet	K140
SFP40□□R	SFP4000R face mill	H116
SGM□-...	TungCut grooving insert	F022, F103, F147, F171, G099
SGN□□□-...	TungCut grooving insert	F030, F108, F152, F178, G102
SGS□-...	TungCut grooving insert	F024, F105, F149, F173, G100
SGSR/L151	Shim	L013
SGTR/L□□□□-...	External grooving toolholder	F080
SH725	PVD coated grade	A004
SH730	PVD coated grade	A004
SHCM4-...	Screw	L005
SHM□□x□.□x□□-C	Screw	L006
SHM16x2x35-C	Screw	L006
SHM8x1.25x35-C	Screw	L006
SHRINKIN UNIT V2 EUR	SHRINKIN Induction heating unit for shrink tool chucking	K144
SI-CLHOR-40M6	Internal threading toolholder for chaser	E041
SL-□R/L	Shim	L013
SLJ□□□□L□□□□NA	Brazed gundrill	J130
SLLV-...	Lever	L017
SL-PI-2	Pin	L018
SM□□-L□□/□.□□-CF4	TungFlex-TungFit conversion adapter	K121
SM□□-L□□□/□.□□-CF4	TungFlex-TungFit conversion adapter	K121
SM□□-L□□□C□□	TungFlex modular system	K121
SM□□-L...	TungFlex modular shank	H208
SM-00	Shim seat	L022
SM2.5...	Screw	L004
SM3...	Screw	L004
SM40-143-H0	Screw	L003
SMP□□□	DrillForce-Meister drill head	J030
SMP□□□-□□□-GH	DrillForce-Meister regrinding holder	J032
SN□□56FTR	MS insert	H115
SN□U1307ANEN-MJ	DoTriple-Mill insert	H057
SN□U1706ANPR-MJ	DoOcto insert	H061
SN□U1706ANTR-ML	DoOcto insert	H061
SNGA...	ISO insert, square, negative	B082
SNGA□□-DIA	PCD insert, traiangular, negative	B189
SNGA□□-QBN	CBN insert, traiangular, negative	B175
SNGD...	ISO insert, square, negative	B082
SNGG□□-01	ISO insert, square, negative	B075
SNGG□□R/L-B	ISO insert, square, negative	B075
SNGG□□R/L-C	ISO insert, square, negative	B075
SNGG□□R/L-D	ISO insert, square, negative	B075
SNGG□□R/L-P	ISO insert, square, negative	B079
SNGN...	ISO insert, square, negative	B082
SNGN□□-□□-W	ISO insert, square, negative	B083
SNGN□□-DIA	PCD insert, traiangular, negative	B189
SNGR/L...	Internal grooving toolholder	F127
SNGU1307ANEN-MH	DoTriple-Mill insert	H057
SNGU1307ANEN-W	DoTriple-Mill insert	H057
SNHU1706ANFN-W	DoOcto insert	H061
SNMA...	ISO insert, square, negative	B082
SNMG...	ISO insert, square, negative	B078
SNMG□□-11	ISO insert, square, negative	B076
SNMG□□-17	ISO insert, square, negative	B076
SNMG□□-27	ISO insert, square, negative	B078
SNMG□□-33	ISO insert, square, negative	B078
SNMG□□-37	ISO insert, square, negative	B078
SNMG□□-AS	ISO insert, square, negative	B076
SNMG□□-CF	ISO insert, square, negative	B076
SNMG□□-CH	ISO insert, square, negative	B081
SNMG□□-CM	ISO insert, square, negative	B079
SNMG□□-DM	ISO insert, square, negative	B078
SNMG□□-HMM	ISO insert, square, negative	B079
SNMG□□-HRF	ISO insert, square, negative	B076
SNMG□□-HRM	ISO insert, square, negative	B079
SNMG□□L/R-S	ISO insert, square, negative	B080
SNMG□□-NS	ISO insert, square, negative	B077
SNMG□□-SA	ISO insert, square, negative	B079
SNMG□□-SF	ISO insert, square, negative	B076
SNMG□□-SH	ISO insert, square, negative	B081
SNMG□□-SM	ISO insert, square, negative	B078
SNMG□□-SS	ISO insert, square, negative	B077
SNMG□□-TA	ISO insert, square, negative	B077
SNMG□□-TF	ISO insert, square, negative	B075
SNMG□□-TH	ISO insert, square, negative	B080
SNMG□□-THS	ISO insert, square, negative	B080
SNMG□□-TM	ISO insert, square, negative	B077
SNMG□□-TS	ISO insert, square, negative	B076
SNMG□□-TSF	ISO insert, square, negative	B075

Alphanumeric Index

Designation	Product name	Page
SNMG□□-ZM	ISO insert, square, negative	B077
SNMM□□-57	ISO insert, square, negative	B081
SNMM□□-65	ISO insert, square, negative	B081
SNMM□□-TRS	ISO insert, square, negative	B080
SNMM□□-TU	ISO insert, square, negative	B080
SNMM□□-TUS	ISO insert, square, negative	B081
SNMN...	ISO insert, square, negative	B083
SNMU1206□□EN-MM	DoQuadMill insert	H064
SNMU120608HNEN-MM	DoQuadMill insert	H064
SNR/L□□□□□□□	Internal threading toolholder	E036
SNR□□□□□□□SC	Internal threading toolholder	E036
SNR□□□□□□□SC-□	Internal threading toolholder	E036
SNR000□H06-...	Internal threading toolholder	E035
SNR/L000□K06SC-...	Internal threading toolholder	E035
SNR□□□□□□□-□	Internal threading toolholder	E036
SP-...	Pin	L018
SP□N423□N	TGP4200R-A insert	H104
SP□N42S□□	TGP4100RIA/BA insert	H103
SP□N42Z□□	TGP4200R-A insert	H104
SP□N53S□□	TGP5100RIA insert	H106
SP-16-L14	Spring for shim	L020
SP-2.5	Spring for shim	L020
SP913	Spring for shim	L020
SPGA...	ISO insert, square, positive	B135
SPGM□□L	ISO insert, square, positive	B135
SPGN...	ISO insert, square, positive	B136
SPGN□□□□□-□□T...	TungHeavyGroove external wide profile grooving toolholder	F073, G078
SPGN□□-DIA	PCD insert, square, positive	B191
SPGN□□-QBN	CBN insert, square, positive	B182
SPGN□□-T1-W	ISO insert, square, positive	B136
SPGN120312TN	TGP4100RIA/BA insert	H103
SPGR□□L	ISO insert, square, positive	B136
SPGT□□L-W20	ISO insert, square, positive	B134
SPGT□□R/L-W15	ISO insert, square, positive	B134
SPGW...	ISO insert, square, positive	B135
SPHA431FNW	TFP4000IA insert	H184
SPHA435FNW	SFP4000R / EFP4000R insert	H117
SPKN53STR20	TGP5100RIA insert	H106
SPKR42SSR-MJ	TGP4100RIA/BA insert	H103
SPKR53SSR-MJ	TGP5100RIA insert	H106
SPM□□□□ERD	Drilling insert	J103
SPMA422...	ECP insert	I096
SPMM□□□ERD	TCB insert	I100
SPMN...	ISO insert, square, positive	B136
SPMP□□□-CG	TCB insert	I100
SPMP□□□ER-CG	TCB insert	I100
SPMP□□□ERD	TCB insert	I100
SPMP831DS	TCB insert	I100, J103
SPMR□□-23	ISO insert, square, positive	B136
SPMR□□-CM	ISO insert, square, positive	B136
SPMT□□-23	ISO insert, square, positive	B134
SPMT□□-24	ISO insert, square, positive	B134
SPMT□□-CM	ISO insert, square, positive	B135
SPMT□□-PS	ISO insert, square, positive	B134
SPMW...	ISO insert, square, positive	B135
SQMU1206ZSR-MJ	DoFeed-Quad insert	H041
SR 114-018-L3.40	Screw	L003
SR PS 118-0273	Screw	L006
SR-10400611	Screw	L007
SR14-5...	Screw	L003
SR14-591	Screw	L003
SR16-212-01397	Screw	L003
SR16-212-01397L	Screw	L003
SR34-5...	Screw	L003
SR76-9...	Screw	L003
SRACR/L□□□...	External toolholder, S-type	C072
SRDCN□□□□M12-6F	FixR-Turn external toolholder	C099
SRDCN□□□...	External toolholder, S-type	C098, C099
SRGCR/L□□□□M12-6F	FixR-Turn external toolholder	C083
SRGCR□□□...	External toolholder, S-type	C082
SRM□□X...	Clamp screw for endmill holder	K155
SRM3	Clamp screw for TungTurn-Jet	L022
SRM4X4 TL360	Coolant screw for TungTurn-Jet	L022
SRM5X0.8IP20X+ACROLYTE	Screw	L003
SRM6X16DIN912-12.9	Screw	L005
S-RNGN...	CBN insert,round, negative	B174
SRW11	Nut	L021
SS100	Screw	L006
SSC...	Shim	L010
SSD□N...	External toolholder, S-type	C102, G040
SSD32	Shim	L010
SSG□□R...	TungMini-Slit side cutter	H188
SSHM□-...	Screw	L006
SSHM2.5-3	Screw	L006
SSKPR□□CA...	Cartridge	K198
SSM□□N	TungMini-Slit insert	H189
S-SNGN...	CBN insert, square, negative	B175
SSR32	Shim	L011
SSS□□N	TungMini-Slit insert	H189
SSS32	Shim	L009
SSSPR/L□□CA...	Cartridge	K202
SST32	Shim	L008
SSV...	Shim	L011
SSYPR10CA-09	Cartridge	K207
ST□□	Drill tube for STS, internal quadruple thread	J158
ST□□X□□□ER□□M	ERMini collet chuck holder	K113
ST□□X□□□ER□□MF	ERMini collet chuck holder	K115
ST□□X□□□ER□□	ER collet chuck holder	K114
ST□□X□□0SRK...	TungShrink Thermal shrinking holder	K116
ST□□X□□ER□□MFD	ER collet chuck holder, double end type	K115
ST□□X□□ER□□S	ER collet chuck holder, internal coolant supply	K116
ST00□□	Drill tube for STS, internal double/quadruple thread	J158
ST16X50ER11MF	ERMini collet chuck holder	K113
STACR/L□□□...	External toolholder, S-type	C075
STCAR/L18-CHP	TetraMini-Cut external grooving blade for high pressure coolant	F037
STCAR/L27-CHP	TetraForce-Cut external grooving blade for high pressure coolant	F047
STCR/L□□□□□18	TetraMini-Cut External grooving and threading toolholder	E042, F035, G062
STCR/L□□□□□18-CHP	TetraMini-Cut grooving toolholder for high pressure coolant	E042, G063
STCR/L□□□□-27	TetraForce-Cut external grooving toolholder	F046, G070
STCR/L□□□□X18-CHP	TetraMini-Cut grooving toolholder for high pressure coolant	F035, G063
STCR/L1212F18B-CHP	TetraMini-Cut grooving toolholder for high pressure coolant	F036, G063
STCR/L1212F18-CHP	TetraMini-Cut grooving toolholder for high pressure coolant	F036, G063
STCR/L1212X18B-CHP	TetraMini-Cut grooving toolholder for high pressure coolant	F035, G063
STCR/L2525-27-CHP	TetraForce-Cut grooving toolholder for high pressure coolant	F046
STGPR/L□□CA...	Cartridge	K196
STN62R/L	Shim	L013
S-TNGN...	CBN insert, traiangular, negative	B177
STVOR-□□□□M□	External threading toolholder	E040
STWPR□□CA...	Cartridge	K200
SVHCR/L...	External toolholder, S-type	C125
SVJCR/L...	External toolholder, S-type	C061
SVQCR/L...	External toolholder, S-type	C124
SVVCN...	External toolholder, S-type	C069
SW□T1304PDPR-MJ	TungMill insert	H162
SW□T13T3AFER-ML	TungMill insert	H071
SW□T13T3AFPR-MJ	TungMill insert	H071
SW...	Shim seat	L022
SW1.00-32	TungMini-Slit drive shank for side cutter	H190
SW1.25-46	TungMini-Slit drive shank for side cutter	H190
SW25-32	TungMini-Slit drive shank for side cutter	H190
SW32-25.4-46-J	TungMini-Slit drive shank for side cutter	H190
SW99	Pin	L018
SWGT1304PDFR-AJ	TungMill insert	H162
SWGT13T3AFFR-AJ	TungMill insert	H071
SWMT1304PDER-ML	TungMill insert	H162
SWMT1304PDPR-MS	TungMill insert	H162
SWMT13T3AFPR-HJ	TungMill insert	H071
SWMT13T3AFPR-MS	TungMill insert	H071
SWMT1506ZER-MJ	MillQuad-Feed insert	H044
SWMW13T3AFTR	TungMill insert	H071
SYHBR/L□□□...	Y-Pro external toolholder	C126
SYIBN□□□...	Y-Pro external toolholder	C129
SYJBR/L□□□...	Y-Pro external toolholder	C062
SYQBR/L□□□...	Y-Pro external toolholder	C126

T		
T-□□□□/5	Wrench/Driver	L023
T□□□-PCLNR...	Tsuppari-Ichiban internal toolholder	D022
T□□□-PDUNR15C	Tsuppari-Ichiban internal toolholder	D054
T□□□-PTUNR...	Tsuppari-Ichiban internal toolholder	D060
T□□□-SCLCR/L...	Tsuppari-Ichiban internal toolholder	D016
T□□□-SCLPR/L...	Tsuppari-Ichiban internal toolholder	D018
T□□□-SDQCR/L11C	Tsuppari-Ichiban internal toolholder	D076
T□□□-STUPR/L...	Tsuppari-Ichiban internal toolholder	D058
T-□□□	Wrench/Driver	L024
T-□□TORX	Wrench/Driver	L023
T-□D	Wrench/Driver	L024

Alphanumeric Index

Designation	Product name	Page
T-□F	Wrench/Driver	L023
T□-R□□	Insert for threading cutter	I126
T1115	CVD coated grade	A002
T1215	CVD coated grade	A002
T-15L	Wrench/Driver	L023
T16Q-SDQCR/L07	Tsuppari-Ichiban internal toolholder	D076
T20R-SVQBR11C	Tsuppari-Ichiban internal toolholder	D079
T20R-SVUBR11C	Tsuppari-Ichiban internal toolholder	D063
T25S-SVQCR16C	Tsuppari-Ichiban internal toolholder	D081
T25S-SVUCR16C	Tsuppari-Ichiban internal toolholder	D067
T2QP-CNGA...	CBN insert, 80°rhombic,negative	B170
T3130	CVD coated grade	A002
T313V	CVD coated grade	A002
T3225	CVD coated grade	A002
T3QP-TNGA...	CBN insert, traiangular, negative	B176
T5105	CVD coated grade	A002
T5115	CVD coated grade	A002
T5125	CVD coated grade	A002
T515	CVD coated grade	A002
T6120	CVD coated grade	A002
T6130	CVD coated grade	A002
T9105	CVD coated grade	A002
T9115	CVD coated grade	A002
T9125	CVD coated grade	A002
T9135	CVD coated grade	A002
T9205	CVD coated grade	A002
T9215	CVD coated grade	A002
T9225	CVD coated grade	A002
T9235	CVD coated grade	A002
TAN07R□□□M...	DoOcto face mill	H059, H060
TASN13M□□□B...	DoTriple-Mill face mill	H056
TAW13R□□□M...	TungMill face mill	H070
TBGN□□-15-QBN	CBN insert, traiangular, positive	B183
TBN□□□□S	TBN1000 radius ball nose endmill	H221
TBR1□□T...	Boring bar	K210
TBR3□□E...	Boring bar	K211
TBR3□□T...	Boring bar	K211
TBR4□□E...	Boring bar	K211
TBR4□□T...	Boring bar	K211
TBS1□□C...	Boring bar	K209
TBS1□□T...	Boring bar	K209
TBS3□□C...	Boring bar	K209
TBS3□□T...	Boring bar	K209
TBS4□□C...	Boring bar	K210
TBS4□□T...	Boring bar	K210
TC-...	Clamp	L014
TCB-...	Boring cutter	I097
TCB□□□-□□□F32	Boring cutter, cartridge type	I098
TCB□□□F...	Boring cutter	I097
TCFF□□□A3-...	FeedMeister 3 flute high feed endmill	I037
TCG18R/L...	TetraMini-Cut insert (edge preparation)	F040, G066
TCGT□□□□□□PDER-MJ	TungTri-Shred insert	H134
TCGT□□-01	ISO insert, traiangular, positive	B137
TCGT□□-AL	ISO insert, traiangular, positive	B139
TCGT□□F-01	ISO insert, traiangular, positive	B137
TCGT□□FN-JS	ISO insert, traiangular, positive	B140
TCGT□□FR/L-J08	ISO insert, traiangular, positive	B140
TCGT□□FR/L-J10	ISO insert, traiangular, positive	B141
TCGT□□L-W15	ISO insert, traiangular, positive	B138
TCGT□□N-JS	ISO insert, traiangular, positive	B140
TCGT□□R	ISO insert, traiangular, positive	B140
TCGT□□R/L-J10	ISO insert, traiangular, positive	B141
TCGT□□-SS	ISO insert, traiangular, positive	B139
TCM27-□□□-...	TetraForce-Cut grooving insert	F052, F053, G072, G073
TCMT□□□□□□PDER-NMJ	TungTri-Shred insert	H134
TCMT□□-23	ISO insert, traiangular, positive	B138
TCMT□□-24	ISO insert, traiangular, positive	B138
TCMT□□-CM	ISO insert, traiangular, positive	B139
TCMT□□-DIA	PCD insert, traiangular, positive	B190
TCMT□□-PM	ISO insert, traiangular, positive	B139
TCMT□□-PS	ISO insert, traiangular, positive	B138
TCMT□□-PSF	ISO insert, traiangular, positive	B137
TCMT□□-PSS	ISO insert, traiangular, positive	B137
TCMT□□-TM	ISO insert, traiangular, positive	B138
TCMT□□-TSF	ISO insert, traiangular, positive	B138
TCNR□□□□□□□DT	Internal grooving and threading toolholder	E037, F122
TCP18R/L...	TetraMini-Cut Grooving insert	F043, G067
TCP18R/L□□□F...	TetraMini-Cut Grooving insert	F044, G068

Designation	Product name	Page
TCS18R...	TetraMini-Cut Grooving insert	F042, G065
TCS27-□□□-...	TetraForce-Cut Grooving insert	F050, G071, G072
TCS27-□□□-□□R/L	TetraForce-Cut Grooving insert	F051, G072
TCT18FR-60A-...	TetraMini-Cut Threading insert	G069, E011
TCT18R/L-60N-...	TetraMini-Cut Threading insert	G069, E011
TDB□□-□□F50-2.5	TungDrill-Big drill body	J095, J098
TDP□□-□□	Indexable drill with pilot drill	J102
TDS□□□F□□-2	TungSix-Drill flat, L/D=2	J075
TDS□□□F□□-3	TungSix-Drill flat, L/D=3	J076
TDS□□□F□□-4	TungSix-Drill flat, L/D=4	J077
TDSCA□□-□□	TungDrill-Big cartridge set, adjustable tool diameter	J095
TDX□□□F□□-2	TungDrill-Twisted flat, L/D = 2	J082, J083
TDX□□□F□□-3	TungDrill-Twisted flat, L/D = 3	J084, J085
TDX□□□F□□-4	TungDrill-Twisted flat, L/D = 4	J086, J087
TDX□□□F□□-5	TungDrill-Twisted flat, L/D = 5	J088, J089
TDXCA□□-□□	TungDrill-Bigcartridge set, adjustable tool diameter	J098
TDXCF□□□L□□	TungDrill-Twisted ・TungSix-Drill chamfering tool	J080, J093
TE□N32Z□R	TSE3000R / ESE3000R shouldering insert	H177
TE□N43Z□R	ESE4000R insert	H180
TEAP□□□H3-...	VariableMeister 3flute solid endmill	I042
TECK□□□H4M-□□□□□CF-R...	VariableMeister 4flute solid endmill	I021
TECK□□□H7-□□□□□CF-R□□T...	VariableMeister 7・9flute solid endmill	I021
TECK□□□H9-□□□□□CF-R□□T...	VariableMeister 7・9flute solid endmill	I021
TEB□□□A2-□□/□□/□.□C□□M...	SolidMeister 2flute solid endmill	I055
TEB□□□A2-□□/□□C□□H...	SolidMeister 2flute solid endmill	I054
TEB□□□A2-□□/□□C□□M...	SolidMeister 2flute solid endmill	I055
TEB□□□A2-□□□/□□C□M...	SolidMeister 2flute solid endmill	I053
TEB□□□A2-□□C□□-□□	SolidMeister 2flute solid endmill	I056
TEB□□□A2-□□C□□-E...	EcoMeister 2flute solid endmill	I056
TEB□□□A2-□□C□□M...	SolidMeister 2flute solid endmill	I055
TEB□□□A2-□□W□□-E...	EcoMeister 2flute solid endmill	I056
TEB□□□A3-□□C□□-...	SolidMeister 3flute solid endmill	I057
TEB□□□A4-□□C□□-...	SolidMeister 4flute solid endmill	I057
TEB□□□E4L-...	VariableMeister 4flute solid endmill	I052
TEB200A2-20C20-104	SolidMeister 2flute solid endmill	I056
TEBRF□□□T3-...	ShredMeister 3・4flute solid endmill	I052
TEBRF□□□T4-...	ShredMeister 3・4flute solid endmill	I052
TEC□□□A2-□□□/□□C4M...	SolidMeister 2flute solid endmill	I044, I045
TEC□□□A2-□□□/□□C6M...	SolidMeister 2flute solid endmill	I045
TEC□□□A2-□□□□/□□C4M...	SolidMeister 2flute solid endmill	I044
TEC□□□A2-□□C□□-E...	EcoMeister 2flute solid endmill	I048
TEC□□□A2-□□W□□-E...	EcoMeister 3flute solid endmill	I047
TEC□□□A3-08□□□-E...	EcoMeister 3flute solid endmill	I048
TEC□□□A3-2□C□□-E...	SolidMeister 4flute solid endmill	I049
TEC□□□A4-□□C□□-...	EcoMeister 4flute solid endmill	I045
TEC□□□A4-1□C□□□-E...	EcoMeister 4flute solid endmill	I050
TEC□□□A4-1□C□□-E...	EcoMeister 4flute solid endmill	I050
TEC□□□A4-2□C□□-E...	EcoMeister 4flute solid endmill	I050
TEC□□□A4-30C0□-E75	EcoMeister 4flute solid endmill	I050
TEC□□□A4-50C□□-E150	EcoMeister 4flute solid endmill	I050
TEC□□□A4-6□C□□-E150	EcoMeister 4flute solid endmill	I050
TEC□□□B3-□□C□□-...	SolidMeister 3flute solid endmill	I034
TEC□□□B3-□□W□□-...	EcoMeister 3flute solid endmill	I049
TEC□□□B4-□□C□□-...	SolidMeister 4flute solid endmill	I035
TEC□□□B4-□□C□□R□-...	SolidMeister 4flute solid endmill	I036
TEC□□□B4-□□C□□R□□-...	SolidMeister 4flute solid endmill	I036
TEC□□□B4L-...	SolidMeister 4flute・6flute solid endmill	I032
TEC□□□B4X-...	SolidMeister 4flute・6flute solid endmill	I032
TEC□□□B6-...	SolidMeister 6flute solid endmill	I046
TEC□□□B6L-...	SolidMeister 4flute・6flute solid endmill	I032
TEC□□□B6X-...	SolidMeister 4flute・6flute solid endmill	I032
TEC□□□D6-...	SolidMeister 6flute solid endmill	I047
TEC□□□E3-□□C□□-E...	EcoMeister 3flute solid endmill	I049
TEC□□□E3-05C06-E36	EcoMeister 3flute solid endmill	I048
TEC□□□E3-12C□□-E...	EcoMeister 3flute solid endmill	I049
TEC□□□E3-2□C□□-E...	EcoMeister 3flute solid endmill	I049
TEC□□□E4L-□/□□C□□CF...	VariableMeister 4flute solid endmill	I018
TEC□□□E4L-□□/□□□□CF...	VariableMeister 4flute solid endmill	I018
TEC□□□E5L-□□C□□CF...	VariableMeister 5flute solid endmill	I018
TEC□□□H□□-□□C□□CF-H...	VariableMeister 6 - 20flute solid endmill	I020
TEC□□□H□□-□□C□□CFH...	VariableMeister 6 - 20flute solid endmill	I020
TEC□□□H□-□□C□□CF-H...	VariableMeister 6 - 20flute solid endmill	I020
TEC□□□H4L-□□/□□□□CF-R...	VariableMeister 4flute solid endmill	I022
TEC□□□H4L-□□/□□□CF-R...	VariableMeister 4flute solid endmill	I022
TEC□□□H4L-□□/□C□CF-R...	VariableMeister 4flute solid endmill	I022
TEC□□□H4M-□□□□□CF-E...	VariableMeister 4flute solid endmill	I017
TEC□□□H4M-□□□□□CFR...	VariableMeister 4flute solid endmill	I022
TEC□□□H4M-□□□□□CF-R...	VariableMeister 4flute solid endmill	I022

Alphanumeric Index

Designation	Product name	Page
TEC□□□H4S-...	VariableMeister 4flute solid endmill	I017
TEC□□□H4X-□□/□□□□□CF-R...	VariableMeister 4flute solid endmill	I023
TEC□□□H5M-□□□□□CF-R□□-...	VariableMeister 5flute solid endmill	I023
TEC□□□H5M-□□□□□CFR□□□-...	VariableMeister 5flute solid endmill	I023
TEC□□□H7-□□□□□CF-...	VariableMeister 7flute solid endmill	I019
TEC020A4-08C02-E32	EcoMeister 4flute solid endmill	I050
TEC020E3-04C06-E35	EcoMeister 3flute solid endmill	I048
TEC025A4-08C025-E32	EcoMeister 4flute solid endmill	I050
TEC035A3-06W06-E37	EcoMeister 3flute solid endmill	I048
TEC040E3-07C06-E39	EcoMeister 3flute solid endmill	I048
TEC050A4-40C05-E100	EcoMeister 4flute solid endmill	I050
TEC060E3-08C06-E39	EcoMeister 3flute solid endmill	I048
TEC070A3-10W08-E42	EcoMeister 3flute solid endmill	I048
TEC080E3-11C08-E43	EcoMeister 3flute solid endmill	I048
TEC090A3-11W10-E48	EcoMeister 3flute solid endmill	I048
TEC100E3-13C10-E50	EcoMeister 3flute solid endmill	I048
TEC120A4-75C12-E150	EcoMeister 4flute solid endmill	I050
TEC200A4-32C20-E104	EcoMeister 4flute solid endmill	I050
TECA□□□B2-...	VariableMeister 2flute solid endmill	I040
TECA□□□B3-...	SolidMeister 3flute solid endmill	I041
TECA□□□F2-...	SolidMeister 2flute solid endmill	I041
TECA□□□H3-...	VariableMeister 3flute solid endmill	I042
TECA□□□H3-□□/□□□C□□CF-R...	VariableMeister 3flute solid endmill	I039
TECA□□□H3-□□/□□C□□CF-R...	VariableMeister 3flute solid endmill	I038, I039
TECA□□□H4-...	VariableMeister 4flute solid endmill	I040
TECA010H3-04C06CF-R.05	VariableMeister 3flute solid endmill	I038
TECC□□□A2-□□C□□-...	SolidMeister 2flute solid endmill	I033
TECC□□□A4-□□C□□-...	SolidMeister 4flute solid endmill	I035
TECC□□□E3-□□C□□-...	SolidMeister 3flute solid endmill	I034
TECC020B2-07C03-38	SolidMeister 2flute solid endmill	I033
TECC020B3-07C03-38	SolidMeister 3flute solid endmill	I034
TECC020B4-07C03-38	SolidMeister 4flute solid endmill	I035
TECCS□□□E3-□□W□□-...	SolidMeister 3flute solid endmill	I033
TECH□□□B6-...	SolidMeister 6flute solid endmill	I046
TECK□□□H4M-□□□□□CF-R□□	VariableMeister 4flute solid endmill	I020
TECK□□□H4M-□□□□□CF-R□□C	VariableMeister 4flute solid endmill	I021
TECN32ZFR-DIA	TSE3000R / ESE3000R shouldering insert	H177
TECN43ZFR-DIA	ESE4000R insert	H180
TECP□□□E3L-...	ShredMeister solid endmill	I030
TECP□□□E4L-...	ShredMeister solid endmill	I030
TECP□□□H4L-...	ShredMeister 4flute solid endmill	I030
TECR□□□B□L-...	ShredMeister 4 - 7flute solid endmill	I028
TECR□□□B□M-...	ShredMeister 4 - 7flute solid endmill	I027
TECR□□□B□MF-...	ShredMeister 4,6flute solid endmill	I028
TECR□□□B□S-□□W□□-...	ShredMeister 4 - 7flute solid endmill	I027
TECR□□□B□X-...	ShredMeister 4 - 5flute solid endmill	I028
TECR□□□B3-...	ShredMeister 3flute solid endmill	I043
TECR□□□T4M-...	ShredMeister 4flute solid endmill	I029
TECS□□□E3-□□W□□-...	SolidMeister 3flute solid endmill	I033
TEFF□□□N4-...	FeedMeister 4flute solid endmill	I036
TEFS□□□B44-□□/□□□□□-□□□	FinishMeister 4flute solid endmill	I026
TEFS□□□B44-□□□□□-□□	FinishMeister 4flute solid endmill	I026
TEFS□□□B44-□□□□□-□□C	FinishMeister 4flute solid endmill	I026
TEFS□□□E44-□□□□□CF...	FinishMeister 4flute solid endmill	I025
TEKR1603PEPR-MS	TSE3000R/ESE3000R shouldering insert	H177
TEKR2204PEPR-MS	ESE4000R insert	H180
TEN09R/L□□□M...	DoPent face mill	H066
TERC□□□E3-...	ShredMeister 3 flute solid endmill	I043
TERF□□□A4-...	ShredMeister 3, 4flute solid endmill	I029
TERF□□□E3-...	ShredMeister 3, 4flute solid endmill	I029
TESTBARHYDRO□□	Torque test bar for hydraulic chuck	K139
TETR□□□A2-...	SolidMeister 2flute solid endmill	I038
TF-...	Clamp	L014
TFE12□□□R	TFE face mill	H078
TFE12R□□□M...	TFE face mill	H079
TFP40□□RIA	TFP4000IA shoulder mill	H183
TGD44□□R-A	TGD4400-A face mill	H098
TGP41□□RBA	TGP4100RIA/BA face mill	H102
TGP41□□RIA	TGP4100RIA/BA face mill	H102
TGP42□□R-A	TGP4200R-A face mill	H104
TGP51□□RIA	TGP5100RIA face mill	H106
TGTSR/L□□□□□16	External grooving toolholder	F076
TGTSR/L□□□□□22-...	External grooving toolholder	F076
TGTTR/L□□□□□16	Perpendicular toolholder for external grooving	F076
TGTTR/L□□□□□22-...	Perpendicular toolholder for external grooving	F076
TH03	Cemented carbide grade	A007
TH10	Cemented carbide grade	A007
THE40□□RIA	THE4000RIA shoulder mill	H174
THSN12J□□□B...	DoQuadMill face mill	H063
THSN12M□□□B...	DoQuadMill face mill	H063
TID□□□F□□-1.5	DrillMeister head exchangeable drill, helical flute, L/D=1.5	J011
TID□□□F□□-3	DrillMeister head exchangeable drill, helical flute, L/D=3	J012
TID□□□F□□-5	DrillMeister head exchangeable drill, helical flute, L/D=5	J013
TID□□□F□□-8	DrillMeister head exchangeable drill, helical flute, L/D=8	J014
TID□□□R□□-12	DrillMeister head exchangeable drill, helical flute, L/D=12	J015
TIDC□□□C□□-3	DrillMeister head exchangeable drill, straight flute L/D=3	J016
TIDC□□□C□□-5	DrillMeister head exchangeable drill, straight flute L/D=5	J017
TIDCF□□□-W32	DrillMeister chamfering holder	J018
TIS□□□F□□-3	DrillForce-Meister head exchangeable drill L/D=3	J028
TIS□□□F□□-5	DrillForce-Meister head exchangeable drill L/D=5	J029
TJSGJETBT...	SpinJet high speed spindle	K159
TJSGJETC...	SpinJet high speed spindle	K160
TJSGJETCAT40	SpinJet high speed spindle	K161
TJSGJETER32	SpinJet high speed spindle	K159
TJSGJETST20	SpinJet high speed spindle	K161
TJSGJETHSKA63	SpinJet high speed spindle	K160
TJSSHAFTLOCKKEYGJET	SpinJet shaft lock key	K164
TJSTSDDISPLAY...	SpinJet wireless RPM display	K162
TLA10R□□□L054M...	Tung-Tri roughing cutter	H125
TLA15R□□□L□□□-□□S	Tung-Tri roughing cutter, subunit	H127
TLA15R□□□L□□□BT50-0□M	Tung-Tri with BT shank	H128
TLA15R□□□L□□□M...	Tung-Tri roughing cutter, main unit	H127
TLANR/L...	TurnTec external toolholder	C076
TLBNR/L...	TurnTec external toolholder	C090
TLFNR/L...	TurnTec external toolholder	C111
TLM11R□□□M...	TecMill roughing cutter	H169
TLS11R050M22.0E04	TungRec roughing cutter	H144
TMBA-0.□□□H	Screw	L007
TMBA-M...	Screw	L007
TMD44□□R...	TMD4400R/LI face mill	H092
TMD54□□RI	TMD5400RI face mill	H096
TME44□□R...	TME4400R/LI face mill	H085
TME54□□RI	TME5400RI face mill	H090
TN□U120708PER-MJ	DoForce-Tri insert	H121
TNGA...	ISO insert, traiangular, negative	B093
TNGA□□-DIA	PCD insert, traiangular, negative	B189
TNGA□□-QBN	CBN insert, traiangular, negative	B177
TNGG□□-01	ISO insert, traiangular, negative	B084
TNGG□□F-01	ISO insert, traiangular, negative	B084
TNGG□□FR/L-P	ISO insert, traiangular, negative	B091
TNGG□□FR/L-W	ISO insert, traiangular, negative	B085
TNGG□□R/L-A	ISO insert, traiangular, negative	B084
TNGG□□R/L-C	ISO insert, traiangular, negative	B084
TNGG□□R/L-D	ISO insert, traiangular, negative	B084
TNGG□□R/L-P	ISO insert, traiangular, negative	B091
TNGG□□R/L-W	ISO insert, traiangular, negative	B085
TNGN...	ISO insert, traiangular, negative	B094
TNGN□□-T□□-W	ISO insert, traiangular, negative	B094
TNMA...	ISO insert, traiangular, negative	B093
TNMA4310RDEXT	Threading insert, API Round	E028
TNMA4310RDINT	Threading insert, API Round	E028
TNMA438RDEXT	Threading insert, API Round	E028
TNMA438RDINT	Threading insert, API Round	E028
TNMA43NT□□PEXT-PT	Threading insert, 29° Trapezoidal	E026
TNMA43NT□□PSTUBE-PT	Threading insert, 29° Trapezoidal	E027
TNMA43NT□PEXT-PT	Threading insert, 29° Trapezoidal	E026
TNMA43NT□PSTUBE-PT	Threading insert, 29° Trapezoidal	E027
TNMA545B1EXT-FC	Threading insert, API Buttress	E030
TNMA545B1INT-FC	Threading insert, API Buttress	E030
TNMA545B75EXT-FC	Threading insert, API Buttress	E030
TNMA545B75INT-FC	Threading insert, API Buttress	E030
TNMA54NT□PEXT-PT	Threading insert, 29° Trapezoidal	E026
TNMA54NT□PSTUBE-PT	Threading insert, 29° Trapezoidal	E027
TNMC4310RDEXT	Threading insert, API Round	E028
TNMC4310RDINT	Threading insert, API Round	E028
TNMC438RDEXT	Threading insert, API Round	E028
TNMC438RDINT	Threading insert, API Round	E028
TNMC43NT□□PEXT-PT	Threading insert, 29° Trapezoidal	E026
TNMC43NT□□PSTUBE-PT	Threading insert, 29° Trapezoidal	E027
TNMC43NT□PEXT-PT	Threading insert, 29° Trapezoidal	E026
TNMC43NT□PSTUBE-PT	Threading insert, 29° Trapezoidal	E027
TNMC545B1EXT-FC	Threading insert, API Buttress	E030
TNMC545B1INT-FC	Threading insert, API Buttress	E030
TNMC545B75EXT-FC	Threading insert, API Buttress	E030
TNMC545B75INT-FC	Threading insert, API Buttress	E030
TNMC54NT□PEXT-PT	Threading insert, 29° Trapezoidal	E026
TNMC54NT□PSTUBE-PT	Threading insert, 29° Trapezoidal	E027
TNMG...	ISO insert, traiangular, negative	B089

Alphanumeric Index

Designation	Product name	Page
TNMG□□-11	ISO insert, traiangular, negative	B086
TNMG□□-17	ISO insert, traiangular, negative	B086
TNMG□□-27	ISO insert, traiangular, negative	B089
TNMG□□-28	ISO insert, traiangular, negative	B090
TNMG□□-33	ISO insert, traiangular, negative	B090
TNMG□□-37	ISO insert, traiangular, negative	B090
TNMG□□-38	ISO insert, traiangular, negative	B090
TNMG□□-AM	ISO insert, traiangular, negative	B088
TNMG□□-AS	ISO insert, traiangular, negative	B087
TNMG□□-CB	ISO insert, traiangular, negative	B087
TNMG□□-CF	ISO insert, traiangular, negative	B086
TNMG□□-CH	ISO insert, traiangular, negative	B092
TNMG□□-CM	ISO insert, traiangular, negative	B090
TNMG□□-DM	ISO insert, traiangular, negative	B089
TNMG□□E-FW	ISO insert, traiangular, negative	B085
TNMG□□E-SM	ISO insert, traiangular, negative	B090
TNMG□□E-SS	ISO insert, traiangular, negative	B088
TNMG□□E-SW	ISO insert, traiangular, negative	B087
TNMG□□E-TM	ISO insert, traiangular, negative	B088
TNMG□□E-TSF	ISO insert, traiangular, negative	B085
TNMG□□-FW	ISO insert, traiangular, negative	B085
TNMG□□-HMM	ISO insert, traiangular, negative	B091
TNMG□□-HRF	ISO insert, traiangular, negative	B086
TNMG□□-HRM	ISO insert, traiangular, negative	B091
TNMG□□-NM	ISO insert, traiangular, negative	B088
TNMG□□-NS	ISO insert, traiangular, negative	B087
TNMG□□R/L-S	ISO insert, traiangular, negative	B092
TNMG□□-SA	ISO insert, traiangular, negative	B091
TNMG□□-SF	ISO insert, traiangular, negative	B086
TNMG□□-SM	ISO insert, traiangular, negative	B090
TNMG□□-SS	ISO insert, traiangular, negative	B088
TNMG□□-SW	ISO insert, traiangular, negative	B087
TNMG□□-TA	ISO insert, traiangular, negative	B088
TNMG□□-TF	ISO insert, traiangular, negative	B084
TNMG□□-TH	ISO insert, traiangular, negative	B092
TNMG□□-THS	ISO insert, traiangular, negative	B092
TNMG□□-TM	ISO insert, traiangular, negative	B088
TNMG□□-TQ	ISO insert, traiangular, negative	B088
TNMG□□-TS	ISO insert, traiangular, negative	B087
TNMG□□-TSF	ISO insert, traiangular, negative	B085
TNMG□□-ZF	ISO insert, traiangular, negative	B085
TNMG□□-ZM	ISO insert, traiangular, negative	B089
TNMM□□-57	ISO insert, traiangular, negative	B092
TNMM□□-DIA	PCD insert, traiangular, negative	B188
TNMU120708PER-NMJ	DoForce-Tri insert	H121
TNMU1207R16PER-MJ	DoForce-Tri insert	H121
TOGT□□□□□□PDFR-AJ	Tung-Tri insert	H129
TOHT□□□□□□R-NDJ	DeepTri-Drill, Tri-Fine insert	J124, J137
TOHT□□□□□□R-NDL	DeepTri-Drill, Tri-Fine insert	J123, J138
TOMT□□□□□□PDER-MJ	Tung-Tri insert	H129
TOMT□□□□□□PDER-NMJ	Tung-Tri insert	H129
TOOLCLAMP...	Tool clamp fixture	K157
TP-...	Wrench/Driver	L024
TP□N43Z...	TFP4000IA insert	H184
TP-3A	Wrench/Driver	L024
TPA06R□□□M...	Tung-Tri face mill	H123
TPA10R□□□M...	Tung-Tri face mill	H124
TPA15R□□□M...	Tung-Tri face mill	H126
TPAV06M040B16.0R10	TungForce-Rec face mill	H137
TPD05R□□□M...	TungQuad face mill	H155
TPGA...	ISO insert, traiangular, positive	B148
TPGA□□-DIA	PCD insert, traiangular, positive	B192
TPGA□□-QBN	CBN insert, traiangular, positive	B185
TPGH□□L-H11	ISO insert, traiangular, positive	B146
TPGH□□L-W10	ISO insert, traiangular, positive	B145
TPGH□□L-W13	ISO insert, traiangular, positive	B145
TPGM□□L-2	ISO insert, traiangular, positive	B147
TPGM□□R/L	ISO insert, traiangular, positive	B147
TPGN...	ISO insert, traiangular, positive	B150
TPGN□□-DIA	PCD insert, traiangular, positive	B192
TPGN□□-QBN	CBN insert, traiangular, positive	B183
TPGN□□-T1-W	ISO insert, traiangular, positive	B150
TPGR□□R/L	ISO insert, traiangular, positive	B150
TPGT□□-01	ISO insert, traiangular, positive	B142
TPGT□□F-JS	ISO insert, traiangular, positive	B148
TPGT□□FR/L-W08	ISO insert, traiangular, positive	B144
TPGT□□-JS	ISO insert, traiangular, positive	B148
TPGT□□R/L-W08	ISO insert, traiangular, positive	B144
TPGT□□R/L-W15	ISO insert, traiangular, positive	B145

Designation	Product name	Page
TPGT□□-SS	ISO insert, traiangular, positive	B146
TPGW...	ISO insert, traiangular, positive	B148
TPGW□□-DIA	PCD insert, traiangular, positive	B192
TPGW□□-QBN	CBN insert, traiangular, positive	B185
TPKR43ZSR-MJ	TFP4000IA insert	H184
TPM□□□ZERD	Drilling insert	J101
TPM□□R□□□M...	TecMill face mill	H169
TPMN...	ISO insert, traiangular, positive	B150
TPMP83ZDS	Drilling insert	J103
TPMR□□-23	ISO insert, traiangular, positive	B149
TPMR□□-24	ISO insert, traiangular, positive	B149
TPMR□□-CM	ISO insert, traiangular, positive	B149
TPMR□□-PS	ISO insert, traiangular, positive	B149
TPMR2204PDSR-MJ	TFP4000IA insert	H184
TPMT□□-23	ISO insert, traiangular, positive	B144
TPMT□□-24	ISO insert, traiangular, positive	B144
TPMT□□-CM	ISO insert, traiangular, positive	B146
TPMT□□-PF	ISO insert, traiangular, positive	B142
TPMT□□-PM	ISO insert, traiangular, positive	B146
TPMT□□-PS	ISO insert, traiangular, positive	B143
TPMT□□-PSF	ISO insert, traiangular, positive	B142
TPMT□□-PSS	ISO insert, traiangular, positive	B143
TPMT□□TM	ISO insert, traiangular, positive	B144
TPMT□□-TSF	ISO insert, traiangular, positive	B143
TPMW...	ISO insert, traiangular, positive	B147
TPO07R□□□M...	TungRec face mill	H141
TPO11R□□□M...	TungRec face mill	H144
TPO18R□□□M...	TungRec face mill	H150
TPQ□□R□□□M...	DoRec face mill	H165
TPTC16M□□□B...	TungTri-Shred face mill	H133
TPTN12M□□□B...	DoForce-Tri face mill	H120
TPV16R□□□M...	Tung-AluMill face mill	H172
TPW13R□□□M...	TungMill face mill	H160
TPYD06M□□□B...	TungSpeed-Mill face mill	H076
TPYP12M□□□B...	TungSpeed-Mill face mill	H074
TRC□□R□□□M...	RoundSplit face mill	H215
TRLG□□.□□X□□□□-...	DeepTri-Drill for gundrill machines	J118, J119
TRLG□□.□□X800-...	DeepTri-Drill for gundrill machines	J118, J119
TRLG30.00X□□□□-FM40	DeepTri-Drill for gundrill machines	J121
TRLG30.00X1650-FU38.1	DeepTri-Drill for gundrill machines	J121
TRLGCH□□.□□X□□□□-...	DeepTri-Drill for gundrill machines, cross hole	J120
TRP□□R□□□M...	FixRMill face mill	H210
TS25...	Screw	L003
TS30...	Screw	L003
TS35085I/HG	Screw	L003
TS40...	Screw	L003
TS45120I	Screw	L003
TS50...	Screw	L003
TS60...	Screw	L003
TS70F250A	Screw	L003
TS80F...	Screw	L003
TSE30□□R	TSE3000R shoulder mill	H176
TSE30□□R-E	TSE3000R shoulder mill	H176
TSE30□□RIA	TSE3000R shoulder mill	H176
TSE40□□RIA	TSE4000RIA shoulder mill	H179
TSL□□R/L	Shim	L013
TSL□□R/LI	Shim	L013
TSN□□R□□□M...	TecTangential-Slot radial drive slot mill	H198
TSNR□□□□□□□	Internal threading toolholder	E036
TSP40□□RIA	TSP4000IA shoulder mill	H182
TSW□□R...	TungUniversal-Slot radial drive slot mill	H195
TT-2525R/LE	External threading toolholder	E048
TT-2525RI	Internal threading toolholder	E048
TTR/L42M-005	Threading insert, 60° thread angle	E013
TTR/L42W-005	Threading insert, 55° thread angle	E015
TUNGBORE-BT50EM□□ADB	Drill holder with BT shank	K104
TVKX□□□□□□TN-MJ	TungThin-Slit insert	H193
TXLN□□M□□□B...	DoTwist-Ball face mill	H034
TXN03R□□□M...	DoFeed face mill	H024
TXN06R□□□M...	DoFeed face mill	H030
TXP□□□□□R	MillFeed face mill	H046, H047
TXP□□□□□R...	MillFeed face mill	H046, H047
TXQ12R□□□M...	DoFeed-Quad face mill	H041
TXSW15□□□□B...	MillQuad-Feed face mill	H044
TZF110□□...	TZF11 face mill	H232
TZP120□□...	TZP12 face mill	H227
TZP19□□□R	TZP19 face mill	H230

Alphanumeric Index

Designation	Product name	Page
U		
UB...	Drill tube for STS, external single thread	J160
UM	Cemented carbide grade	A007
UMBB□□□	Drill tube for MBU. internal single thread	J158
UTE-□□□□	Brazed drill head for STS, external double/quadruple thread	J153
UX30	Cemented carbide grade	A007
V		
VA...	Washer	L023
VAD...	TungMeister adapter for TungFlex connection	I089, K122
VBB□□□L□□.□-BG-02S...	TungMeister head	I073
VBB□□□L□□.□-BM-02S...	TungMeister head	I073
VBB□□□L□□.□-SG-02S...	TungMeister head	I074
VBD□□□L□□.□-BG-02S...	TungMeister head	I073
VBD□□□L□□.□-BG-04S...	TungMeister head	I074
VBE□□□L□□.□-BG-04S...	TungMeister head	I074
VBE□□□L□□.□-BGA02S...	TungMeister head	I074
VBGT□□FN-JS	ISO insert, 35° rhombic, positive	B152
VBGT□□FR/L-J10	ISO insert, 35° rhombic, positive	B152
VBGT□□N-JS	ISO insert, 35° rhombic, positive	B152
VBGT□□R/L-J10	ISO insert, 35° rhombic, positive	B152
VBMT□□-24	ISO insert, 35° rhombic, positive	B152
VBMT□□-CM	ISO insert, 35° rhombic, positive	B152
VBMT□□-PF	ISO insert, 35° rhombic, positive	B151
VBMT□□-PS	ISO insert, 35° rhombic, positive	B151
VBMT□□-PSF	ISO insert, 35° rhombic, positive	B150
VBMT□□-PSS	ISO insert, 35° rhombic, positive	B151
VBMT□□-TM	ISO insert, 35° rhombic, positive	B151
VBMT□□-TSF	ISO insert, 35° rhombic, positive	B151
VC004762I10035F	Screw	L005
VC00TANG16040F	Screw	L005
VC00TEDI...	Screw	L005
VCA...	TungMeister head	I080
VCGT□□-AL	ISO insert, 35° rhombic, positive	B154
VCGW□□-DIA	PCD insert, 35° rhombic, positive	B192
VCMT□□-24	ISO insert, 35° rhombic, positive	B154
VCMT□□-CM	ISO insert, 35° rhombic, positive	B154
VCMT□□-DIA	PCD insert, 35° rhombic, positive	B190
VCMT□□-PF	ISO insert, 35° rhombic, positive	B153
VCMT□□-PS	ISO insert, 35° rhombic, positive	B153
VCMT□□-PSF	ISO insert, 35° rhombic, positive	B153
VCMT□□-PSS	ISO insert, 35° rhombic, positive	B153
VCMT□□-TM	ISO insert, 35° rhombic, positive	B153
VCMT□□-TSF	ISO insert, 35° rhombic, positive	B153
VCMT...	ISO insert, 35° rhombic, positive	B154
VCP...	TungMeister head	I076
VCR...	TungMeister head	I080
VCW...	TungMeister head	I080
VDP...	TungMeister head	I076
VED□□□L□□.□R□□-04S...	TungMeister head	I065
VED□□□L□□.□R□□-06S...	TungMeister head	I068
VED□□□L□□.□R□□-08S...	TungMeister head	I069
VED□□□L□□.□R□□-10S...	TungMeister head	I069
VEE□□□L□□.□C□□C04S...	TungMeister head	I067
VEE□□□L□□.□R/C□□I04S...	TungMeister head	I066
VEE□□□L□□.□C□□R04S...	TungMeister head	I066
VEE□□□L□□.□R□□-03S...	TungMeister head	I065
VEE□□□L□□.□R□□-04S...	TungMeister head	I065
VEE□□□L□□.□R/C□□-06S...	TungMeister head	I068
VEE□□□L□□.□R/C□□-08S...	TungMeister head	I069
VEE□□□L□□.□R/C□□-10S...	TungMeister head	I069
VEE□□□L□□.□R□□A02S...	TungMeister head	I067
VEE□□□L□□.□R□□A03S...	TungMeister head	I068
VEE□□□L□□.□R00-03S...	TungMeister head	I064
VEH□□□L□□.□□□I04S...	TungMeister head	I064
VER...	TungMeister adapter for ER collet connection	I090
VFX□□□L□.□□R□□H04S...	TungMeister head	I072
VFX□□□L□□.□R□□-02S...	TungMeister head	I072
VGC□□□L□□.□R□□-02S...	TungMeister head	I078
VMT□□□L□□IS□□-...	TungMeister head	I118
VMT□□□L□□UN□□-...	TungMeister head	I118
VMT□□□L□□W□□-...	TungMeister head	I119
VNGA...	ISO insert, 35° rhombic, negative	B098
VNGD...	ISO insert, 35° rhombic, negative	B099
VNGG□□-01	ISO insert, 35° rhombic, negative	B094
VNMA...	ISO insert, 35° rhombic, negative	B098
VNMG...	ISO insert, 35° rhombic, negative	B097
VNMG□□-11	ISO insert, 35° rhombic, negative	B095
VNMG□□-28	ISO insert, 35° rhombic, negative	B097
VNMG□□-33	ISO insert, 35° rhombic, negative	B097
VNMG□□-CF	ISO insert, 35° rhombic, negative	B096
VNMG□□-CM	ISO insert, 35° rhombic, negative	B098
VNMG□□-DM	ISO insert, 35° rhombic, negative	B097
VNMG□□-HMM	ISO insert, 35° rhombic, negative	B098
VNMG□□-HRF	ISO insert, 35° rhombic, negative	B096
VNMG□□-HRM	ISO insert, 35° rhombic, negative	B098
VNMG□□-SF	ISO insert, 35° rhombic, negative	B095
VNMG□□-SM	ISO insert, 35° rhombic, negative	B098
VNMG□□-SS	ISO insert, 35° rhombic, negative	B096
VNMG□□-TF	ISO insert, 35° rhombic, negative	B094
VNMG□□-TM	ISO insert, 35° rhombic, negative	B096
VNMG□□-TQ	ISO insert, 35° rhombic, negative	B096
VNMG□□-TS	ISO insert, 35° rhombic, negative	B096
VNMG□□-TSF	ISO insert, 35° rhombic, negative	B095
VNMG□□-ZF	ISO insert, 35° rhombic, negative	B095
VNMG□□-ZM	ISO insert, 35° rhombic, negative	B097
VNMM□□-DIA	PCD insert, 35° rhombic, negative	B188
VPET□□MFN-JSP	ISO insert, 35° rhombic, positive	B156
VPET□□MFR/L-JPP	ISO insert, 35° rhombic, positive	B155
VPET□□MFR/L-JRP	ISO insert, 35° rhombic, positive	B155
VPG□□V-T1-W	ISO insert, 35° rhombic, positive	B157
VRB...	TungMeister head	I069
VRC...	TungMeister head	I069
VRD...	TungMeister head	I070
VSC...	TungMeister shank	I089
VSSD□□L□□□S□□-...	TungMeister shank	I087
VSSD□□L□□□S□□-W-A	TungMeister shank	I086
VSSD□□L□□□W□□-S	TungMeister shank	I087
VST□□□L□□.□□A45-□S...	TungMeister head	I083
VST□□□W□.□□R□□□-3S06	TungMeister head	I082
VST□□□W□.□□R□□□-4S08	TungMeister head	I083
VST□□□W□.□□R□□□-6S10	TungMeister head	I083
VSTD...	TungMeister shank	I089
VTB□□□W□.□□R04-06S...	TungMeister head	I084
VTB135W2.00C15-06S05	TungMeister head	I084
VTR□□□L□□IS□□-□S...	TungMeister head	I119
VTR220L24W14-4S08	TungMeister head	I119
VTSD□□L□□□S□□-...	TungMeister shank	I088
VTSD□□L□□□S□□-W-A	TungMeister shank	I088
VX0400□□A	Screw	L003
VXGU□□MFR/LE-JRP	MiniForce-Turn insert, 35° rhombic, positive	B156
VXGU□□MFR/L-JS	MiniForce-Turn insert, 35° rhombic, positive	B156
W		
W□□R/L	Insert clamp	L026
WBGT□□FR/L-JS	ISO insert, 80° hexagonal, positive	B158
WBGT□□FR/L-W08	ISO insert, 80° hexagonal, positive	B157
WBGT□□L-W11	ISO insert, 80° hexagonal, positive	B158
WBGT□□R/L-JS	ISO insert, 80° hexagonal, positive	B158
WBGT□□R/L-W08	ISO insert, 80° hexagonal, positive	B157
WCMT□□□□□□-D□	Drilling insert	J103
WCMT□□□□□□-D4	Insert for EVX	I093
WCS3	Screw	L007
WDCN42ZFR-DIA	TMD4400R/LI, EMD4400RI, TGD4400-A, EGD4400 insert	H094, H100
WECN42ZFR-DIA	THE4000RIA shouldering insert	H175
WF□□□R/L	Insert clamp	L026
WG□□-□-□-W	Grooving insert	B164
WG300	Ceramic grade	A005
WGE□□	My-T Series Grooving insert	F059, F185
WGE□□R/L	My-T Series Grooving insert	F059, F186
WGR□□	My-T Series Grooving insert	F060
WGT□□	My-T Series Grooving insert	F060, F185
WN645R/L	Insert clamp	L026
WNGA...	ISO insert, 80° hexagonal, negative	B106
WNGG□□-01	ISO insert, 80° hexagonal, negative	B099
WNGU□□□□□□TN-MJ	TungUniversal-Slot insert	H196
WNMA...	ISO insert, 80° hexagonal, negative	B106
WNMG...	ISO insert, 80° hexagonal, negative	B104
WNMG□□-11	ISO insert, 80° hexagonal, negative	B100
WNMG□□-17	ISO insert, 80° hexagonal, negative	B100
WNMG□□-27	ISO insert, 80° hexagonal, negative	B104
WNMG□□-33	ISO insert, 80° hexagonal, negative	B104
WNMG□□-37	ISO insert, 80° hexagonal, negative	B104
WNMG□□-AFW	ISO insert, 80° hexagonal, negative	B100
WNMG□□-AM	ISO insert, 80° hexagonal, negative	B103
WNMG□□-AS	ISO insert, 80° hexagonal, negative	B102
WNMG□□-ASW	ISO insert, 80° hexagonal, negative	B102

Alphanumeric Index

Designation	Product name	Page
WNMG□□-CB	ISO insert, 80° hexagonal, negative	B102
WNMG□□-CF	ISO insert, 80° hexagonal, negative	B101
WNMG□□-CH	ISO insert, 80° hexagonal, negative	B106
WNMG□□-CM	ISO insert, 80° hexagonal, negative	B105
WNMG□□-DM	ISO insert, 80° hexagonal, negative	B104
WNMG□□E-FW	ISO insert, 80° hexagonal, negative	B100
WNMG□□E-NM	ISO insert, 80° hexagonal, negative	B103
WNMG□□E-SM	ISO insert, 80° hexagonal, negative	B105
WNMG□□E-SS	ISO insert, 80° hexagonal, negative	B102
WNMG□□E-SW	ISO insert, 80° hexagonal, negative	B102
WNMG□□E-TM	ISO insert, 80° hexagonal, negative	B103
WNMG□□E-TSF	ISO insert, 80° hexagonal, negative	B100
WNMG□□E-ZF	ISO insert, 80° hexagonal, negative	B100
WNMG□□E-ZM	ISO insert, 80° hexagonal, negative	B104
WNMG□□-FW	ISO insert, 80° hexagonal, negative	B100
WNMG□□-HMM	ISO insert, 80° hexagonal, negative	B105
WNMG□□-HRF	ISO insert, 80° hexagonal, negative	B101
WNMG□□-HRM	ISO insert, 80° hexagonal, negative	B105
WNMG□□-NM	ISO insert, 80° hexagonal, negative	B103
WNMG□□-NS	ISO insert, 80° hexagonal, negative	B102
WNMG□□-SA	ISO insert, 80° hexagonal, negative	B105
WNMG□□-SF	ISO insert, 80° hexagonal, negative	B101
WNMG□□-SH	ISO insert, 80° hexagonal, negative	B106
WNMG□□-SM	ISO insert, 80° hexagonal, negative	B105
WNMG□□-SS	ISO insert, 80° hexagonal, negative	B102
WNMG□□-SW	ISO insert, 80° hexagonal, negative	B102
WNMG□□-TA	ISO insert, 80° hexagonal, negative	B103
WNMG□□-TF	ISO insert, 80° hexagonal, negative	B099
WNMG□□-TH	ISO insert, 80° hexagonal, negative	B106
WNMG□□-THS	ISO insert, 80° hexagonal, negative	B106
WNMG□□-TM	ISO insert, 80° hexagonal, negative	B103
WNMG□□-TQ	ISO insert, 80° hexagonal, negative	B103
WNMG□□-TS	ISO insert, 80° hexagonal, negative	B101
WNMG□□-TSF	ISO insert, 80° hexagonal, negative	B100
WNMG□□-ZF	ISO insert, 80° hexagonal, negative	B100
WNMG□□-ZM	ISO insert, 80° hexagonal, negative	B104
WP193TR/L	Insert clamp	L026
WP440R/L	Insert clamp	L026
WPAN42SFR	TGP4100RIA/BA insert	H103
WPAN42SFRS	TGP4100RIA/BA insert	H103
WPAN42ZFR	TGP4200R-A insert	H104
WPMT□□□□□□-D3	TDP insert	J102
WPMT□□□□□□ZPR-DML	MillFeed insert	H049
WPMT□□□□□□ZPR-MH	MillFeed insert	H049
WPMT□□□□□□ZPR-ML	MillFeed insert	H049
WPMT090725ZP□-ML	TurnFeed insert	B156, C096
WPMW□□□□□□ZPR	MillFeed insert	H049
WR603R/L	Insert clamp	L026
WR602R/LW	Insert clamp	L026
WRENCHCOOLTUBEHSK...	Wrench for HSK cooling tube	K157
WRENCHER□□	Wrench for ER collet chuck	K034
WRENCHER...	Wrench for ER nut	K152
WRENCHM□SEMC□□	Wrench for cutter arbor	K036, K156
WRENCHMAXIN□□HOOK	Wrench for power chuck holder	K039, K152
WT402R/L	Insert clamp	L026
WTJNR/L□□□...	External toolholder, W-type	C051
WWCW13T3AF□R-WS	TungMill insert	H071
WWCW13T3AFFR-WD	TungMill insert	H071
WWMU□□□□□□R-DJ	TungSix-Drill insert	J079, J096
WWMU□□□□□□R-DS	TungSix-Drill insert	J080, J096
WXGU□□MFR/L-JS	MiniForce-Turn insert, 80° trigon, positive, double-sided	B158
WXGU□□MFR/L-JSS	MiniForce-Turn insert, 80° trigon, positive, double-sided	B159
WXGU□□MFR/L-JTS	MiniForce-Turn insert, 80° trigon, positive, double-sided	B158
WXGU□□MR/L-JSS	MiniForce-Turn insert, 80° trigon, positive, double-sided	B159
WXGU□□MR/L-JTS	MiniForce-Turn insert, 80° trigon, positive, double-sided	B158
WXGU□□R/L-SS	MiniForce-Turn insert, 80° trigon, positive, double-sided	B159
WXGU□□R/L-TS	MiniForce-Turn insert, 80° trigon, positive, double-sided	B159
WXGU□□R/L-TSW	MiniForce-Turn insert, 80° trigon, positive, double-sided	B159
WXHU0403□□R-MJ	DoMiniMill insert	H209
X		
X407	Cermet grade	A005
XCET310404ER	ECC insert	I094
XGR/L□□□□-02	Grooving insert	F082, F131
XGR/L□□□□S-QBN	CBN insert for grooving	B187, F083
XHGR090300-45A	DrillMeister chamfering insert	J019
XHGR090300-60A	DrillMeister chamfering insert	J019
XHGT090300-30A	DrillMeister chamfering insert	J019
XHGX090700R-45A	Insert for TDXCF chamfering tool	J081, J093
XNR/L□□□□-...	Face grooving insert	F166
XPMT□□□□R-DG	TungDrill-Twisterd, TungDrillBig insert	J091, J100
XPMT□□□□R-DJ	TungDrill-Twisterd, TungDrillBig insert	J090, J099
XPMT□□□□R-DS	TungDrill-Twisterd, TungDrillBig insert	J090, J099
XPMT□□□□R-DW	TungDrill-Twisterd, TungDrillBig insert	J091, J099
XVCT16□□□□R-AJ	Tung-AluMill insert	H173
XWXPR/L□□□□□09	TurnFeed external toolholder	C096
XXMU□□□□□PR-MJ	EVX insert	I093
Y		
YDEN0603PD□R-D	TungSpeed-Mill insert	H077
YDEN0603PDFR-BD	TungSpeed-Mill insert	H077
YDEN0603PDFR-WD	TungSpeed-Mill insert	H077
YDEN0905PDFR-BD	DPD09 / EDPD09 insert	H083
YDEN0905PDFR-D	DPD09 / EDPD09 insert	H083
YDEN0905PDFR-WD	DPD09 / EDPD09 insert	H083
YH170	PVD coated grade	A004
YH180	PVD coated grade	A004
YNMG□□-ZF	ISO insert, 25° rhombic, negative	B107
YNMG□□-ZM	ISO insert, 25° rhombic, negative	B107
YPEB12X3-□□□□R-D	TungSpeed-Mill insert	H075
YWMT□□-ZF	ISO insert, 25° rhombic, positive	B160
YWMT□□-ZM	ISO insert, 25° rhombic, positive	B160
Z		
ZDMT□□□□-MJ	EBD insert	H225
ZFBM□□□R□□-MJ	BallFinishNose insert	H206
ZFRM□□□R□□-MJ	BallFinishNose insert	H206
ZNCA□□□□FN	TBN1000 insert	H221
ZNCA1002FN2	TBN1000 insert	H221
ZNMM□□□□EN	TBN1000 insert	H221
ZPCW□□□□-QBN	EBB insert	H224
ZPET□□□□-MJ	EBP insert	H223
ZRBM□□□-MM	BallRoughNose insert	H203
ZSA□□02	Shim	L010

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