

Turning Indexable Inserts

B1~B107



B



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Turning Indexable Inserts Identification System

B



Insert (Turning)

Symbol	Shape
H	Hexagon
O	Octagon
P	Pentagon
S	Square
T	Triangle
C	80° Rhombic
D	55° Rhombic
E	75° Rhombic
F	50° Rhombic
M	86° Rhombic
V	35° Rhombic
W	80° Trigon
L	Rectangle
A	85° Parallelogram
B	82° Parallelogram
K	55° Parallelogram
R	Round

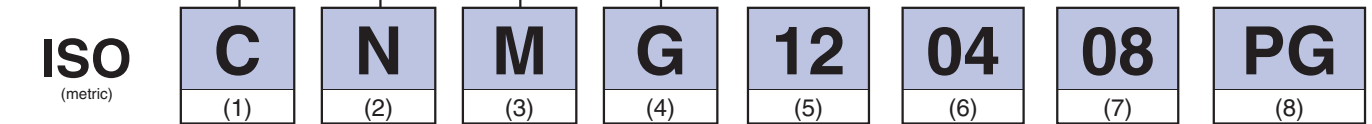
Shown angle stands for acute angle for rhombic and parallelogram inserts.

Symbol	Relief Angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°

Symbol (Class)	Tolerance (mm)		
	Corner Height	Thickness	I.C. Size
A	±0.005	±0.025	±0.025
F			±0.013
C	±0.013		±0.025
H			±0.013
E	±0.025	±0.13	±0.025
G			±0.025
J	±0.005	±0.05~±0.15	±0.05~±0.15
K*	±0.013		
L*	±0.025		
M*	±0.08~±0.18		
N*	±0.13~±0.38	±0.13	±0.08~±0.25
U*		±0.025	

* Insert's periphery is as fired. Tolerance difference is depending on insert size.

Symbol	Hole	Hole Shape	Chipbreaker	Shape
N	No	-	No	
R			Single Sided	
F			Two Sides	
A	Yes	With Hole	No	
M			Single Sided	
G		Two Sides		
W		With Hole and One Countersink 40°~60°	No	
T			Single Sided	
Q		With Hole and Two Countersink 40°~60°	No	
U			Two Sides	
B		With Hole and One Countersink 70°~90°	No	
H			Single Sided	
C		With Hole and Two Countersink 70°~90°	No	
J	Two Sides			
X	-	-	-	-



(5) Edge Length Symbol (ISO)							I.C. Size (mm)	(5) I.C. Size (ANSI)	
C	D	R	S	T	V	W		IC Size (inch)	Symbol
03	04		03	06			3.97	5/32	12
04	05		04	08	08		4.76	3/16	15
		05					5		
05	06		05	09			5.56	7/32	18
		06					6		
06	07		06	11	11		6.35	1/4	2
08	09		07	13			7.94	5/16	25
		08					8		
09	11	09	09	16	16		9.525	3/8	3
		12	10				10		
		12					12		
12	15	12	12	22	22		12.7	1/2	4
16	19	15	15	27	27		15.875	5/8	5
		16					16		
19	23	19	19	33	33		19.05	3/4	6
		20					20		
22	27		22	38			22.225	7/8	7
		25					25		
25	31	25	25	44	44		25.4	1	8
32	38	31	31	54	54		31.75	1-1/4	10
		32					32		

(6) Thickness Symbol			
ISO		ANSI	
Thickness (mm)	Symbol	Thickness (inch)	Symbol
1.59	01	1/16	1
1.98	T1	5/64	12
2.38	02	3/32	15
2.78	T2	-	-
3.18	03	1/8	2
3.97	T3	5/32	25
4.76	04	3/16	3
5.56	05	7/32	35
6.35	06	1/4	4
7.94	07	5/16	5
9.525	09	3/8	6

Thickness displayed as the distance between bottom surface and highest point on cutting edge.

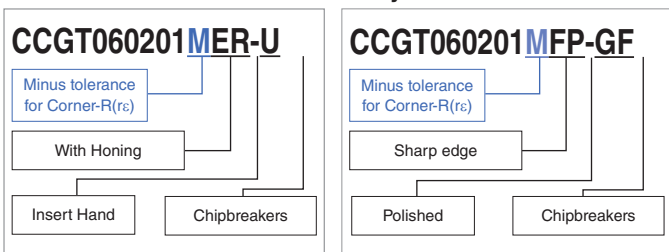
(7) Corner-R(r _c) Symbol			
ISO		ANSI	
Corner-R(r _c) (mm)	Symbol	Corner-R(r _c) (inch)	Symbol
Sharp Corner	00	.000	00
0.03	003	.001	01
0.05	005	.002	013
0.1	01	.004	02
0.2	02	.008	05
0.4	04	1/64	1
0.8	08	1/32	2
1.2	12	3/64	3
1.6	16	1/16	4
2.0	20	5/64	5
2.4	24	3/32	6
2.8	28	7/64	7
3.2	32	1/8	8
Round insert	00 (inch) or M0 (metric)	Round insert	0

(8) Manufacturer's Option

Hand Symbol
Chipbreaker Symbol, etc.

· Expressed as edge length for ISO.
· ANSI expresses the inscribed circle diameter in inches.

Positive Inserts Identification System



When a minus tolerance is specified for the corner-R(r_c)

If a minus tolerance is specified for the corner-R(r_c) as shown in the Fig.1, using an insert with corner-R(r_c)=0.2 mm may result in larger radius than specified. Use an insert the corner of which R(r_c) has a minus tolerance.

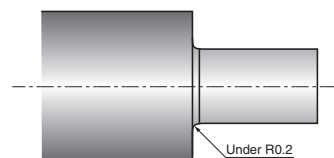


Fig.1 Example of a specified corner-R in the drawing



● Features of insert with tolerance symbol of “E” Class

“E” Class Turning Insert

- Accuracy of index position after insert replacement

Thickness Tolerance

(Conventional) → ±0.025mm

Corner-R (r_ε) Tolerance

(Conventional) → ±0.02mm

● High Quality Ground Insert “Super Fine”

- Applicable for mechatronics, electronics and high precision machined parts
- Sub-micron accuracy possible

High Quality Ground Insert

- Reduced micro chipping during edge grinding
- Less adhesion · Long tool life

■ Insert Color

● Cermet, MEGACOAT NANO Cermet, MEGACOAT Cermet and PVD Coated Cermet

Grades	Cermet						MEGACOAT NANO Cermet		MEGACOAT Cermet				PVD Coated Cermet			
		NEW TN610	TN620	TN6010	TN6020	TN60	TN100M	TC40N	TC60M	NEW PV710	NEW PV720	PV7005	PV7010	PV7025	PV7040	PV7020
Insert Color																

● MEGACOAT (PVD Coated Carbide)

Grades	MEGACOAT						
		PR1210	PR1215	PR1225	PR1230	PR1305	PR1310
Insert Color							

● CVD Coated Carbide and PVD Coated Carbide

Grades	CVD Coated Carbide						PVD Coated Carbide									
		NEW CA420M	CA45 series		CA40/CA41 series	NEW CA510 CA515 CA525 CA530	CA55 series	CA65 series	PR660	PR830	PR905	PR915	PR930	PR1005	PR1025	PR1115
Insert Color																

● MEGACOAT (PVD Coated Carbide)

Grades	MEGACOAT NANO			
		NEW PR1425	PR1510	PR1525
Insert Color				

● Ceramic

Grades	Aluminum Oxide Ceramic			PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Honeycomb structure Ceramic	
		KA30	A65	KT66	A66N	PT600M	KS6050	CS7050	NEW KS6030	KS6040
Insert Color										

● CBN and PCD

Grades	CBN			PCD			MEGACOAT CBN	PVD Coated CBN		
		KBN65B	NEW KBN475	KBN510	KBN525	NEW KBN570	KPD001	KPD010	KPD230	KBN · · M
Insert Color										

● DLC Coated Carbide ● Carbide

Grades	DLC Coated Carbide	Carbide			
		NEW PDL025	GW15	GW25	KW10
Insert Color					

Chipbreaker Selection (Negative Inserts)

Steel

1 Molded Chipbreaker

B



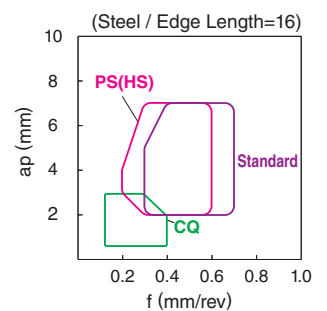
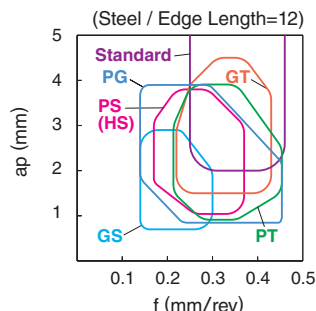
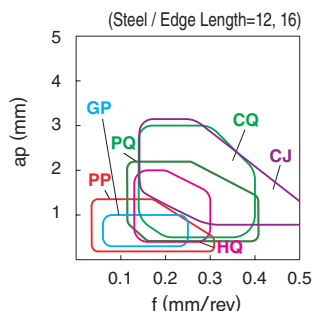
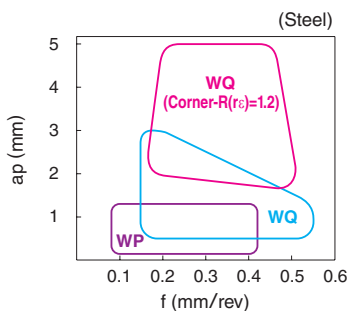
Chipbreakers

Insert (Turning)

Cutting Range	Name	Design	Advantages
Finishing (With Wiper Edge)	WP		Wiper insert. Good chip control at small machining.
Finishing-Medium (With Wiper Edge)	WQ		Wiper insert. Double feed rate possible while maintaining a smooth finish. High efficiency and good chip control.
Finishing	PP		3-step dot structure realizes stable chip control at a wide range of feed rate. Less cutting force due to sharp cutting edge and smooth rake face.
Finishing-Medium	PQ		Stable chip control in a wide feed rate range by breaking chips effectively. The well-balanced edge sharpness and toughness.

Cutting Range	Name	Design	Advantages
Finishing	GP		Finishing to light machining. Good chip control.
Finishing-Medium	HQ		Sharp cutting performance with 3-D rake angle and double projection design.
Finishing-Medium	CQ		Good chip control for varied ap such as copying. Applicable to up facing.
Finishing-Medium (Up Facing)	CJ		Improved chip curing at small machining and high feed rate machining. Improved chip evacuation at copying and up facing.
Medium - Roughing	PG		Stable machining with good balance of edge sharpness and strength. Prevent chip clogging at high feed rate. Good chip control at low feed rate. Stable machining with wide chip control range.

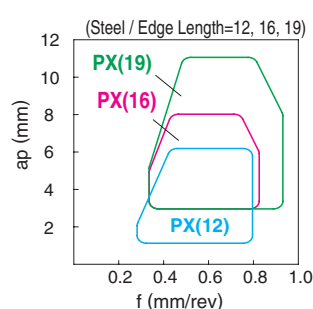
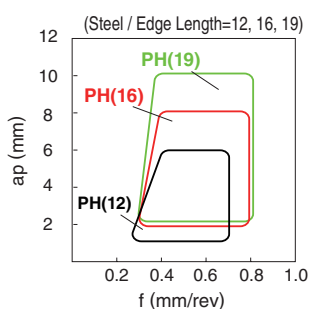
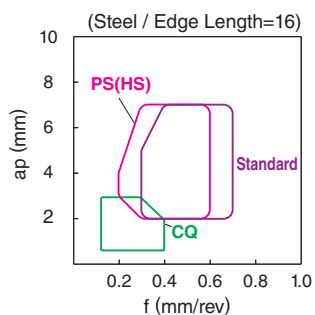
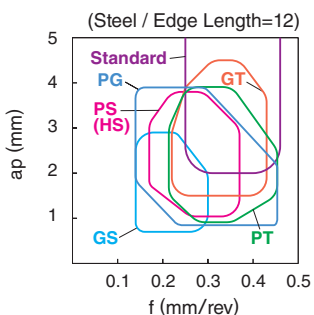
● Applicable Chipbreaker Range (ap indicates radius)





Cutting Range	Name	Design	Advantages
Medium - Roughing	GS		Strong edge chipbreaker. Stable for continuous machining and light interrupted machining.
Medium - Roughing	PS		General purpose chipbreaker. More stable due to large contact surface.
Medium - Roughing	HS		General purpose chipbreaker. Applicable to copying.
Medium-Roughing / High Feed Rate	PT		Low cutting force at high feed machining. Land support structure.
Medium-Roughing / High Feed Rate	GT		Strong edge chipbreaker. Wide land design and smooth chip control even at high feed rate machining.
Roughing	Standard (Without Indication)		Low cutting force and applicable to large ap roughing.
Roughing	PH		For roughing of steel. Suitable for heavy interrupted machining and for workpieces with scale due to strong cutting edge.
Single Sided Roughing (High Feed Rate)	PX		Roughing and high feed rate operation. Low cutting force chipbreaker.

● Applicable Chipbreaker Range (ap indicates radius)



Chipbreaker Selection (Negative Inserts)

Stainless Steel / Heat-Resistant Alloys / Titanium Alloy

B



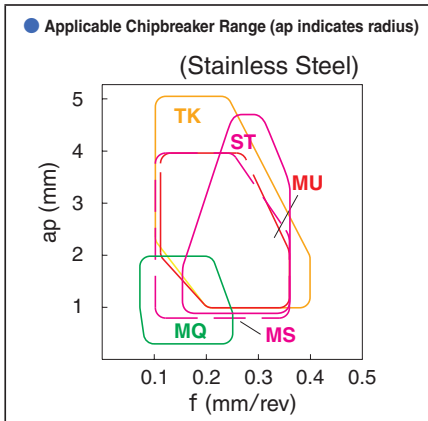
Chipbreakers

Insert (Turning)

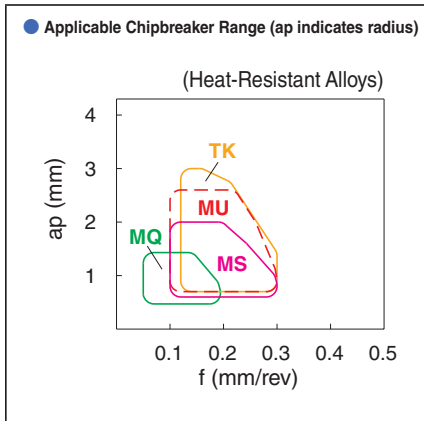
Cutting Range	Name	Design	Advantages
Finishing	MQ		Large rake angle. Low cutting force and good chip control.
Medium-Roughing	MS		Superior cutting edge sharpness and strength achieved by a positive land. Extra strength of cutting edge inhibits damage from wall shouldering.
Medium-Roughing	MU		Large rake angle reduces cutting force. Less burring achieved by diminishing damage from notching.

Cutting Range	Name	Design	Advantages
Medium-Roughing	TK		Smooth chipbreaker geometry improves chip flow with less adhesion. Large curled chips.
Medium-Roughing	ST		Less cutting force due to large rake angle. Less notching by special design.

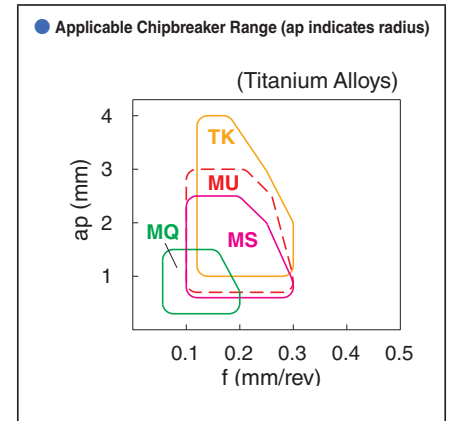
Stainless Steel



Heat-Resistant Alloys

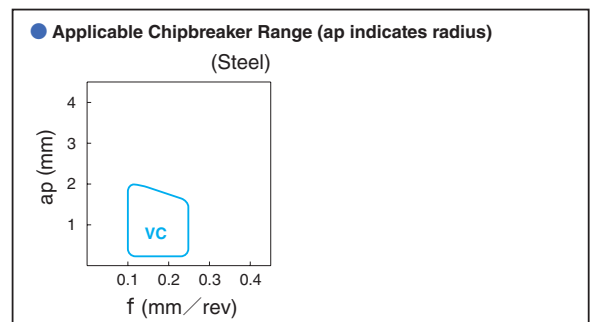


Titanium Alloys


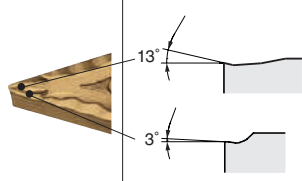


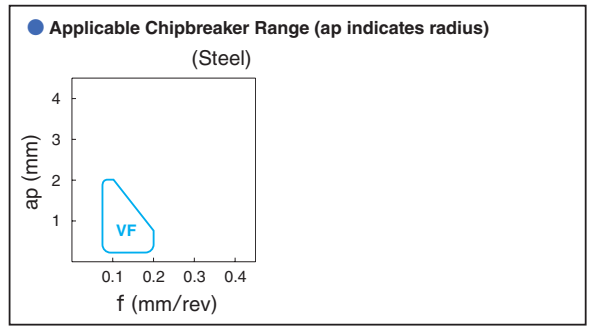
Steel (Copying / Undercutting, Varied ap)

Cutting Range	Name	Design	Advantages
Finishing-Medium	VC		Chipbreaker with hand for copying. Excellent chip control in a wide range of machining applications.


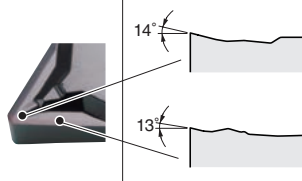
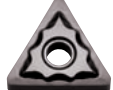
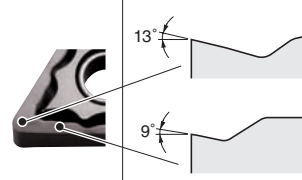


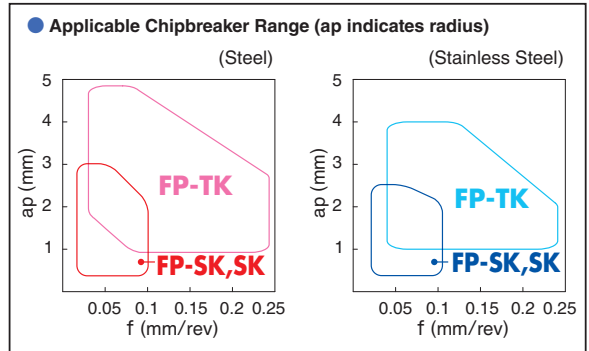
Steel (Copying / Undercutting , Varied ap)

Cutting Range	Name	Design		Advantages
Finishing-Medium	VF			Good chip control for varied ap such as copying and undercutting.


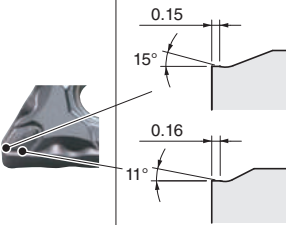

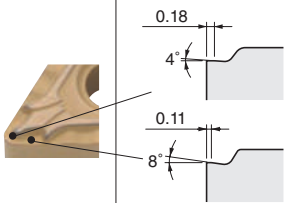

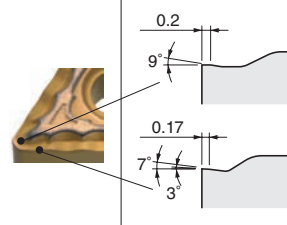

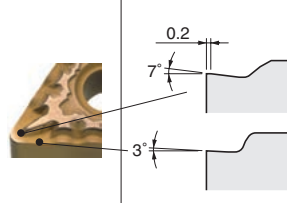


Steel / Stainless Steel (for automatic lathe)

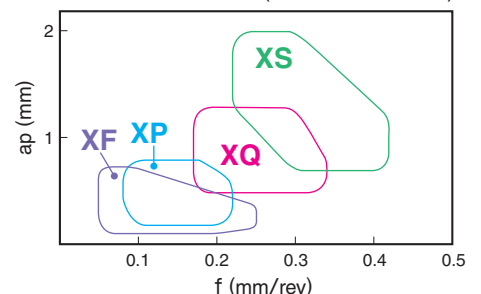
Cutting Range	Name	Design		Advantages
Finishing-Medium	SK	 FP-SK : Polished Sharp Edge SK : Honed		For finishing to medium machining in automatic lathes. Sharp cutting performance equivalent to positive inserts. 2-step dot design provides reliable chip control at various ap.
Medium-Roughing	FP-TK			For medium to large ap in automatic lathes (When machining workpieces of medium to large dia.) Superior cutting performance achieved by sharp edge and polished surface. Smooth chipbreaker geometry improves chip flow with less adhesion. Large curled chips.



Low Carbon Steel (Pipe / Rolled Plate / Rolled Steel)

Cutting Range	Name	Design		Advantages
Finishing	XF			Excellent chip control at high speed and small ap machining of low carbon steel
Finishing	XP			Short chips when finishing due to sharp cutting and special design.
Medium	XQ			Consistent chip breaking at medium machining due to moderate rake face and special design.
Roughing	XS			Consistent chip breaking when roughing due to special rake face and rake angle design.

● Applicable Chipbreaker Range (ap indicates radius) (Low Carbon Steel)



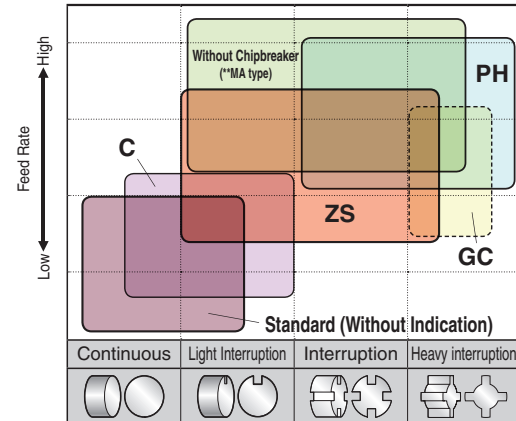
Chipbreaker Selection (Negative Inserts)

Cast Iron

Cutting Range	Name	Design	Advantages
Sharp Cutting Oriented	Standard (Without Indication)		Standard chipbreaker for continuous to light interrupted machining of cast iron. (Low cutting force)
	C		High feed rate chipbreaker for continuous to light interrupted machining of cast iron.
	ZS		Standard chipbreaker for light interrupted to interrupted machining of cast iron. (Stability Oriented)
	Without Chipbreaker		High feed rate chipbreaker for light interrupted to interrupted machining of cast iron.

Cutting Range	Name	Design	Advantages
Stability Oriented	GC		Chipbreaker for heavy interrupted machining of cast iron. (Tough edge chipbreaker)
	PH		Chipbreaker for roughing of cast iron. Suitable for heavy interrupted machining and for workpieces with scale due to strong cutting edge.

Chipbreaker Selection (Negative Inserts)



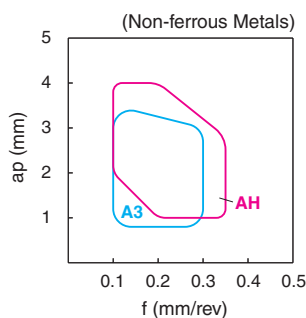
Non-ferrous Metals

Cutting Range	Name	Design	Advantages
Finishing-Medium	A3		Large rake angle and smooth surface. Good chip control and less adhesion.

Cutting Range	Name	Design	Advantages
Medium - Roughing	AH		Polished chipbreaker. Smooth chip control and less adhesion.

G Class: Sharp Edge
M Class: Horned Edge Prep.

Applicable Chipbreaker Range (ap indicates radius)

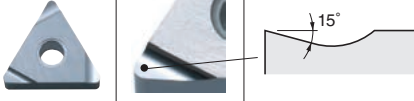
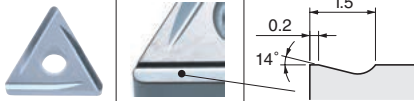
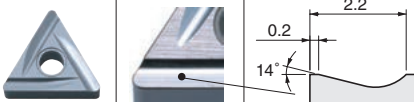


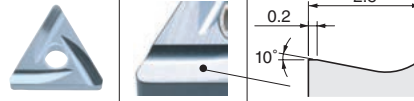
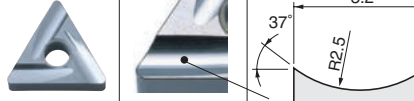
A3 Chipbreaker	
	ap=2mm f=0.2mm/rev
	ap=2mm f=0.3mm/rev

AH Chipbreaker	
	ap=2mm f=0.2mm/rev
	ap=2mm f=0.3mm/rev

Steel

2 Ground Chipbreaker

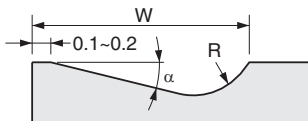
Cutting Range	Name	Design	Advantages
Finishing	S		Sharp edge and less cutting force. Good chip control and smooth chip evacuation.
Finishing-Medium	B		Suitable for general purpose machining at feed rate 0.15 to 0.25mm/rev.
Medium - Roughing	C		Suitable for general purpose machining at feed rate 0.20 to 0.35mm/rev.

Cutting Range	Name	Design	Advantages
Roughing	D		Suitable for general purpose machining at feed rate 0.30 to 0.45mm/rev.
Medium-Roughing / Low Cutting Force	25R		Applicable to sticky material such as low carbon steel. Large rake angle and suitable for stainless steel.

Effectiveness of ground chipbreaker

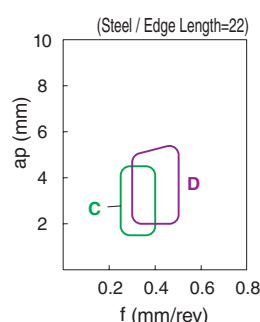
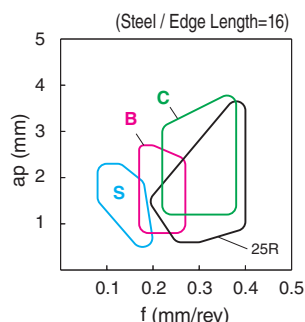
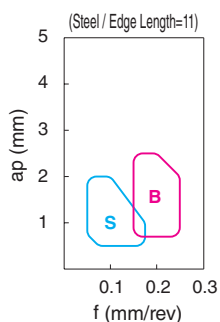
- (1) Lower cutting force and improve edge
- (2) Improved adhesion resistance
- (3) Improved dimension accuracy and finishing surface accuracy
- (4) Controlled chip evacuation direction

Specification of B, C, D and parallel ground chipbreaker



Insert Type	Size	Chipbreaker Name	W	α	R
CNGG	09, 12	Without Indication (Similar to C)	2.2	14°	1.0
WNGG	06	Without Indication (Similar to C)	2.2	14°	1.0
TNGG	11, 16	B	1.5	14°	0.5
	16, 22	C	2.2	14°	1.0
	16, 22	D	2.8	10°	1.5
DNGG	11, 15	Without Indication (Similar to C)	2.5	14°	2.0
VNGG	16	Without Indication (Similar to B)	1.5	14°	0.5
SNGG	09, 12	B	1.5	14°	0.5
	12	C	2.2	14°	1.0

Applicable Chipbreaker Range (ap indicates radius)



Chipbreaker Selection (Positive Insert)

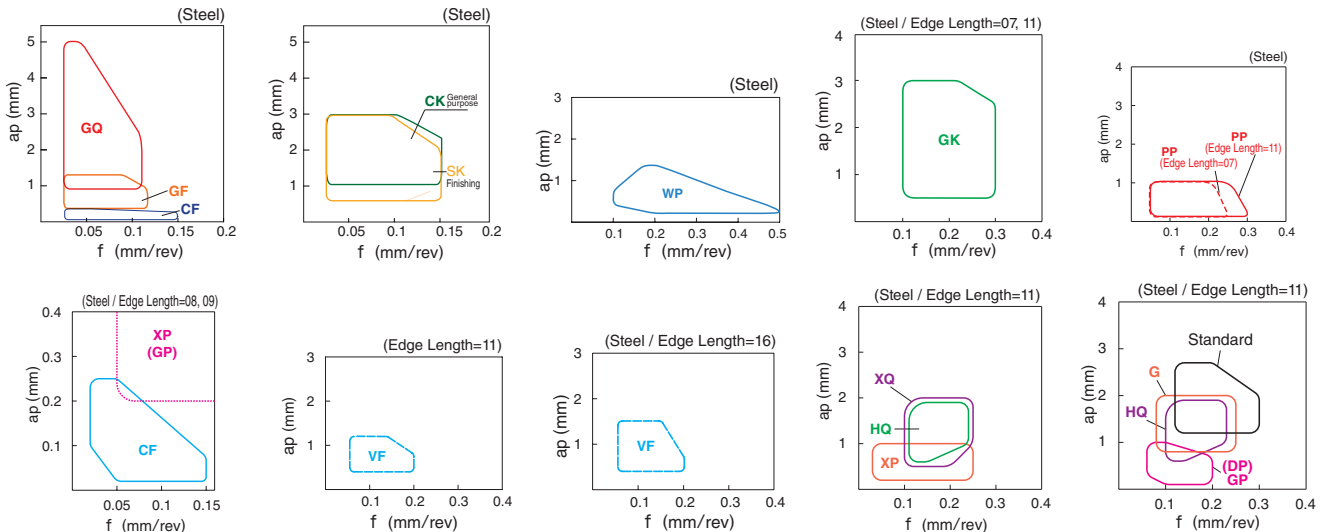
Steel

1 Molded Chipbreaker

Cutting Range	Name	Design	Advantages
Minute ap	CF		Available for minute ap (0.02 to 0.2mm) finishing.
Finishing	GF		Chips fragmented in small pieces in machining of small ap.
Finishing-Medium	GQ		Enables machining over a wide range of conditions by using the optimum chipbreaker width according to the cutting depth.
Finishing	SK		Sharp cutting performance due to Large rake angle. Large dot to the corner edge improved chip control in a wide feed rate range.
Finishing	CK		Good cutting performance. Applicable without hand for two direction machining on automatic lathe.
Finishing	WP		Wiper insert. Good surface finish at high feed machining. Reduces surface finish galling.
Finishing-Medium	GK		Good chip evacuation at wide range by breaker dot and wide chip pocket.
Finishing	PP		1st. Recommendation at steel finishing. Stable chip control in a wide feed rate range. Stable tool life due to special edge design with sharpness and improved strength.

Cutting Range	Name	Design	Advantages
Finishing	DP		Consistent chip breaking performance for finishing.
Finishing	GP		Good chip control.
Finishing	VF		Good chip control for varied ap such as copying and undercutting.
Finishing-Medium	HQ		General purpose chipbreaker for medium machining.
Medium	G		Chipbreaker for short chips at medium machining.
Medium	Standard (Without Indication)		Strong edge chipbreaker for medium machining range.

Applicable Chipbreaker Range (ap indicates radius)

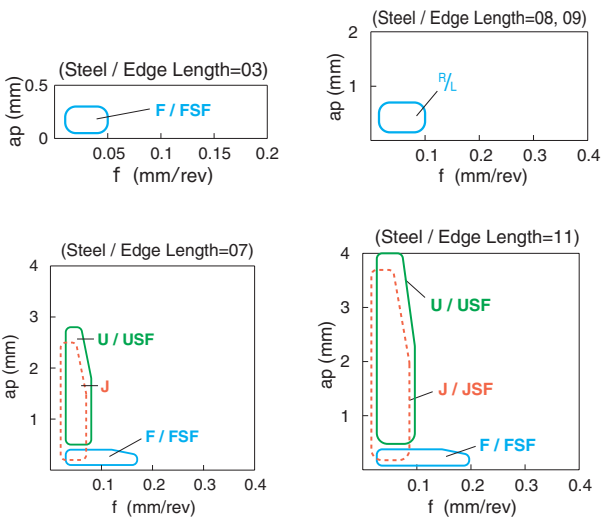


Steel

2 Ground Chipbreaker

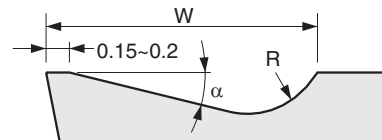
Cutting Range	Name	Design	Advantages
Finishing	Lead (Without Indication)		Good chip control at finishing to light machining with low cutting force.
Finishing	F		Good chip control at finishing to light machining with low cutting force.
Medium	Y		Sharp cutting performance and good surface finish.
Low Feed	J		Slant chipbreaker width and chip control at various ap. Applicable to automatic lathes.
Low Feed	U		Good chip control at low feed rate and varied ap with low cutting force.

● Applicable Chipbreaker Range (ap indicates radius)



Cutting Range	Name	Design	Advantages
Finishing	A		Large rake angle and low cutting force. Narrow chipbreaker width and consistent chip control.
Finishing-Medium	B		General purpose chipbreaker for medium machining. Good balance between chip control and sharp cutting.
Medium	C		Applicable to high load machining. Good chip flow and less resistance.
Medium	H		Sharp cutting performance and small curled chips.

● Specification of A, B, C and parallel ground chipbreaker



Insert Type	Size	Chipbreaker Name	W	α	R
TPGR	11	A	1.0	17°	0.5
	11,16	B	1.5	14°	0.5
	16	C	2.2	14°	1.0
SPGR	09	Without Indication (Similar to B)	1.5	14°	0.5
	12	Without Indication (Similar to C)	2.2	14°	1.0

B



Insert (Turning)

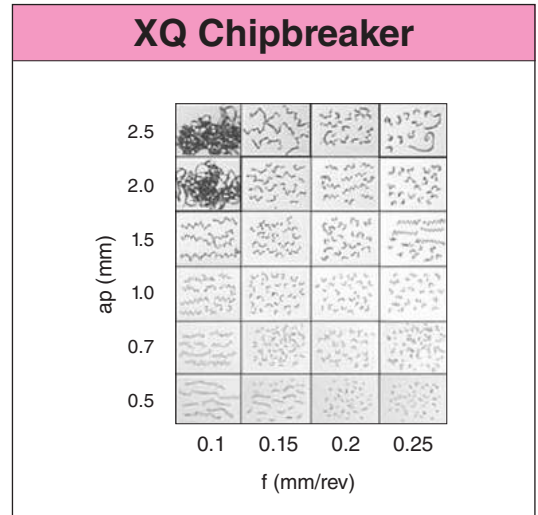
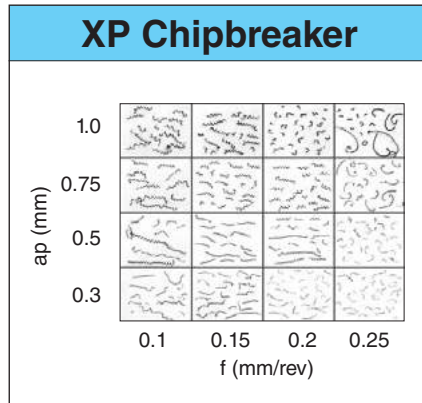
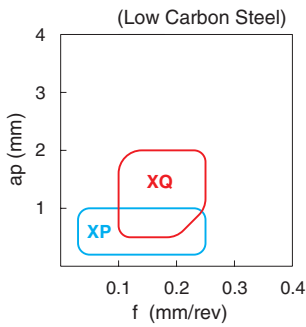


Chipbreaker Selection (Positive Insert)

Low Carbon Steel (Pipe / Rolled Plate / Rolled Steel)

Cutting Range	Name	Design	Advantages	Cutting Range	Name	Design	Advantages
Finishing	XP		Consistent chip breaking performance even for low carbon steel and sticky material.	Finishing-Medium	XQ		Wide chip control range and sharp cutting performance. Suitable for low carbon steel and sticky material.

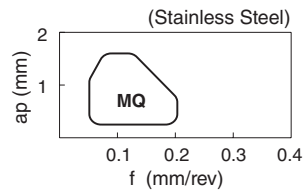
Applicable Chipbreaker Range (ap indicates radius)



Stainless Steel

Cutting Range	Name	Design	Advantages
Finishing	MQ		Good chip evacuation at internal turning. Small curled chips. Prevents chip entanglement with toolholder and stabilizes surface roughness.

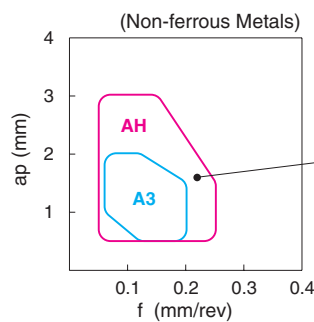
Applicable Chipbreaker Range (ap indicates radius)



Non-ferrous Metals

Cutting Range	Name	Design	Advantages
Finishing-Medium	AH		Positive chip groove and good chip control with low cutting force. Polished surface reduces adhesion.
Finishing-Medium	A3		Large rake angle, smooth chip flow and less adhesion. Superior cutting performance achieved by sharp edge.

Applicable Chipbreaker Range (ap indicates radius)



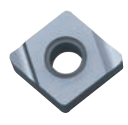


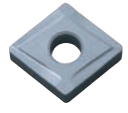
AH Chipbreaker



Turning Indexable Inserts

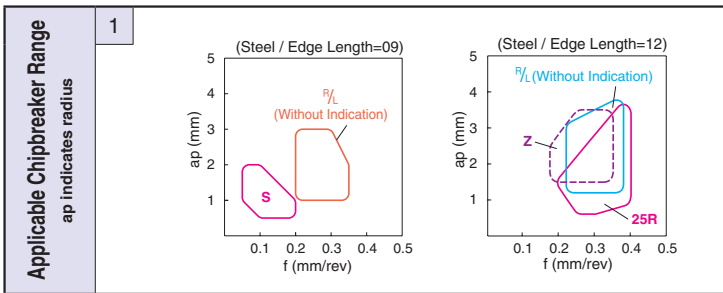
80° Rhombic / Negative with Hole

Description	(mm)			Description	(mm)		
	A	T	φd		A	T	φd
CN_0904_	9.525	4.76	3.81	CN_1606_	15.875	6.35	6.35
CN_1204_	12.70	4.76	5.16	CN_1906_	19.05	6.35	7.94

Insert	Description	Dimension (mm)	Cermet			MEGACOAT Cermet			PVD Coated Cermet							CVD Coated Carbide								MEGACOAT MEGACOAT NANO			PVD Coated Carbide			DLC		Carbide		Ref. to Page for Applicable Toolholders Applicable Chipbreaker Range					
			TN610	TN620	TN6010	TN6020	TN60	PV710	PV720	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA525	CA530	CA505	CA515	CA525	CA535	CA615	CA625	CA405	CA415	CA410	CA420	PR125	PR1305	PR1310	PR1325	PR1335		PR930	PR1005	PR1025	PR1125	PDL025
Finishing  Surface Roughness Oriented	CNCG 090402R-S	0.2	●	●	●	●		●																														D8 F68	
	CNCG 090402L-S	0.2	●	●	●	●		●																															
	CNCG 090404R-S	0.4	●	●	●	●		●																															
	CNCG 090404L-S	0.4	●	●	●	●		●																															
	CNCG 090408R-S	0.8	●	●	●	●		●																															
Medium 	CNCG 090404L	0.4																																					1
	CNCG 090408L	0.8																																					
	CNCG 120404R	0.4	●	●	○	●	●																																
	CNCG 120404L	0.4	●	●	○	●	●																																
Medium - Roughing  Low cutting force	CNCG 120404R-25R	0.4	●	●	●	●																															D8 F63 F67 F68		
	CNCG 120404L-25R	0.4	●	●	●	●																																	
	CNCG 120408R-25R	0.8	●	●	●	●																																	
Medium - Roughing 	CNCG 120404Z	0.4			●																																		

- Chipbreakers
- Negative
- C
- D
- R
- S
- T
- V
- W
- Ceramic

Insert (Turning)



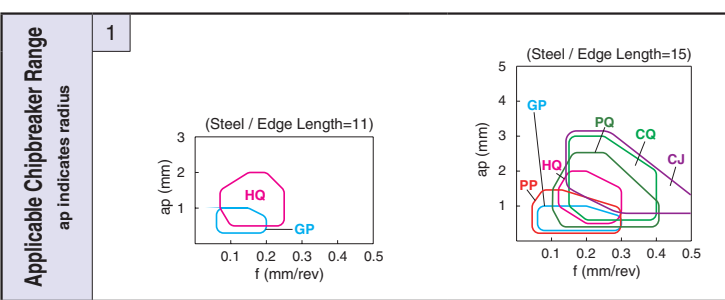
Inserts are sold in 10 piece boxes

55° Rhombic / Negative with Hole

	(mm)			(mm)			
Description	A	T	φd	Description	A	T	φd
DN_1104_	9.525	4.76	3.81	DN_1506_	12.70	6.35	5.16
DN_1504_	12.70	4.76	5.16				

			<table border="1"> <tr> <th>P</th><th>M</th><th>K</th><th>N</th><th>S</th><th>H</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th> <th>Free-cutting steel</th> <th>Carbon Steel / Alloy Steel</th> <th>Stainless Steel</th> <th>Gray Cast Iron</th> <th>Nodular Cast Iron</th> <th>Non-Ferrous Metals</th> <th>Heat-resistant Alloys</th> <th>Titanium Alloys</th> <th>Hard Materials</th> </tr> </table>																												P	M	K	N	S	H																								Free-cutting steel	Carbon Steel / Alloy Steel	Stainless Steel	Gray Cast Iron	Nodular Cast Iron	Non-Ferrous Metals	Heat-resistant Alloys	Titanium Alloys	Hard Materials
			P	M	K	N	S	H																								Free-cutting steel	Carbon Steel / Alloy Steel	Stainless Steel	Gray Cast Iron	Nodular Cast Iron	Non-Ferrous Metals	Heat-resistant Alloys	Titanium Alloys	Hard Materials																												
Dimension (mm)	Cermet				MEGACOAT Cermet				PVD Coated Cermet	CVD Coated Carbide										MEGACOAT MEGACOAT NANO		PVD Coated Carbide			DLC	Carbide	Ref. to Page for Applicable Toolholders	Applicable Chipbreaker Range																																								
rε	TN610	TN620	TN6010	TN6020	TN60	PV710	PV720	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA520	CA530	CA505	CA515	CA525	CA535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR1425	PR1225	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL025	KW10	SW05																												

Insert	Description	Material Compatibility																												Ref. to Page for Applicable Toolholders	Applicable Chipbreaker Range																				
		Dimension (mm)	TN610	TN620	TN6010	TN6020	TN60	PV710	PV720	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA520	CA530	CA505	CA515	CA525	CA535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120			PR1425	PR1225	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL025	KW10	SW05							
Finishing	DNMG 150402PP 150404PP 150408PP 150412PP	0.2	●	●	○	○	●	●	●	○			●	●	●	●	●	●	●	●																										D10	D11	F64	F70	F71	
	DNMG 150602PP 150604PP 150608PP 150612PP	0.2	●	●	○	○	●	●	●	○				●	●	●	●	●	●	●	●																										D10	D11	F64		
	DNMG 110404GP 110408GP	0.4	●			●		●					●		●		●		●		●																										D11	F69			
	DNMG 150402GP 150404GP 150408GP	0.2	●	●	○	○	●	●	●	○			●	○	●	●	●	●	●	●	●	●																									D10	D11	F64	F70	F71
	DNMG 150602GP 150604GP 150608GP	0.2	●	●	○	○	●	●	●	○				●	○	●	●	●	●	●	●	●																									D10	D11	F64		
	DNMG 150404PQ 150408PQ 150412PQ	0.4	●	●	○	○	●	●	●	○				●	●	●	●	●	●	●	●	●																									D10	D11	F64	F70	F71
Finishing-Medium	DNMG 150604PQ 150608PQ 150612PQ	0.4	●	●	○	○	●	●	○				●	○	●	●	●	●	●	●	●																										D10	D11	F64		
	DNMG 110402HQ 110404HQ	0.2	●			●		●				●		●		●		●		●																											D11	F69			
	DNMG 150404HQ 150408HQ 150412HQ	0.4	●	●	○	○	●	●	○			●	○	●	●	●	●	●	●	●	●	●																									D10	D11	F64	F70	F71
	DNMG 150604HQ 150608HQ 150612HQ	0.4	●	●	○	○	●	●	○				●	○	●	●	●	●	●	●	●	●																										D10	D11	F64	



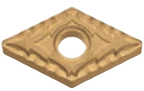



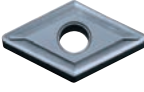





Inserts are sold in 10 piece boxes

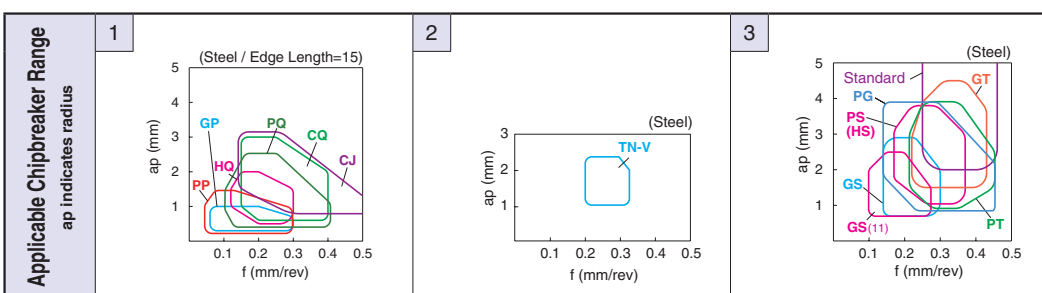
Turning Indexable Inserts

How to read pages of "Turning Inserts" B13

55° Rhombic / Negative with Hole

Description	(mm)			Description	(mm)		
	A	T	φd		A	T	φd
DN_1104_	9.525	4.76	3.81	DN_1506_	12.70	6.35	5.16
DN_1504_	12.70	4.76	5.16				

Insert	Description	Dimension (mm)	Cermets										CVD Coated Carbide										MEGACOAT MEGACOAT NANO		PVD Coated Carbide		DLC		Carbide		Ref. to Page for Applicable Toolholders	Chipbreaker Range																				
			TN610	TN620	TN6010	TN6020	TN60	PV710	PV720	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA520	CA530	CA505	CA515	CA525	CA535	CA615	CA625	CA4505	CA4515	CA4010	CA4115	CA4120	PR1425			PR1225	PR1305	PR1310	PR1325	PR1335	PR930	PR1005	PR1025	PR1125	PDL025	KW10	SW05								
 Finishing-Medium / Up Facing	DNMG 150404CQ	0.4	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
	DNMG 150408CQ	0.8	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
	DNMG 150412CQ	1.2	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
 Finishing-Medium / Up Facing	DNMG 150604CQ	0.4	●	○			●						●	●	●	○	●	●	●	●	●	○																														
	DNMG 150608CQ	0.8	●	○			●						●	●	●	○	●	●	●	●	●	○																														
	DNMG 150612CQ	1.2	●	○			●						●	●	●	○	●	●	●	●	●	○																														
 Finishing-Medium / Up Facing	DNMG 150408CJ	0.8											●	●	●	○	●	●	●	●	○																															
	DNMG 150412CJ	1.2											●	●	●	○	●	●	●	●	○																															
 Finishing-Medium / Up Facing	DNMG 150608CJ	0.8											●	●	●	○	●	●	●	●	○																															
	DNMG 150612CJ	1.2											●	●	●	○	●	●	●	●	○																															
 Medium	DNMG 150404TN-V	0.4				●																																														
	DNMG 150408TN-V	0.8				●																																														
 Medium - Roughing	DNMG 110404GS	0.4	●		●	●						●	●	●	○	●	●	●	●	○																																
	DNMG 150404GS	0.4	●		●	●						●	●	●	○	●	●	●	●	○																																
	DNMG 150408GS	0.8	●		●	●						●	●	●	○	●	●	●	●	○																																
 Medium - Roughing	DNMG 150604GS	0.4										●																																								
	DNMG 150608GS	0.8										●																																								
	DNMG 150612GS	1.2										●																																								
 Medium - Roughing	DNMG 150404PG	0.4	●	●			●	●					●	●	●	○	●	●	●	○																																
	DNMG 150408PG	0.8	●	●			●	●					●	●	●	○	●	●	●	○																																
 Medium - Roughing	DNMG 150412PG	1.2	●	●			●	●					●	●	●	○	●	●	●	○																																
	DNMG 150416PG	1.6	●	●			●	●						●	●	●	○	●	●	●	○																															
 Medium - Roughing	DNMG 150604PG	0.4	●	●			●	●					●	●	●	○	●	●	●	○																																
	DNMG 150608PG	0.8	●	●			●	●					●	●	●	○	●	●	●	○																																
	DNMG 150612PG	1.2	●	●			●	●					●	●	●	○	●	●	●	○																																
	DNMG 150616PG	1.6	●	●			●	●					●	●	●	○	●	●	●	○																																



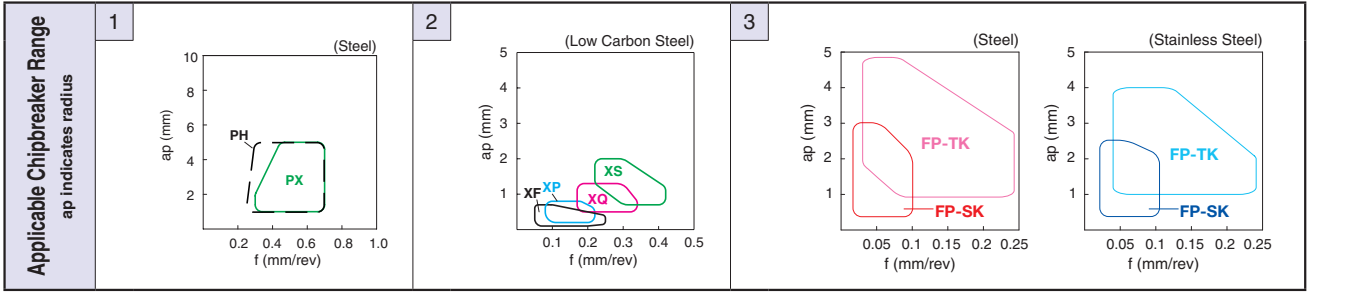
Inserts are sold in 10 piece boxes

55° Rhombic / Negative with Hole

Description	(mm)			Description	(mm)		
	A	T	ϕd		A	T	ϕd
DN_1104_	9.525	4.76	3.81	DN_1506_	12.70	6.35	5.16
DN_1504_	12.70	4.76	5.16				

Insert	Description	Dimension (mm)	Cermet		MEGACOAT Cermet		PVD Coated Cermet							CVD Coated Carbide					MEGACOAT MEGACOAT NANO		PVD Coated Carbide		DLC	Carbide	Ref. to Page for Applicable Toolholders	Chipbreaker Range																				
			TN610	TN620	TN6010	TN6020	TN60	PV710	PV720	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA525	CA530	CA505	CA515	CA525	CA535					CA6515	CA6525	CA4505	CA4010	CA4115	CA4120	PR1425	PR1225	PR1305	PR1310	PR1325	PR1335	PR930	PR1005	PR1025	PR1125	PDL 025	KW10	SW05	
 Roughing	DNMG 150408PH 150412PH 150416PH	0.8 1.2 1.6										●	●	●	●	●	●																													
	DNMG 150608PH 150612PH 150616PH	0.8 1.2 1.6										●	●	●	●	●	●																													
	DNMM 150408PX 150412PX 150416PX	0.8 1.2 1.6													●	●	●																													
 Single Sided / Roughing / High Feed Rate	DNMM 150608PX 150612PX 150616PX	0.8 1.2 1.6													●	●	●																													
	DNMG 150404XF 150408XF	0.4 0.8	●●●	●●●	●●●	●●●	●●●	○	●																																					
	DNMG 150404XP 150408XP	0.4 0.8	●●●	●●●	○	●	●	●	●	○	●	○	●	●	●	●	●	●	●																											
 Finishing	DNMG 150604XP 150608XP	0.4 0.8	●			●	●																																							
	DNMG 150404XQ 150408XQ	0.4 0.8	●●●	○	●	●	●	○	●		○	●	●	●	●	●																														
 Medium	DNMG 150604XQ 150608XQ	0.4 0.8				●									○	○																														
	DNMG 150408XS 150608XS	0.8	●●●	○	●	●		○		○	●	●	●	●	○	○																														
 Roughing	DNMG 150408XS 150608XS	0.8	●●●	○	●	●		○		○	●	●	●	○	○																															
	DNMG 150408XS 150608XS	0.8	●●●	○	●	●		○		○	●	●	●	○	○																															
 Finishing-Medium NEW	DNMG 150402MFP-SK 150404MFP-SK	<0.2 <0.4																																												
	DNMG 150402MFP-SK 150404MFP-SK	<0.2 <0.4																										●	●																	

Insert whose corner-R(r_c) dimension expressed with less than sign (e.g. < 0.05, < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(r_c).

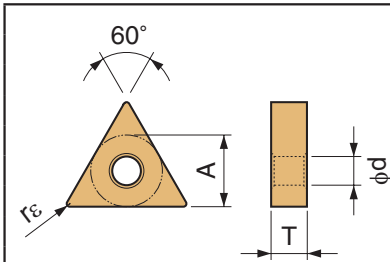


Inserts are sold in 10 piece boxes

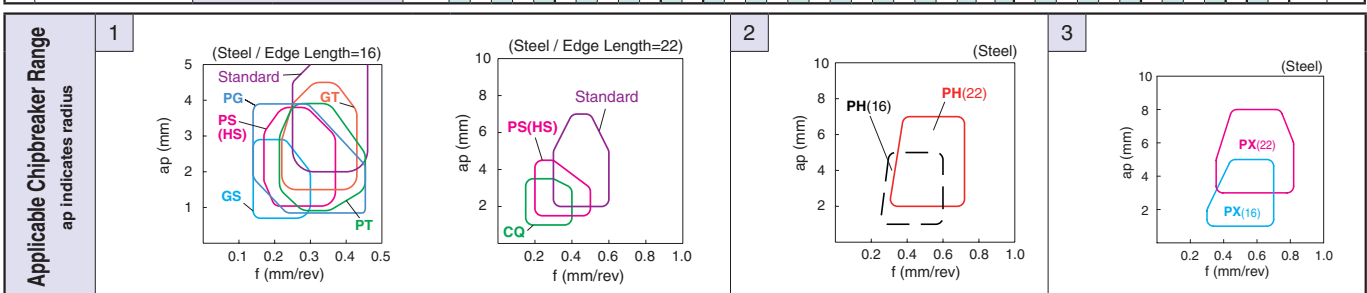
60° Triangle / Negative with Hole

Description	A	T	φd
TN_1103_	6.35	3.18	2.26
TN_1104_	6.35	4.76	2.26

Description	A	T	φd
TN_1603_	9.525	3.18	3.81
TN_1604_	9.525	4.76	3.81
TN_2204_	12.70	4.76	5.16



Insert	Description	Dimension (mm)	Material Compatibility										DLC	Carbide	Ref. to Page for Applicable Toolholders	Chipbreaker Range																												
			Free-cutting steel	Carbon Steel / Alloy Steel	Stainless Steel	Gray Cast Iron	Nodular Cast Iron	Non-ferrous Metals	Heat-resistant Alloys	Titanium Alloys	Hard Materials	Cermet					MEGACOAT Cermet	PVD Coated Cermet	CVD Coated Carbide	MEGACOAT MEGACOAT NANO	PVD Coated Carbide																							
		rε	TN610	TN620	TN6010	TN6020	TN60	PV710	PV720	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4010	CA4115	CA4120	PR1425	PR1225	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL025	KW10	SW05			
Medium - Roughing	TNMG 160404HS 160408HS 160412HS	0.4 0.8 1.2																																									D14 D15 F64 F74 F75	
	TNMG 220404HS 220408HS 220412HS	0.4 0.8 1.2																																									D14 F74	
Medium-Roughing / High Feed Rate	TNMG 160408PT 160412PT	0.8 1.2																																										
	TNMG 160408GT 160412GT	0.8 1.2																																										D14 D15 F64 F74 F75
Roughing	TNMG 160404 160408 160412 160416 160420	0.4 0.8 1.2 1.6 2.0																																										
	TNMG 220404 220408 220412	0.4 0.8 1.2																																										D14 F74
Roughing	TNMG 160408PH 160412PH	0.8 1.2																																										D14 D15 F64 F74 F75
	TNMG 220408PH 220412PH 220416PH	0.8 1.2 1.6																																										D14 F74
Single Speed / Roughing / High Feed Rate	TNMM 160408PX 160412PX	0.8 1.2																																										D14 D15 F64 F74 F75
	TNMM 220408PX 220412PX 220416PX	0.8 1.2 1.6																																										D14 F74

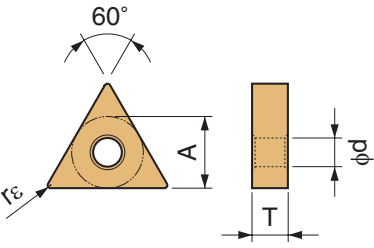


(mm)

60° Triangle / Negative with Hole

Description	A	T	φd
TN_1103_	6.35	3.18	2.26
TN_1104_	6.35	4.76	2.26

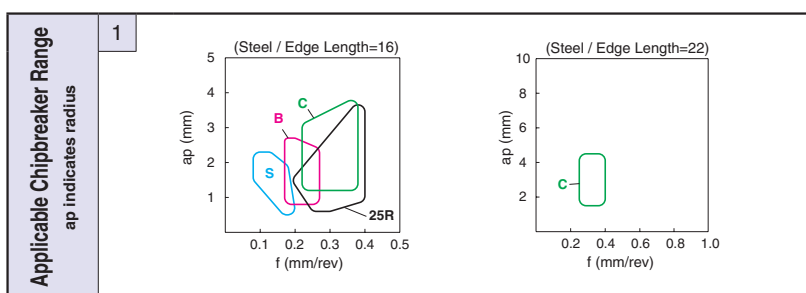
Description	A	T	φd
TN_1603_	9.525	3.18	3.81
TN_1604_	9.525	4.76	3.81
TN_2204_	12.70	4.76	5.16



Insert	Description	Dimension (mm)	rε	Material Group													Ref. to Page for Applicable Toolholders	Applicable Chipbreaker Range																										
				Cermet	MEGACOAT Cermet	PVD Coated Cermet	CVD Coated Carbide							MEGACOAT MEGACOAT NANO	PVD Coated Carbide	DLC			Carbide																									
				TN610	TN620	TN6010	TN6020	TN60	PV710	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4010	CA4115	CA4120	PR1425	PR1225	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL025	KW10	SW05			
Medium-Roughing	TNGG 160402R-C	0.2		●	●	○	○		●	○	○		○																															
	TNGG 160402L-C	0.2							●																																			
	TNGG 160404R-C	0.4		●	●	○	○		●	○	○		○																															
	TNGG 160404L-C	0.4							●																																			
	TNGG 160408R-C	0.8		●	●	○	○		●	○	○		○																															
	TNGG 160408L-C	0.8							●																																			
	TNGG 160412R-C	1.2		●	●	○	○		●	○	○		○																															
	TNGG 160412L-C	1.2							●																																			
	TNGG 160416R-C	1.6							●																																			
	TNGG 220404R-C	0.4		●	○	○		●		●																																		
	TNGG 220404L-C	0.4						●		●																																		
	TNGG 220408R-C	0.8		●	○	○		●		●																																		
	TNGG 220408L-C	0.8						●		●																																		
	TNGG 110402R	0.2						●																																				
	TNGG 110402L	0.2						●																																				
	TNGG 110404R	0.4						●																																				
	TNGG 110404L	0.4						●																																				
	TNGG 110408R	0.8						●																																				
TNGG 110408L	0.8						□																																					
TNMG 160404R-C	0.4		●	●	○		○		○																																			
TNMG 160404L-C	0.4						○		○																																			
TNMG 160408R-C	0.8		●	●	○		○		○																																			
TNMG 160408L-C	0.8						○		○																																			
TNMG 160412R-C	1.2						●																																					
TNGG 160404R-25R	0.4		●	●	○		○		○																																			
TNGG 160404L-25R	0.4						○		○																																			
TNGG 160408R-25R	0.8		●	●	○		○		○																																			
TNGG 160408L-25R	0.8						○		○																																			



Insert (Turning)



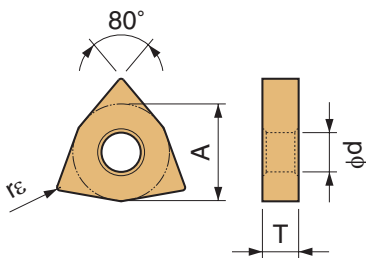
● : Std. Item ○ : Check Availability □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

(mm) (mm)

80° Trigon / Negative with Hole

Description	A	T	φd	Description	A	T	φd
WN_06T3_	9.525	3.97	3.81	WN_0804_	12.70	4.76	5.16
WN_0604_	9.525	4.76	3.81				



Insert	Description	Dimension (mm)	Material Groups											D20	F76																													
			Cermet	MEGACOAT Cermet	PVD Coated Cermet	CVD Coated Carbide					MEGACOAT MEGACOAT NANO	PVD Coated Carbide	DLC Carbide			Ref. to Page for Applicable Toolholders																												
		rε	TN610	TN620	TN6010	TN6020	TN60	PV710	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR1425	PR1225	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL025	KW10	SW05	Chipbreaker Range		
Medium - Roughing	 WNGM 060404GS 060408GS	0.4 0.8	●	●	●	●	●	●	○		●	●	●	●	●	●	●	●	●	●	●	●																				D20 F76		
Medium - Roughing	NEW WNGM 080404PG 080408PG 080412PG 080416PG	0.4 0.8 1.2 1.6	●	●			●	●	○				●	●	●	●	●	●	●	●	●	●																						
Medium - Roughing	 WNGM 080404PS 080408PS 080412PS 080416PS	0.4 0.8 1.2 1.6		●				●	○				●	●	●	●	●	●	●	●	●	●																						
Medium - Roughing	 WNGM 080404HS 080408HS 080412HS	0.4 0.8 1.2			○	○			○	○			○	○	○	○	○	○	○	○	○	○																						
Medium-Roughing / High Feed Rate	 WNGM 080408PT 080412PT	0.8 1.2											●	●	●	●	●	●	●	●	●	●																					D20 F77 F78	
Medium-Roughing / High Feed Rate	 WNGM 080408GT 080412GT	0.8 1.2									●		●	●	●	●	●	●	●	●	●	●																						
Roughing	 WNGM 080404 080408 080412	0.4 0.8 1.2	●	●	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●																						
Roughing	NEW WNGM 080408PH 080412PH	0.8 1.2												●	●	●	●	●	●	●	●	●																						

B

Insert (Turning)

● : Std. Item ○ : Check Availability □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

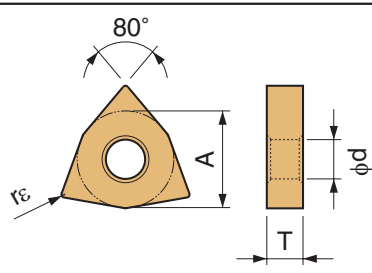
B43

Turning Indexable Inserts

How to read pages of "Turning Inserts" B13

80° Trigon / Negative with Hole

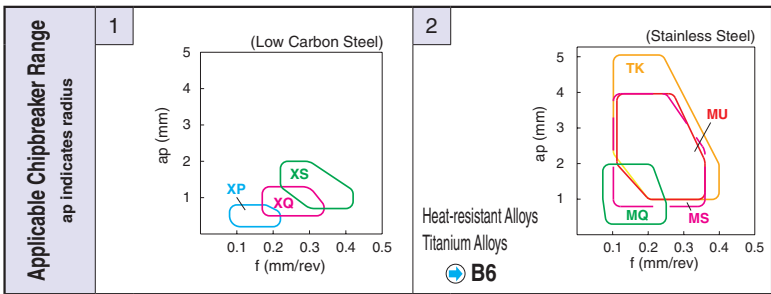
Description	A	T	φd	Description	A	T	φd
WN_06T3_	9.525	3.97	3.81	WN_0804_	12.70	4.76	5.16
WN_0604_	9.525	4.76	3.81				



P	M	K	N	S	H
●	○	○	○	○	○
○	○	○	○	○	○
○	○	○	○	○	○
○	○	○	○	○	○
○	○	○	○	○	○
○	○	○	○	○	○

- Chipbreakers
- Negative
- C
- D
- R
- S
- T
- V
- W
- Ceramic
- Insert (Turning)

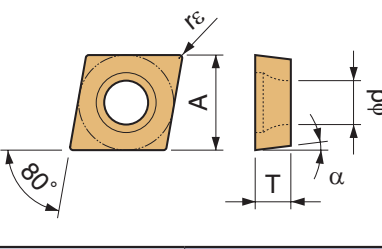
Insert		Description		Dimension (mm)	Cermet	MEGACOAT Cermet	PVD Coated Cermet	CVD Coated Carbide												MEGACOAT MEGACOAT NANO	PVD Coated Carbide	DLC	Carbide	Ref to Page for Applicable Toolholders	Applicable Chipbreaker Range																					
rε	TN610	TN620	TN6010	TN6020	TN60	PV710	PV720	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR1425	PR1225	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL025	KW10	SW05							
Low Carbon Steel		WNMG 080404XP 080408XP		0.4 0.8	● ●	○ ○	● ●	● ●	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○				
Low Carbon Steel		WNMG 080404XQ 080408XQ		0.4 0.8	● ●	○ ○	● ●	● ●	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○		1
Low Carbon Steel		WNMG 080408XS		0.8	●	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
Stainless Steel / Heat-Resistant Alloys		WNGG 080404TK 080408TK		0.4 0.8																																								D20		
		WNMG 080404TK 080408TK		0.4 0.8																																								F77		
		WNMG 080404MQ 080408MQ		0.4 0.8																																									F78	
		WNMG 080404MS 080408MS 080412MS		0.4 0.8 1.2																																										
		WNMG 080404MU 080408MU		0.4 0.8																																										



Inserts are sold in 10 piece boxes

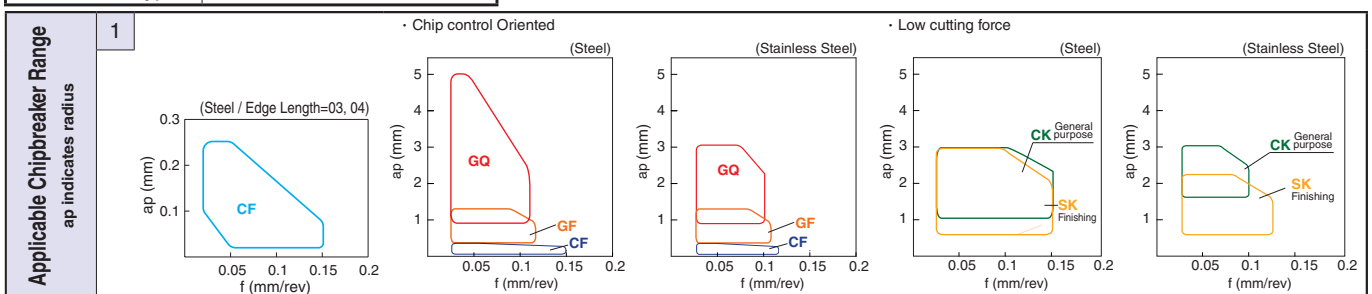
80° Rhombic / Positive with Hole

*Thickness of CC_0301_ and CC_0401_ are different (mm)					Description	A	T	ϕd	α
Description	A	T	ϕd	α	CC_0602_	6.35	2.38	2.8	7°
*CC_0301_	3.5	1.4	1.9	7°	CC_09T3_	9.525	3.97	4.4	7°
*CC_0401_	4.3	1.8	2.3	7°	CC_1204_	12.7	4.76	5.5	7°

	P										Free-cutting steel																																						
	M										Carbon Steel / Alloy Steel																																						
	K										Stainless Steel																																						
	N										Gray Cast Iron																																						
S											Nodular Cast Iron																																						
H											Non-Ferrous Metals																																						
											Heat-resistant Alloys																																						
											Titanium Alloys																																						
											Hard Materials																																						
Insert	Description	Dimension (mm)	Cermet					MEGACOAT Cermet					PVD Coated Cermet					CVD Coated Carbide					MEGACOAT MEGACOAT NANO					PVD Coated Carbide					DLC		Carbide		Ref. to Page for Applicable Toolholders		Applicable Chipbreaker Range										
		r _c	TN610	TN620	TN6010	TN6020	TN60	PV710	PV720	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR1425	PR1225	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL025	KW10	SW05							
Minute ap Sharp Edge	*CCGT 030101M-CF	<0.1																																															
	*CCGT 030102M-CF	<0.2																																															
Minute ap Sharp Edge / Polished	*CCGT 040101M-CF	<0.1																																															
	*CCGT 040102M-CF	<0.2																																															
Finishing Sharp Edge	CCGT 060201MF-GF	<0.1																																															
	CCGT 060202MF-GF	<0.2																																															
	CCGT 09T301MF-GF	<0.1																																															
Finishing Sharp Edge / Polished	CCGT 060201MFP-GF	<0.1																																															
	CCGT 060202MFP-GF	<0.2																																															
	CCGT 09T301MFP-GF	<0.1																																															
Finishing Sharp Edge / Polished	CCGT 060201MFP-SK	<0.1																																															
	CCGT 060202MFP-SK	<0.2																																															
	CCGT 09T301MFP-SK	<0.1																																															
Finishing Sharp Edge / Polished	CCGT 060201MP-CK	<0.1																																															
	CCGT 060202MP-CK	<0.2																																															
Finishing-Medium Sharp Edge	CCGT 09T301MP-CK	<0.1																																															
	CCGT 09T302MP-CK	<0.2																																															
	CCGT 060201MF-GQ	<0.1																																															
	CCGT 060202MF-GQ	<0.2																																															
	CCGT 060204MF-GQ	<0.4																																															
	CCGT 09T301MF-GQ	<0.1																																															
	CCGT 09T302MF-GQ	<0.2																																															
	CCGT 060204MF-GQ	<0.4																																															
	CCGT 09T304MF-GQ	<0.4																																															

· Insert whose corner-R(r_c) dimension expressed with less than sign (e.g. < 0.05, < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(r_c).

Insert Description	Ref. to Page for Applicable Toolholders
CC..0602 type	E22,E23,E34,F39
CC..09T3 type	E22,E23,E34,F39,F65



● : Std. Item

Inserts are sold in 10 piece boxes



Insert (Turning)

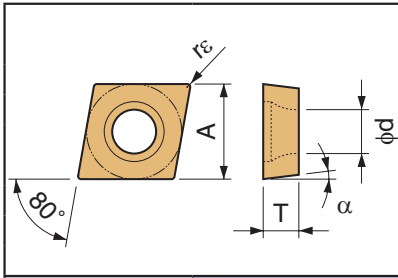


80° Rhombic / Positive with Hole

*Thickness of CC_0301_ and CC_0401_ are different (mm)

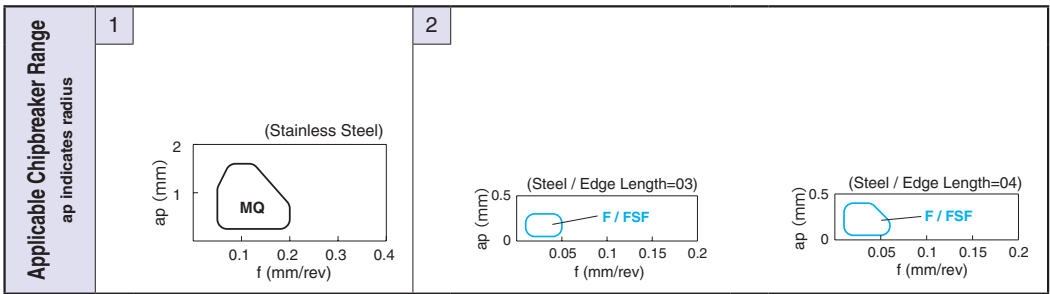
Description	A	T	φd	α
*CC_0301_	3.5	1.4	1.9	7°
*CC_0401_	4.3	1.8	2.3	7°

Description	A	T	φd	α
CC_0602_	6.35	2.38	2.8	7°
CC_09T3_	9.525	3.97	4.4	7°
CC_1204_	12.7	4.76	5.5	7°



Insert	Description	Dimension (mm)	rε	CVD Coated Carbide															MEGACOAT MEGACOAT NANO			PVD Coated Carbide			DLC	Carbide	Ref. to Page for Applicable Toolholders	Applicable Chipbreaker Range						
				Cermet					MEGACOAT Cermet					PVD Coated Cermet					PR1425	PR1225	PR1305	PR1310	PR1325	PR1335					PR930	PR1005	PR1025	PR1125	KW10	SW05
				TN610	TN620	TN6010	TN6020	TN60	PV710	PV720	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA520	CA530	CA505	CA515	CA525	CA535	CA6515					CA6525	CA4505	CA4515	CA4010		
Medium Sharp Edge	CCGT 0602005MF 060201MF 060202MF 060204MF	<0.05																											Ref. to the table below B49	B50				
		<0.1																														2		
		<0.2																																
		<0.4																																
	CCGT 09T3005MF 09T301MF 09T302MF 09T304MF	<0.05																																
		<0.1																																
		<0.2																																
		<0.4																																
Stainless Steel / Heat Resistant Alloys	CCMT 09T304MQ 09T308MQ	0.4																												1				
		0.8																																
Super Fine	*CCET 0301003R-FSF 0301003L-FSF 030101R-FSF 030101L-FSF 030102R-FSF 030102L-FSF 030104R-FSF 030104L-FSF	0.03																																
		0.03																																
		0.1		•																														
		0.1		•		•																												
		0.2		•		•																												
		0.2		•		•																												
		0.4		•		•																												
		0.4		•		•																												
	*CCET 0401003R-FSF 0401003L-FSF 040101R-FSF 040101L-FSF 040102R-FSF 040102L-FSF 040104R-FSF 040104L-FSF	0.03																																
		0.03																																
		0.1		•																														
		0.1		•		•																												
		0.2		•		•																												
		0.2		•		•																												
		0.4		•		•																												
		0.4		•		•																												
		*CCET 0301005MR-FSF 0301005ML-FSF 030101MR-FSF 030101ML-FSF 030102MR-FSF 030102ML-FSF 030104MR-FSF 030104ML-FSF	<0.05																															
			<0.05																															
			<0.1																															
			<0.1																															
	<0.2																																	
	<0.2																																	
	<0.4																																	
	<0.4																																	
	*CCET 0401005MR-FSF 0401005ML-FSF 040101MR-FSF 040101ML-FSF 040102MR-FSF 040102ML-FSF 040104MR-FSF 040104ML-FSF	<0.05																																
		<0.05																																
		<0.1																																
		<0.1																																
<0.2																																		
<0.2																																		
<0.4																																		
<0.4																																		

Insert whose corner-R(rε) dimension expressed with less than sign (e.g. < 0.05, < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(rε).

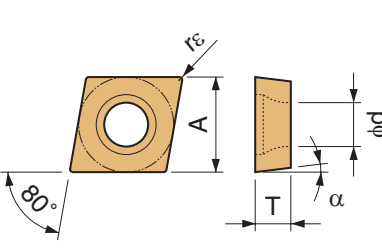


● : Std. Item □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

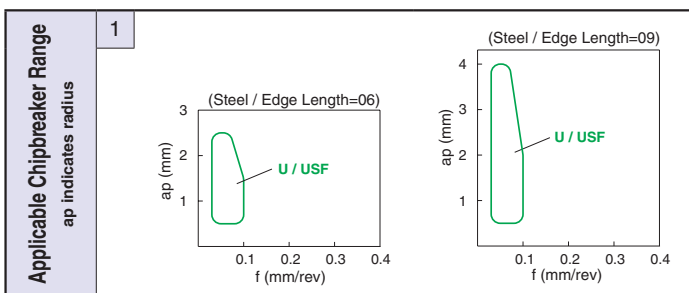
80° Rhombic / Positive with Hole

Description	A	T	φd	α
CC_0602_	6.35	2.38	2.8	7°
CC_09T3_	9.525	3.97	4.4	7°
CC_1204_	12.7	4.76	5.5	7°



Insert	Description	Dimension (mm)	Cermet				MEGACOAT Cermet				PVD Coated Cermet				CVD Coated Carbide				MEGACOAT MEGACOAT NANO				PVD Coated Carbide				DLC		Carbide		Ref. to Page for Applicable Toolholders	Applicable Chipbreaker Range															
			TN610	TN620	TN6010	TN6020	PV710	PV720	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA525	CA530	CA505	CA515	CA525	CA535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR1425	PR1225			PR1305	PR1310	PR1325	PR1335	PR930	PR1005	PR1025	PR1125	PDL025	KW10	SW05				
Super Fine Low Feed	CCET 0602003FR-USF 0602003FL-USF 060201FR-USF 060201FL-USF 060202FR-USF 060202FL-USF	0.03	●	●	○	○	●	●	○	○																																					
		0.03																																													
		0.1		●	●	●																																									
		0.1		●	●	●																																									
		0.2		●	●	●																																									
	CCET 09T3003FR-USF 09T3003FL-USF 09T301FR-USF 09T301FL-USF 09T302FR-USF 09T302FL-USF	0.03																																													
		0.03																																													
		0.1		●	●	●																																									
		0.1		●	●	●																																									
		0.2		●	●	●																																									
		0.2		●	●	●																																									
		NEW Low Feed	CCET 0602005MFR-U 0602005MFL-U 060201MFR-U 060201MFL-U 060202MFR-U 060202MFL-U	<0.05																																											
				<0.05																																											
				<0.1		●	●	●																																							
				<0.1		●	●	●																																							
<0.2				●	●	●																																									
CCET 09T3005MFR-U 09T3005MFL-U 09T301MFR-U 09T301MFL-U 09T302MFR-U 09T302MFL-U 09T304MFR-U 09T304MFL-U	<0.05																																														
	<0.05																																														
	<0.1			●	●	●																																									
	<0.1			●	●	●																																									
	<0.2			●	●	●																																									
Low Feed	CCGT 0602003FR-U 0602003FL-U 060201FR-U 060201FL-U 060202FR-U 060202FL-U	0.03																																													
		0.03																																													
		0.1			○	○																																									
		0.1			○	○																																									
	CCGT 09T3003FR-U 09T3003FL-U 09T301FR-U 09T301FL-U 09T302FR-U 09T302FL-U	0.03																																													
		0.03																																													
		0.1			○	○																																									
		0.1			○	○																																									

Insert whose corner-R(rε) dimension expressed with less than sign (e.g. < 0.05, < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(rε).

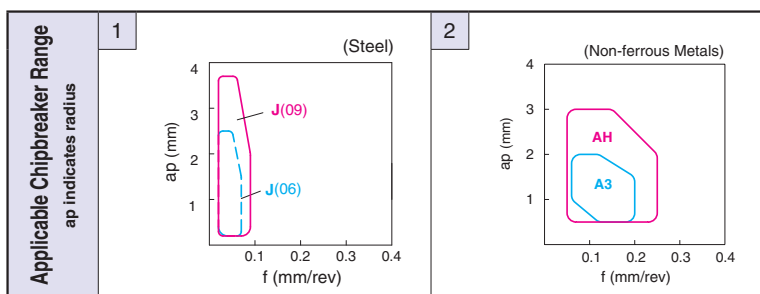


80° Rhombic / Positive with Hole

Description	A	T	φd	α
CC_0602_	6.35	2.38	2.8	7°
CC_09T3_	9.525	3.97	4.4	7°
CC_1204_	12.7	4.76	5.5	7°

Insert	Description	Dimension (mm)	Cermet		MEGACOAT Cermet		PVD Coated Cermet		CVD Coated Carbide								MEGACOAT MEGACOAT NANO		PVD Coated Carbide		DLC	Carbide	Ref. to Page for Applicable Toolholders		Chipbreaker Range			
			Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)		Dimension (mm)	Dimension (mm)	
<p>Low Feed Sharp Edge</p>	NEW CCET 0602005MFR-J 060201MFR-J 060201MFL-J 060202MFR-J 060202MFL-J CCET 09T301MFR-J 09T301MFL-J 09T302MFR-J 09T302MFL-J 09T304MFR-J 09T304MFL-J	<0.05																								1		
		<0.1																										
		<0.1																										
		<0.2																										
		<0.2																										
		<0.4																										
<p>Non-ferrous Metals Finishing-Medium / Sharp Edge</p>	CCGT 09T304AH 09T308AH CCGT 09T302R-A3 09T302L-A3 09T304R-A3 09T304L-A3 09T308R-A3 09T308L-A3 CCGT 120402R-A3 120402L-A3 120404R-A3 120404L-A3 120408R-A3 120408L-A3	0.4																										
		0.8																										
		0.2																										
		0.2																										
		0.4																										
		0.4																										
		0.8																										
		0.8																										
<p>Cast Iron Without Chipbreaker</p>	CCGW 060201 060202 CCGW 09T300 09T301 09T302 09T304	0.1																										
		0.2																										
		0.0																										
		0.1																										
		0.2																										
		0.4																										

· Insert whose corner-R(r_c) dimension expressed with less than sign (e.g. < 0.05, < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(r_c).



B
Insert (Turning)

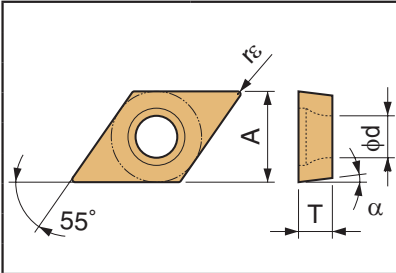
Turning Indexable Inserts

How to read pages of "Turning Inserts" ➔ **B13**

(mm)

55° Rhombic / Positive with Hole

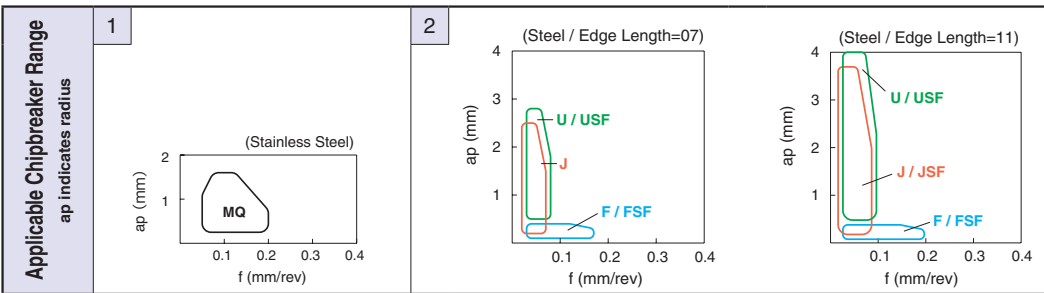
Insert Description	Ref. to Page for Applicable Toolholders	Description	A	T	φd	α
DC..07 type	E24~E27,E35,F43~F45	DC_0702_	6.35	2.38	2.8	7°
DC..11 type	E20,E24~E27,E35,F43~F45,F65	DC_11T3_	9.525	3.97	4.4	7°



Material	P	M	K	N	S	H
Free-cutting steel						
Carbon Steel / Alloy Steel						
Stainless Steel		●●				
Gray Cast Iron						
Nodular Cast Iron						
Non-Ferrous Metals						
Heat-resistant Alloys					●●	
Titanium Alloys					●	
Hard Materials						

Insert	Description	Dimension (mm)	Cermets						CVD Coated Carbide										MEGACOAT MEGACOAT NANO			PVD Coated Carbide			DLC		Carbide		Ref. to Page for Applicable Toolholders	Applicable Chipbreaker Range										
			TN610	TN620	TN6010	TN6020	TN60	PV710	PV720	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA530	CA505	CA515	CA525	CA535	CA615	CA625	CA405	CA410	CA415	CA420	PR1425			PR1225	PR1305	PR1310	PR1325	PR1335	PR930	PR1005	PR1025	PR1125	PDL025
Stainless Steel / Heat-Resistant Alloys Finishing-Medium	DCMT 070202MQ	0.2																																						
	DCMT 070204MQ	0.4																			●	●																		
	DCMT 11T302MQ	0.2																																						
DCMT 11T304MQ	0.4																																							
DCMT 11T308MQ	0.8																																							
Ceramic Super Fine	DCET 0702003R-FSF	0.03																																						
	DCET 0702003L-FSF	0.03																																						
	DCET 070201R-FSF	0.1																																						
	DCET 070201L-FSF	0.1																																						
	DCET 070202R-FSF	0.2				●																																		
	DCET 070202L-FSF	0.2				●																																		
	DCET 070204R-FSF	0.4				●																																		
	DCET 070204L-FSF	0.4				●																																		
	Finishing	DCET 11T3003R-FSF	0.03																																					
		DCET 11T3003L-FSF	0.03																																					
		DCET 11T301R-FSF	0.1				●																																	
		DCET 11T301L-FSF	0.1				□																																	
		DCET 11T302R-FSF	0.2				●																																	
		DCET 11T302L-FSF	0.2				●																																	
		DCET 11T304R-FSF	0.4				●																																	
		DCET 11T304L-FSF	0.4				●																																	
		Sharp Edge / Precision	DCET 0702005MR-FSF	<0.05																																				
			DCET 0702005ML-FSF	<0.05																																				
			DCET 070201MR-FSF	<0.1																																				
			DCET 070201ML-FSF	<0.1																																				
	DCET 070202MR-FSF		<0.2																																					
	DCET 070202ML-FSF		<0.2																																					
	DCET 070204MR-FSF		<0.4																																					
	DCET 070204ML-FSF		<0.4																																					
	DCET 11T3005MR-FSF		<0.05																																					
	DCET 11T3005ML-FSF		<0.05																																					
	DCET 11T301MR-FSF		<0.1																																					
	DCET 11T301ML-FSF		<0.1																																					
	DCET 11T302MR-FSF	<0.2																																						
	DCET 11T302ML-FSF	<0.2																																						
DCET 11T304MR-FSF	<0.4																																							
DCET 11T304ML-FSF	<0.4																																							

· Insert whose corner- $R(r_c)$ dimension expressed with less than sign (e.g. < 0.05, < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner- $R(r_c)$.

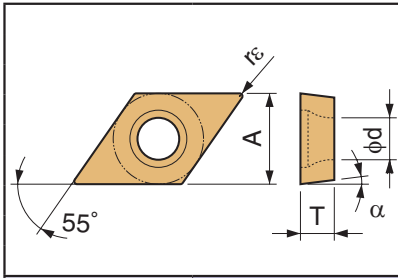


Inserts are sold in 10 piece boxes

(mm)

55° Rhombic / Positive with Hole

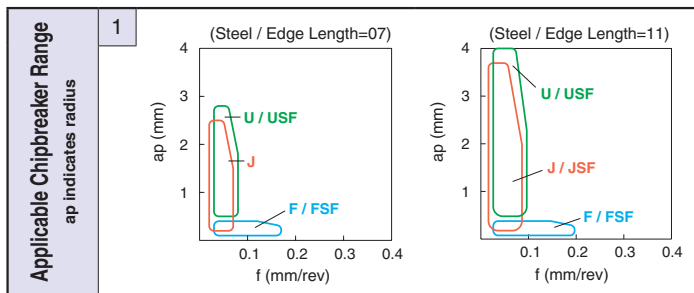
Insert Description	Ref. to Page for Applicable Toolholders	Description	A	T	φd	α
DC..07 type	E24~E27,E35,F43~F45	DC_0702_	6.35	2.38	2.8	7°
DC..11 type	E20,E24~E27,E35,F43~F45,F65	DC_11T3_	9.525	3.97	4.4	7°



P	M	K	N	S	H	Free-cutting steel	Carbon Steel / Alloy Steel	Stainless Steel	Gray Cast Iron	Modular Cast Iron	Non-ferrous Metals	Heat-resistant Alloys	Titanium Alloys	Hard Materials
●	●	○	○	○		●		●						

Insert	Description	Dimension (mm)	rε	Cermet	MEGACOAT Cermet	PVD Coated Cermet	CVD Coated Carbide	MEGACOAT MEGACOAT NANO	PVD Coated Carbide	DLC	Carbide	Ref. to Page for Applicable Toolholders	Applicable	Chipbreaker Range																																																																																
															TN610	TN620	TN6010	TN6020	TN60	PV710	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR1425	PR1225	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL025	KW10	SW05																																									
Low Feed 	DCGT 0702003MFR-U 0702003MFL-U 0702005MFR-U 0702005MFL-U 070201MFR-U 070201MFL-U 070202MFR-U 070202MFL-U 070204MFR-U 070204MFL-U	<0.03 <0.03 <0.05 <0.05 <0.1 <0.1 <0.2 <0.2 <0.4 <0.4												1																																																																																
															DCGT 11T3005MFR-U 11T3005MFL-U 11T301MFR-U 11T301MFL-U 11T302MFR-U 11T302MFL-U 11T304MFR-U 11T304MFL-U	<0.05 <0.05 <0.1 <0.1 <0.2 <0.2 <0.4 <0.4																																																																														
																															DCGT 070201ER-U 070201EL-U 070202ER-U 070202EL-U 070204ER-U 070204EL-U	0.1 0.1 0.2 0.2 0.4 0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●																																																
																																															DCGT 11T301ER-U 11T301EL-U 11T302ER-U 11T302EL-U 11T304ER-U 11T304EL-U	0.1 0.1 0.2 0.2 0.4 0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●																																
																																																															DCGT 070201MER-U 070202MER-U 070202MEL-U 070204MER-U 070204MEL-U	<0.1 <0.2 <0.2 <0.4 <0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●																
																																																																															DCGT 11T301MER-U 11T301MEL-U 11T302MER-U 11T302MEL-U 11T304MER-U 11T304MEL-U	<0.1 <0.1 <0.2 <0.2 <0.4 <0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Insert whose corner-R(rε) dimension expressed with less than sign (e.g. < 0.05, < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(rε).



Turning Indexable Inserts

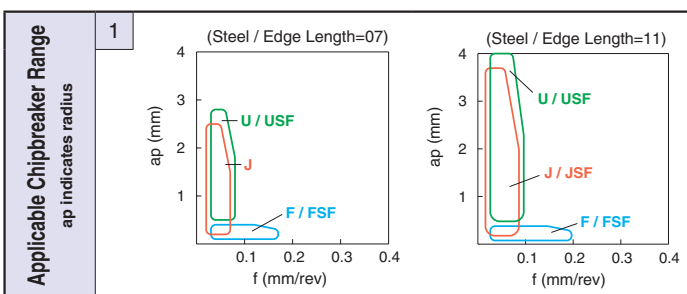
(mm)

55° Rhombic / Positive with Hole

Insert Description	Ref. to Page for Applicable Toolholders	Description	A	T	φd	α
DC..07 type	E24~E27,E35,F43~F45	DC_0702_	6.35	2.38	2.8	7°
DC..11 type	E20,E24~E27,E35,F43~F45,F65	DC_11T3_	9.525	3.97	4.4	7°

Insert	Description	Dimension (mm)	rε	Cermets		PVD Coated Cermet	CVD Coated Carbide										MEGACOAT MEGACOAT NANO	PVD Coated Carbide	DLC	Carbide	Ref. to Page for Applicable Toolholders	Applicable Chipbreaker Range																			
				TN610	TN620	TN6010	TN6020	TN60	PV710	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA525	CA530	CA5505	CA5515			CA5525	CA5535	CA6515	CA6525	CA4905	CA4515	CA4010	CA4115	CA4120	PR1425	PR1225	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125
<div style="text-align: center;"></div> <p>Super Fine</p>	DCET 11T3003FR-JSF	0.03																																							
	11T3003FL-JSF	0.03																																							
	11T301FR-JSF	0.1																																							
	11T301FL-JSF	0.1																																							
	11T302FR-JSF	0.2																																							
	11T302FL-JSF	0.2																																							
<div style="text-align: center;"></div> <p>Sharp Edge / Precision</p>	DCET 11T3005MFR-JSF	<0.05																																							
	11T3005MFL-JSF	<0.05																																							
	11T301MFR-JSF	<0.1																																							
	11T301MFL-JSF	<0.1																																							
	11T302MFR-JSF	<0.2																																							
	11T302MFL-JSF	<0.2																																							
<div style="text-align: center;"></div> <p>NEW Sharp Edge</p>	DCET 0702005MFR-J	<0.05																																							
	070201MFR-J	<0.1																																							
	070201MFL-J	<0.1																																							
	070202MFR-J	<0.2																																							
	070202MFL-J	<0.2																																							
	DCET 11T3005MFR-J	<0.05																																							
<div style="text-align: center;"></div> <p>Sharp Edge</p>	DCGT 11T3003FR-J	0.03																																							
	11T301FR-J	0.1																																							
	11T301FL-J	0.1																																							
	11T302FR-J	0.2																																							
	11T302FL-J	0.2																																							
	DCGT 11T3005MFR-J	<0.05																																							
	11T3005MFL-J	<0.05																																							
	11T301MFR-J	<0.1																																							
	11T301MFL-J	<0.1																																							
	11T302MFR-J	<0.2																																							
11T302MFL-J	<0.2																																								
11T304MFR-J	<0.4																																								
11T304MFL-J	<0.4																																								

· Insert whose corner-R(rε) dimension expressed with less than sign (e.g. < 0.05, < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(rε).



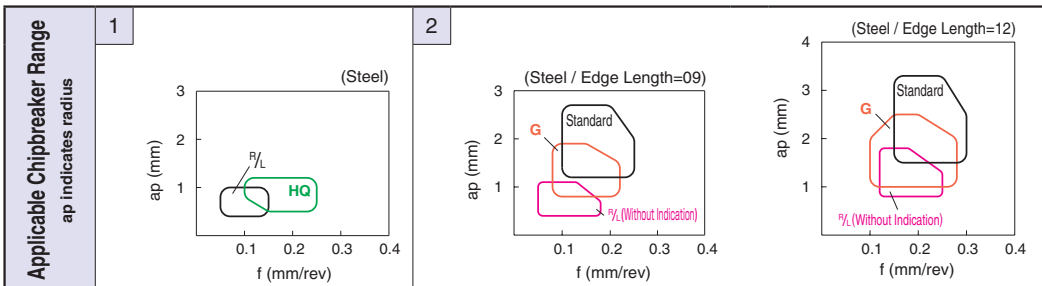
B64 Inserts are sold in 10 piece boxes

● : Std. Item □ : Deleted from the next catalogue

90° Square / Positive with Hole
90° Square / Positive without Hole

Description	(mm)				Description	A	T	φd	α
	A	T	φd	α					
SC_09T3_	9.525	3.97	4.4	7°	SP_0903_	9.525	3.18	-	11°
SP_0903_	9.525	3.18	4.5	11°	SP_1203_	12.7	3.18	-	11°
					SP_1204_	12.7	4.76	-	11°

Insert	Description	Dimension (mm)	Material Compatibility																						Ref. to Page for Applicable Toolholders	Applicable Chipbreaker Range																			
			Cermet					MEGACOAT Cermet					PVD Coated Cermet					CVD Coated Carbide									MEGACOAT MEGACOAT NANO		PVD Coated Carbide			DLC Carbide													
			TN610	TN620	TN6010	TN6020	TN60	PV710	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505			CA4515	CA4010	CA4115	CA4120	PR1425	PR1225	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL025	KW10	SW05		
Finishing-Medium	SCMT 09T304HQ 09T308HQ	0.4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•																							1	
		0.8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•																							
Finishing	SPGH 090304L 090308L	0.4				•																																					F60		
		0.8				•																																							
Finishing	SPGR 090304R 090304L 090308R 090308L	0.4	•	•	•	•	•	•	•	•																																			
		0.4	•	•	•	•	•	•	•	•	•																																		
		0.8	•	•	•	•	•	•	•	•	•																																		
		0.8	•	•	•	•	•	•	•	•	•																																		
Medium	SPMR 090304G 090308G	0.4				•			•	•	•	•	•																																
		0.4				•																																							
		0.8				•																																							
		0.8				•																																							
Medium	SPMR 090304 090308	0.4												•	•	•	•	•	•																								E42 F60		
		0.4													•	•	•	•	•																										
		0.8													•	•	•	•	•																										
		0.8													•	•	•	•	•																										
Cast Iron	SPGN 090304 090308	0.4																																											
		0.4																																											
		0.8																																											
		0.8																																											
		1.2																																											
Without Chipbreaker	SPMN 120304 120308 120312	0.4																																											
		0.8																																											
		0.8																																											
		1.2																																											
Without Chipbreaker	SPMN 120408 120412	0.8																																											
		1.2																																											



• : Std. Item ○ : Check Availability

Inserts are sold in 10 piece boxes

How to read pages of "Turning Inserts" **B13**

(mm)

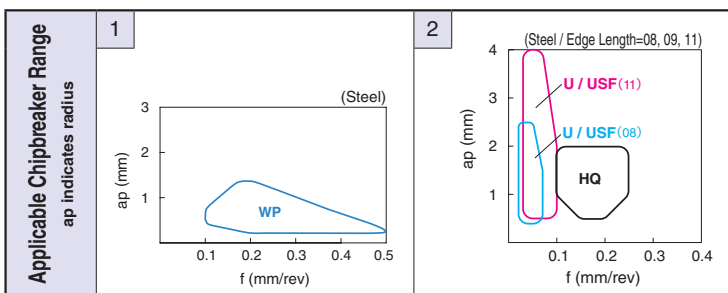
(mm)

60° Triangle / Positive with Hole

Description	A	T	φd	α
TC_1102_	6.35	2.38	2.8	7°
TC_1103_	6.35	3.18	2.8	7°
TC_16T3_	9.525	3.97	4.4	7°

Insert	Description	Dimension (mm)	Cermet		MEGACOAT Cermet		PVD Coated Cermet		CVD Coated Carbide										MEGACOAT MEGACOAT NANO		PVD Coated Carbide		DLC Carbide		Ref. to Page for Applicable Toolholders	Applicable Chipbreaker Range
			Handed Insert shows Left-hand	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)	Dimension (mm)				
With Wiper Edge	NEW TCMX 090204WP Finishing	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	1			
		TCMX 110204WP	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	1		
Finishing-Medium	TCMT 090202HQ 090204HQ TCMT 110202HQ 110204HQ 110208HQ TCMT 16T304HQ 16T308HQ 16T312HQ	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	F47			
		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●		
		0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●		
		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●		
Super Fine	TCET 0802003FR-USF 0802003FL-USF 080201FR-USF 080202FR-USF TCET 1103003FR-USF 1103003FL-USF 110301FR-USF 110301FL-USF 110302FR-USF 110302FL-USF TCET 1103005MFR-USF 110301MFR-USF 110302MFR-USF	0.03																					E29			
		0.03																						●		
		0.1																						●		
		0.2																						●		
		0.03																						●		
		0.03																						●		
		0.1																						●		
		0.1																						●		
		0.2																						●		
		0.2																						●		
		<0.05																						●		
		<0.1																						●		
<0.2																					●					

- Insert whose corner-R(rε) dimension expressed with less than sign (e.g. < 0.05, < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(rε).




● : Std. Item ○ : Check Availability

Inserts are sold in 10 piece boxes

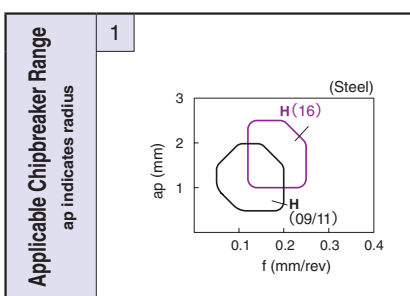
(mm) (mm)

60° Triangle / Positive with Hole

Description	A	T	φd	α	Description	A	T	φd	α
TP_0802_	4.76	2.38	2.3	11°	TP_1103_	6.35	3.18	3.3	11°
TP_0902_	5.56	2.38	3.0	11°	TP_1603_	9.525	3.18	4.5	11°
TP_1102_	6.35	2.38	3.5	11°	TP_1604_	9.525	4.76	4.4	11°

Insert	Description	Dimension (mm)	Cermet	MEGACOAT Cermet			CVD Coated Carbide												MEGACOAT MEGACOAT NANO		PVD Coated Carbide		DLC	Carbide	Free-cutting steel	Carbon Steel / Alloy Steel	Stainless Steel	Gray Cast Iron	Nodular Cast Iron	Non-ferrous Metals	Heat-resistant Alloys	Titanium Alloys	Hard Materials									
				PN610	TN620	TN6010	TN6020	TN60	PV710	PV720	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA525	CA530	CA5505	CA5515	CA5525	CA5535												CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR1425	PR1225
Medium 	TPGH 090201L-H 090202L-H 090204L-H	0.1 0.2 0.4																																								
	TPGH 110302R-H 110302L-H 110304R-H 110304L-H 110308R-H 110308L-H	0.2 0.2 0.4 0.4 0.8 0.8																																								
	TPGH 160304R-H 160304L-H 160308R-H 160308L-H	0.4 0.4 0.8 0.8																																								
	TPGT 160402L-H 160404L-H 160408L-H	0.2 0.4 0.8																																								
	TPGH 110302ML-H 110304MR-H 110304ML-H	<0.2 <0.4 <0.4																																								
	TPGH 160304ML-H 160308MR-H 160308ML-H	<0.4 <0.8 <0.8																																								

· Insert whose corner-R(rε) dimension expressed with less than sign (e.g. < 0.05, < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(rε).



● : Std. Item ○ : Check Availability □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

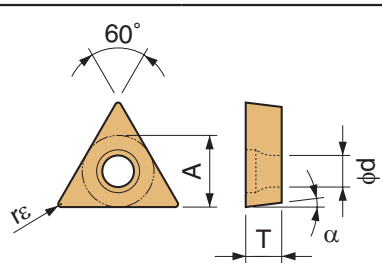
(mm)

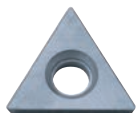
(mm)

60° Triangle / Positive with Hole

Description	A	T	φd	α
TP_0802_	4.76	2.38	2.3	11°
TP_0902_	5.56	2.38	3.0	11°
TP_1102_	6.35	2.38	3.5	11°

Description	A	T	φd	α
TP_1103_	6.35	3.18	3.3	11°
TP_1603_	9.525	3.18	4.5	11°
TP_1604_	9.525	4.76	4.4	11°



Insert	Description	Dimension (mm)	Cermet		MEGACOAT Cermet		PVD Coated Cermet	CVD Coated Carbide										MEGACOAT MEGACOAT NANO		PVD Coated Carbide		DLC	Carbide	Ref. to Page for Applicable Toolholders Applicable Chipbreaker Range														
			TN610	TN620	TN6010	TN6020	TN60	PV710	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525		CA4505	CA4515	CA4115	CA4120	CA4120	PR1425	PR1225	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025
Cast Iron 	TPGB 080202 080204 080208	0.2	●	●	○	●	●	○																												●		Ref. to the table below B74
		0.4	●	●	○	●	●	○	○																											●		Ref. to the table below B74
		0.8			○	●	●	○	○																										●		Ref. to the table below B74	
	TPGB 090202 090204	0.2	●	○	●	●	○	○																											●		Ref. to the table below B74	
		0.4	●	○	●	●	○	○																										●		Ref. to the table below B74		
		0.05			●	●	○	○																										●		F50		
		0.1			●	●	○	○																									●		F50			
	TPGB 1102005 110201 110202 110204	0.1			●	●	○	○																										●		F50		
		0.2			●	●	○	○																									●		F50			
		0.4	●	●	○	●	●	○																								●		F50				
		0.8	●	●	○	●	●	○																								●		F50				
	TPGB 1103005 110301 110302 110304 110308	0.05			●	●	○	○																									●		Ref. to the table below B74			
		0.1			●	●	○	○																								●		Ref. to the table below B74				
	TPGB 160304 160308	0.2			●	●	○	○																								●		Ref. to the table below B74				
		0.4	●	●	○	●	●	○	○																						●		Ref. to the table below B74					
		0.4			●	●	○	○																								●		Ref. to the table below B74				
0.8		●	●	○	●	●	○																							●		Ref. to the table below B74						



● : Std. Item ○ : Check Availability












Inserts are sold in 10 piece boxes

Turning Indexable Inserts

(mm)

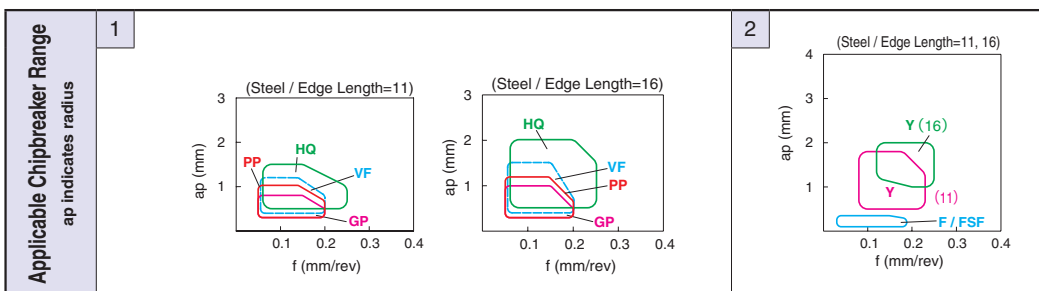
35° Rhombic / Positive with Hole

Description	A	T	φd	α
VB_1103_	6.35	3.18	2.8	5°
VB_1604_	9.525	4.76	4.4	5°

Insert	Description	Dimension (mm)	Cermet	MEGACOAT Cermet	PVD Coated Cermet	CVD Coated Carbide										MEGACOAT MEGACOAT NANO	PVD Coated Carbide	DLC	Carbide	Ref. to Page for Applicable Toolholders	Applicable Chipbreaker Range																
						TN610	TN620	TN6010	TN6020	TN60	PV710	PV720	PV7010	PV7025	PV7005							PV90	PV7020	CA510	CA515	CA530	CA505	CA515	CA525	CA535	CA615	CA625	CA4505	CA4010	CA4115	CA4120	PR1425
		r _c	<input checked="" type="checkbox"/> : Std. Item <input type="checkbox"/> : Check Availability <input type="checkbox"/> : Deleted from the next catalogue																																		
Finishing		VBMT 110302PP	0.2	•	•																																
		110304PP	0.4	•	•	•	•	•																													
		110308PP	0.8	•	•																																
Finishing		VBMT 160404PP	0.4	•	•																																
		160408PP	0.8	•	•																																
		160412PP	1.2	•	•																																
Finishing		VBMT 110304GP	0.4	•	•	○	•	•	•	•	○		•	•																							
		VBMT 160404GP	0.4	•	•	○	•	•	•	•	○		•	•																							
Finishing		VBMT 110304VP	0.4	•	•	○	•	•	•	•	○		•	•																							
		VBMT 160404VP	0.4	•	•	○	•	•	•	•	○		•	•																							
Finishing		VBMT 110302VF	0.2	•	•		○	•	•	•																											
		110304VF	0.4	•	•		○	•	•	•																											
Finishing		110308VF	0.8	•	•		○	•	•	•																											
		VBMT 160402VF	0.2	•	•		○	•	•	•																											
Finishing		160404VF	0.4	•	•		○	•	•	•																											
		160408VF	0.8	•	•		○	•	•	•																											
Finishing		160412VF	1.2	•	•		○	•	•	•																											
		VBMT 110304HQ	0.4	•	•	○	•	•	•	•	○		•	•																							
Finishing-Medium		110308HQ	0.8	•	•	○	•	•	•	•	○		•	•																							
		VBMT 160404HQ	0.4	•	•	○	•	•	•	•	○		•	•																							
Finishing-Medium		160408HQ	0.8	•	•	○	•	•	•	•	○		•	•																							
		160412HQ	1.2	•	•	○	•	•	•	•	○		•	•																							
Finishing		VBET 1103003R-FSF	0.03				•																														
		1103003L-FSF	0.03																																		
		110301R-FSF	0.1					•																													
		110301L-FSF	0.1																																		
		110302R-FSF	0.2																																		
		110302L-FSF	0.2																																		
		VBET 1103005MR-FSF	<0.05																																		
		1103005ML-FSF	<0.05																																		
		110301MR-FSF	<0.1																																		
		110301ML-FSF	<0.1																																		
110302MR-FSF	<0.2																																				
110302ML-FSF	<0.2																																				

• Insert whose corner-R(r_c) dimension expressed with less than sign (e.g. < 0.05, < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(r_c).

Insert Description	Ref. to Page for Applicable Toolholders
VB..1103 type	E30,E31,E36,F52,F54,F57
VB..1604 type	E30,E31,F52,F54,F57



(mm)

35° Rhombic / Positive with Hole

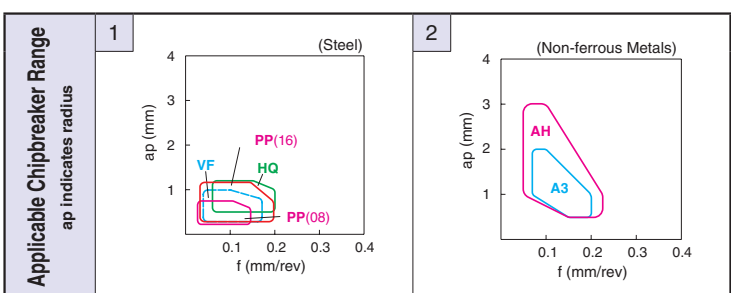
Description	A	T	φd	α
VC_0802_	4.76	2.38	2.3	7°
VC_1604_	9.525	4.76	4.4	7°

Insert	Description	Dimension (mm)	rε	Material																		DLC	Carbide	Ref. to Page for Applicable Toolholders	Chipbreaker Range															
				Cermet				MEGACOAT Cermet				PVD Coated Cermet				CVD Coated Carbide										MEGACOAT MEGACOAT NANO		PVD Coated Carbide												
				TN610	TN620	TN6010	TN6020	TN60	PV710	PV720	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA525	CA530	CA505	CA515					CA525	CA535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR1425	PR1225	PR1305	PR1310	PR1325	PR1335
Finishing	VCMT 080202PP 080204PP	0.2 0.4	●●●○	●●●○	●●●○	●●●○	●●●○	●●●○	●●●○	●●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	E36 F52 F54 F57
	VCMT 160404PP 160408PP	0.4 0.8	●●●○	●●●○	●●●○	●●●○	●●●○	●●●○	●●●○	●●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	E30 E31 F52 F54 F57	
Finishing	VCMT 080202VF 080204VF	0.2 0.4	●●●○	●●●○	○●●○	●●●○	●●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	1
Finishing-Medium	VCMT 080202HQ 080204HQ	0.2 0.4	●●●○	●●●○	○●●○	●●●○	●●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	○●●○	E36 F52 F54 F57	
Non-ferrous Metals	VCGT 160404AH	0.4																																			2			
Non-ferrous Metals	VCGT 160404R-A3 160404L-A3 160408R-A3 160408L-A3	0.4 0.4 0.8 0.8																																				F54 F57		

B



Insert (Turning)




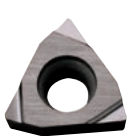


Inserts are sold in 10 piece boxes

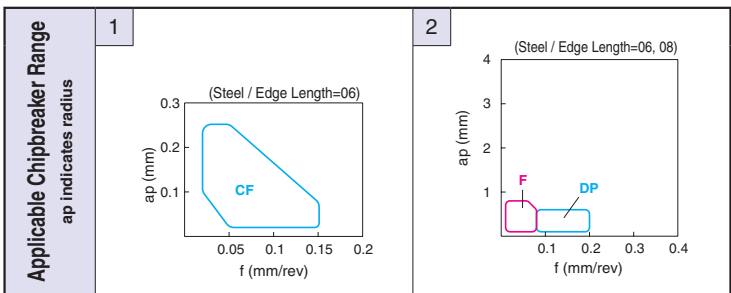
● : Std. Item ○ : Check Availability

80° Trigon / Positive with Hole

Description	A	T	ϕd	α
WB_0601_	3.97	1.59	2.3	5°
WB_0802_	4.76	2.38	2.3	5°

Insert Handed Insert shows Left-hand	Description	Dimension (mm) rc	Cermet		MEGACOAT Cermet		PVD Coated Cermet		CVD Coated Carbide							MEGACOAT MEGACOAT NANO		PVD Coated Carbide		DLC	Carbide	Ref. to Page for Applicable Toolholders Applicable Chipbreaker Range																														
			TN610	TN620	TN6010	TN6020	TN60	PV710	PV720	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA530	CA505	CA515	CA525	CA535		CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR1425	PR1225	PR1305	PR1310	PR1325	PR1335	PR930	PR1005	PR1025	PR1125	PDI 025	KW10	SW05										
Minute ap  Sharp Edge	WBGT 060101MR-CF	<0.1																																																		
	060101ML-CF	<0.1																																																		
	060102MR-CF	<0.2																																																		
	060102ML-CF	<0.2																																																		
Minute ap  Sharp Edge / Polished	WBGT 060101MPR-CF	<0.1																																																		
	060101MPL-CF	<0.1																																																		
	060102MPR-CF	<0.2																																																		
	060102MPL-CF	<0.2																																																		
Finishing 	WBMT 060102R-DP	0.2																																																		
	060102L-DP	0.2																																																		
	060104R-DP	0.4																																																		
	060104L-DP	0.4																																																		
	WBMT 080202R-DP	0.2																																																		
	080202L-DP	0.2																																																		
NEW Finishing  Sharp Edge	WBET 0601005ML-F	<0.05																																																		
	060101MR-F	<0.1																																																		
	060101ML-F	<0.1																																																		
	060102MR-F	<0.2																																																		
	060102ML-F	<0.2																																																		
	060104MR-F	<0.4																																																		
	060104ML-F	<0.4																																																		
	WBET 080201MR-F	<0.1																																																		
	080201ML-F	<0.1																																																		
	080202MR-F	<0.2																																																		
	080202ML-F	<0.2																																																		
	080204MR-F	<0.4																																																		
080204ML-F	<0.4																																																			

- Insert whose corner-R(rc) dimension expressed with less than sign (e.g. < 0.05, < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(rc).



● : Std. Item ○ : Check Availability □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

80° Trigon / Positive with Hole

Description	A	T	φd	α
WP_1102_	6.35	2.38	2.8	11°
WP_1603_	9.525	3.18	4.4	11°

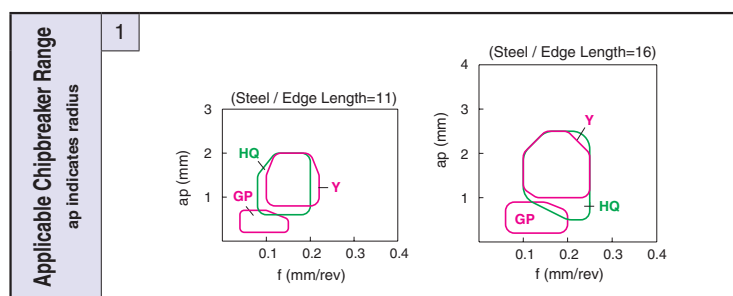
(mm)

Insert	Description	Dimension (mm)	Cermet	MEGACOAT Cermet					PVD Coated Cermet	CVD Coated Carbide												MEGACOAT MEGACOAT NANO			PVD Coated Carbide				DLC Carbide		Ref. to Page for Applicable Toolholders Applicable Chipbreaker Range																			
				TN610	TN620	TN6010	TN6020	TN60		PV710	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120		PR1425	PR1225	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL025	KW10	SW05						
				rε	TN610	TN620	TN6010	TN6020		TN60	PV710	PV7010	PV7025	PV7005	PV90	PV7020	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115		CA4120	PR1425	PR1225	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL025	KW10	SW05					
Finishing	WPMT 110204GP	0.4	●	●	●	●	●	●	●	●	●	●	●	□	●																																			
	WPMT 160304GP	0.4	●		●	●	●	●	●	●	●	●	●	●	●	●																			●	●														
Finishing-Medium	WPMT 110202HQ 110204HQ	0.2	●		●	●	●	●	●	●	●	●	●	●	●	●																		●	●															
		0.4	●	●	○	●	●	●	●	○	●	○	●	●	●	●	●	●	●	●	●	●	●	●										●	●	●	●													
	WPMT 160304HQ 160308HQ	0.4	●	●	○	●	●	●	○	●	○	●	●	●	●	●	●	●	●	●	●	●	●											●	●	●	●													
		0.8	●	●	○	●	●	●	○	●	○	●	●	●	●	●	●	●	●	●	●	●	●											●	●	●	●													
Finishing-Medium	WPGT 110202L-Y 110204R-Y 110204L-Y	0.2			●																											●																		
		0.4			○	●				●																						●																		
		0.4			○	●				●																						●																		
	WPGT 160304R-Y 160304L-Y 160308L-Y	0.4			○	●				●																						●																		
		0.4			○	●				●																						●																		
		0.8				○	●			●																						●																		
Cast Iron	WPGW 110202 110204	0.2																																																
		0.4																																																
	WPGW 160304 160308	0.4																																																
		0.8																																																

B

Insert (Turning)

Insert whose corner-R(rε) dimension expressed with less than sign (e.g. < 0.05, < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(rε).



● : Std. Item ○ : Check Availability □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

B



Insert (Turning)

NEW

P	Free-cutting steel							
	Carbon Steel / Alloy Steel	●	☺	☺	☺			
M	Stainless Steel	☺	●	☺	☺			
K	Gray Cast Iron							●
	Nodular Cast Iron							☺
N	Non-ferrous Metals							●
S	Heat-resistant Alloys	☺	●	☺	☺			
	Titanium Alloys		●					☺
H	Hard Materials							

● For KTKF toolholder

Insert <small>Photo shows Right-hand</small>	Description	Dimension (mm)							MEGACOAT MEGACOAT NANO		PVD Coated Carbide	Carbide	Ref. to Page for Applicable Toolholders	
		W	a	B	r _ε	T	H	φd	PR1425	PR1535	PR1225	PR1025		KW10
<p>● Right-hand shown</p>	TKFB 12R15005M	1.5	0.25	2.6	<0.05	3.0	8.7	5.2	●	●	●	●	●	E12
	12R28005M	2.8	0.3	4.6	<0.05				●	●	●	●	●	
12R28010M				<0.1	●	●	●	●	●					
<p>● Left-hand shown</p>	TKFB 16R38005M	3.8	0.3	6.3	<0.05	4.0	9.5	5.2	●	●	●	●		
	16R38010M				<0.1				●	●	●	●		
	TKFB 12L28005MR	2.8	0.3	4.6	<0.05	3.0	8.7	5.2		●	●			
	12L28010MR				<0.1					●	●			
	TKFB 16L38005MR	3.8	0.3	6.3	<0.05	4.0	9.5	5.2		●	●			
	16L38010MR				<0.1					●	●			

· Insert whose corner-R(r_ε) dimension expressed with less than sign (e.g. < 0.05, < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(r_ε).

● Inserts Identification System (Ref. to Tables 1 and 2)

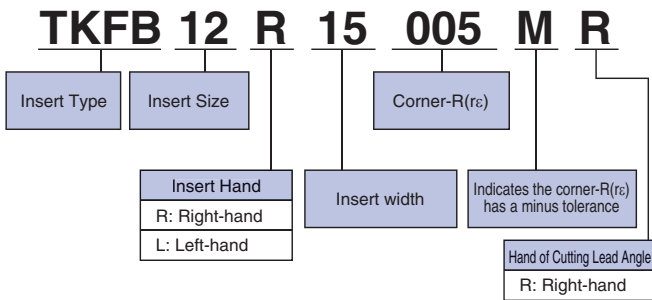


Table 1

Small machining	General purpose	Large machining
<p>TKFB12R15..</p>	<p>TKFB12R28..</p>	<p>TKFB16R38..</p>



Table 2

Toolholder	Right-hand (R)	Toolholder	Left-hand (L)
Insert	Right-hand (R)	Insert	Left-hand (L)
Lead angle	Right-hand (R)	Lead angle	Right-hand (R)

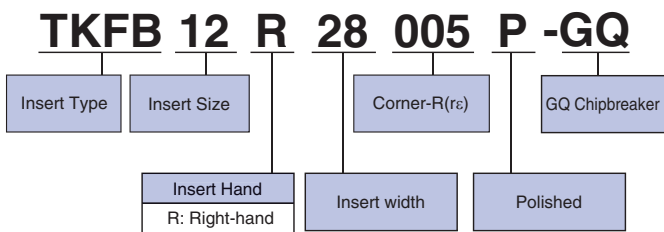


P	Free-cutting steel			
	Carbon Steel / Alloy Steel	☹	☺	☺
M	Stainless Steel	☺	☹	☺
K	Gray Cast Iron			
	Nodular Cast Iron			
N	Non-ferrous Metals			
S	Heat-resistant Alloys	☺	☹	☺
	Titanium Alloys		☹	
H	Hard Materials			

● For KTKF toolholder (GQ Chipbreaker) **NEW**

Insert	Description	Dimension (mm)								MEGACOAT MEGACOAT NANO			Ref. to Page for Applicable Toolholders
		W	a	B	r _ε	T	H	φd	θ	PR1425	PR1535	PR1225	
 Polished	TKFB 12R28005P-GQ	2.8	1.5	4.6	0.05	3.0	8.7	5.2	74°	●	●	●	E12
	12R28015P-GQ				0.15					●	●	●	
	TKFB 16R38005P-GQ	3.8	1.8	6.3	0.05	4.0	9.5	5.2	72°	●	●	●	
	16R38015P-GQ				0.15					●	●	●	
 Polished	TKFB 12R28005-GQ	2.8	1.5	4.6	0.05	3.0	8.7	5.2	74°	●	●	●	
	12R28015-GQ				0.15					●	●	●	
	TKFB 16R38005-GQ	3.8	1.8	6.3	0.05	4.0	9.5	5.2	72°	●	●	●	
	16R38015-GQ				0.15					●	●	●	

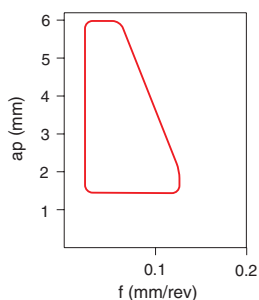
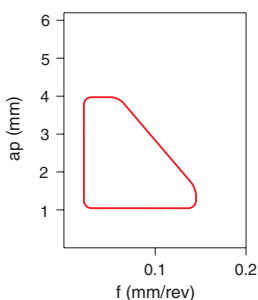
● Inserts Identification System



● Applicable Chipbreaker Range

TKFB12R28...GQ

TKFB16R38...GQ



Inserts for Back Turning (Small Tools)


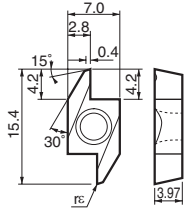

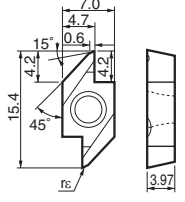

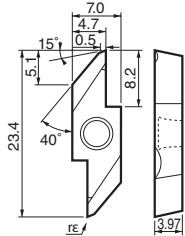
B



Insert (Turning)


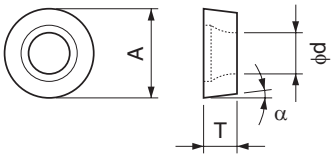

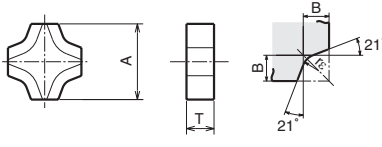
NEW

● For AABS / SABS / AABW / SABW toolholders

Insert	Description	Dimension (mm)	Cermets		PVD Coated Carbide			Carbide	Ref. to Page for Applicable Toolholders
			TC60M	PR1425	PR1225	PR930	PR1005		
<p>Handed Insert shows Right-hand</p>									
		ABS 15R4005 15R4015	0.05 0.15	● ●			● ●		E17
		ABS 15R4005M 15R4015M	<0.05 <0.15		● ●		● ●	● ●	
		ABW 15R4005 15R4015	0.05 0.15	● ●			● ●		E18
		ABW 15R4005M 15R4015M	<0.05 <0.15		● ●		● ●	● ●	
		ABW 23R5005 23R5015	0.05 0.15	● ●			● ●		E19
		ABW 23R5005M 23R5015M	<0.05 <0.15		● ●		□ ●	● ●	

· Insert whose corner-R(r_c) dimension expressed with less than sign (e.g. < 0.05, < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(r_c).

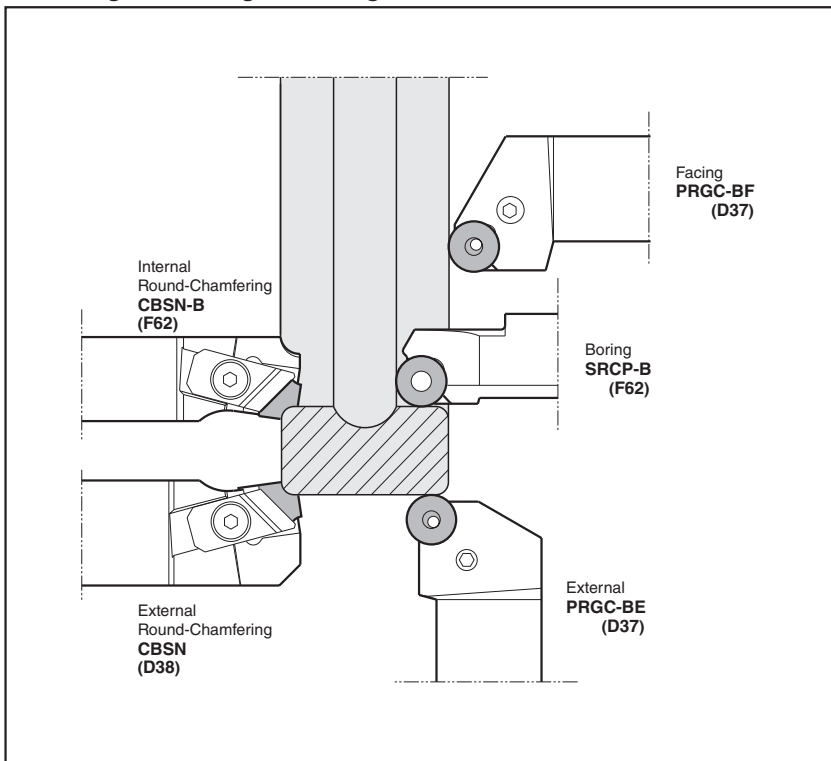
Bearing Machining

Insert	Description	Dimension (mm)				Relief Angle	Cermet	Ref. to Page for Applicable Toolholders	
		A	T	ϕd	r_ϵ	α	TN90		
• External/Boring/Facing 		RCMT 1204M0-BB	12.0	4.76	4.2	-	7°	●	D37
		RCMT 1606M0-BB	16.0	6.35	5.5	-	7°	●	
• Round Chamfering 		SNMF	12.70	4.76	B	r_ϵ	-	●	D38
					120406-21	1.5			
					3.0	1.0			F62
					3.1	1.6			
					3.2	2.1			
					3.3	2.6			

B

 Insert (Turning)

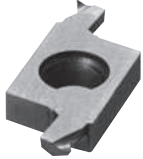
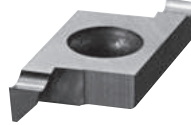

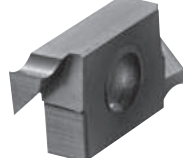
Tooling for Bearing Machining












Turning Indexable Inserts

Micro Boring













Twin-Bars

Micro Boring	Micro Face Grooving
TWB Twin-Bars F34	TWFG Twin-Bars G72
	
TWBT Twin-Bars F35	TWFGT Twin-Bars G73
	

EZ Bars / System Tip-Bars / Tip-Bars

Micro Boring		Micro Back Boring
EZB EZ Bars F14	EZVB EZ Bars F20	-
		-
VNB-S / VNB System Tip-Bars F28	VNBX-S System Tip-Bars F32	VNBT System Tip-Bars F29
		
HPB 2-Edge Tip-Bars F36	-	HPBT 2-Edge Tip-Bars F36
	-	
PSB-S Tip-Bars F37	-	PSBT-S Tip-Bars F37
	-	

Solid Tip-Bars [Grooving / Threading]

Micro Grooving	Micro Face Grooving	Micro Internal Threading
EZG EZ Bars G43	EZFG EZ Bars G68	EZT EZ Bars J24
		
VNG System Tip-Bars G45	VNFG System Tip-Bars G70	VNT System Tip-Bars J30
		
HPG 2-Edge Tip-Bars G46	HPFG 2-Edge Tip-Bars G71	HPPT 2-Edge Tip-Bars J28
		
PSG Tip-Bars G46	PSFG Tip-Bars G71	PST Tip-Bars J30
		

B

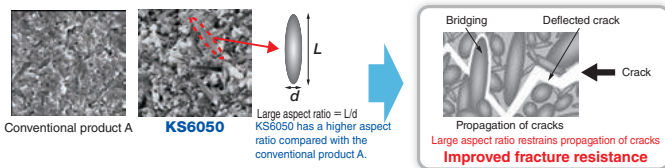


Insert (Turning)

High Speed Machining for Cast Iron KS6050/CS7050

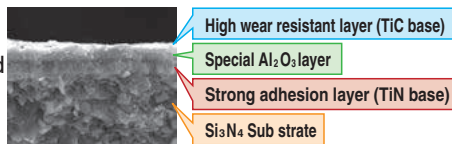
- Improved fracture resistance by high aspect ratio constituents
- Anti-chipping in scale processing and interrupted machining
- High speed machining of cast iron by controlling grain boundary phase (good wear resistance)

KS6050

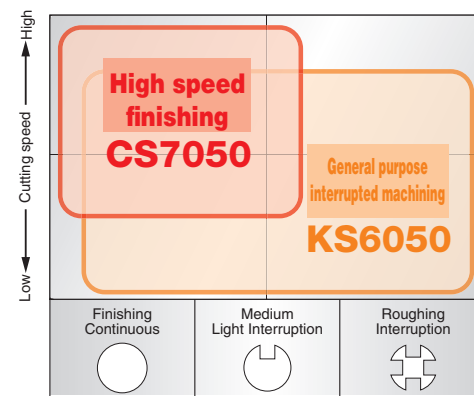


CS7050 (Coated Si₃N₄)

Superior wear resistance attained with strong coating adherence
Applicable to high speed machining



Application Map

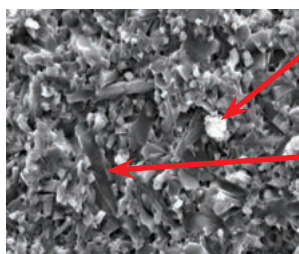


B
Insert (Turning)

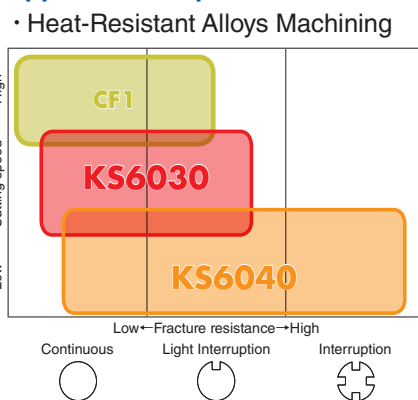
Heat-Resistant Alloys Machining SiAlON Ceramic KS6030/KS6040

- Improved wear and fracture resistance due to the mixture of the hard and acicular particles

Superior balance in heat resistant alloys machining achieves optimum balance between wear and fracture resistance.



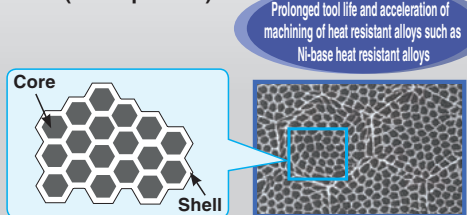
Application Map



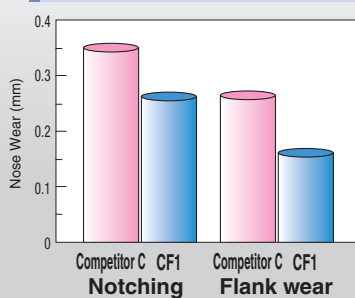
Heat-Resistant Alloys Machining Honeycomb structure Ceramic CF1

What is Honeycomb structure Ceramic?

Honeycomb structure Ceramic is a composite material consisting of a core (gray portion) and shell (white portion)



Comparison of Wear Resistance



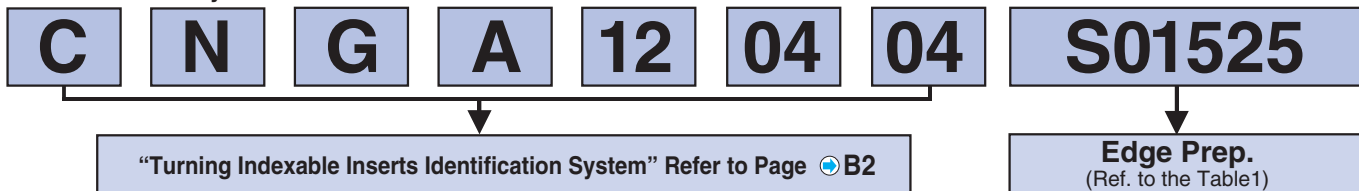
Competitor C

<Cutting Conditions>

Workpiece Material: Ni-base heat-resistant alloys
Tool geometry: RNGN120400
Vc=150m/min, ap=1mm
f=0.15mm/rev Wet

Ceramic Inserts Identification System

Identification System



Edge Preparation Identification System

Table1

Edge Prep.	Symbol	Cutting Edge Spec.	Example	Shape
Edge Prep.	S	Chamfered and Honed Cutting Edge	S01525 0.15mm X 25° Chamfered and Honed Cutting Edge	
	T	Chamfered Cutting Edge	T02025 0.20mm X 25° Chamfered Cutting Edge	

● Ref. to Page B3 for insert color

Turning Indexable Inserts

How to read pages of "Turning Inserts" B13

80° Rhombic / Negative

Description	(mm)			Description	(mm)		
	A	T	φd		A	T	φd
CN_A 1204_	12.70	4.76	5.16	CNGN1607_	15.875	7.94	-
CN_N 1204_	12.70	4.76	-	CNGX1207_	12.70	7.94	-
1207_		7.94					

Edge Prep.				K	Material										Ref. to Page for Applicable Toolholders					
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	S	H	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic	High strength structural Ceramic		
S	Chamfered and Honed Cutting Edge	S01525	0.15mm X 25° Chamfered and Honed Cutting Edge		●	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺			
T	Chamfered Cutting Edge	T01525	0.15mm X 25° Chamfered Cutting Edge														☺			
Insert				Description	Edge Prep.	Dimension (mm)	Material										Ref. to Page for Applicable Toolholders			
						rε	KA30	A65	KT66	A66N	PT600M	KS6050	CS7050	KS6030	KS6040	CF1				
	CNGA	120412S01025	S01025	1.2	●													D8 F63 F67 F68		
	CNGA	120404S01525 120408S01525 120412S01525	S01525	0.4 0.8 1.2					●											
	CNGA	120404S02025 120408S02025 120412S02025	S02025	0.4 0.8 1.2						●										
	CNGA	120404S03030 120408S03030 120412S03030	S03030	0.4 0.8 1.2						●										
	CNGA	120412T00520	T00520	1.2	●															
	CNGA	120404T02025 120408T02025 120412T02025	T02025	0.4 0.8 1.2		●	●			●		●	●							
	CNMA	120408S01525	S01525	0.8						●										
	CNMA	120408S03030 120412S03030	S03030	0.8 1.2						●										
		CNGN	120408S01025 120412S01025	S01025	0.8 1.2	●														D22
		CNGN	120408T01020 120412T01020	T01020	0.8 1.2														●	
CNGN		120404T02025 120408T02025 120412T02025 120416T02025	T02025	0.4 0.8 1.2 1.6						●		●	●							
CNGN		120708S01525 120712S01525	S01525	0.8 1.2						●										
CNGN		120708T01020 120712T01020	T01020	0.8 1.2													●	●		
CNGN		120704T02025 120708T02025 120712T02025 120716T02025	T02025	0.4 0.8 1.2 1.6		●	●													
CNGN		160708T02025 160712T02025 160716T02025	T02025	0.8 1.2 1.6		●	●													
CNMN		120708T02025 120712T02025	T02025	0.8 1.2		●	●													
		CNGX	120712T01020 120716T01020	T01020	1.2 1.6													●	D28 F80	
		CNGX	120708T02025 120712T02025 120716T02025	T02025	0.8 1.2 1.6								●	●				●		

Inserts are sold in 10 piece boxes

● : Std. Item

(mm)

(mm)

55° Rhombic / 75° Rhombic / Negative

Description	A	T	φd
DNGA 1504_	12.70	4.76	5.16
1506_		6.35	
DNGN 1504_	12.70	4.76	-
1507_		7.94	

Description	A	T	φd
DNGX 1207_	10.00	7.94	-
DNGX 1507_	12.70	7.94	-
ENGN 1307_	12.70	7.94	-

Edge Prep.				K												Ref. to Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example			S														
S	Chamfered and Honed Cutting Edge	S01225	0.12mm X 25° Chamfered and Honed Cutting Edge																
T	Chamfered Cutting Edge	T01215	0.12mm X 15° Chamfered Cutting Edge	H															
Insert		Description		Edge Prep.	Dimension (mm)	Aluminum Oxide Ceramic											Ref. to Page for Applicable Toolholders		
				rε	KA30	A65	KT66	A66N	PT600M	KS6050	CS7050	KS6030	KS6040	CF1					
		DNGA 150408S01025	S01025	0.8	●														
		DNGA 150412S01025	S01025	1.2	●														
		DNGA 150404S01525	S01525	0.4					●										D10
		DNGA 150408S01525	S01525	0.8					●										D11
		DNGA 150404S02025	S02025	0.4						●									F64
		DNGA 150408S02025	S02025	0.8						●									F70
		DNGA 150408S03030	S03030	0.8						●									F71
		DNGA 150404T02025	T02025	0.4		●				●									
DNGA 150408T02025	T02025	0.8		●				●											
DNGA 150412T02025	T02025	1.2		●				●											
DNGA 150604T02025	T02025	0.4					□	●									D10		
DNGA 150608T02025	T02025	0.8					□	●									D11		
DNGA 150612T02025	T02025	1.2					□	●									F64		
		DNGN 150408T02025	T02025	0.8					●									-	
		DNGN 150704S01525	S01525	0.4					●										
		DNGN 150708S01525	S01525	0.8					●										
		DNGN 150712S01525	S01525	1.2					●										
		DNGN 150704S02025	S02025	0.4					●									D23	
		DNGN 150708S02025	S02025	0.8					●										
		DNGN 150712S02025	S02025	1.2					●										
		DNGN 150704T02025	T02025	0.4		●													
DNGN 150708T02025	T02025	0.8		●															
DNGN 150712T02025	T02025	1.2		●															
DNGN 150716T02025	T02025	1.6		●															
		DNGX 120708T02025	T02025	0.8							●						D29		
		DNGX 120712T02025	T02025	1.2							●							F80	
		DNGX 150708T02025	T02025	0.8							●	●					D29		
		DNGX 150712T02025	T02025	1.2							●	●							
		ENGN 130708S01525	S01525	0.8					●									D23	
		ENGN 130712S01525	S01525	1.2					●										
		ENGN 130708S02025	S02025	0.8						●									
		ENGN 130712S02025	S02025	1.2						●									
		ENGN 130704T02025	T02025	0.4		●					●								
		ENGN 130708T02025	T02025	0.8		●					●								
		ENGN 130712T02025	T02025	1.2		●					●								
		ENGN 130716T02025	T02025	1.6		●					●								
ENGN 130720T02025	T02025	2.0		●					●										
ENGN 130730T02025	T02025	3.0		□					●								F79		

● : Std. Item □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

Turning Indexable Inserts

How to read pages of "Turning Inserts" **B13**

Round / Negative

(mm)				(mm)			
Description	A	T	φd	Description	A	T	φd
RNGN 0903_		3.18		RNGN 1207_	12.70		
0904_	9.525	4.76		1507_	15.875	7.94	
0907_		7.94		1907_	19.05		
1204_	12.70	4.76		2507_	25.40		

B



Chipbreakers

Negative

C

D

R

S

T

V

W

Ceramic


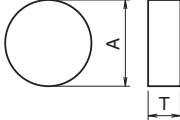
Insert (Turning)

Insert (Turning)

Insert (Turning)

Insert (Turning)

Insert (Turning)

Edge Prep.				Material Compatibility													Ref. to Page for Applicable Toolholders				
Symbol	Cutting Edge Spec.	Example		K	Gray Cast Iron (With Scale)		Gray Cast Iron (Without Scale)		Nodular Cast Iron (With Scale)		Nodular Cast Iron (Without Scale)		Heat-resistant Alloys		Hard Materials						
S	Chamfered and Honed Cutting Edge	S01225	0.12mm X 25° Chamfered and Honed Cutting Edge																		
T	Chamfered Cutting Edge	T01215	0.12mm X 15° Chamfered Cutting Edge	S																	
				H																	
Insert				Description			*Edge Prep.		Material Compatibility												
							Dimension (mm)	Aluminum Oxide Ceramic		PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Hardness structure Ceramic						
							rε	KA30	A65	KT66	A66N	PT600M	KS6050	CS7050	KS6030	KS6040	CF1				
 	RNGN	090300E003	E003	-																	
		090300E005	E005	-																	
		090300T01020	T01020	-																	
	RNGN	090400S01525	S01525	-																	
		090400S02025	S02025	-																	
		090400T01020	T01020	-																	
		090400T02025	T02025	-																	
	RNGN	090700T01020	T01020	-																	
	RNGN	120400E003	E003	-																	
		120400E005	E005	-																	
		120400S01525	S01525	-																	
		120400S02025	S02025	-																	
		120400T01020	T01020	-																	
		120400T02025	T02025	-																	
	RNGN	120700E003	E003	-																	
		120700E005	E005	-																	
		120700K15015	K15015	-																	
		120700S01525	S01525	-																	
		120700S02025	S02025	-																	
		120700T01020	T01020	-																	
		120700T02025	T02025	-																	
	RNGN	150700S01525	S01525	-																	
		150700S02025	S02025	-																	
		150700T02025	T02025	-																	
	RNGN	190700E003	E003	-																	
		190700E005	E005	-																	
		190700T01020	T01020	-																	
	RNGN	250700E003	E003	-											MTO						
		250700E005	E005	-																	
		250700T01020	T01020	-											MTO						

*For cutting edge "E" and "K", please refer to the table below.

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R-honed Cutting Edge	E005	R0.05mm Honed
K	Double Chamfered Cutting Edges	K15015	1.5mm X 15° Chamfered Cutting Edge




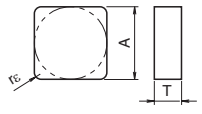
Note: Symbol "K" describe only the largest chamfer width and its angle.

Inserts are sold in 10 piece boxes

● : Std. Item MTO : Made to order

90° Square / Negative

Description	A	T	φd
SN_A1204_	12.70	4.76	5.16
SNGN1204_			-
SNGN1207_		7.94	-

Edge Prep.				K	Material Compatibility										Ref. to Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	Heat-resistant Alloys	Hard Materials	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Monophase structural Ceramic
S	Chamfered and Honed Cutting Edge	S01225	0.12mm X 25° Chamfered and Honed Cutting Edge		●	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺		
T	Chamfered Cutting Edge	T01215	0.12mm X 15° Chamfered Cutting Edge	S												☺		
Insert				Description	Edge Prep.	Dimension (mm)	KA30	A65	KT66	A66N	PT600M	KS6050	CS7050	KS6030	KS6040	CF1		
		SNGA 120408S01525 120412S01525	S01525	0.8 1.2	●				●								D12 D13 F73	
		SNGA 120408S02025 120412S02025	S02025	0.8 1.2					●									
		SNGA 120408T02025 120412T02025 120416T02025	T02025	0.8 1.2 1.6	●	●	●	●	●									
		SNMA 120408S03030	S03030	0.8					●									
		SNGN 120408S01025 120412S01025 120416S01025 120420S01025	S01025	0.8 1.2 1.6 2.0	●												D25 D34 D35 F79	
		SNGN 120408S01525 120412S01525 120416S01525	S01525	0.8 1.2 1.6					●									
		SNGN 120408S02025 120412S02025 120416S02025	S02025	0.8 1.2 1.6					●									
		SNGN 120416S03030	S03030	1.6					●									
		SNGN 120408T00520	T00520	0.8	●	☐												
		SNGN 120408T01020 120412T01020 120416T01020 120420T01020	T01020	0.8 1.2 1.6 2.0														●
		SNGN 120404T02025 120408T02025 120412T02025 120416T02025 120420T02025	T02025	0.4 0.8 1.2 1.6 2.0	●	●	●	●	●	●	●	●	●	●	●	●		●
		SNGN 120708S01025 120712S01025 120716S01025	S01025	0.8 1.2 1.6	●	●												
		SNGN 120704S01525 120708S01525 120712S01525 120716S01525 120720S01525	S01525	0.4 0.8 1.2 1.6 2.0						●	●	●	●	●	●	●		●
		SNGN 120708S02025 120712S02025 120716S02025 120720S02025	S02025	0.8 1.2 1.6 2.0						●	●	●	●	●	●	●		●
		SNGN 120708T01020 120712T01020 120716T01020 120720T01020	T01020	0.8 1.2 1.6 2.0														●

● : Std. Item ☐ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

B


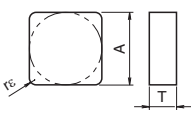

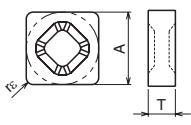

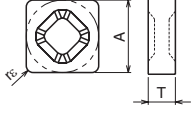

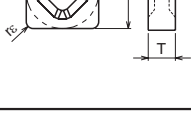

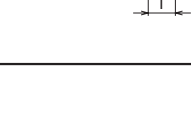


Insert (Turning)

Turning Indexable Inserts

90° Square / Negative

(mm)				(mm)			
Description	A	T	φd	Description	A	T	φd
SN_N1207_	12.70	7.94	-	SNGX1207_	12.70	7.94	-
SNGN1507_	15.875	7.94	-	SNGX1507_	15.875	7.94	-


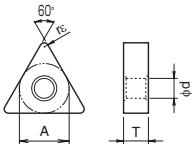

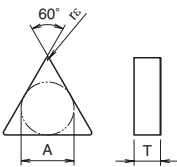
Edge Prep.				K	Material										Ref. to Page for Applicable Toolholders				
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	S	H	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Hexagon structural Ceramic	
S	Chamfered and Honed Cutting Edge	S01225	0.12mm X 25° Chamfered and Honed Cutting Edge																
T	Chamfered Cutting Edge	T01215	0.12mm X 15° Chamfered Cutting Edge	S	H														
Insert				Description	Edge Prep.	Dimension (mm)	KA30	A65	KT66	A66N	PT600M	KS6050	CS7050	KS6030	KS6040	CF1			
 	SNGN 120704T02025 120708T02025 120712T02025 120716T02025 120720T02025	T02025	0.4	●															
			0.8	●															
			1.2	●															
 	SNGN 150712T02025 150716T02025	T02025	1.6	●															
			1.2	●															
			1.6	●															
 	SNGX 120712T01020 120716T01020	T01020	1.2																
			1.6																
			1.2																
 	SNGX 120712T02025 120716T02025	T02025	1.6																
			1.6																
 	SNGX 150716T02025	T02025	1.6																
			1.6																

Inserts are sold in 10 piece boxes

● : Std. Item

60° Triangle / Negative

(mm)				(mm)			
Description	A	T	φd	Description	A	T	φd
TNGA 1604_	9.525	4.76	3.81	TNGN 1604_	9.525	4.76	-
TNGN 1103_	6.35	3.18	-	1607_		7.94	

Edge Prep.				K	Material										Ref. to Page for Applicable Toolholders					
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	S	H	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Hexagon structural Ceramic		
S	Chamfered and Honed Cutting Edge	S01525	0.15mm X 25° Chamfered and Honed Cutting Edge																	
T	Chamfered Cutting Edge	T01525	0.15mm X 25° Chamfered Cutting Edge																	
Insert				Description	Edge Prep.	Dimension (mm)	KA30	A65	KT66	A66N	PT600M	KS6050	CS7050	KS6030	KS6040	CF1				
 	TNGA 160408S01025	S01025	0.8	●																
	TNGA 160404S01525 160408S01525 160412S01525	S01525	0.4 0.8 1.2						●											
	TNGA 160404S02025 160408S02025 160412S02025	S02025	0.4 0.8 1.2							●										D14 D15 F64 F74 F75
	TNGA 160408S03030 160412S03030	S03030	0.8 1.2							●										
	TNGA 160408T00520	T00520	0.8		●															
	TNGA 160404T02025 160408T02025 160412T02025	T02025	0.4 0.8 1.2			●	●				●	●		●						
 	TNGN 110304T00520 110308T00520 110312T00520	T00520	0.4 0.8 1.2		●							●							D36 F81	
	TNGN 160404S01025 160408S01025 160412S01025 160416S01025 160420S01025	S01025	0.4 0.8 1.2 1.6 2.0		●															
	TNGN 160404S01525 160408S01525 160412S01525	S01525	0.4 0.8 1.2							●										
	TNGN 160404S02025 160408S02025 160412S02025	S02025	0.4 0.8 1.2							●										
	TNGN 160404T00520 160408T00520 160412T00520	T00520	0.4 0.8 1.2			●	●													D26
	TNGN 160404T02025 160408T02025 160412T02025	T02025	0.4 0.8 1.2			●	●				●	●								
	TNGN 160708S01525	S01525	0.8							●										
	TNGN 160708S02025	S02025	0.8								●									
	TNGN 160704T02025 160708T02025 160712T02025 160716T02025 160720T02025	T02025	0.4 0.8 1.2 1.6 2.0			●	●					●	●							

● : Std. Item

Inserts are sold in 10 piece boxes

B



Insert (Turning)

Turning Indexable Inserts

(mm)

Description	A	T	φd
VN_A1604_	9.525	4.76	3.81

35° Rhombic / Negative

B



Chipbreakers

Negative Positive



Ceramic

Insert (Turning)

Edge Prep.				K	Material										Ref. to Page for Applicable Toolholders		
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	S	H	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic
S	Chamfered and Honed Cutting Edge	S01525	0.15mm X 25° Chamfered and Honed Cutting Edge														
T	Chamfered Cutting Edge	T01525	0.15mm X 25° Chamfered Cutting Edge														
Insert				Edge Prep.	Dimension (mm)	KA30	A65	KT66	A66N	PT600M	KS6050	CS7050	KS6030	KS6040	CF1		
	VNGA	160404S01525	160408S01525	S01525	0.4				●								
					0.8				●								
	VNGA	160404S02025	160408S02025	S02025	0.4					●							
					0.8					●							
	VNGA	160404T02025	160408T02025	160412T02025	T02025	0.4	●	●	●	●							
					0.8	●	●	●	●								
					1.2				●								
VNMA	160408S01525			S01525	0.8				●								


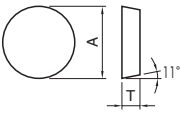




D16
D17
D18

Inserts are sold in 10 piece boxes

● : Std. Item

Positive

Description	(mm)			α
	A	T	α	
TBGN 0601_	3.97	1.59	5°	11°
TCGN 1604_	9.525	4.76	7°	
TPGN 0902_	5.56	2.38		
SPGN0903	9.525	3.18		11°
SPGN1203_	12.70	3.18		
	1103	6.35		
	1603	9.525		

Edge Prep.				K	Material Compatibility											Ref. to Page for Applicable Toolholders				
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	S	H	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	CVD Coated Silicon Nitride Ceramic		SIALON Ceramic	Hexcomb structural Ceramic		
				S																
				T																
				H																
Insert		Description		Edge Prep.	Dimension (mm)	Material Compatibility											Ref. to Page for Applicable Toolholders			
				rε	KA30	A65	KT66	A66N	PT600M	KS6050	CS7050	KS6030	KS6040	CF1						
 	RPGN	090300E003	E003	-																
		090300E005	E005	-																
		090300T01020	T01020	-																
	RPGN	120400E003	E003	-																
		120400E005	E005	-																
		120400T01020	T01020	-																
 	SPGN	090308T00820	T00820	0.8		●			●											
	SPGN	120308S00820	S00820	0.8				●	●										E42	
	SPGN	120308T00820 120312T00820	T00820	0.8 1.2		●	●		●	●									F60	
 	TBGN	060104S00820 060108S00820	S00820	0.4 0.8				●	●											
	TCGN	160404T00820 160408T00820	T00820	0.4 0.8		●														
	TPGN	090204T00820 090208T00820	T00820	0.4 0.8			●		●	●									F61	
	TPGN	110304S00820 110308S00820	S00820	0.4 0.8				●	●	●										
	TPGN	110304T00820 110308T00820	T00820	0.4 0.8		●			●	●										
	TPGN	160304S00820 160308S00820 160312S00820	S00820	0.4 0.8 1.2					●	●	●									E43
	TPGN	160304T00820 160308T00820 160312T00820	T00820	0.4 0.8 1.2		●			●	●										F61

*For cutting edge "E", please refer to the table below.

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R-honed Cutting Edge	E005	R0.05mm Honed

● : Std. Item


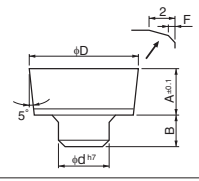
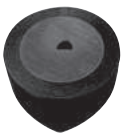
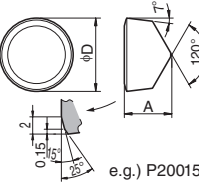
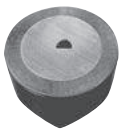
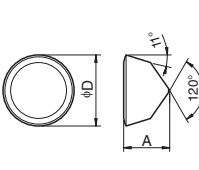
Inserts are sold in 10 piece boxes

B



Insert (Turning)

Inserts for Hardened Roll

Edge Prep.				K	Material Compatibility											Ref. to Page for Applicable Toolholders								
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	S	H	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	CVD Coated Nitride Ceramic		SAION Ceramic	High speed structural Ceramic						
S	Chamfered and Honed Cutting Edge	S01525	0.15mm X 25° Chamfered and Honed Cutting Edge																					
T	Chamfered Cutting Edge	T01525	0.15mm X 25° Chamfered Cutting Edge																					
				*Edge Prep.	Dimension (mm)					Material Compatibility														
Insert				Description	φD	φd	A	B	F	KA30	A65	KT66	A66N	PT600M	KS6050	CS7050	KS6030	KS6040	CF1					
		RBG 12K20003	K20003	12	6	6	3	0.2						●										
		16K20003	K20003	16	8	8	5	0.2	●					●										
		20K20003	K20003	20	10	10	5	0.3	●					●										
	 <p>e.g.) P20015</p>	RCGX 060600E003	E003	6.35	-	6.35	-	-									●							
		060600E005	E005																				●	
		060600T01020	T01020																				●	●
		090700E003	E003	9.525	-	8	-	-										●						
		090700E005	E005																			●		
		090700P20015	P20015						●															●
		090700S01020	S01020																					●
		090700T01020	T01020															●	●					
		120700E003	E003	12.7	-	8	-	-											●					
		120700E005	E005																				●	
120700P20015	P20015																					●		
120700S01020	S01020																					●		
120700T01020	T01020															●	●							
		RPGX 060600E003	E003	6.35	-	6.35	-	-									●							
		060600E005	E005																			●		
		060600T01020	T01020																			●	●	
		090700E003	E003	9.525	-	8	-	-										●						
		090700E005	E005																			●		
		090700T01020	T01020																			●	●	
		120700E003	E003						12.7	-	8	-	-										●	
120700E005	E005																			●				
120700T01020	T01020																			●	●			

*For cutting edge "E", "K" and "P" please refer to the table below.

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R-honed Cutting Edge	E005	R0.05mm Honed
K	Double Chamfered Cutting Edges	K20003	2.00mm X 3° Chamfered Cutting Edge
P	Double Chamfered + Honed Cutting Edge	P20015	2.00mm X 15° Chamfered + Honed Cutting Edge


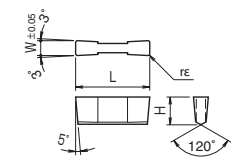
Note: Symbol "K" and "P" describe only the largest chamfer width and its angle.

RBG Inserts are sold in 1 piece boxes

Inserts are sold in 10 piece boxes

● : Std. Item

Grooving Inserts

Edge Prep.				K	Material											Ref. to Page for Applicable Toolholders					
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	S				H								
S	Chamfered and Honed Cutting Edge	S01525	0.15mm X 25° Chamfered and Honed Cutting Edge			○		●													
T	Chamfered Cutting Edge	T01525	0.15mm X 25° Chamfered Cutting Edge																		
					S	Heat-resistant Alloys				H	Hard Materials										
Insert		Description		Edge Prep.	Dimension (mm)				Aluminum Oxide Ceramic		AlN Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	CrN Coated Nitride Ceramic	SiAlON Ceramic	Monocryst. structure Ceramic	Ref. to Page for Applicable Toolholders				
					W	r _ε	L	H	KA30	A65	KT66	A66N	PT600M	KS6050	CS7050	KS6030		KS6040	CF1		
 	GH	4020-05	S01020	4.0	0.5	20	7.5				●									G38 G61	
		4020-05	T01020	4.0					●		●										
		5020-05	S01020	5.0								●									
		5020-05	T01020	5.0								●		●							
		6020-05	T01020	6.0								●		●							
		7020-05	T01020	7.0								●		●							

B



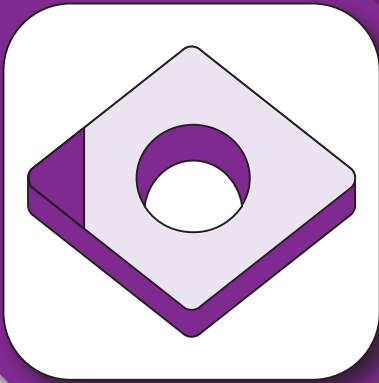
Insert (Turning)

● : Std. Item

Inserts are sold in 10 piece boxes

CBN & PCD Tools

C1~C35



CBN Tools

C2~C21

Identification System	C2
Edge Preparation Identification System	C2
MEGACOAT CBN	C3
Application Map	C4
Recommended Cutting Conditions	C4
Case Studies	C5
Turning Negative Inserts	C6~C13
Turning Positive Inserts	C14~C18
Turning Negative Inserts (Solid)	C19
Grooving Inserts	C20
Solid Tip-Bars for Micro Boring	EZ Bars / Tip-Bars C21



PCD Tools

C22~C35

PCD Grades and Features	C22
Identification System	C22
Recommended Cutting Conditions	C22
Turning Negative Inserts	C23
Turning Positive Inserts	C24~C29
Grooving Inserts	C30~C31
For Aluminum Wheel	C31
Turning / Grooving	C32
Solid Tip-Bars for Micro Boring	EZ Bars / System Tip-Bars / Tip-Bars C33~C34
Milling Inserts	C35



CBN Tools



Extended Tool Life

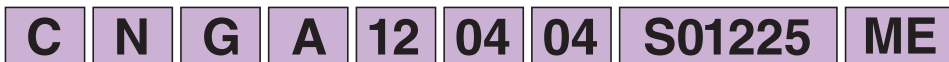
Improved Stability

High Speed Machining

Kyocera's innovative CBN tools.
CBN Variation and Features Ref. to Page **A16**

Various lineup applicable from machining Hard materials to Sintered steel

Identification System (Turning Insert)



"Turning Indexable Inserts Identification System" Refer to Page **B2**

Insert Type	Description	Edge Prep.	Manufacturer's Option	Edge Length	No. of Edges	re-grinding
Negative	CNGA120404MEF	F	MEF	Short (Small Edge)	2	Not Recommended
	CNGA120404ME4	S01225	ME4		4 [Multi Edge (Double-sided)]	
	CNGA120404S01225ME		ME		2	
	CNGA120404S00545MEP	S00545	MEP		2	
	CNGA120404S01225SE	S01225	SE		1	
CNMN120404S02020	S02020	Without Indication (Only KBN900)	Long	Plural edge	Possible	
Positive	CCMW09T304MEF	F	MEF	Short (Small Edge)	2	Not Recommended
	CCMW09T304T00815ME	T00815	ME		2	
	CCMW09T304S01225MES	S01225	MES		2	
	CCMW09T304T00815SE	T00815	SE		1	

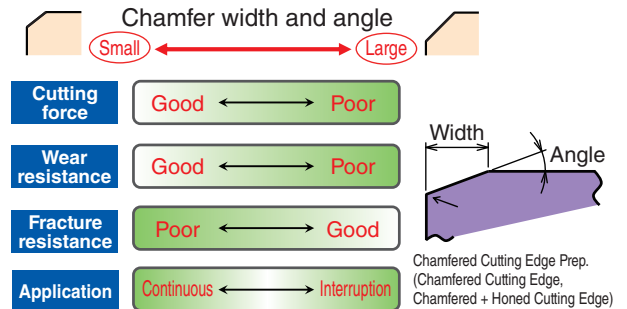
- About re-grinding
 - 1) Regrinding is possible for inserts without any indication in manufacturer's option. Regrinding can not be available depending on the edge condition.
 - 2) Regrinding is not recommended for inserts with manufacturer's symbol like "ME" or "SE"

Note 1) Ref. to Page **B3** for insert color.

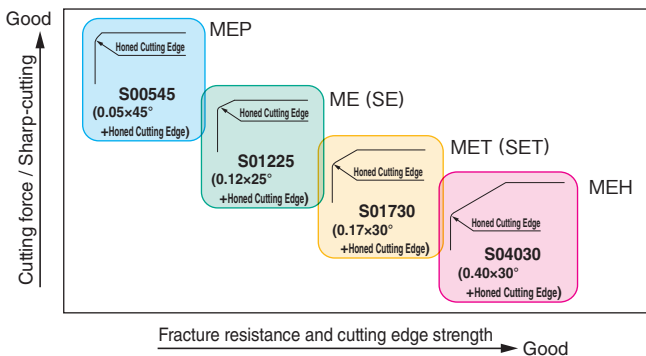
Edge Preparation Identification System

Symbol	Cutting Edge Spec.	Edge Prep.		Shape
		Example		
F	Sharp Edge	F	Sharp Edge	
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge	
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge	
S	Chamfered and Honed Cutting Edge	S01225	0.12mmx25° Chamfered and Honed Cutting Edge	

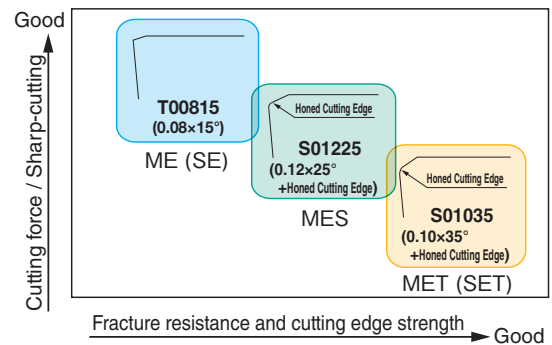
Features of chamfer width and angle



(1) Standard cutting edge prep. of negative inserts (Machining of hard materials)



(2) Standard cutting edge prep. of positive inserts (Machining of hard materials)



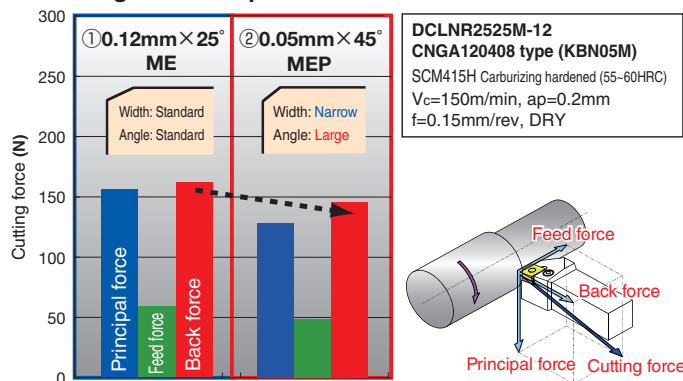
Manufacturer's Option	Edge Prep.	Application and Features
MEP	S00545 0.05mmx45°+Honed Cutting Edge	High speed, Continuous Excellent crater wear resistance
ME	S01225 0.12mmx25°+Honed Cutting Edge	General purpose
MET	S01730 0.17mmx30°+Honed Cutting Edge	Superior fracture resistance
MEH	S04030 0.40mmx30°+Honed Cutting Edge	Interrupted high feed machining Prevention of flaking

Manufacturer's Option	Edge Prep.	Application and Features
ME	T00815 0.08mmx15°	Chamfered Sharp-cutting oriented, less burring
MES	S01225 0.12mmx25°+Honed Cutting Edge	General purpose
MET	S01035 0.10mmx35°+Honed Cutting Edge	Interrupted machining Stable machining Oriented

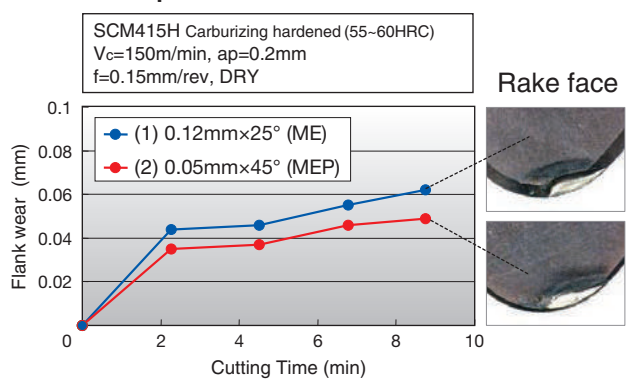
■ Negative Inserts, Features of new edge prep. (Machining of hard materials)

(1) MEP (High speed / Continuous)

● Cutting force comparison



● Wear comparison



MEP performs lower cutting force than ME

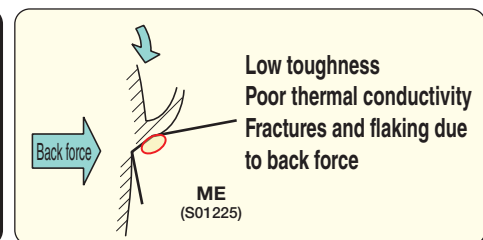
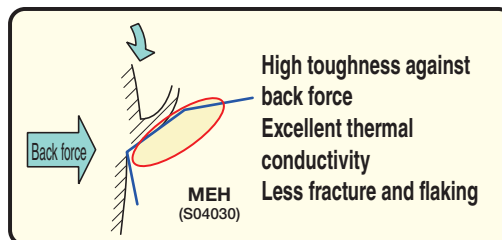
⇒ Sharp cutting!

"MEP prevents the Flank wear, compared to ME

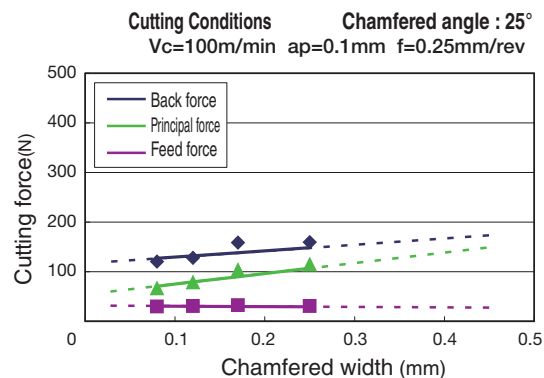
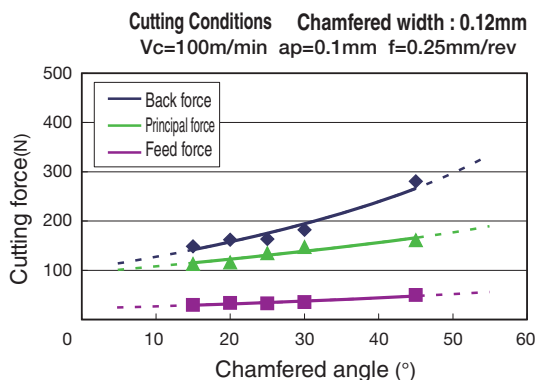
⇒ Prevents crater wear!

(2) MEH (Interruption / High feed machining)

● Toughness and Prevention of flaking



● Cutting force and chamfered angle / width

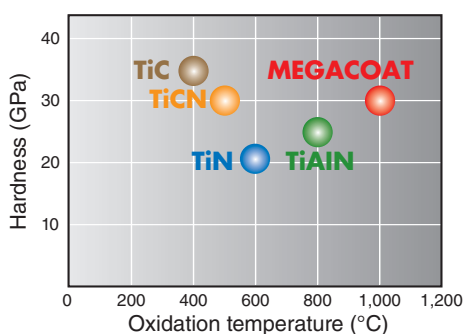


Cutting force is influenced by chamfered angle more than chamfered width.

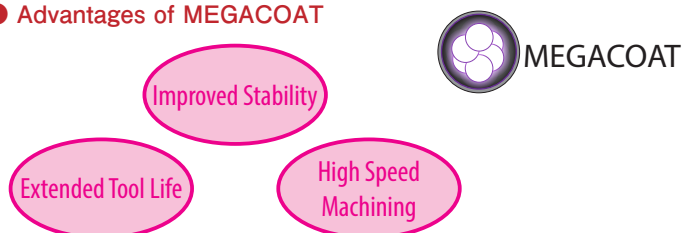
Though enlarging chamfered angle is more effective for fracture resistance improvement than changing chamfered width, the cutting force increases as well. Please refer to the graph for details.

■ MEGACOAT CBN

● Properties of PVD Coating



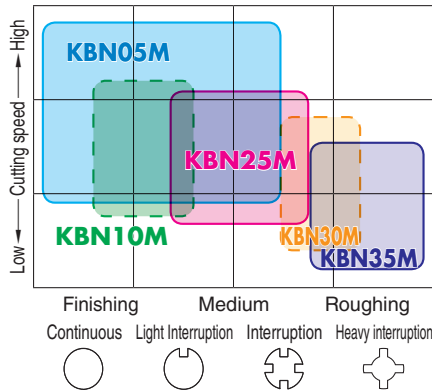
● Advantages of MEGACOAT



- Long tool life and stable machining due to superior heat-resistance and hardness
- Stability improvement through prevention of crater wear (oxidation, diffusional wear)
- High thermal stability and surface smoothness provide excellent surface finish

Application Map

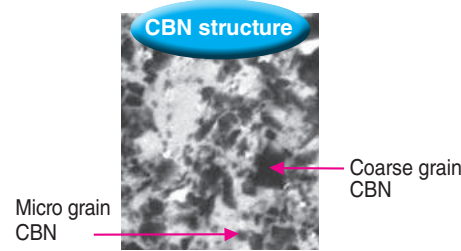
● Hard materials



● Hybrid Grain Structure (KBN05M)

Mixed structure of micro grain CBN and coarse grain CBN

➡ CBN that possess High hardness, toughness and thermal resistance characteristics



⇒ High thermal conductivity

KBN05M is 1st recommended grade for a wide range of application from continuous (high speed finishing) to interrupted machining.

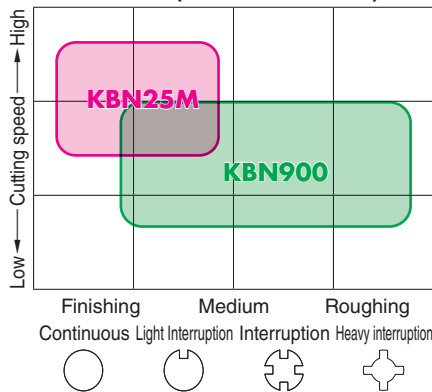
KBN25M : High stability for general machining

KBN30M : High stability in interrupted machining

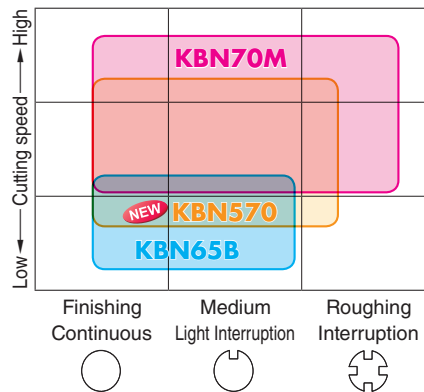
KBN35M : Honeycomb structure CBN

Superior fracture resistance in heavy interrupted machining

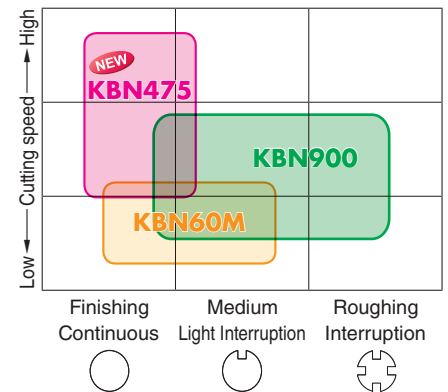
● Roll Materials (Chilled Cast Iron)



● Sintered Steel



● Cast Iron



Recommended Cutting Conditions


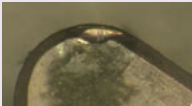

Workpiece Material	Hardness	Applications		Recommended Insert Grade	Cutting Conditions		
					Vc (m/min)	ap (mm)	f (mm/rev)
Heat Treated Steel	Over 55HRC	General Finishing	Continuous-Interruption	KBN05M	100 - 150 - 200	0.05 - 0.3 - 0.5	0.05 - 0.08 - 0.1
		High Efficient Stable Machining	Light Interruption-Interruption	KBN25M	80 - 120 - 160	0.05 - 0.3 - 0.5	0.05 - 0.08 - 0.1
		Interruption (Small ap)	Interruption-Heavy interruption	KBN35M	60 - 100 - 150	0.05 - 0.2 - 0.4	0.05 - 0.08 - 0.1
		Heavy Machining	Continuous-Interruption	KBN900	70 - 90 - 110	0.5 - 1.0 - 2.0	0.05 - 0.1 - 0.2
	Under 55HRC	Finishing	Continuous	*PT600M	60 - 80 - 120	0.2 - 0.5 - 0.7	0.05 - 0.1 - 0.15
Gray Cast Iron	Under 250HB	Finishing	Continuous-Light interruption	KBN475	400 - 800 - 1,200	0.05 - 0.2 - 0.5	0.1 - 0.2 - 0.3
		Finishing	Continuous-Light interruption	KBN60M	300 - 500 - 700	0.05 - 0.2 - 0.5	0.1 - 0.2 - 0.3
		High Efficient Finishing	Continuous-Light interruption	KBN900	500 - 900 - 1,200	0.1 - 0.5 - 1.0	0.05 - 0.1 - 0.2
		Heavy Machining	Continuous-Interruption	KBN900	500 - 700 - 900	0.5 - 1.5 - 3.0	0.1 - 0.3 - 0.5
Roll Materials (Chilled Cast Iron)	Over 55HRC	Finishing	Continuous-Interruption	KBN25M	80 - 120 - 160	0.05 - 0.3 - 0.5	0.05 - 0.08 - 0.1
		Heavy Machining	Continuous-Interruption	KBN900	70 - 90 - 110	0.3 - 0.7 - 1.0	0.05 - 0.1 - 0.15
Sintered Steel	-	Finishing	Continuous-Light interruption	KBN570	50 - 150 - 250	0.05 - 0.15 - 0.25	0.03 - 0.1 - 0.2
	-	Finishing	Continuous-Interruption	KBN70M	100 - 200 - 250	0.05 - 0.2 - 0.3	0.05 - 0.15 - 0.25

*PT600M : MEGACOAT on Al₂O₃+TiC ceramic

Case Studies

SCr420H(58HRC)	
<ul style="list-style-type: none"> · Gear · External, Facing and Chamfering · Vc=130m/min · ap=0.6mm · f=0.12mm/rev · Wet · CNGA120408S01225ME (KBN05M) 	
KBN05M	300 pcs/edge
Competitor C	200 pcs/edge
<ul style="list-style-type: none"> · KBN05M achieved 1.5 times longer tool life than competitor C. ⇒ Its longer tool life contributes to cost-cutting. <p style="text-align: right;">(Evaluation by the user)</p>	

SCM415(55HRC)	
<ul style="list-style-type: none"> · Stator · Boring · Vc=170m/min · ap=0.4mm · f=0.1mm/rev · Wet · CNGA120408S01225ME (KBN05M) 	
KBN05M	600 pcs/edge
Competitor D	300 pcs/edge
<ul style="list-style-type: none"> · KBN05M achieved twice longer tool life than competitor D. ⇒ Its longer tool life contributes to cost-cutting. <p style="text-align: right;">(Evaluation by the user)</p>	

SCr420H(58HRC)	
<ul style="list-style-type: none"> · Pulley · Facing (Continuous) · Vc=120m/min · ap=0.15~0.2mm · f=0.24mm/rev · Wet · DNGA120408S00545MEP (KBN05M) 	
KBN05M-MEP (Edge Prep.: 0.05x45°)	150 pcs/edge
KBN05M-ME (Edge Prep.: 0.12x25°)	100 pcs/edge
Competitor E	100 pcs/edge
<ul style="list-style-type: none"> · Tool life of KBN05M-ME type (Edge prep.: 0.12x25° Chamfered + R honed) is same as competitor E's. · KBN05M-MEP (Edge prep.: 0.05x45° Chamfered + R honed) type achieved 1.5 times longer tool life, preventing crater wear. <div style="display: flex; justify-content: space-around;">    </div> <p style="text-align: center;">(Evaluation by the user)</p>	

SCr20(61~65HRC)	
<ul style="list-style-type: none"> · Gear · External and Facing (Interrupted) · Vc=120m/min · ap=0.15mm · f=0.1~0.15mm/rev (External) · Wet · CNGA120408S04030MEH (KBN05M) 	
KBN05M-MEH (Edge Prep.: 0.40x30°)	150 pcs/edge
Competitor F	100 pcs/edge
<ul style="list-style-type: none"> · Compared to competitor F, KBN05M-MEH type (Edge prep.: 0.40x30° Chamfered + R honed) achieved 1.5 times longer tool life. · No chipping in interrupted machining, and improved productivity (Competitor F's cutting edge got many chipping.) · Feed rate could be increased from 0.15 to 0.25 mm/rev in facing. ⇒ Achieved cycle time and cost reduction. <p style="text-align: right;">(Evaluation by the user)</p>	

SCM420(60HRC)	
<ul style="list-style-type: none"> · Gear · Facing (Interrupted) · Vc=90m/min · ap=0.5mm · f=0.12mm/rev · Wet ⇒ Dry · CNGA120412S01225ME (KBN25M) 	
KBN25M	70 pcs/edge
Competitor G	30 pcs/edge (Unstable)
<ul style="list-style-type: none"> · KBN25M improved tool life up to 70 pieces/edge than is two times more than competitor's G (CBN tool). Also, KBN25M has increased its tool life up to 250 pieces/edge by hanging from wet machining to dry machining. <p style="text-align: right;">(Evaluation by the user)</p>	

SCM420(58HRC)	
<ul style="list-style-type: none"> · Sleeve · Boring (Heavy interruption) · Vc=100m/min · ap=0.5mm · f=0.1mm/rev · Wet · TPGB110308S01035MET (KBN35M) 	
KBN35M	115 pcs/edge
Competitor H	100 pcs/edge
<ul style="list-style-type: none"> · KBN35M achieved 15% Longer tool life in heavy interrupted machining compared with competitor H. · Furthermore it still keeps the insert in a good condition and so provides stable machining result. ⇒ Its longer tool life and capability of providing stable result can contribute to cost-cutting and improved efficiency in machining. <p style="text-align: right;">(Evaluation by the user)</p>	

(mm)

80° Rhombic / Negative

Description	A	T	φd
CNGA 1204_	12.70	4.76	5.16
CNGM 1204_			

Edge Prep.				K	Material Compatibility													Ref. to Page for Applicable Toolholders									
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)																						
F	Sharp Edge	F	Sharp Edge		Gray Cast Iron (Without Scale)																						
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge	Nodular Cast Iron (With Scale)																							
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge	H	Hard Materials (Roughing)																						
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge		Hard Materials (Finishing)	●	○																				
					Hard Materials (Chip Control)	●	○																				
				Sintered Steel																							
Insert	Description	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN							CBN					Ref. to Page for Applicable Toolholders									
			rε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510	KBN525	KBN475	KBN65B		KBN570								
	CNGA 120404S01215MEW 120408S01215MEW 120412S01215MEW	S01215	0.4	2.6	2	●	○	●	□	●							●	●									
			0.8	2.5		●	○	●	○	●									●	●							
			1.2	2.5		●	○	●	□	●										□	●						
	CNGA 120404S00545MEP 120408S00545MEP 120412S00545MEP 120416S00545MEP 120420S00545MEP 120424S00545MEP	S00545	0.4	2.6	2	●																					
			0.8	2.6		●																					
			1.2	2.5		●																					
			1.6	3.4		●																					
			2.0	3.4		●																					
	CNGA 120404MEF 120408MEF 120412MEF	F	0.4	2.6	2																						
			0.8	2.6																							
			1.2	2.5																							
	CNGA 120404ME4 120408ME4 120412ME4	S01225	0.4	2.6	4	●																					
			0.8	2.6		●																					
			1.2	2.5		●																					
	CNGA 120402S01225ME 120404S01225ME 120408S01225ME 120412S01225ME 120416S01225ME 120420S01225ME 120424S01225ME	S01225	0.2	2.6	2	●	○	●	○	●	●						●	●									
			0.4	2.6		●	○	●	○	●	●								●	●							
			0.8	2.6		●	○	●	○	●	●									●	●						
			1.2	2.5		●	○	●	○	●	●									□	●	●					
			1.6	3.4		●														●	●						
			2.0	3.4		●														●	●						
	CNGA 120404T01215ME 120408T01215ME 120412T01215ME	T01215	2	0.4	2.6													●	●								
				0.8	2.6														●	●							
				1.2	2.5														●	●							
																				●	●						
	CNGA 120404S01730MET 120408S01730MET 120412S01730MET 120416S01730MET 120420S01730MET 120424S01730MET	S01730	0.4	2.6	2	●	○	●	○	●																	
			0.8	2.6		●	○	●	○	●																	
			1.2	2.5		●	○	●	□	●																	
			1.6	3.4		●																					
			2.0	3.4		●																					
	CNGA 120404S04030MEH 120408S04030MEH 120412S04030MEH 120416S04030MEH 120420S04030MEH 120424S04030MEH	S04030	0.4	2.6	2	●																					
			0.8	2.6		●																					
			1.2	2.5		●																					
			1.6	3.4		●																					
			2.0	3.4		●																					

C

CBN

PCD

Negative

C

D

S

T

V

W

Solid

Grooving

CBN & PCD

D8
F63
F67
F68

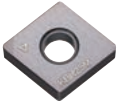
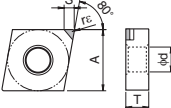
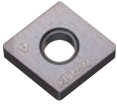
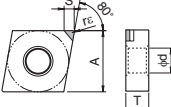
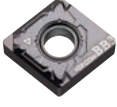
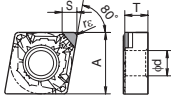
CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item (1 pc boxes) ○ : Check Availability □ : Deleted from the next catalogue

(mm)

80° Rhombic / Negative

Description	A	T	φd
CNGA 1204_	12.70	4.76	5.16
CNGM 1204_			

Edge Prep.				K													Ref. to Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)	Hard Materials (Finishing)	Hard Materials (Chip Control)	Sintered Steel									
F	Sharp Edge	F	Sharp Edge																	
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge																	
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge																	
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge																	
Insert	Description	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN							CBN					Ref. to Page for Applicable Toolholders		
			rε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510	KBN525	KBN475	KBN65B		KBN570	
 Small Edge		S01225	0.2	2.6	1		○	●												
			0.4	2.6			○	●						●	●					
			0.8	2.6			○	●						●	●					
			1.2	2.5			□	●												
 Small Edge / Tough		S01730	0.4	2.6	1			●												
			0.8	2.6				●						●						
																	○	○		
 Chip Control		S00825	0.4	1.8	1			●												
			0.8	2.0				●												
			1.2	2.2				●												
		S01225	0.4	2.2	1			●												
			0.8	2.4				●												
			1.2	2.6				●												
S01625	0.4	2.6	1		□	●														
	0.8	2.8			□	●														
	1.2	3.0				●														



CBN & PCD

CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item (1 pc boxes) ○ : Check Availability □ : Deleted from the next catalogue

(mm)

Description	A	T	φd
DNGA 1504_	12.70	4.76	5.16
1506_		6.35	
DNGM 1504_	12.70	4.76	5.16

55° Rhombic / Negative

C



CBN

PCD

Negative



Solid

Grooving

CBN & PCD

Edge Prep.				K	Material Compatibility													Ref. to Page for Applicable Toolholders																	
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)	Hard Materials (Finishing)	Hard Materials (Chip Control)	Sintered Steel	MEGACOAT CBN							CBN																
				H																															
					Dimension (mm)		No. of Edges																												
					rε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510	KBN525	KBN475	KBN65B	KBN570															
NEW Multi Edge / Finishing		F	Sharp Edge	F	Sharp Edge	S00545	0.4 2.6	●																											
							0.8 2.2	●																											
							1.2 1.9	●																											
							1.6 3.8	●																											
							2.0 3.5	●																											
							2.4 3.1	●																											
NEW Multi Edge / Sharp Edge		F	Sharp Edge	F	Sharp Edge	F	0.4 2.6															●													
							0.8 2.2																			●									
							1.2 1.9																				●								
NEW Multi Edge (Double-sided)		S01225	Sharp Edge	S01225	Sharp Edge	S01225	0.4 2.6	●																											
							0.8 2.2	●																											
							1.2 1.9	●																											
 Multi Edge		S01225	Sharp Edge	S01225	Sharp Edge	S01225	0.1 2.8	●	□	●																									
							0.2 2.7	●	○	●																									
							0.4 2.6	●	○	●	□	●																							
							0.8 2.2	●	○	●	○	●																							
							1.2 1.9	●	○	●	○	●																							
							1.6 3.8	●	○	●	○	●																							
		S01730	Sharp Edge	S01730	Sharp Edge	S01730	Sharp Edge	S01730	0.4 2.6	●	○	●	○	●																					
									0.8 2.2	●	○	●	○	●																					
									1.2 1.9	●	○	●	○	●																					
									1.6 3.8	●	○	●	○	●																					
									2.0 3.5	●	○	●	○	●																					
									2.4 3.1	●	○	●	○	●																					
S01730	Sharp Edge	S01730	Sharp Edge	S01730	Sharp Edge	S01730	0.4 2.6	●	○	●	○	●																							
							0.8 1.9	●	○	●	○	●																							
							1.2 1.9	●	○	●	○	●																							
S04030	Sharp Edge	S04030	Sharp Edge	S04030	Sharp Edge	S04030	0.4 2.6	●																											
							0.8 2.2	●																											
							1.2 1.9	●																											
							1.6 3.8	●																											
							2.0 3.5	●																											
							2.4 3.1	●																											

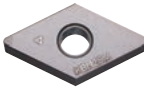
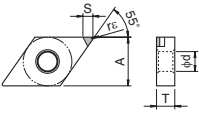
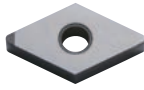
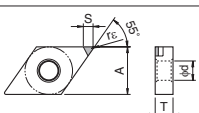
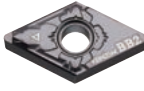
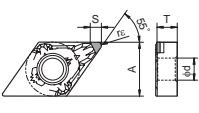
CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item (1 pc boxes) ○ : Check Availability □ : Deleted from the next catalogue

(mm)

Description	A	T	φd
DNGA 1504_	12.70	4.76	5.16
1506_		6.35	
DNGM 1504_	12.70	4.76	5.16

55° Rhombic / Negative

Edge Prep.				K	Material Compatibility												Ref. to Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)			Hard Materials (Finishing)			Hard Materials (Chip Control)				Sintered Steel		
F	Sharp Edge	F	Sharp Edge																	
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge																	
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge																	
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge																	
Insert	Description	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN							CBN							
			rε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510	KBN525	KBN475	KBN65B		KBN570	
 Small Edge		S01225	DNGA 150401S01225SE	0.1	2.2			●										D10		
			150402S01225SE	0.2	2.5			●					●	●					D11	
			150404S01225SE	0.4	2.3	1	□	●						●	●				F64	
			150408S01225SE	0.8	1.9		□	●						●					F70	
			150412S01225SE	1.2	1.9		□												F71	
		T01215	0.4	2.3	1											○	○			
 Small Edge / Tough		S01225	DNGA 150604S01225SE	0.4	2.3		□	●										D10		
			150608S01225SE	0.8	1.9	1	□	□					□						D11	
			150612S01225SE	1.2	1.9		□												F64	
 Chip Control		S01730	DNGA 150404S01730SET	0.4	2.3	1								□						
			150408S01730SET	0.8	1.9										□					
		S00825	DNGM 150404S00825BB1	0.4	1.6	1		□	●											D10
			150408S00825BB1	0.8	1.6		□	●												D11
		S01225	150412S00825BB1	1.2	1.8			●												F64
			DNGM 150404S01225BB2	0.4	1.8	1		○	●											F70
S01625	150408S01225BB2	0.8	2.0			○	●											F71		
	150412S01225BB2	1.2	2.1			●														
S01625	DNGM 150404S01625BB3	0.4	2.2	1		○	●													
	150408S01625BB3	0.8	2.5			○	●													
	150412S01625BB3	1.2	2.5			●														



CBN & PCD

CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item (1 pc boxes) ○ : Check Availability □ : Deleted from the next catalogue

(mm)

Description	A	T	φd
SNGA 1204	12.70	4.76	5.16
TNGA 1604	9.525	4.76	3.81

90° Square - 60° Triangle / Negative

- C
- CBN
- PCD
- Negative
- C
- D
- S
- T
- W
- Solid
- Grooving

CBN & PCD

Edge Prep.				K	Material Compatibility												Ref. to Page for Applicable Toolholders						
Symbol	Cutting Edge Spec.	Example	Example		Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)	Hard Materials (Finishing)	Hard Materials (Chip Control)	Sintered Steel	MEGACOAT CBN						CBN					
				Edge Prep.	Dimension (mm)		No. of Edges	KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510	KBN525	KBN475	KBN65B	KBN570			
					rε	S																	
				D12 D13 F73																			
				D14 D15 F64 F74 F75																			

CBN & PCD Inserts are sold in 1 piece boxes.

(mm)

60° Triangle / Negative

Description	A	T	φd
TNGA 1604	9.525	4.76	3.81
TNGM 1604			

Edge Prep.				Material Compatibility												Ref. to Page for Applicable Toolholders										
Symbol	Cutting Edge Spec.	Example	K	Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)	Hard Materials (Finishing)	Hard Materials (Chip Control)	Sintered Steel	MEGACOAT CBN						CBN									
F	Sharp Edge	F	Sharp Edge								Dimension (mm)		No. of Edges	KBN05M	KBN10M		KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510	KBN525	KBN475	KBN65B
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge	H	Hard Materials (Roughing)	Hard Materials (Finishing)	Hard Materials (Chip Control)	Sintered Steel	re	S																
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge																							
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge																							
				TNGA 160401S01225ME 160402S01225ME 160404S01225ME 160408S01225ME 160412S01225ME		S01225		0.1 2.9 0.2 2.8 0.4 2.7 0.8 2.4 1.2 2.1		3																
				TNGA 160404S01730MET 160408S01730MET 160412S01730MET		S01730		0.4 2.7 0.8 2.4 1.2 2.1		3																
				TNGA 160404S04030MEH 160408S04030MEH 160412S04030MEH		S04030		0.4 2.7 0.8 2.4 1.2 2.1		3																
				TNGA 160401S01225SE 160402S01225SE 160404S01225SE 160408S01225SE		S01225		0.1 2.6 0.2 2.9 0.4 2.7 0.8 2.4		1																
				TNGA 160404S01730SET 160408S01730SET		S01730		0.4 2.7 0.8 2.4		1																
				TNGM 160404S00825BB1 160408S00825BB1 160412S00825BB1		S00825		0.4 1.5 0.8 1.7 1.2 1.9		1																
				TNGM 160404S01225BB2 160408S01225BB2 160412S01225BB2		S01225		0.4 1.9 0.8 2.1 1.2 2.2		1																
				TNGM 160404S01625BB3 160408S01625BB3 160412S01625BB3		S01625		0.4 2.2 0.8 2.4 1.2 2.6		1																

CBN & PCD Inserts are sold in 1 piece boxes.



(mm)

Description	A	T	φd
VNGA 1604	9.525	4.76	3.81

35° Rhombic / Negative

C

CBN

PCD

Negative

C

D

S

T


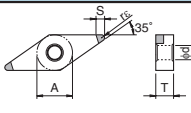

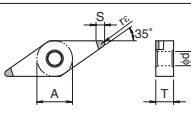

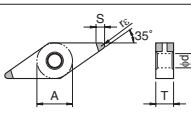




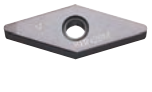
V

W

Solid

Grooving

CBN & PCD

Edge Prep.				K	Material													Ref. to Page for Applicable Toolholders
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)			Hard Materials (Finishing)			Hard Materials (Chip Control)			Sintered Steel	
F	Sharp Edge	F	Sharp Edge															
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge															
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge	H														
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge															
Insert	Description	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN							CBN			D16 D17 D18		
			rε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510	KBN525		KBN475	KBN65B
NEW 	 VNGA 160404S00545MEP 160408S00545MEP	S00545	0.4 0.8	2.0 1.8	2	●												
NEW 	 VNGA 160404MEF 160408MEF	F	0.4 0.8	2.0 1.8	2											●	●	●
NEW 	 VNGA 160404ME4 160408ME4	S01225	0.4 0.8	2.0 1.8	4	●												
	VNGA 160401S01225ME 160402S01225ME 160404S01225ME 160408S01225ME	S01225	0.1 0.2 0.4 0.8	2.6 2.3 2.0 1.8	2	○	●	●	●	●	●	●	●	●	●	●	●	●
	VNGA 160404T01215ME 160408T01215ME	T01215	0.4 0.8	2.0 1.8	2						●	●			●	●		
	VNGA 160404S01730MET 160408S01730MET	S01730	0.4 0.8	2.0 1.8	2	●	□	●	○	●						●		
NEW 	VNGA 160404S04030MEH 160408S04030MEH	S04030	0.4 0.8	2.0 1.8	2	●												
	VNGA 160401S01225SE 160402S01225SE 160404S01225SE 160408S01225SE	S01225	0.1 0.2 0.4 0.8	2.6 2.3 1.9 2.7	1		○	●	●	●				●	●	●		
	VNGA 160404T01215SE 160408T01215SE	T01215	0.4 0.8	1.9 2.7	1												○	○
	VNGA 160404S01730SET 160408S01730SET	S01730	0.4 0.8	1.9 2.7	1			●							●			

Ref. to Page for Applicable Toolholders

D16
D17
D18

CBN & PCD Inserts are sold in 1 piece boxes.

80° Trigon / Negative

(mm)

Description	A	T	φd
WNGA 0804	12.70	4.76	5.16

Edge Prep.																	Ref. to Page for Applicable Toolholders									
Symbol	Cutting Edge Spec.	Example	K																							
F	Sharp Edge	F	Sharp Edge																							
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge																							
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge																							
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge	H																						
Insert		Description		Edge Prep.		Dimension (mm)		MEGACOAT CBN													CBN					
						rε	S	No. of Edges	KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510	KBN525	KBN475	KBN65B	KBN570					
		WNGA 080404MEF 080408MEF		F	0.4 2.0 0.8 2.6	3																				
		WNGA 080404S01225ME 080408S01225ME 080412S01225ME		S01225	0.4 2.0 0.8 2.6 1.2 2.5	3	●	○	●	□	●	●					●	●	●	●						
		WNGA 080404T01215ME 080408T01215ME 080412T01215ME		T01215	0.4 2.0 0.8 2.6 1.2 2.5	3										□	●			●						
		WNGA 080404S01730MET 080408S01730MET 080412S01730MET		S01730	0.4 2.0 0.8 2.6 1.2 2.5	3		○	●	□	●															
		WNGA 080404S01225SE 080408S01225SE		S01225	0.4 2.0 0.8 1.9	1		○																		
		WNGA 080404S01730SET		S01730	0.4 2.0	1														●						



CBN & PCD

CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item (1 pc boxes) ○ : Check Availability □ : Deleted from the next catalogue

80° Rhombic / Positive

*Thickness of CC_0301_ and CC_0401_ are different (mm)

Description	A	T	φd	α
CCMW *0301_	3.5	1.4	1.9	7°
*0401_	4.3	1.8	2.3	
0602_	6.35	2.38	2.8	
09T3_	9.525	3.97	4.4	

(mm)

Description	A	T	φd	α
CPGB 0802_	7.94	2.38	3.5	11°
0903_	9.525	3.18	4.5	

C

CBN

PCD

Positive

C

D

S

T

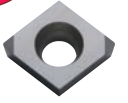
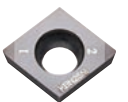
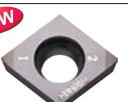
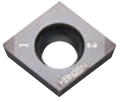

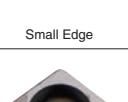





V

W

Solid

Grooving

CBN & PCD

Edge Prep.				K												Ref. to Page for Applicable Toolholders	
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)	Hard Materials (Finishing)	Hard Materials (Chip Control)	Sintered Steel						
F	Sharp Edge	F	Sharp Edge														
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge														
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge														
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge														
Insert	Description	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN							CBN				Ref. to Page for Applicable Toolholders
			rε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510	KBN525	KBN475	
NEW 	CCMW 09T304MEF 09T308MEF	F	0.4 0.8	1.9 1.8	2												
	CCMW 060202T00815ME 060204T00815ME 060208T00815ME CCMW 09T302T00815ME 09T304T00815ME 09T308T00815ME	T00815 T00815	0.2 0.4 0.8	2.0 1.9 1.8	2	●	○	●		●	●			●	●	●	
NEW 	CCMW 060204S01225MES 060208S01225MES CCMW 09T304S01225MES 09T308S01225MES	S01225 S01225	0.4 0.8	1.9 1.8	2	●											
	CCMW 09T304S01035MET 09T308S01035MET	S01035	0.4 0.8	1.9 1.8	2	●	○	●		●				●			
	*CCMW 030102T00815SE 030104T00815SE *CCMW 040102T00815SE 040104T00815SE CCMW 060202T00815SE 060204T00815SE CCMW 09T302T00815SE 09T304T00815SE	T00815 T00815 T00815 T00815	0.2 0.4	1.4 1.4	1		○	●					●	●	●		
	*CCMW 030102S01035SET 030104S01035SET *CCMW 040102S01035SET 040104S01035SET CCMW 060204S01035SET CCMW 09T304S01035SET	S01035 S01035 S01035 S01035	0.2 0.4	1.4 1.4	1		○	●					●				
	CPGB 080204T00815ME CPGB 090302T00815ME 090304T00815ME 090308T00815ME	T00815 T00815	0.4 0.2 0.4 0.8	1.9 1.9 1.9 2.5	2	●	○	●		●			●	●	●		
NEW 	CPGB 090304S01225MES 090308S01225MES	S01225	0.4 0.8	1.9 2.5	2	●											
	CPGB 080204S01035MET 080208S01035MET CPGB 090304S01035MET 090308S01035MET	S01035 S01035	0.4 0.8	1.9 2.2	2		○	●		●				●			
	CPGB 080202T00815SE 080204T00815SE CPGB 090302T00815SE 090304T00815SE	T00815 T00815	0.2 0.4	1.9 1.9	1								●	●	●		
	CPGB 080204S01035SET CPGB 090304S01035SET	S01035 S01035	0.4	1.9	1			●						●			

CBN & PCD Inserts are sold in 1 piece boxes.

(mm)

Description	A	T	φd	α
DCMW 0702_	6.35	2.38	2.8	7°
11T3_	9.525	3.97	4.4	

55° Rhombic / Positive

Edge Prep.				K	Material Compatibility													Ref. to Page for Applicable Toolholders				
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)	Hard Materials (Finishing)	Hard Materials (Chip Control)	Sintered Steel	MEGACOAT CBN							CBN			
F	Sharp Edge	F	Sharp Edge	H																		
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge																			
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge																			
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge																			
Insert		Description			Edge Prep.	Dimension (mm)		No. of Edges	Material Compatibility													Ref. to Page for Applicable Toolholders
						r _e	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510	KBN525	KBN475	KBN65B	KBN570	
NEW			DCMW 11T304MEF 11T308MEF		F	0.4	1.7	2														
			DCMW 070202T00815ME 070204T00815ME 070208T00815ME		T00815	0.2	1.9	2	●	○	●											
			DCMW 11T302T00815ME 11T304T00815ME 11T308T00815ME 11T312T00815ME		T00815	0.2	1.9	2	●	○	●	□										
NEW			DCMW 11T302S01225MES 11T304S01225MES 11T308S01225MES		S01225	0.2	1.9	2	●										●			
			DCMW 070202S01035MET 070204S01035MET 070208S01035MET		S01035	0.2	1.9	2		○	●											
			DCMW 11T302S01035MET 11T304S01035MET 11T308S01035MET 11T312S01035MET		S01035	0.2	1.9	2	●	○	●	□										
			DCMW 070202T00815SE 070204T00815SE		T00815	0.2	1.9	1		○	●											
			DCMW 11T302T00815SE 11T304T00815SE 11T308T00815SE		T00815	0.2	1.9	1														
			DCMW 070204S01035SET		S01035	0.4	1.7	1														
			DCMW 11T302S01035SET 11T304S01035SET 11T308S01035SET		S01035	0.2	1.9	1														

Insert Description	Ref. to Page for Applicable Toolholders
DC..07 type	E24~E27,E35,F43~F45
DC..11 type	E20,E24~E27,E35,F43~F45,F65

● CC type / TP type

Insert Description	Ref. to Page for Applicable Toolholders
CC..0602 type	E22,E23,E34,F39
CC..09T3 type	E22,E23,E34,F39,F65

Insert Description	Ref. to Page for Applicable Toolholders
TP..0802 type	E29,F49,F51
TP..0902 type	F49,F51

Insert Description	Ref. to Page for Applicable Toolholders
TP..1103 type	E29,F49,F50
TP..1603 type	F49,F50

CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item (1 pc boxes) ○ : Check Availability □ : Deleted from the next catalogue



CBN & PCD

60° Triangle / Positive

Description	A	T	φd	α
TPGB 0802_	4.76	2.38	2.5	11°
0902_	5.56		3.0	

Description	A	T	φd	α
TPGB 1103_	6.35	3.18	3.5	11°
1603_	9.525		4.5	
TPGW 1604_	9.525	4.76	4.4	11°

Edge Prep.				K	Material										Ref. to Page for Applicable Toolholders													
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)	Hard Materials (Finishing)	Hard Materials (Chip Control)	Sintered Steel	MEGACOAT CBN					CBN											
F	Sharp Edge	F	Sharp Edge																									
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge																									
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge																									
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge																									
				Edge Prep.	Dimension (mm)		No. of Edges																					
Insert					Description			rε	S	KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510	KBN525	KBN475	KBN65B	KBN570						
NEW					TPGB 110304MEF 110308MEF	F	0.4 2.1 0.8 1.8	3																				
					TPGB 110302T00815ME 110304T00815ME 110308T00815ME	T00815	0.2 2.3 0.4 2.1 0.8 1.8	3	●	○	●		●			●	●	●										
					TPGB 160304T00815ME 160308T00815ME	T00815	0.4 1.8 0.8 1.5	3	●	○	●		●															
NEW					TPGB 110304S01225MES 110308S01225MES	S01225	0.4 2.1 0.8 1.8	3	●										●									
					TPGB 110302S01035MET 110304S01035MET 110308S01035MET	S01035	0.2 2.3 0.4 2.1 0.8 1.8	3	●	○	●		●															
					TPGB 160304S01035MET 160308S01035MET	S01035	0.4 1.8 0.8 1.5	3		○	●		●															
					TPGB 110302S01035MET 080204T00815SE	T00815	0.2 1.8 0.4 1.6	1		○	●					●	●	●										
					TPGB 090202T00815SE 090204T00815SE	T00815	0.2 1.8 0.4 1.6	1		○	●					●	●	●										
					TPGB 110302T00815SE 110304T00815SE 110308T00815SE	T00815	0.2 1.9 0.4 1.8 0.8 1.5	1		○						●	●	●										
					TPGB 160302T00815SE 160304T00815SE	T00815	0.2 1.9 0.4 1.8	1		○						●	●	●										
					TPGB 080202S01035SET 080204S01035SET	S01035	0.2 1.8 0.4 1.6	1		○	●							●										
					TPGB 090202S01035SET 090204S01035SET	S01035	0.2 1.8 0.4 1.6	1		○	●							●										
					TPGB 110304S01035SET 110308S01035SET	S01035	0.4 1.8 0.8 1.5	1										●										
					TPGB 160304S01035SET 160308S01035SET	S01035	0.4 1.8 0.8 1.5	1										●										
					TPGW 160404T00815ME 160408T00815ME	T00815	0.4 1.8 0.8 1.5	3		○	●																	
					TPGW 160404S01035MET 160408S01035MET	S01035	0.4 1.8 0.8 1.5	3		□	●							●										
					TPGW 160404T00815SE	T00815	0.4 1.8	1										●										
					TPGW 160404S01035SET	S01035	0.4 1.9	1										●										

Ref. to the table below C15

- C
- CBN
- PCD
- Positive
- C
- D
- S
- T
- V
- W
- Solid
- Grooving

CBN & PCD





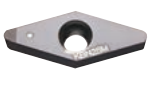

C16 CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item (1 pc boxes) ○ : Check Availability □ : Deleted from the next catalogue

(mm)

Description	A	T	φd	α
VBGW 1103_	6.35	3.18	2.8	5°
1604_	9.525	4.76	4.4	
VCGW 0802_	4.76	2.38	2.3	7°

35° Rhombic / Positive

Edge Prep.				Material Compatibility												Ref. to Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example		K	Gray Cast Iron (With Scale)				Gray Cast Iron (Without Scale)				Nodular Cast Iron (With Scale)						
F	Sharp Edge	F	Sharp Edge		Hard Materials (Roughing)				Hard Materials (Finishing)				Hard Materials (Chip Control)						
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge	Sintered Steel															
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge	H															
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge																
Insert	Description	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN							CBN					Ref. to the table below	
			rε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510	KBN525	KBN475	KBN65B		KBN570
 Multi Edge / Sharp Edge	VBGW 110304MEF 110308MEF	F	0.4 0.8	2.0 1.7	2														Ref. to the table below
	VBGW 160404MEF 160408MEF	F	0.4 0.8	2.0 1.7	2														
 Multi Edge	VBGW 110302T00815ME 110304T00815ME 110308T00815ME	T00815	0.2 0.4 0.8	2.4 2.0 1.7	2	●	○	●		●	●			●	●	●	●		
	VBGW 160402T00815ME 160404T00815ME 160408T00815ME	T00815	0.2 0.4 0.8	2.4 2.0 1.7	2	●	○	●	□	●	●	●		●	●	●	●		
	VBGW 110304S01225MES 110308S01225MES	S01225	0.4 0.8	2.0 1.7	2	●												●	
 Multi Edge / General Purpose	VBGW 160404S01225MES 160408S01225MES	S01225	0.4 0.8	2.0 1.7	2	●												●	
	VBGW 110302S01035MET 110304S01035MET 110308S01035MET	S01035	0.2 0.4 0.8	2.4 2.0 1.7	2	●	○	●		●	●							●	
	VBGW 160402S01035MET 160404S01035MET 160408S01035MET	S01035	0.2 0.4 0.8	2.4 2.0 1.7	2	●	○	●	□	●	●	●							
 Multi Edge / Tough	VBGW 110302T00815SE 110304T00815SE 110308T00815SE	T00815	0.2 0.4 0.8	2.8 2.4 1.7	1		○	●						●	●				
	VBGW 160402T00815SE 160404T00815SE 160408T00815SE	T00815	0.2 0.4 0.8	2.4 2.0 1.7	1		○							●	●				
	VBGW 110304S01035SET 110308S01035SET	S01035	0.4 0.8	2.0 1.7	1			●											
 Small Edge	VBGW 160404S01035SET 160408S01035SET	S01035	0.4 0.8	2.0 1.7	1													●	
	VBGW 110302S01035MET 110304S01035MET 110308S01035MET	S01035	0.2 0.4 0.8	2.0 2.0 1.7	2	●	○	●		●	●			●	●	●	●		
	VCGW 080202T00815ME 080204T00815ME 080208T00815ME	T00815	0.2 0.4 0.8	2.0 2.0 1.7	2	●	○	●		●	●			●	●	●	●		
 Multi Edge / Tough	VCGW 080202S01035MET 080204S01035MET 080208S01035MET	S01035	0.2 0.4 0.8	2.0 2.0 1.7	2		○	●											
	VCGW 080202T00815SE 080204T00815SE	T00815	0.2 0.4	2.4 2.0	1		○	●						●	●				
	VCGW 080204S01035SET 080208S01035SET	S01035	0.4 0.8	2.0 1.8	1													●	

Insert Description	Ref. to Page for Applicable Toolholders
VB..1103 type	E30,E31,E36,F52,F54,F57
VB..1604 type	E30,E31,F52,F54,F57

CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item (1 pc boxes) ○ : Check Availability □ : Deleted from the next catalogue



80° Trigon / Positive

Description	A	T	φd	α
WBGW 0601_	3.97	1.59	2.3	5°
0802_	4.76	2.38		

Edge Prep.				K											Ref. to Page for Applicable Toolholders					
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)			Hard Materials (Finishing)			Hard Materials (Chip Control)						
F	Sharp Edge	F	Sharp Edge																	
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge																	
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge	H			●	●		○	○									
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge																	
					Sintered Steel															
Insert		*Description		Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN								CBN				
Left-hand Shown					rε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M		KBN70M	KBN510	KBN525	KBN475	KBN65B
		WBGW 060102T00815L-SE	T00815	0.2	1.9	1	○	●								●	●			
		WBGW 060104T00815L-SE	T00815	0.4	1.9	1	○	●								●	●			
		WBGW 080202T00815L-SE	T00815	0.2	2.3	1	○	●							●	●				
		WBGW 080204T00815L-SE	T00815	0.4	2.3	1	○	●								●	●			
		WBGW 060102S01035LSET	S01035	0.2	1.9	1	○	●												
		WBGW 060104S01035LSET	S01035	0.4	1.9	1	○	●								●				
		WBGW 080202S01035LSET	S01035	0.2	2.3	1	○	●												
		WBGW 080204S01035LSET	S01035	0.4	2.3	1	○	●								●				

*Left-hand (L) Only

60° Triangle / Positive without Hole

Description	A	T	φd	α
TBGN 0601_	3.97	1.59	-	5°
TPGN 1103_	6.35	3.18		11°
1603_	9.525			

Edge Prep.				K											Ref. to Page for Applicable Toolholders					
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)			Hard Materials (Finishing)			Hard Materials (Chip Control)						
F	Sharp Edge	F	Sharp Edge																	
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge																	
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge	H			●			○	○									
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge																	
					Sintered Steel															
Insert		Description		Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN								CBN				
					rε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M		KBN70M	KBN510	KBN525	KBN475	KBN65B
		TBGN 060104F	F	0.4	-	3														●
		TBGN 060102T00815 060104T00815 060108T00815	T00815	0.2	-	3		□							●	●				
		TPGN 110302T00815ME 110304T00815ME 110308T00815ME	T00815	0.2	2.6	3										●	●			
		TPGN 110302T00815SE 110304T00815SE 110308T00815SE	T00815	0.2	2.6	1									●	●				
		TPGN 160302T00815SE 160304T00815SE 160308T00815SE	T00815	0.2	2.6	1										□	●	●		
		TPGN 110304S01035SET 110308S01035SET	S01035	0.4	2.5	1										●	●			
		TPGN 160304S01035SET 160308S01035SET	S01035	0.4	2.4	1											●	●		


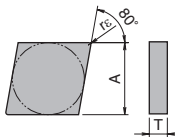

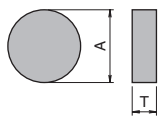

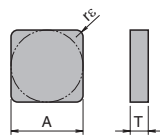

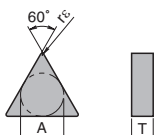
CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item (1 pc boxes) ○ : Check Availability □ : Deleted from the next catalogue

(mm) (mm)

Negative (Solid)

Description	A	T	Description	A	T
CNMN 0903_	9.525	3.18	SNMN 0903_	9.525	3.18
1204_	12.70	4.76	1203_	12.70	3.18
RNMN 0903_	9.525	3.18	1204_		4.76
1203_	12.70	3.18	TNMN 1103_	6.35	3.18
1204_		4.76	1604_	9.525	4.76

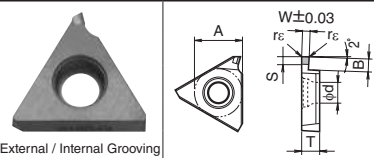
Edge Prep.								Ref. to Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example		K	Gray Cast Iron (With Scale)	+					
F	Sharp Edge	F	Sharp Edge		Gray Cast Iron (Without Scale)	H					
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge		Nodular Cast Iron (With Scale)						
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge		Hard Materials (Roughing)						
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge		Hard Materials (Finishing)	●					
					Hard Materials (Chip Control)						
					Sintered Steel						
Insert		Description		Edge Prep.	Dimension (mm)	No. of Edges	PVD Coated CBN				
					rε		KBN900				
 Solid		CNMN 090308S02020	S02020	4	0.8	4	●	D32			
		CNMN 090312S02020			1.2		●	F81			
		CNMN 120408S02020	S02020		0.8		●	D22			
		CNMN 120412S02020			1.2		●				
CNMN 120416S02020	1.6	●									
 Solid		RNMN 090300S02020	S02020	Depends on ap	—	●	●		D33		
		RNMN 120300S02020	S02020					●			
		RNMN 120400S02020	S02020					●		D27	
 Solid		SNMN 090308S02020	S02020	8	0.8	●	●	D34			
		SNMN 090312S02020			1.2				●		
		SNMN 120308S02020	S02020		0.8		●	D35			
		SNMN 120312S02020			1.2						
		SNMN 120408S02020	S02020		0.8			●		D25	
		SNMN 120412S02020			1.2			●			D34
		SNMN 120416S02020			1.6			●			
SNMN 120420S02020	2.0	●		F79							
 Solid		TNMN 110308S02020	S02020		6	0.8		●	●	D36	
		TNMN 160408S02020	S02020			0.8	●				F81
		TNMN 160412S02020				1.2			●	D26	
		TNMN 160416S02020		1.6		□					

C

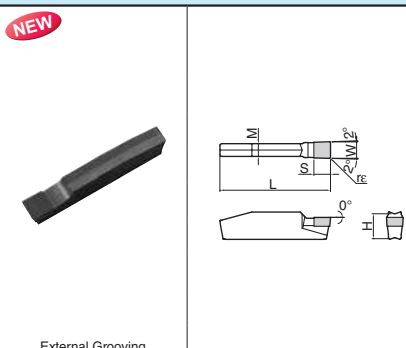


CBN & PCD

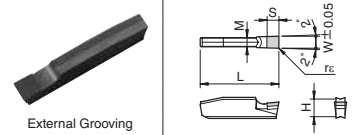
Grooving Inserts (1-edge)

Edge Prep.				K	Material			CBN		Ref. to Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example	Gray Cast Iron (With Scale)		Gray Cast Iron (Without Scale)	Nodular Cast Iron (Without Scale)	KBN510	KBN525					
F	Sharp Edge	F	Sharp Edge										
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge										
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge	H									
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge										
Insert		Description	Edge Prep.	Dimension (mm)						No. of Edges	CBN		
Handed Insert shows Right-hand				W	B	r _ε	A	T	φd	S		KBN510	KBN525
 <p>External / Internal Grooving</p>	GBA43%	125-020	E008	1.25	2.0							●	●
		150-020	E008	1.50	3.5							●	●
		200-020	E008	2.00	3.5	0.2	12.70	4.76	5.5	1.9		●	●
		250-020	E008	2.50	4.0							●	●
		300-020	E008	3.00	4.0							●	●

Deep Grooving Inserts (1-edge)

Edge Prep.				K	Material			CBN		Ref. to Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example	Gray Cast Iron (With Scale)		Gray Cast Iron (Without Scale)	Nodular Cast Iron (Without Scale)	MEGA COAT CBN	KBN570					
F	Sharp Edge	F	Sharp Edge										
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge										
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge	H									
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge										
Insert		Description	Edge Prep.	Dimension (mm)						No. of Edges	MEGA COAT CBN	KBN570	
				W	r _ε	M	L	H	S		KBN05M	KBN570	
				Tolerance									
 <p>External Grooving</p>	NEW	GDGS 2020N-020NB	E008	2.0	0.2	1.8					●	●	
			E002									●	
			3020N-040NB	E008	3.0		2.3					●	●
				E002								●	
			4020N-040NB	E008	4.0	±0.03	3.3	20	4.3	2.9	1	●	●
				E002								●	
			5020N-040NB	E008	5.0	0.4	4.2					●	●
				E002								●	
			6020N-040NB	E008	6.0		5.2					●	●
				E002								●	

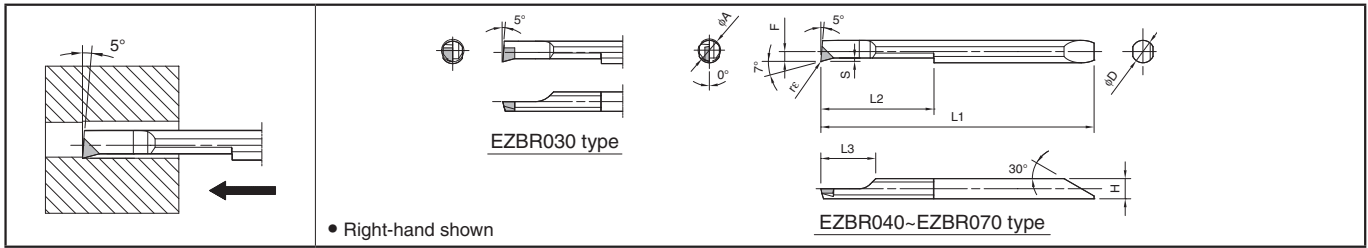
Deep Grooving Inserts (1-edge)

Edge Prep.				K	Material			CBN		Ref. to Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example	Gray Cast Iron (With Scale)		Gray Cast Iron (Without Scale)	Nodular Cast Iron (Without Scale)	KBN510	KBN525					
F	Sharp Edge	F	Sharp Edge										
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge										
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge	H									
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge										
Insert		Description	Edge Prep.	Dimension (mm)						No. of Edges	CBN		
				W	r _ε	L	H	M	S		KBN510	KBN525	
 <p>External Grooving</p>		GMN 2	E008	2.0	0.2			1.8			●	●	
			E002									●	
			3	E008	3.0				2.3			●	●
				E002								●	
			4	E008	4.0	0.4	20	4.3	3.3	2.9		●	●
				E002								●	

CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item (1 pc boxes)

EZ Bars (EZB-NB:CBN) NEW



• Right-hand shown

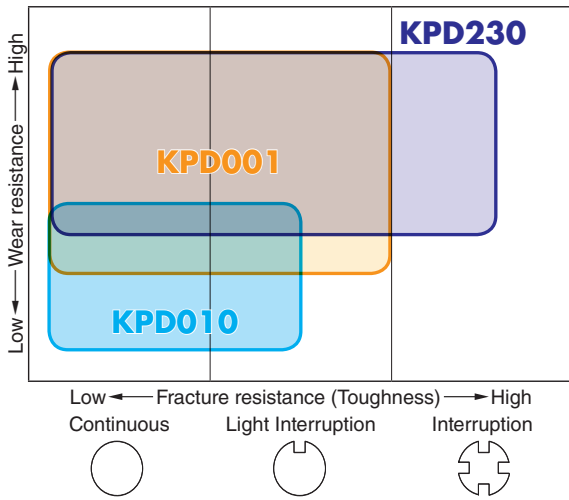
EZ Bars Dimensions

Edge Prep.		Example		K	Material		No. of Edges		Ref. to Page for Applicable Sleeves						
Symbol	Cutting Edge Spec.	Edge Prep.	Example		Material	Material	MEGACOAT CBN	KBN05M							
F	Sharp Edge	F	Sharp Edge	K	Gray Cast Iron (With Scale)										
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge		Gray Cast Iron (Without Scale)										
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge		Nodular Cast Iron (Without Scale)										
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge	H	Hard Materials (Roughing)										
					Hard Materials (Finishing)			●							
					Hard Materials (Chip Control)										
					Sintered Steel										
Description	Edge Prep.	Min. Bore Dia.	Dimension (mm)								No. of Edges	MEGACOAT CBN		Ref. to Page for Applicable Sleeves	
			φA	φD	H	L1	L2	L3	F	S		rε	KBN05M		
EZBR	030030-003NB	T00815	3	3	2.6	38.8	13	6.8	1.25	0.3	0.035 ±0.015	1	●		F22 F27
	040040-003NB	T00815	4	4	3.6	48.8	20	9.8	1.75	0.5			●		
	050050-003NB	T00815	5	5	4.6	58.1	25	9.8	2.25	0.5			●		
	060060-003NB	T00815	6	6	5.6	66.1	30	11.8	2.75	0.5			●		
	070070-003NB	T00815	7	7	6.6	74.1	35	11.8	3.25	0.5			●		

Tip-Bars

Edge Prep.		Example		K	Material		No. of Edges		Ref. to Page for Applicable Sleeves						
Symbol	Cutting Edge Spec.	Edge Prep.	Example		Material	Material	CBN	KBN525							
F	Sharp Edge	F	Sharp Edge	K	Gray Cast Iron (With Scale)										
E	Honed Cutting Edge	E008	R0.08mm Honed Cutting Edge		Gray Cast Iron (Without Scale)										
T	Chamfered Cutting Edge	T01215	0.12mmx15° Chamfered Cutting Edge		Nodular Cast Iron (Without Scale)										
S	Chamfered + Honed Cutting Edge	S01225	0.12mmx25° Chamfered + Honed Cutting Edge	H	Hard Materials (Roughing)										
					Hard Materials (Finishing)			○ ●							
					Hard Materials (Chip Control)										
					Sintered Steel										
Insert	Description	Edge Prep.	Min. Bore Dia.	Dimension (mm)								No. of Edges	CBN		Ref. to Page for Applicable Sleeves
				φA	φD	H	L1	L2	L3	F	S		rε	KBN510	
Handed Insert shows Right-hand 	PSBR 0303-50NBS	T00815	3	2.8	-	50	25	7	1.4	0.15	0.05	1	○	○	F84
	0404-60NBS	T00815	4	3.8	3.6	60	30	10	1.9	0.3			○	○	
	0505-70NBS	T00815	5	4.8	4.4	70	45	12	2.4	0.5			○	○	
	0606-70NBS	T00815	6	5.8	5.2								2.9	0.5	
	0707-80NBS	T00815	7	6.8	6.2	80	50		3.4				○	○	

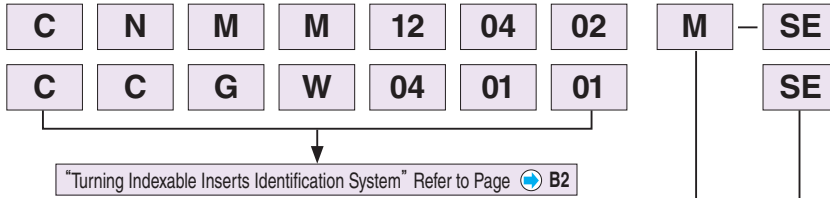
Application Map



About Insert Grades

Grades	Applications	Features
KPD001 (Ave. Grain Size under 0.5μm)	<ul style="list-style-type: none"> High speed machining of non-ferrous metals and brass High speed machining of plastics Machining of carbide 	<ul style="list-style-type: none"> The world highest level micro-grain diamond High edge strength, and superior to wear resistance, fracture resistance and edge sharpening performance
KPD010 (Ave. Grain Size 10μm)	<ul style="list-style-type: none"> High speed machining of non-ferrous metals and brass High speed machining of plastics Machining of carbide 	<ul style="list-style-type: none"> Good balance of wear resistance and flexural strength General purpose
KPD230 (Mixture of fine grain with the Ave. grain size 2-30 μm and rough grain)	<ul style="list-style-type: none"> High speed machining of non-ferrous metals and brass High speed machining of plastics 	<ul style="list-style-type: none"> High density PCD with mixture of coarse and fine grains features excellent abrasive wear resistance and fracture resistance
KPD250 (Ave. Grain Size 25μm) (Made to order)	<ul style="list-style-type: none"> High speed machining of high silicon aluminium alloy Machining of carbide 	<ul style="list-style-type: none"> Coarse grain PCD (Ave. Grain Size 25μm) Superior to wear resistance

Identification System (Turning Insert)



Insert Type	Description	Manufacture's Option 1	Manufacture's Option 2	Series Name	Edge Length	No. of Edges	re-grinding
Negative	CNMM120402M-SE	M	SE	Small Edge	Short (Small Edge)	1	Not Recommended
	CNMM120402M-NE	(Indicates the tool is for negative inserts/toolholders)	NE	New Value Edge	Long (85% length compared with no Indication's cutting edge)	1	Possible
	CNMM120402M		Without Indication	-	Long	1	
Positive	CCGW040101SE	-	SE	Small Edge	Short (Small Edge)	1	Not Recommended
	CCGW040101NE		NE	New Value Edge	Long (85% length compared with no Indication's cutting edge)	1	Possible
	CCGW040101		Without Indication	-	Long	1	

Note) 1. No edge preparation symbols for PCD inserts. Most of the PCD inserts' edge prep. are sharp edge.
 2. "M" in manufacturer's option 1 indicates the inserts are applicable to negative toolholders.
 3. Ref. to page B3 for insert color.

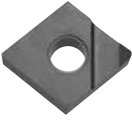
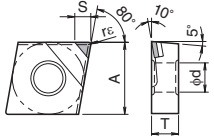
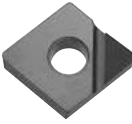
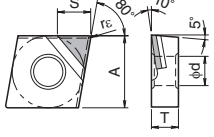
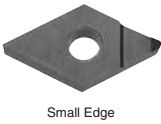
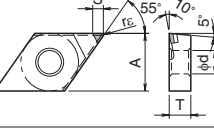
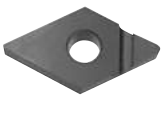
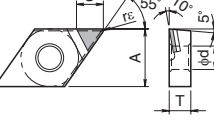
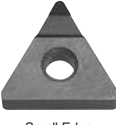
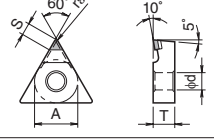
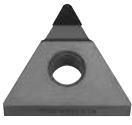
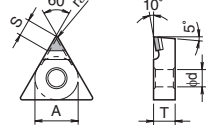

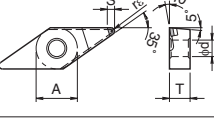

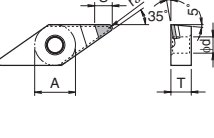

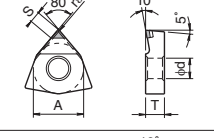

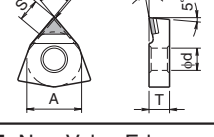
About re-grinding

- Regrinding is possible with the inserts with "NE" and no symbol in manufacturer's option 2. Regrinding can not be available depending on the edge condition.
- Regrinding is not recommended for inserts with "SE" in manufacturer's option 2.

Recommended Cutting Conditions (Turning)

Workpiece Material	Insert Grades		Cutting Conditions				Remarks
	KPD001	KPD010	Vc (m/min)	ap (mm)		f (mm/rev)	
				Small Edge and Positive (Inserts)	Negative (Inserts)		
Aluminum alloys Zinc alloys	★	☆	300~1,500	~1.0	~2.0	0.03~0.5	Both Dry and Coolant
Copper, Brass, Bronze	★	☆	300~1,000	~1.0	~2.0	0.03~0.5	
Magnesium Alloys	★	☆	400~1,200	~1.0	~2.0	0.03~0.5	
Carbide	★	☆	10~30	~0.3	~0.3	0.03~0.1	
Titanium Alloys	★	☆	100~200	~1.0	~2.0	0.05~0.2	Coolant
Glass fiber reinforced plastics Carbon fiber	★	☆	100~600	~1.0	~2.0	0.05~0.5	Dry
Silica Filling Plastic Particle Board	★	☆	400~800	~1.0	~2.0	0.05~0.5	

Negative

Edge Prep.				N		S						Ref. to Page for Applicable Toolholders			
PCD all items		Sharp Edge		Non-ferrous Metals (With interruption)		Non-ferrous Metals (Without interruption)		Titanium Alloys (With interruption)		Titanium Alloys (Without interruption)					
Insert	Description	Dimension (mm)					Angle	No. of Edges	PCD						
		A	T	φd	$r\epsilon$	S	α		KPD001	KPD010	KPD230	KPD250			
		CNMM	120402M-SE 120404M-SE 120408M-SE	12.70	4.76	5.16	0.2 0.4 0.8	2.8 2.8 2.7	-	1	●	●			D8 F63 F67 F68
		CNMM	120402M-NE 120404M-NE 120408M-NE	12.70	4.76	5.16	0.2 0.4 0.8	5.1 5.0 4.9	-	1	●				
		CNMM	120402M 120404M 120408M 120412M				0.2 0.4 0.8 1.2	5.8 5.8 5.7 5.6			●	●			
		DNMM	150402M-SE 150404M-SE 150408M-SE				12.70	4.76			5.16	0.2 0.4 0.8	2.8 2.6 2.2	-	1
		DNMM	150402M-NE 150404M-NE 150408M-NE	12.70	4.76	5.16	0.2 0.4 0.8	5.2 5.0 4.6	-	1	●				
		DNMM	150402M 150404M 150408M 150412M				0.2 0.4 0.8 1.2	5.9 5.8 5.4 5.0			●	●			
		TNMM	160402M-SE 160404M-SE 160408M-SE				9.525	4.76			3.81	0.2 0.4 0.8	2.7 2.6 2.3	-	1
		TNMM	160402M-NE 160404M-NE 160408M-NE	9.525	4.76	3.81	0.2 0.4 0.8	3.2 3.1 2.8	-	1	●				
		TNMM	160402M 160404M 160408M 160412M				0.2 0.4 0.8 1.2	3.8 3.6 3.3 3.0			●	●			
		VNMM	160402M-SE 160404M-SE 160408M-SE				9.525	4.76			3.81	0.2 0.4 0.8	2.9 2.5 1.6	-	1
		VNMM	160402M-NE 160404M-NE 160408M-NE	9.525	4.76	3.81	0.2 0.4 0.8	4.7 4.2 3.4	-	1	●				
		VNMM	160402M 160404M 160408M 160412M				0.2 0.4 0.8 1.2	5.3 4.8 4.0 3.1			●	●			
		WNMM	080402M-SE 080404M-SE 080408M-SE				12.70	4.76			5.16	0.2 0.4 0.8	2.8 2.8 2.7	-	1
		WNMM	080402M-NE 080404M-NE	12.70	4.76	5.16	0.2 0.4	5.0 5.0	-	1	●				
		WNMM	080402M 080404M				0.2 0.4	5.8 5.8			●	□			

• SE: Small Edge / NE: New Value Edge

● : Std. Item (1 pc boxes) □ : Deleted from the next catalogue

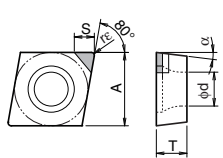
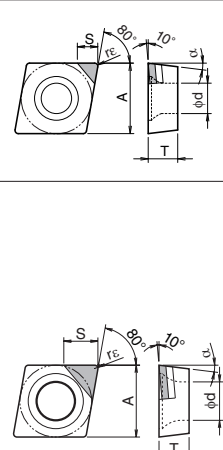
CBN & PCD Inserts are sold in 1 piece boxes.



CBN & PCD

Positive

*Thickness of CC_0301_ and CC_0401_ are different

Edge Prep.		N		S		Dimension (mm)				Angle	No. of Edges	PCD				Ref. to Page for Applicable Toolholders			
		Non-ferrous Metals (With interruption)		Non-ferrous Metals (Without interruption)								Titanium Alloys (With interruption)		Titanium Alloys (Without interruption)			KPD001	KPD010	KPD230
PCD all items		Sharp Edge																	
Insert	Description	A	T	φd	rε	S	α												
	*CCGW NEW 040101SE 040102SE 040104SE	4.3	1.8	2.3	0.1 0.2 0.4	1.3 1.3 1.3												F19 F39	
	CCGW NEW 060201SE 060202SE 060204SE	6.35	2.38	2.8	0.1 0.2 0.4	2.3 2.3 2.3	7°	1										Ref. to the table below	
	CCGW NEW 09T302SE 09T304SE 09T308SE	9.525	3.97	4.4	0.2 0.4 0.8	2.7 2.7 2.7												Ref. to the table below	
	*CCGW 040101NE 040102NE 040104NE	4.3	1.8	2.3	0.1 0.2 0.4	1.7 1.6 1.6												F19 F39	
	CCGW 060201NE 060202NE 060204NE	6.35	2.38	2.8	0.1 0.2 0.4	3.1 3.0 3.0	7°	1										Ref. to the table below	
	CCGW 09T301NE 09T302NE 09T304NE 09T308NE	9.525	3.97	4.4	0.1 0.2 0.4 0.8	3.4 3.4 3.4 3.3												Ref. to the table below	
	*CCGW 040101 040102 040104	4.3	1.8	2.3	0.1 0.2 0.4	1.9 1.9 1.9												F19 F39	
	CCGW 060201 060202 060204	6.35	2.38	2.8	0.1 0.2 0.4	3.5 3.5 3.5	7°	1											
	CCGW 09T301 09T302 09T304 09T308	9.525	3.97	4.4	0.1 0.2 0.4 0.8	3.8 3.8 3.7 3.6													
		CCMT NEW 060202SE 060204SE	6.35	2.38	2.8	0.2 0.4	2.2 2.2												
		CCMT NEW 09T301SE 09T302SE 09T304SE 09T308SE	9.525	3.97	4.4	0.1 0.2 0.4 0.8	2.7 2.7 2.7 2.7	7°	1										Ref. to the table below
		CCMT 060201NE 060202NE 060204NE	6.35	2.38	2.8	0.1 0.2 0.4	2.8 2.8 2.8												
		CCMT 09T301NE 09T302NE 09T304NE 09T308NE	9.525	3.97	4.4	0.1 0.2 0.4 0.8	3.4 3.4 3.4 3.3	7°	1										Ref. to the table below
		CCMT 060201 060202 060204	6.35	2.38	2.8	0.1 0.2 0.4	3.3 3.3 3.2												
CCMT 09T301 09T302 09T304 09T308		9.525	3.97	4.4	0.1 0.2 0.4 0.8	3.9 3.9 3.9 3.8	7°	1										Ref. to the table below	

• SE: Small Edge / NE: New Value Edge

Insert Description	Ref. to Page for Applicable Toolholders
CC..0602 type	E22,E23,E34,F39
CC..09T3 type	E22,E23,E34,F39,F65

CBN & PCD Inserts are sold in 1 piece boxes.

Positive

Edge Prep.		N		S		Dimension (mm)		Angle	No. of Edges	PCD				Ref. to Page for Applicable Toolholders				
										KPD001	KPD010	KPD230	KPD250					
PCD all items		Non-ferrous Metals (With interruption)		Non-ferrous Metals (Without interruption)		Titanium Alloys (With interruption)		Titanium Alloys (Without interruption)										
Sharp Edge																		
Insert	Description	A		T		φd		rε		S		α		PCD				Ref. to Page for Applicable Toolholders
		Handed Insert shows Left-hand																
	 CPMH NEW 090302SE 090304SE	9.525	3.18	4.5	0.2	2.7	11°	1	●					F41				
		9.525	3.18	4.5	0.2	3.4	11°	1	●									
	 CPMH 080202NE 080204NE	7.94	2.38	3.5	0.2	3.2	11°	1	●									
		CPMH 090301NE 090302NE 090304NE 090308NE	9.525	3.18	4.5	0.1			3.4	●								
						0.2			3.4	●								
	CPMH 080201 080202 080204	7.94	2.38	3.5	0.1	3.7	11°	1	●	●								
					0.2	3.7			●	●								
	CPMH 090301 090302 090304 090308	9.525	3.18	4.5	0.1	4.0	11°	1	●	●								
					0.2	3.9			●	●								
		 DCMT NEW 070201SE 070202SE 070204SE	6.35	2.38	2.8	0.1	2.7	7°	1	●					Ref. to the table below			
DCMT NEW 11T301SE 11T302SE 11T304SE 11T308SE			9.525	3.97	4.4	0.1	2.7			●								
						0.2	2.7			●								
		0.4				2.7	●	●										
DCMT 070201NE 070202NE 070204NE		6.35	2.38	2.8	0.1	3.4	7°	1	●									
					DCMT 11T301NE 11T302NE 11T304NE 11T308NE	9.525			3.97	4.4	0.1	3.4	●					
											0.2	3.3	●					
DCMT 070201 070202 070204		6.35	2.38	2.8	0.1	4.0	7°	1	●	●								
					0.2	3.9			●	●								
DCMT 11T301 11T302 11T304 11T308		9.525	3.97	4.4	0.1	4.0	7°	1	●	●								
					0.2	3.9			●	●								
 DCMT 070202 ^{SE} /L-NE 070204 ^{SE} /L-NE		6.35	2.38	2.8	0.2	3.3	7°	1	●									
					DCMT 11T302 ^{SE} /L-NE 11T304 ^{SE} /L-NE	9.525			3.97	4.4	0.2	3.3	●					
		0.4	3.2	●														

SE: Small Edge / NE: New Value Edge






Insert Description	Ref. to Page for Applicable Toolholders
DC..07 type	E24~E27,E35,F43~F45
DC..11 type	E20,E24~E27,E35,F43~F45,F65

● : Std. Item (1 pc boxes)

CBN & PCD Inserts are sold in 1 piece boxes.



Positive


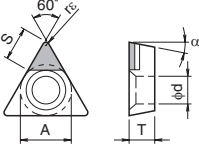

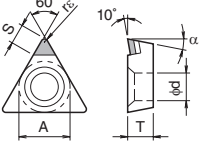
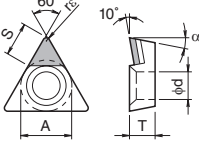
Edge Prep.				N										Ref. to Page for Applicable Toolholders	
PCD all items		Sharp Edge		S		Titanium Alloys (With interruption)		Titanium Alloys (Without interruption)							
Insert	Description	Dimension (mm)					Angle	No. of Edges	PCD						
		A	T	φd	rε	S	α		KPD001	KPD010	KPD230	KPD250			
	TBGW 060102NE 060104NE TBGW 060102 060104	3.97	1.59	2.3	0.2	2.1	5°	1	●						
					0.4	1.9			●						
					0.2	2.4			●	●					
	TBMT 060101NE 060102NE 060104NE 060108NE TBMT 060101 060102 060104 060108	3.97	1.59	2.3	0.1	2.2	5°	1	●					F49 F51	
					0.2	2.1			●						
					0.4	2.0			●						
					0.8	1.7			●						
					0.1	2.6			●	●					
					0.2	2.5			●	●					
	TCGW 110302SE 110304SE TCGW 110302NE 110304NE TCGW 110302 110304	6.35	3.18	2.8	0.2	2.5	7°	1		●				E29	
					0.4	2.4				●					
					0.2	3.3			7°	1	●				
					0.4	3.2			7°	1	●				
					0.2	3.9			7°	1		●			
					0.4	3.7			7°	1		●			
	TCMT 110301SE 110302SE 110304SE TCMT 080202NE 110302NE 110304NE TCMT 080202 080204 TCMT 110302	6.35	3.18	2.8	0.1	2.6	7°	1		●			E29		
					0.2	2.5				●					
					0.4	2.4				●					
		4.76	2.38	2.3	0.2	2.1	7°	1	●						
		6.35	3.18	2.8	0.2	3.4				●					
					0.4	3.3				●					
	4.76	2.38	2.3	0.2	2.4	7°	1		●						
				0.4	2.2				●						
	6.35	3.18	2.8	0.2	3.9	7°	1		●						
				0.2	3.7				●						
	TPGB 090202SE NEW 090204SE 090208SE TPGB 110301SE 110302SE 110304SE TPGB 160302SE 160304SE	5.56	2.38	3.0	0.2	2.1	11°	1	●				Ref. to the table below		
					0.4	2.1			●						
					0.8	2.1			●						
		6.35	3.18	3.3	0.1	2.7				●	●				
					0.2	2.6				●	●				
					0.4	2.5				●	●				
	9.525	3.18	4.5	0.2	2.6	7°	1		●						
				0.4	2.4				●						

• SE: Small Edge / NE: New Value Edge

Insert Description	Ref. to Page for Applicable Toolholders
TP..0802 type	E29,F49,F51
TP..0902 type	F49,F51

Insert Description	Ref. to Page for Applicable Toolholders
TP..1103 type	E29,F49,F50
TP..1603 type	F49,F50

Positive

Edge Prep.		N		S		PCD				Ref. to Page for Applicable Toolholders				
		Non-ferrous Metals (With interruption)		Non-ferrous Metals (Without interruption)		Titanium Alloys (With interruption)		Titanium Alloys (Without interruption)						
PCD all items		Sharp Edge		Dimension (mm)					Angle	No. of Edges	PCD			
Insert	Description	A	T	φd	rε	S	α	No. of Edges	KPD001	KPD010	KPD230	KPD250	Ref. to the table below C26	
 	TPGB 080202NE	4.76	2.38	2.5	0.2	2.2	11°	1	●				Ref. to the table below C26	
	TPGB 080204NE				0.4	2.1			●					
	TPGB 080208NE				0.8	1.8			●					
	TPGB 090202NE	5.56	2.38	3.0	0.2	2.7			●					
	TPGB 090204NE				0.4	2.6			●					
	TPGB 090208NE				0.8	2.3			●					
	TPGB 110302NE	6.35	3.18	3.3	0.2	3.4			●					
	TPGB 110304NE				0.4	3.3			●					
	TPGB 110308NE				0.8	3.0			●					
	TPGB 160304NE	9.525	3.18	4.5	0.4	3.2			●					
	TPGB 160308NE				0.8	2.9			●					
	TPGB 080202	4.76	2.38	2.5	0.2	2.6			●	●				
	TPGB 080204				0.4	2.4			●	●				
	TPGB 090202	5.56	2.38	3.0	0.2	3.2			●	●				
TPGB 090204	0.4				3.0	●	●							
TPGB 110302	6.35	3.18	3.3	0.2	3.9	●	●							
TPGB 110304				0.4	3.7	●	●							
TPGB 110308				0.8	3.4	●	●							
  	TPMH 080202SE	4.76	2.38	2.5	0.2	2.0	11°	1	●				Ref. to the table below C26	
	TPMH 080204SE				0.4	1.8			●					
	TPMH 090202SE	5.56	2.38	3.0	0.2	2.4			●					
	TPMH 090204SE				0.4	2.2			●					
	TPMH 110301SE	6.35	3.18	3.3	0.1	2.7			●	●				
	TPMH 110302SE				0.2	2.6			●	●				
	TPMH 110304SE				0.4	2.5			●	●				
	TPMH 160302SE	9.525	3.18	4.5	0.2	2.6			●	□				
	TPMH 160304SE				0.4	2.4			●	●				
	TPMH 080201NE	4.76	2.38	2.5	0.1	2.3			●					
	TPMH 080202NE				0.2	2.2			●					
	TPMH 080204NE				0.4	2.1			●					
	TPMH 090201NE	5.56	2.38	3.0	0.1	2.7			●					
	TPMH 090202NE				0.2	2.6			●					
	TPMH 090204NE				0.4	2.5			●					
	TPMH 090208NE				0.8	2.2			●					
	TPMH 110301NE	6.35	3.18	3.3	0.1	3.4			●					
	TPMH 110302NE				0.2	3.3			●					
	TPMH 110304NE				0.4	3.2			●					
	TPMH 110308NE				0.8	2.9			●					
	TPMH 160304NE	9.525	3.18	4.5	0.4	3.3			●					
	TPMH 160308NE				0.8	3.0			●					
	TPMH 080201	4.76	2.38	2.5	0.1	2.6			●	□				
	TPMH 080202				0.2	2.5			●	●				
TPMH 080204	0.4				2.3	●	●							
TPMH 090201	5.56	2.38	3.0	0.1	3.0	●	●							
TPMH 090202				0.2	2.9	●	●							
TPMH 090204				0.4	2.8	●	●							
TPMH 090208				0.8	2.5	●	●							
TPMH 110301	6.35	3.18	3.3	0.1	3.9	●	●							
TPMH 110302				0.2	3.9	●	●							
TPMH 110304				0.4	3.7	●	●							
TPMH 110308				0.8	3.4	●	●							
TPMH 160302	9.525	3.18	4.5	0.2	4.0	●								
TPMH 160304				0.4	3.8	●	●							
TPMH 160308				0.8	3.6	●	●							


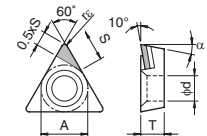

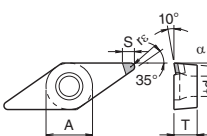
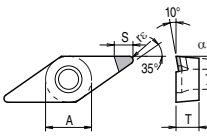
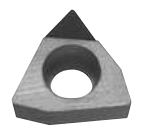
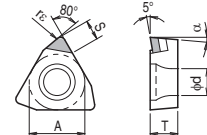
SE: Small Edge / NE: New Value Edge

● : Std. Item (1 pc boxes) □ : Deleted from the next catalogue

CBN & PCD Inserts are sold in 1 piece boxes.



Positive

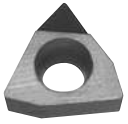
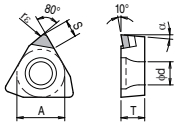
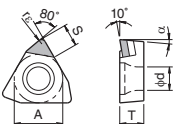
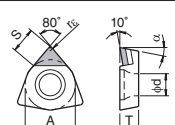

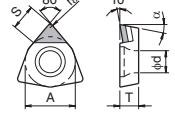
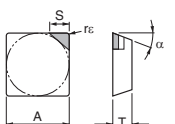
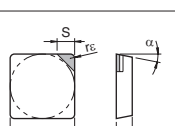

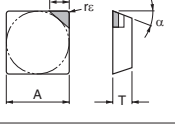
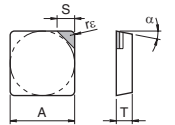
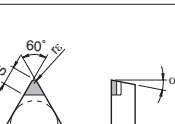

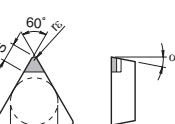
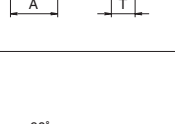
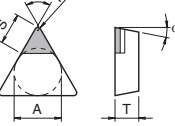




Edge Prep.		PCD all items		Sharp Edge		Dimension (mm)					Angle	No. of Edges	PCD				Ref. to Page for Applicable Toolholders		
						A	T	φd	rε	S			α	KPD001	KPD010	KPD230		KPD250	
Insert	Description	Handed Insert shows Left-hand																	
				TPMH	110302L-NE 110304L-NE	6.35	3.18	3.3	0.2 0.4	3.8 3.6	11°	1	●				Ref. to the table below C26		
		VBMT	110301SE 110302SE 110304SE 110308SE	6.35	3.18	2.8	0.1 0.2 0.4 0.8	2.5 2.3 1.9 1.9	5°	1	●				Ref. to the table below				
		VBMT	160401SE 160402SE 160404SE 160408SE	9.525	4.76	4.4	0.1 0.2 0.4 0.8	2.7 2.5 2.1 2.0			●								
		VBMT	110301NE 110302NE 110304NE 110308NE	6.35	3.18	2.8	0.1 0.2 0.4 0.8	2.6 2.4 2.0 3.1			●								
		VBMT	160401NE 160402NE 160404NE 160408NE	9.525	4.76	4.4	0.1 0.2 0.4 0.8	2.8 2.6 2.2 3.0			●								
		VBMT	110301 110302 110304 110308	6.35	3.18	2.8	0.1 0.2 0.4 0.8	3.0 2.8 2.4 3.5	5°	1	●	●							
		VBMT	160401 160402 160404 160408	9.525	4.76	4.4	0.1 0.2 0.4 0.8	3.2 3.0 2.6 3.5			●	●							
		VCMT	080202SE 080204SE 080208SE	4.76	2.38	2.3	0.2 0.4 0.8	1.4 1.4 1.4			7°	1	●						
		VCMT	080201NE 080202NE 080204NE 080208NE				0.1 0.2 0.4 0.8	1.7 1.7 1.8 1.9					7°	1		●			
		VCMT	080201 080202 080204 080208				0.1 0.2 0.4 0.8	2.0 2.0 2.1 2.2								●	●		
				WBMT	060102L-SE	3.97	1.59	2.3			0.2	1.3				5°	1	●	
	WBMT			060101L-NE 060102L-NE 060104L-NE	3.97	1.59	2.3	0.1 0.2 0.4	1.7 1.6 1.6	5°	1	●				F59			
	WBMT		060101L 060102L 060104L	3.97	1.59	2.3	0.1 0.2 0.4	1.9 1.9 1.9	5°			1	●	□					

• SE: Small Edge / NE: New Value Edge

Insert Description	Ref. to Page for Applicable Toolholders
VB..1103 type	E30,E31,E36,F52,F54,F57
VB..1604 type	E30,E31,F52,F54,F57

CBN & PCD Inserts are sold in 1 piece boxes.

Positive

Edge Prep.		PCD all items		Sharp Edge		Dimension (mm)					Angle	No. of Edges	PCD				Ref. to Page for Applicable Toolholders
						A	T	φd	$r\epsilon$	S	α		KPD001	KPD010	KPD230	KPD250	
Insert	Description	Handed Insert shows Left-hand															
			 WBMT 080202L-SE <i>NEW</i>	4.76	2.38	2.3	0.2	1.6	5°	1	●					F59	
 WBMT 080202L-NE WBMT 080204L-NE	4.76		2.38	2.3	0.2	2.1	5°	1	●								
 WBMT 080202L WBMT 080204L	4.76		2.38	2.3	0.2	2.4	5°	1	●	●							
	 WPMT 110202SE	6.35	2.38	2.8	0.2	2.1	11°	1	●				F59				
	 WPMT 110202NE				0.2	2.7			●								
	 WPMT 110202				0.2	3.1				●							
	 SEGN 120304NE	12.70	3.18	-	0.4	3.6	20°	1	□				-				
	 SPGN 120304NE	12.70	3.18	-	0.4	3.6	11°	1	●				E42 F60				
 SPGN 120304	4.2					●											
	 TPGN 110301SE TPGN 110302SE TPGN 110304SE	6.35	3.18	-	0.1	2.6	11°	1	●	●			E43 F61				
	 TPGN 160301SE TPGN 160302SE TPGN 160304SE	9.525	3.18		0.1	2.6			●	●							
	 TPGN 160304NE TPGN 160308NE	9.525	3.18		0.4	3.2			●								
	 TPGN 110302 TPGN 110304 TPGN 110308	6.35	3.18	-	0.2	3.9	11°	1	●	●							
	 TPGN 160302 TPGN 160304 TPGN 160308	9.525	3.18		0.4	3.7			●	●							
	 TPGN 160302 TPGN 160304 TPGN 160308	9.525	3.18		0.4	3.7			●	●							
	 TPGN 160302 TPGN 160304 TPGN 160308	9.525	3.18	0.4	3.4	●	●										



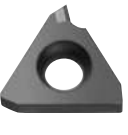

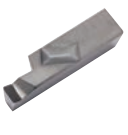

• SE: Small Edge / NE: New Value Edge

● : Std. Item (1 pc boxes) □ : Deleted from the next catalogue

CBN & PCD Inserts are sold in 1 piece boxes.



Grooving Inserts (1-edge)

Edge Prep.														Ref. to Page for Applicable Toolholders		
PCD all items		Sharp Edge														
Insert	Description	Dimension (mm)							No. of Edges	PCD						
		W	B	r _ε	A	T	φd	S		KPD001		KPD010				
Handed Insert shows Right-hand										R	L	R	L			
 External / Internal Grooving	GBA32R 125-010 150-010 GBA43^{R/L} 125-010 150-010 200-010 250-010 300-010	1.25 1.50 1.25 1.50 2.00 2.50 3.00	2.0 3.5 4.0	0.1	9.525 12.70	3.18 4.76	4.4 5.5 1.9	1.7	1	●	●	●	●	G9 G11 G56		
	 External Grooving	GB43^{R/L} 125 150 200 250 300	1.25 1.50 2.00 2.50 3.00	2.0 3.5 4.0	0.1	12.70	4.76	-	1.9	1	○	○	○	○	G11	
		 External Grooving	TGF32R 125-010 150-010 200-010	1.25 1.50 2.00	2.0 2.5	0.1	9.525	3.18	4.5	1.7 1.9	1	●	●	●	●	G14 G15
			Dimension (mm)													
			W	B	r _ε	A	L	H								
Insert	Description	Dimension (mm)							No. of Edges	PCD				Ref. to Page for Applicable Toolholders		
		W	B	r _ε	A	L	H									
Handed Insert shows Right-hand										R	L	R	L			
 Internal Grooving	GV^{R/L} 145-020A 200-020A 300-020A GV^{R/L} 200-020B 250-020B 300-020B GV^{R/L} 300-020C 400-020C	1.45 2.00 3.00 2.00 2.50 3.00 3.00 4.00	2.3 3.2 4.2	0.2	4.0 4.5 5.8	12 15 21	5.0 5.5 6.5	1	●	●	●	●	●	G55		
	 Face Grooving	GVF^{R/L} 250-020B 300-020B 400-020B GVF^{R/L} 350-020C 400-020C GVF^{R/L} 350-040C 400-040C	2.50 3.00 4.00 3.50 4.00 3.50 4.00	4.8 4.8 5.3 6.8 6.8 6.8 6.8	0.2 0.4	5.8 7.0 7.0	20 27 27	5.0 7.0 7.0	1	●	●	●	●	G90 G93 G100		
		Dimension (mm)														
		W	r _ε	L	H	M	S									
		Insert	Description	Dimension (mm)							No. of Edges	PCD				Ref. to Page for Applicable Toolholders
	W			r _ε	L	H	M	S								
Handed Insert shows Right-hand										KPD001	KPD010					
 External Deep Grooving	GMN 2 3 4 5 6	2.0 3.0 4.0 5.0 6.0	0.2	20	4.3	1.8 2.3 3.3 4.2 5.2	2.9	1	●	●	●	●	G34,G35 G34 G35 G36 G34,G35			

C



CBN

PCD

Positive











Solid


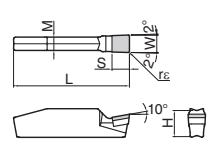
Grooving

CBN & PCD


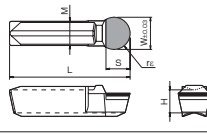
CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item (1 pc boxes)
 ○ : Check Availability
 MTO : Made to order


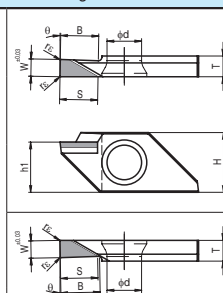

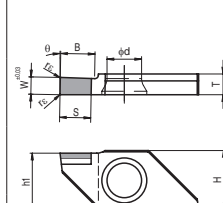
Deep Grooving Inserts (1-edge)

Edge Prep.		Material		PCD		Ref. to Page for Applicable Toolholders									
PCD all items	Sharp Edge	N	S	PCD											
		Non-ferrous Metals (With interruption)	Titanium Alloys (With interruption)												
		Non-ferrous Metals (Without interruption)		Titanium Alloys (Without interruption)											
Insert	Description	Dimension (mm)						No. of Edges	PCD						
		W	r _ε	M	L	H	S		KPD001						
		Tolerance													
 <p>External Deep Grooving</p>		GDGS	2020N-020NB	2.0			1.8				1	●		G21 G25	
			3020N-020NB	3.0			2.3						●		
			4020N-020NB	4.0	±0.03	0.2	3.3	20	4.3	2.9			●		
			5020N-020NB	5.0			4.2						●		
			6020N-020NB	6.0			5.2						●		

For Aluminum Wheel (1-edge)

Edge Prep.		Material		PCD		Ref. to Page for Applicable Toolholders									
GMGW	Honed Cutting Edge	N	S	PCD											
		Non-ferrous Metals (With interruption)	Titanium Alloys (With interruption)												
		Non-ferrous Metals (Without interruption)		Titanium Alloys (Without interruption)											
Insert	Description	Dimension (mm)						No. of Edges	PCD						
		W	r _ε	L	H	M	S		KPD001	KPD010					
		GMGW	6030-30R	6	3	30	5.5	5	4.5			1	●		G40
			8030-40R	8	4		6	6					●		
	GMGW	8030-40R-HR	8	4	30	5.5	6	5					●		

Turning / Grooving (1-edge)

Edge Prep.				Dimension (mm)										Angle	No. of Edges		PCD		Ref. to Page for Applicable Toolholders
PCD all items		Sharp Edge		W	B	r ϵ	T	H	h1	ϕ d	S	θ	R	L	KPD001				
Insert		Description																	
Handed Insert shows Right-hand																			
 <p>Turning / Grooving</p>		TKF12 ^{R/L}	200-AS	2.0	5	+0 -0.05	3	8.7	7.3	5	5.3	0°	1	●	●	E12			
			250-AS	2.5	5		4	9.5	8.0					6.3	●		●		
		TKF16 ^{R/L}	250-AS	2.5	8	4	9.5	8.0	6.3	●	●								
			TKF12L	200-ASR	2.0	5	+0 -0.05	3	8.7	7.3	5	5.3	0°	1	●		●		
		TKF16L	250-ASR	2.5	5	4		9.5	8.0	6.3					●		●		
			 <p>External Grooving (Turning is possible)</p>		TKF12 ^{R/L}	150-NB	1.5	3.5	+0 -0.05	3	8.7	8.3	5	3.0	0°		1	●	●
200-NB	2.0	4				4.5	●	●											
TKF16L	250-NB	2.5			4	●	●												
	250-NB4.5	2.5			5	●	●												

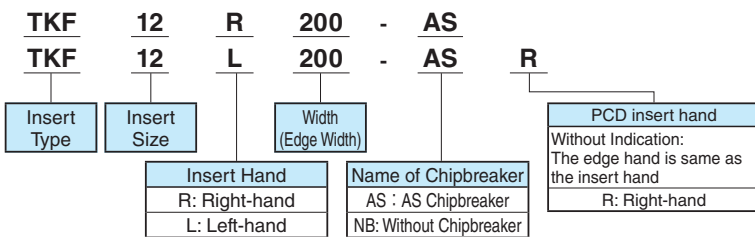
* Lead angle (Front cutting edge angle: θ) shows the angle when installed in toolholder.

* PCD Inserts of TKF type only for Turning and Grooving.

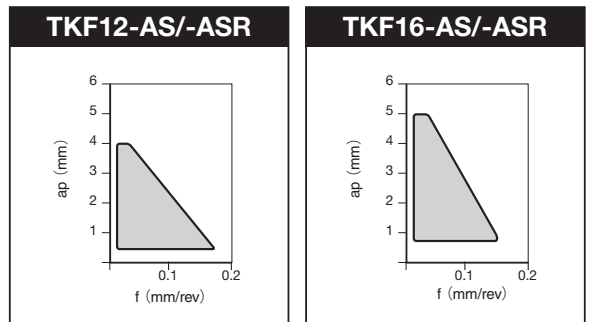
* Cut-off is not recommended.

* Dimension B: shows available grooving depth.

Inserts Identification System



Applicable Range



* PCD Inserts of TKF type only for Turning and Grooving.

* Cut-off is not recommended.

Note 1) The cutting edge of the TKF-AS/-ASR will be 1mm lower than the center line when attached to the KTKF toolholder (Ref. to Fig.1).

Adjust the height by making NC lathe parameter settings or inserting a plate.

2) If the 1mm adjustment is not possible on your automatic lathe, use the TKF-NB. (Ref. to Fig.2.)

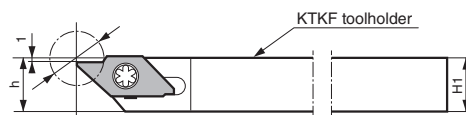


Fig.1 When a TKF-AS/-ASR insert is attached (The cutting edge is 1mm lower than the center line.)

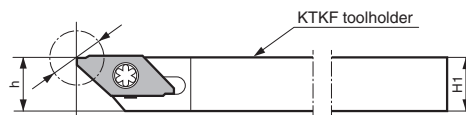
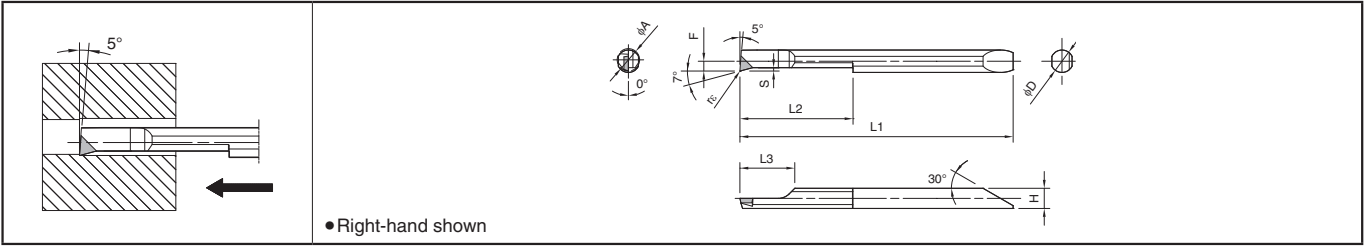


Fig.2 When a TKF-NB insert is attached

CBN & PCD Inserts are sold in 1 piece boxes.

EZ Bars (EZB-NB type: PCD) NEW



EZ Bars Dimensions

Edge Prep.		Min. Bore Dia.	Dimension (mm)									No. of Edges	PCD		Ref. to Page for Applicable Sleeves	
PCD all items	Sharp Edge		φA	φD	H	L1	L2	L3	F	S	rε		KPD001			
EZBR	040040-003NB	4	4	3.6	48.8	20	9.8	1.75	0.5	0.035 ^{±0.015}	1	●		F22 F27		
	050050-003NB	5	5	4.6	58.1	25		2.25								
	060060-003NB	6	6	5.6	66.1	30	2.75									
	070070-003NB	7	7	6.6	74.1	35	3.25									

N	Non-ferrous Metals (With interruption)	●	
	Non-ferrous Metals (Without interruption)	●	
S	Titanium Alloys (With interruption)	●	
	Titanium Alloys (Without interruption)	●	



CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item (1 pc boxes)

System Tip-Bars

Edge Prep.												N		S		Ref. to Page for Applicable Toolholders
PCD all items	Sharp Edge											Non-ferrous Metals (With interruption)		Non-ferrous Metals (Without interruption)		
Insert		Description		Min. Bore Dia.	Dimension (mm)							No. of Edges	PCD			
Handed Insert shows Right-hand				ϕA	H	L1	L2	F	S	r_e	KPD001		KPD010			
<p>Micro Boring</p>	VNBR	0411-02NB	4	3.9	30.8	11	3.5	0.5	0.2	1	●	●				
		0420-02NB			39.8	20					●	●				
	VNBR	0511-02NB	5	3.9	30.8	11	4.5	0.7	0.2		●	●				
		0520-02NB			39.8	20					●	●				
	VNBR	0620-02NB	6	3.9	39.8	20	5.3	1.0	0.2		●	●				
		0630-02NB			49.8	30					●	●				
	VNBR	0720-02NB	7	3.9	39.8	20	6.2	1.0	0.2		●	●				
		0730-02NB			49.8	30					●	●				
												●	●			
												●	●			

System Tip-Bars

Edge Prep.												N		S		Ref. to Page for Applicable Toolholders
PCD all items	Sharp Edge											Non-ferrous Metals (With interruption)		Non-ferrous Metals (Without interruption)		
Insert		Description		Min. Bore Dia.	Dimension (mm)							No. of Edges	PCD			
Handed Insert shows Right-hand				ϕA	W	r_e	H	L1	L2	L3	F		T	KPD001	KPD010	
<p>Micro Grooving</p>	VNGR	0410-11NB	4	1.0	0.05	3.9	30.8	11	0.1	3.5	0.8	1	MTO	MTO		
		0420-11NB		2.0	0.10								MTO	MTO		
	VNGR	0510-11NB	5	1.0	0.05	3.9	30.8	11	0.1	4.4	1.0		MTO	MTO		
		0520-11NB		2.0	0.10								MTO	MTO		
	VNGR	0610-20NB	6	1.0	0.05	3.9	39.8	20	0.3	5.2	1.8		MTO	MTO		
		0620-20NB		2.0	0.10								MTO	MTO		
	VNGR	0710-20NB	7	1.0	0.05	3.9	39.8	20	0.3	6.2	2.0		MTO	MTO		
		0720-20NB		2.0	0.10								MTO	MTO		
													MTO	MTO		
													MTO	MTO		
<p>Micro Face Grooving</p>	VNFR	0820-10NB	8	2.0							2.0	1	MTO	MTO		
		0830-10NB	8	3.0	0.05	3.9	39.8	10	-	7.3	3.0		MTO	MTO		



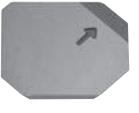

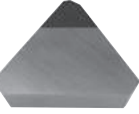


Tip-Bars

Edge Prep.												N		S		Ref. to Page for Applicable Sleeves
PCD all items	Sharp Edge											Non-ferrous Metals (With interruption)		Non-ferrous Metals (Without interruption)		
Insert		Description		Min. Bore Dia.	Dimension (mm)							No. of Edges	PCD			
Handed Insert shows Right-hand				ϕA	ϕD	H	L1	L2	L3	F	S		R	L	R	L
<p>Micro Boring</p>	PSB ^{R/L}	0404-60NBS	4	3.8	3.6	60	30	10	1.9	0.3	1	○	○			
		0505-70NBS	5	4.8	4.4	70	40		2.4			○	○	○	○	
		0606-70NBS	6	5.8	5.2	45	12		2.9	0.5		○	○			
		0707-80NBS	7	6.8	6.2	80	50		3.4			○	○			
													○	○		

CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item (1 pc boxes)
○ : Check Availability
MTO : Made to order

Milling Inserts

Edge Prep.		N	Non-ferrous Metals (With interruption)										☺	☹	☹	Ref. to Page for Applicable Toolholders
PCD all items		S	Titanium Alloys (With interruption)										☺	☹	☹	
Insert	Description	Dimension (mm)					Angle			No. of Edges	PCD					
		A	T	X	Z	S	α	β	γ		KPD001	KPD010	KPD230			
	SDKN 1203AUFN-NE	12.70	3.18	0.5	1.2	3.1	15°	23°	45°	1	●			M43		
	1203AUFN										●	●				
	SEEN 1203AFFN-NE	12.70	3.18	0.5	1.4	3.0	20°	25°	45°	1	●			M38		
	1203AFFN										●	●		M39		
 With Wiper Edge	SEEN 1203AFFR-W	12.50	3.18	-	3.5	1.7	B=14.56	20°	25°	45°	1	●		M40		
	SOKN 13T3AXFN-NE	13.494	3.97	0.4	1.1	3.0	27°	32°	45°	1			○	M44		
	TEEN 1603PTFR-NE	9.525	3.18	0.6	1.4	4.1	20°	22°	30°	1	●		●	M113		
	1603PTFR					4.7					●	●				
	TEKN 2204PTFR-NE	12.70	4.76	0.7	1.8	4.2	20°	22°	30°	1	●		●	M94		
	2204PTFR					4.8					●	●	M95			
Insert	Description	Dimension (mm)					Angle			No. of Edges	PCD					
		A	T	ϕd	W	r_e	S	α	β			KPD001	KPD010	KPD230		
	BDMT 11T302FR	6.7	3.8	2.8	11.0	0.2	18°	13°		1	●		●	M62		
	11T304FR					0.4					●	●				
	BDMT 170402FR	9.6	4.9	4.4	17.0	0.2	18°	13°		1	●		●	M64		
170404FR	0.4					●					●	M65				
	NDCW 150302FRX-NE	9.525	3.18	4.4	15.0	5.1	15°	-		1	●		●	M111		
	150302FRX					5.7					●	●				



External

D1~D40

External Turning Toolholders Identification System **D3**

Product Lineup **D4~D5**

Clamping System **D6~D7**

External Turning Toolholders **D8~D21**

CN□□ Insert	DCLN / PCLN	D8
DN□□ Insert	DDJN / DDHN	D10
	PDJN / PDHN	D11
SN□□ Insert	DSBN / PSBN / PSKN	D12
	PSSN / PSDN	D13
TN□□ Insert	DTGN / PTGN / PTFN	D14
	WTJN-N / WTKN-N / WTEN-N	D15
VN□□ Insert	DVLN / DVPN / DVVN	D16
	MVLN / MVVN	D17
	PVLN / PVPN / PVVN	D18
RC□□ Insert	PRGC / PRXC	D19
RN□□ Insert	PRGN	D19
WN□□ Insert	DWLN / PWLN / WWLN	D20

Toolholders for Ceramic Tools **D22~D31**

CN□□ Insert	CCLN	D22
DN□□ Insert	CDJN	D23
EN□□ Insert	CELN	D23
SN□□ Insert	CSRN / CS-N / CSKN / CSYN	D25
	CSSN / CSDN	D25
TN□□ Insert	CTJN / CTUN	D26
RN□□ Insert	CRSN / CRDN	D27
CNGX Insert	CCLN-GX	D28
DNGX Insert	CDHN-GX / CDJN-GX	D29
SNGX Insert	CSRN-GX / CSDN-GX / CSSN-GX	D30
	CS-N-GX / CSKN-GX / CSYN-GX	D31

Toolholders for Solid CBN Tools **D32~D36**

CNMN Insert	CCRN-A / CCLN-A	D32
RNMN Insert	CRSN-A / CRDN-A	D33
SNMN Insert	CSRN-A / CSKN-A / CSYN-A	D34
	CSSN-A / CSDN-A	D35
TNMN Insert	CTJN-A / CTUN-A	D36

Toolholders for Bearing Machining **D37~D38**

RCMT Insert	PRGC-BE / PRGC-BF	D37
SNMF Insert	CBSN	D38

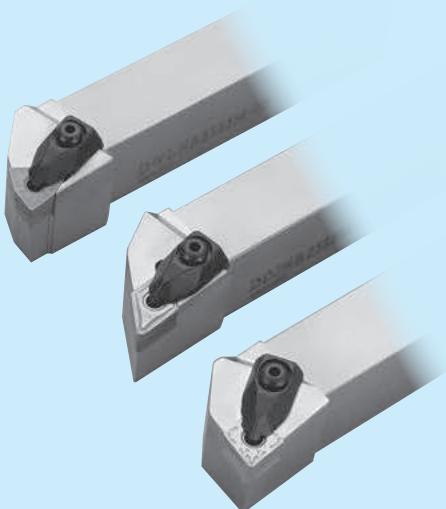
Technical Information **D39~D40**

Recommended Cutting Conditions **D39**

Parts Compatibility of Lever Lock Toolholders **R44**



D



High rigidity toolholder

Double Clamp Series

Securely clamps the insert with a single action

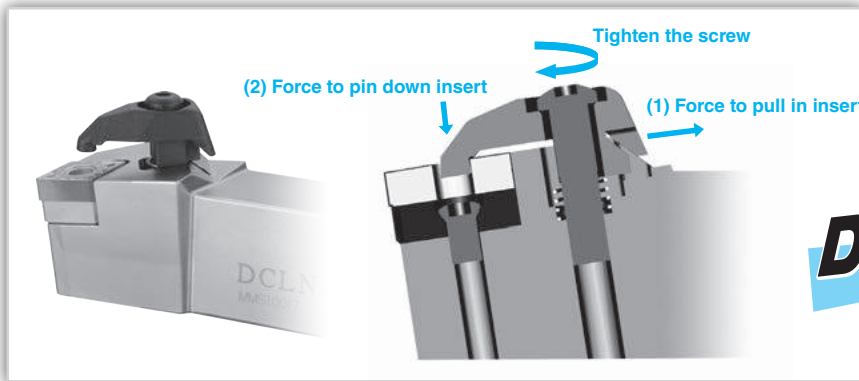
D



External

Improved Clamping Rigidity

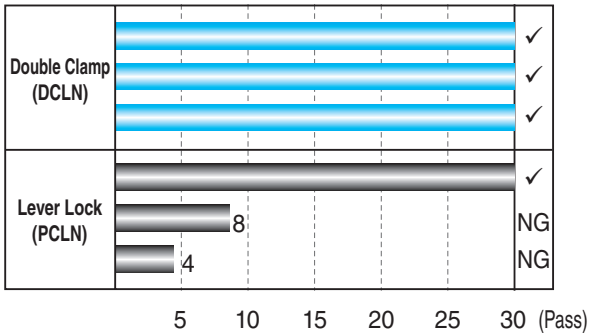
Firmly clamp the insert in two directions with one action



Achieving long Tool Life

By strongly clamping the insert in two directions, good contact between the shim and insert can be maintained, even with high feed rates.

Along with improving the accuracy of the insert position, long tool life can be achieved.



<Cutting Conditions>
SCM435, Vc=150m/min, ap=1mm, f=0.4mm/rev
CNMG120408PS, 30 Pass Interrupted Machining

Comparison of shim and insert contact

Coating material is applied to the shim side of the insert, which is installed on the toolholder. Compare the shim contact surface after tightening.

PS Chipbreaker	Shim contact surface of double clamp	Shim contact surface of lever lock
	The shape of insert chipbreaker is transferred. There is a high level of contact.	Only a part of the shape of insert chipbreaker is transferred. There is a low level of contact.

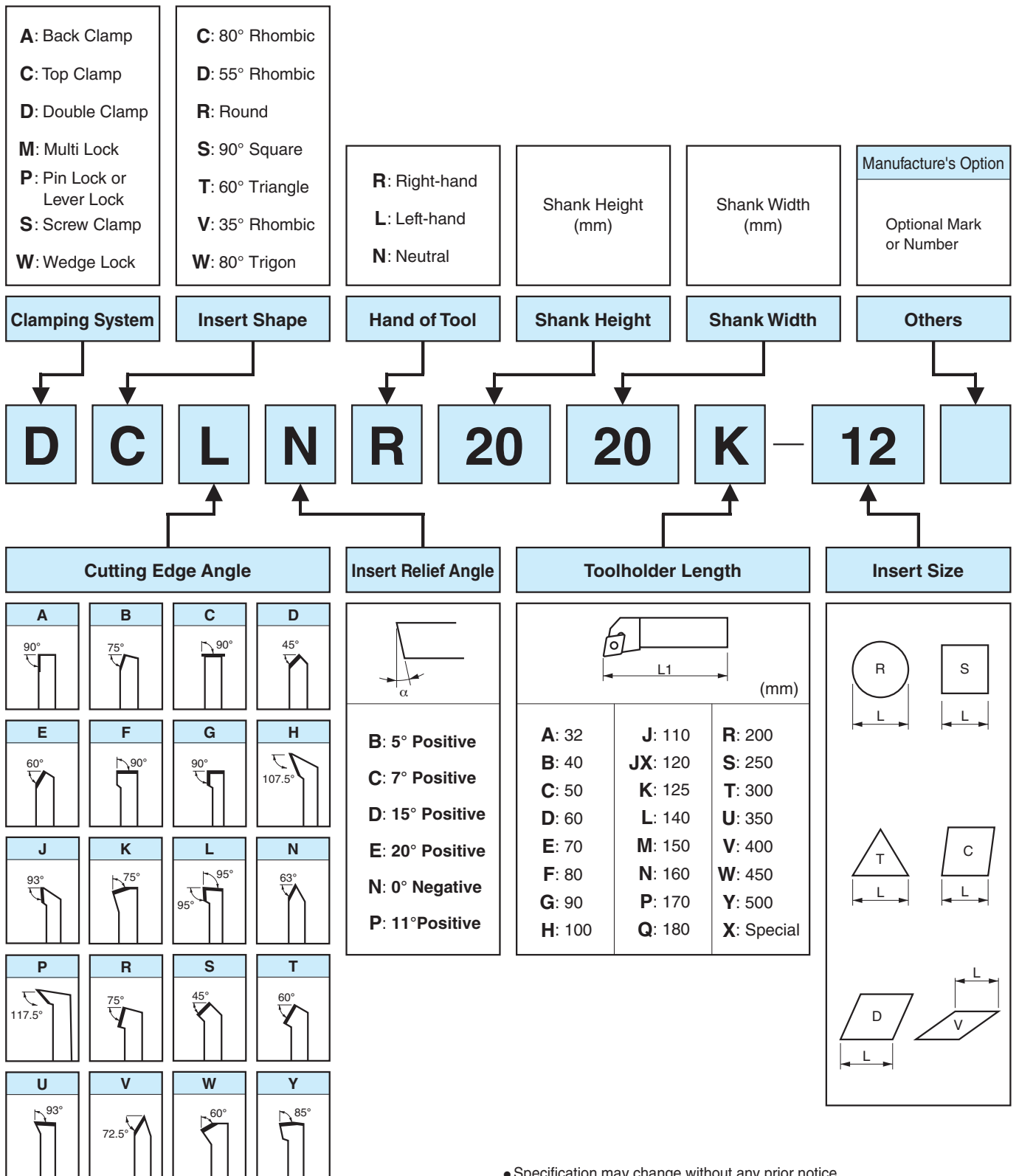
Convenient marking design



Screw	Tightening Torque (N·m)
CS-2D	1.7
CS-3D	3.9
CS-5D	3.0

Use the part-description for convenient ordering. The screw tightening torque is also indicated.

External Turning Toolholders Identification System (Square Shank)



External

- Specification may change without any prior notice.
- Due to the installation size constraints on the machine, the toolholder length of some products may not match with the symbol.

Product Lineup

External Turning Toolholders

	CN..	WN..	TN..	DN..	RC..		RN..	VN..	
Applicable Insert Shape									
Applications	External / Facing			External / Facing / Copying				External / Facing / Copying / Undercutting	
Cutting Edge Angle	95°		105°	107.5°	Special			117.5°	
Lever Lock (Pin Lock)									
Ref. to Page	D8	D20		D11	D19	D19	D19	D18	
Wedge Lock Multi Lock									
Ref. to Page		D20	D15						
Double Clamp									
Ref. to Page	D8	D20		D10				D16	

Toolholders for Ceramic Tools

Applications	External / Facing			External / Copying			External / Chamfering	External / Facing / Chamfering	
Cutting Edge Angle	95°	97.5°	Special	93°	107.5°	Special	45°	45°	
Top Clamp									
Ref. to Page	D22	D23	D27	D23		D27	D25	D25	
Dimpled-clamp									
Ref. to Page	D28			D29	D29		D30	D30	

Toolholders for Solid CBN Tools

Applications	External / Facing		External / Copying	External / Chamfering	External / Facing / Chamfering	External		
Cutting Edge Angle	95°	Special	Special	45°	45°	75°		93°
Top Clamp								
Ref. to Page	D32	D33	D33	D35	D35	D32	D34	D36

D

External

VN..	DN..		SN..	TN..	SN..	SN..	TN..	SN..	TN..
		TN..							
External / Copying			External / Chamfering		External / Facing / Chamfering	External		Facing	
72.5°	95°	93°	45°	60°	45°	75°	91°	15°	-1°
PVVN (Pin Lock) D18	PVLN (Pin Lock) D18	PDJN D11	PSDN D13		PSSN D13	PSBN D12	PTGN D14	PSKN D12	PTFN D14
MVVN D17	MVLN D17	WTJN-N D15		WTEN-N D15					
DVVN D16	DVLN D16	DDJN D10				DSBN D12	DTGN D14		



External			Facing		
75°	85°	93°	5°	15°	-3°
CSRN D25	CS-N D25	CTJN D26	CSYN D25	CSKN D25	CTUN D26
CSRN-GX D30	CS-N-GX D31		CSYN-GX D31	CSKN-GX D31	

Toolholders for Bearing Machining

Facing		
5°	15°	-3°
CSYN-A D34	CSKN-A D34	CTUN-A D36

Applications	External	Facing	Applications	Round Chamfering
Cutting Edge Angle	Special	Special	Cutting Edge Angle	Special
Lever Lock			Top Clamp	
Ref. to Page	D37	D37	Ref. to Page	D38

Clamping System

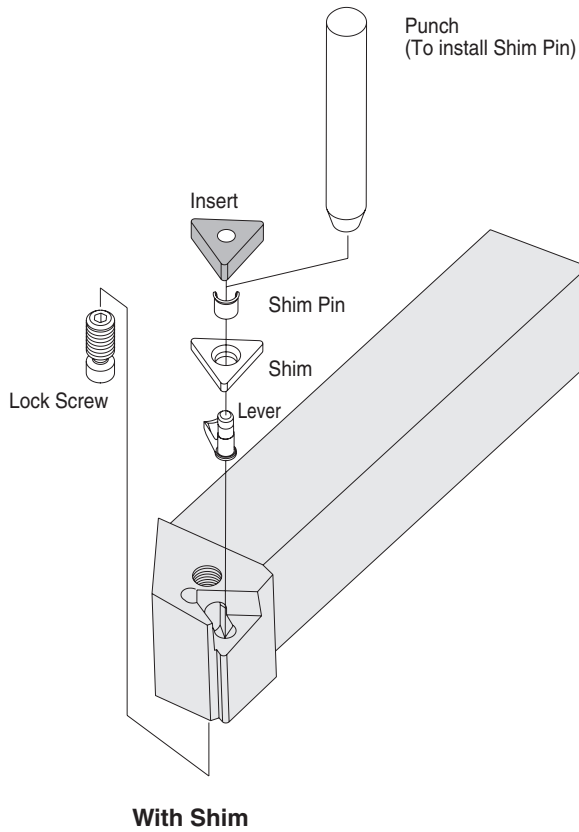
Clamping System

Series	Design		Features	Series	Design		Features
Top Clamp (C)			<ul style="list-style-type: none"> · Rigid Clamping · Negative Insert : Medium to Heavy Machining (Mainly for Ceramic Insert) · Positive Insert : Low Cutting Force 	Multi Lock (M)			<ul style="list-style-type: none"> · Combination of Top Clamp and Pin Lock · Rigid Clamping · Heavy Machining
Double Clamp (D)			<ul style="list-style-type: none"> · Firmly clamp the insert in two directions with one action. 	Lever Lock (P)			<ul style="list-style-type: none"> · Easy Insert Replacement · General Use
Pin Lock (P)			<ul style="list-style-type: none"> · Easy Insert Replacement 	Wedge Lock (W)			<ul style="list-style-type: none"> · Rigid Clamping · Heavy Machining
Screw Clamp (S)			<ul style="list-style-type: none"> · Simple Mechanism · Fewer Parts · Finishing to Medium Machining 				

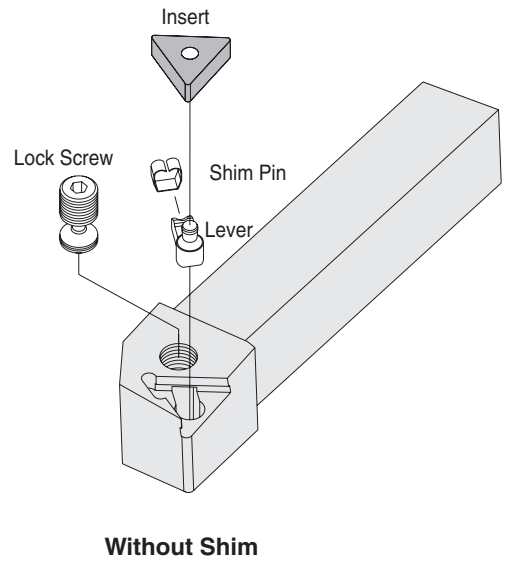
D

External

● Lever Lock

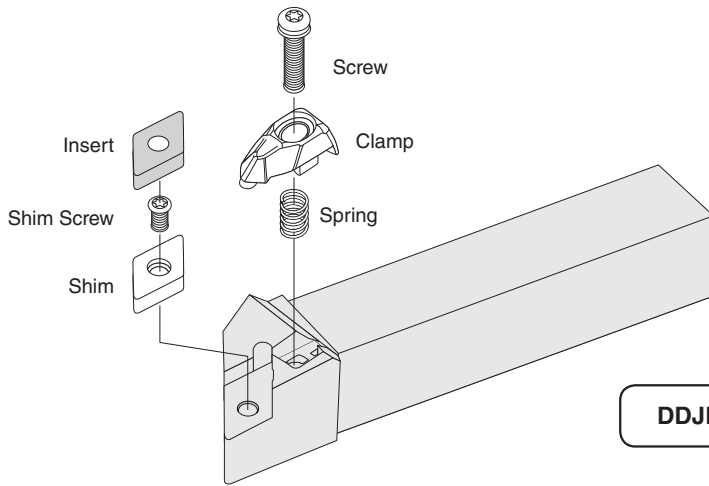


PCLN
 PWLN
 PTGN / PTFN / PTLN
 PDJN / PDHN
 PSBN / PSKN / PSSN / PSDN
 PRGN
 PRGC / PRXC



PTGN-11 / PTFN-11

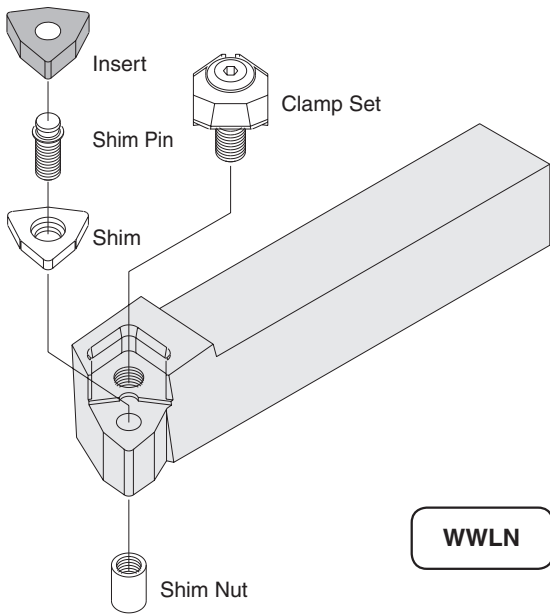
● **Double Clamp**



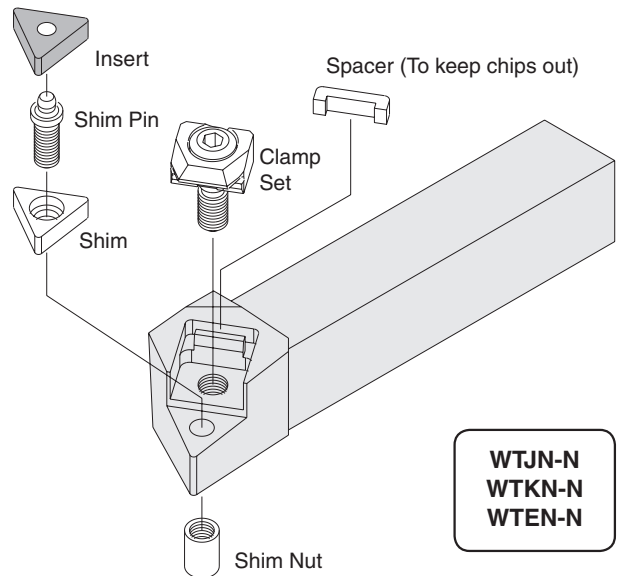
DCLN
DDJN / DDHN
DSBN
DTGN
DVLN / DVPN / DVVN
DWLN

DDJN

● **Wedge Lock**

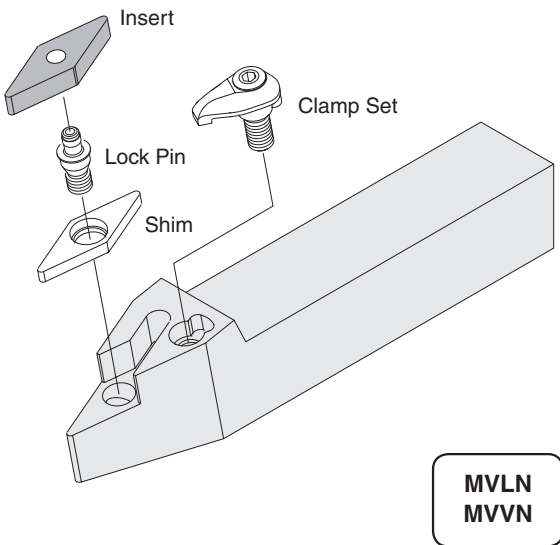


WWLN



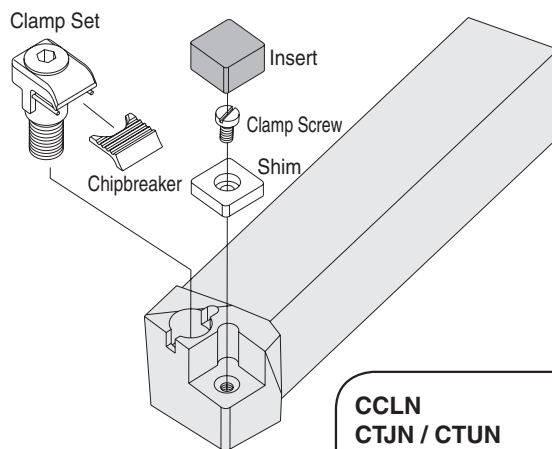
WTJN-N
WTKN-N
WTEN-N

● **Multi Lock**



MVLN
MVVN

● **Top Clamp**



CCLN
CTJN / CTUN
CDHN / CDJN
CELN
CSRN / CS-N / CSKN
CSYN / CSSN / CSDN
*** CRSN / * CRDN**

* A chipbreaker is not included with CRSN / CRDN.

DCLN (External / Facing)

Side Rake Angle: -6°
Angle of Inclination: -6°

● Right-hand shown

● **Applicable Inserts**

Toolholder Description	Insert Description
DCLN ^{R/L} ...-12	CN□A CN□G CN□M 1204..

Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R(r _c)	Spare Parts						
	R	L	H1=h	B	L1	L2	F1	F2	Clamp		Screw	Spring	Shim	Shim Screw	Wrench	Wrench (sold separately)	
DCLN ^{R/L} 2020K-12	●	●	20	20	125	33	25	20	0.8	CP-3D	CS-3D	SP-3D	*DC-44	SB-4085TR	LW-3	FT-15	
DCLN ^{R/L} 2525M-12	●	●	25	25	150	32	32										

*When using inserts whose corner-R(r_c) is greater than 1.6mm, it will be necessary additional modifications of the shim in order to prevent workpiece and shim from interfering each other.

PCLN (External / Facing)

Side Rake Angle: -6°
Angle of Inclination: -6°

● Right-hand shown

● **Applicable Inserts**

Toolholder Description	Insert Description
PCLN ^{R/L} ...-09	CN□G 0904..
PCLN ^{R/L} ...-12	CN□A CN□G CN□M 1204..
PCLN ^{R/L} ...-16	1606..

































Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R(r _c)	Spare Parts					
	R	L	H1=h	B	L1	L2	F1	F2	Lever		Lock Screw	Shim	Shim Pin	Punch	Wrench	
PCLN ^{R/L} 1616H-09	●	●	16	16	100		20	14	0.8	LL-1N	LS-1N	LC-32N	LSP-1	PC-1	FH-2.5	
PCLN ^{R/L} 2020K-09	●	●	20	20	125	22	25	15								
PCLN ^{R/L} 2525M-09	●	●	25	25	150		32	18								
PCLN ^{R/L} 2020H-12*	●	●	20	20	100	27	25	20	0.8	LL-2N	LS-2N	LC-42N *LC-42N-20	LSP-2	PC-2	LW-3	
PCLN ^{R/L} 2020K-12	●	●	20	20	125											
PCLN ^{R/L} 2525M-12	●	●	25	25	150											
PCLN ^{R/L} 3225P-12	●	●	32	25	170		32									
PCLN ^{R/L} 2525M-16	●	●	25	25	150	32	32	25	0.8	LL-5N	LS-4N	LC-53N	LSP-3	-	LW-3	
PCLN ^{R/L} 3232P-16	●	●	32	32	170		40	27								

* mark indicates short shank type

· When using inserts whose corner-R(r_c) is greater than 1.6mm, please purchase a shim with * mark and use it in order to prevent workpiece and shim from interfering each other.

● **Applicable Inserts**

Applications	Finishing	Finishing-Medium	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing
Insert	WP(Wiper) 	WQ(Wiper) 	PP 	PQ 	CQ 	CJ 	GS 	PG 
Size	12	12	12	12	12,16	12,16	09,12	12
Page	B14	B14	B14	B14	B14	B14	B15	B15
Applications	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing	Roughing	Single Sided / Roughing / High Feed Rate	Finishing	Medium
Insert	PS 	HS 	PT 	Standard 	PH 	PX 	P/L-S 	P/L 
Size	12,16	12,16	12,16	12,16	12,16	12,16	09	09,12
Page	B15	B15	B15	B16	B16	B16	B20	B20
Applications	Soft Steel / Small ap	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron
Insert	XF 	XP 	XQ 	XS 	MQ 	MS 	MU 	C 
Size	12	12	12	12	12	12	12,16	12,16
Page	B17	B17	B17	B17	B18	B18	B18	B19
Applications	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Insert	ZS 	GC 	Without Chipbreaker 	Ceramic 	AH 	A3 	PCD 	CBN 
Size	12	12	12	12	12	12	12	12
Page	B19	B19	B19	B98	B19	B19	C23	C6,C7

Recommended Cutting Conditions ● **D39~D40**

■ **Short Shank Toolholders** for small lathes and turning mill

Overall length : 100mm (20mm square shank)

- Optimal toolholder length for small lathe, conventionally for which shank was cut off
- Available also as toolholder for quick change system of turning mill

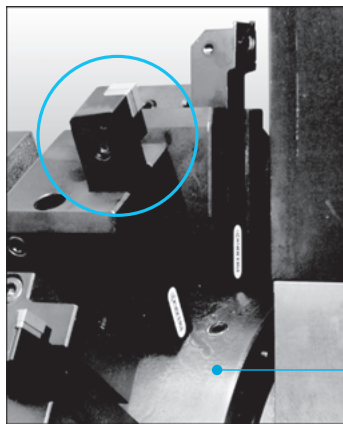


Short Shank PCLNR2020H-12



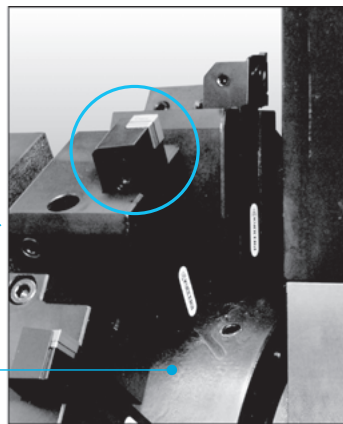
Conventional Toolholder PCLNR2020K-12

Conventional Toolholder



Large overhang length due to contact of shank with toolpost drum.

Short Shank



May be set to optional overhang length since there is no interference with toolpost drum.

Toolpost drum

External Turning Toolholders [DN□□ Insert]

DDJN (External / Copying)

Side Rake Angle: -6°
Angle of Inclination: -7°

● **Applicable Inserts**

Toolholder Description	Insert Description	
DDJN ^{F/L} ...-1504	DN□A DN□G	1504.. (1506..)
DDJN ^{F/L} ...-1506	DN□M	1506.. (1504..)

● Right-hand shown

D

External

DDHN (External / Facing / Copying)

Side Rake Angle: -6°
Angle of Inclination: -6°

● **Applicable Inserts**

Toolholder Description	Insert Description	
DDHN ^{F/L} ...-1504	DN□A DN□G	1504.. (1506..)
DDHN ^{F/L} ...-1506	DN□M	1506.. (1504..)

● Right-hand shown

● Toolholder Dimensions

Description	Std.		Dimension (mm)						Standard Corner-R(r _c)	Spare Parts																											
	R	L	H1=h	B	L1	L2	F1	F2		Clamp	Screw	Spring	Shim	Shim Screw	Wrench	Wrench (sold separately)																					
DDJN ^{F/L} 2020K -1504	●	●	20	20	125	39	25	-	0.8	CP-3D	CS-3D	SP-3D	SB-4085TR	LW-3	FT-15	*DD-44 (DD-43)																					
	DDJN ^{F/L} 2525M -1504	●	●	25	25		150	32								25	DD-43 (*DD-44)																				
DDJN ^{F/L} 2020K -1506	●	●	20	20	125	37	25	-								22	CP-3D	CS-3D	SP-3D	SB-4085TR	LW-3	FT-15	*DD-44 (DD-43)														
	DDJN ^{F/L} 2525M -1506	●	●	25	25		150	32															25	DD-43 (*DD-44)													
DDHN ^{F/L} 2020K -1504	●	●	20	20	125	37	25	-															0.8	CP-3D	CS-3D	SP-3D	SB-4085TR	LW-3	FT-15	*DD-44 (DD-43)							
	DDHN ^{F/L} 2525M -1504	●	●	25	25		150	32																						25	DD-43 (*DD-44)						
DDHN ^{F/L} 2020K -1506	●	●	20	20	125	37	25	-																						22	CP-3D	CS-3D	SP-3D	SB-4085TR	LW-3	FT-15	*DD-44 (DD-43)
	DDHN ^{F/L} 2525M -1506	●	●	25	25		150	32																													25

Shims indicated within brackets () are not included with the toolholder. To change insert thickness, please purchase it separately.

*When using inserts whose corner-R(r_c) is greater than 1.6mm, it will be necessary additional modifications of the shim in order to prevent workpiece and shim from interfering each other.

● : Std. Item

■ PDJN (External / Copying)

Side Rake Angle: -6°
Angle of Inclination: -7°

● Applicable Inserts

Toolholder Description	Insert Description	
PDJN [°] /L...-11	DN□A	1104..
	DN□G	
PDJN [°] /L...-15	DN□A	1504..
	DN□G	
PDJN [°] /L...-15U	DN□M	1506..

● Right-hand shown

■ PDHN (External / Facing / Copying)

Side Rake Angle: -6°
Angle of Inclination: -6°

● Applicable Inserts

Toolholder Description	Insert Description	
PDHN [°] /L...15	DN□A	1504..
	DN□G	
	DN□M	
		(1506..)

● Right-hand shown

● Toolholder Dimensions

Description	Std. Dimension (mm)								Standard Corner-R (rc)	Spare Parts						
	R	L	H1=h	B	L1	L2	F1	F2		Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench	
PDJN [°] /L	1616H -11	●	●	16	16	100		20		0.4	LL-1DN	LS-1N	LD-32N	LSP-1	PC-1	FH-2.5
	2020K -11	●	●	20	20	125	28	25	-							
	2525M -11	●	●	25	25	150		32	27							
	2020H -15*	●	●	20	20	100	36	25	-	0.8	LL-3N	LS-2N	LD-42 *LD-42-20	LSP-2	PC-2	LW-3
	2020K -15	●	●													
	2525M -15	●	●	25	25	150		32	25							
	3225P -15	●	●	32	25	170		32	25	0.8	LL-4	LS-3	LD-42 *LD-42-20 (LD-43) (*LD-43-20)	LSP-2	PC-2	LW-3
2525M -15U	●	●	25	25	150	34	32	24								
3232P -15U	●	●	32	32	170	36	40	28								
PDHN [°] /L	2020K -15	●	●	20	20	125	35	25	22	0.8	LL-4	LS-3	LD-43 *LD-43-20 (LD-42) (*LD-42-20)	LSP-2	PC-2	LW-3
	2525M -15	●	●	25	25	150	34	32	24							

*mark indicates short shank type

· Shim: PDJN[°]/L-15U ...LD-42 is attached to PDJN[°]/L-15U. When using DN□□1504 type insert, please purchase LD-43 separately.

PDHN ...LD-43 is attached to PDHN. When using DN□□1506 type Insert, please purchase LD-42 separately.

· When using inserts whose corner-R (rc) is greater than 1.6mm, please purchase a shim with * mark and use it in order to prevent workpiece and shim from interfering each other.

● Applicable Inserts

Applications	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing	Roughing
Insert	PP	PQ	CQ	CJ	GS	PG	PS	PT	Standard	PH
Size	1504,1506	1504,1506	1504,1506	1504,1506	1104,1504,1506	1504,1506	1504,1506	1504,1506	1504,1506	1504,1506
Page	B21	B21	B22	B22	B22	B22	B23	B23	B23	B24
Applications	Single Steel / Roughing / High Feed Rate	Finishing	Medium	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	
Insert	PX	[°] /L-S	[°] /L	XP	XQ	XS	MQ	MS	MU	
Size	1504,1506	1104	1104,1504	1504,1506	1504,1506	1504	1504,1506	1504,1506	1504,1506	
Page	B24	B27	B27	B24	B24	B24	B25	B25	B25	
Applications	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials	
Insert	TK	C	ZS	GC	Ceramic	AH	[°] /L-A3	PCD	CBN	
Size	1504,1506	1504,1506	1504,1506	1504,1506	1504,1506	1504,1506	1504	1504	1504,1506	
Page	B25	B26	B26	B26	B99	B27	B27	C23	C8, C9	

Recommended Cutting Conditions ➡ D39~D40

● : Std. Item

D
External

DSBN (External)

● Right-hand shown

● **Applicable Inserts**

Toolholder Description	Insert Description
DSBN ^{R/L} ...-12	SN□A SN□G SN□M
	1204..

Toolholder Dimensions

Description	Std.		Dimension (mm)						Standard Corner-R(r _c)	Spare Parts						
	R	L	H1=h	B	L1	L2	F1	F2		Clamp	Screw	Spring	Shim	Shim Screw	Wrench <small>For Clamp</small>	Wrench <small>(sold separately) For Shim</small>
DSBN ^{R/L} 2020K -12	●	●	20	20	125	34	17	13	0.8							
	●	●	25	25	150		22									

PSBN (External)

● Right-hand shown

PSKN (Facing)

● Right-hand shown

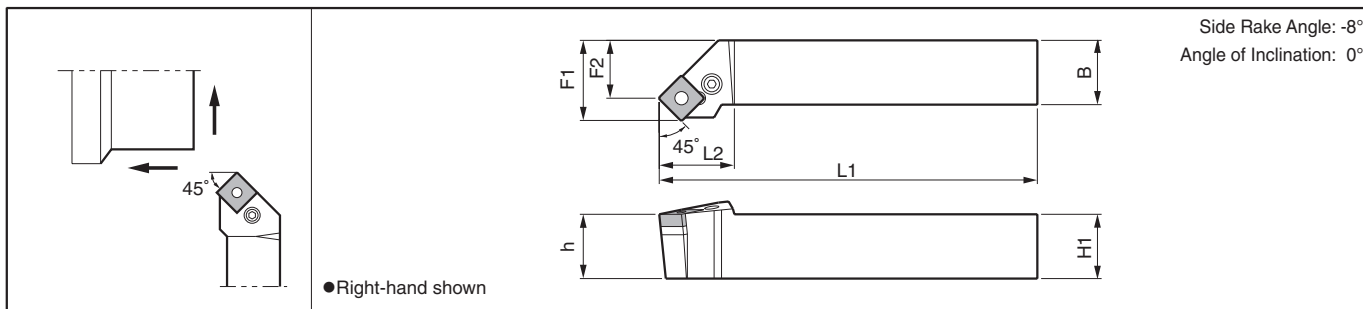
Toolholder Dimensions

Description	Std.		Dimension (mm)						Standard Corner-R(r _c)	Spare Parts											
	R	L	H1=h	B	L1	L2	F1	F2		Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench <small>FH</small>						
PSBN ^{R/L} 1616H -09	●	●	16	16	100	21	13	-	0.8												
	●	●	20	20	125	27	17	-								LL-1N	LS-1N	LS-32	LSP-1	PC-1	FH-2.5
	●	●	25	25	150	24	22	-								LL-2N	LS-2N	LS-42	LSP-2	PC-2	LW-3
PSKN ^{R/L} 1616H -09	●	●	16	16	100	19	20	12.7	0.8												
	●	●	20	20	125	22.5	25	17								LL-1N	LS-1N	LS-32	LSP-1	PC-1	FH-2.5
	●	●	25	25	150		32	19								LL-2N	LS-2N	LS-42	LSP-2	PC-2	LW-3

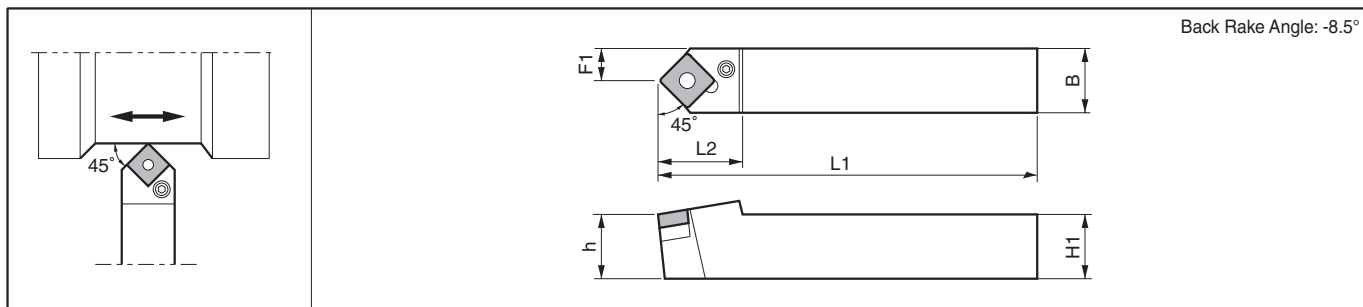
· PSKN^{R/L}...Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

● : Std. Item

PSSN (External / Facing / Chamfering)



PSDN (External / Chamfering)



Toolholder Dimensions

Description	Std.		Dimension (mm)								Standard Corner-R _(r)	Spare Parts					
	R	N	L	H1=h	B	L1	L2	F1	F2	Lever		Lock Screw	Shim	Shim Pin	Punch	Wrench	
PSSN ^{F/L}	1616H-09	●	●	16	16	100	22	20	13.6	0.8	LL-1N	LS-1N	LS-32	LSP-1	PC-1	FH-2.5	
	2020K-12	●	●	20	20	125	29	25	16.4	0.8	LL-2N	LS-2N	LS-42	LSP-2	PC-2	LW-3	
	2525M-12	●	●	25	25	150		32	23.4								
PSDNN	1616H-09		●	16	16	100	21	8	-	0.8	LL-1N	LS-1N	LS-32	LSP-1	PC-1	FH-2.5	
	2020K-12		●	20	20	125	30	10	-	0.8	LL-2N	LS-2N	LS-42	LSP-2	PC-2	LW-3	
	2525M-12		●	25	25	150		12.5									

Applicable Inserts

Toolholder Description	Insert Description		Applications	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing	Roughing	Single Side / Roughing / High Feed Rate	
PSBN ^{F/L} ...-09	SN□G	0903..	Insert	PQ	PG	PS	HS	PT	Standard	PH	PX	
PSKN ^{F/L} ...-09				Size	12	12	12	12	12	09,12	12	12
PSSN ^{F/L} ...-09				Page	B29	B29	B29	B29	B29	B29	B30	B30
PSDNN...-09				Applications	Finishing-Roughing	Medium-Roughing / Low Cutting Force	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Cast Iron
PSBN ^{F/L} ...-12	SN□A SN□G SN□M	1204..	Insert	^{F/L} □	^{F/L} -25R	XP	XQ	XS	MQ	MS	C	
PSKN ^{F/L} ...-12				Size	09,12	12	12	12	12	12	12	12
PSSN ^{F/L} ...-12				Page	B32	B32	B30	B30	B30	B31	B31	B31
PSDNN...-12				Applications	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Hard Materials			
			Insert	ZS	GC	Without Chipbreaker	Ceramic	CBN				
				Size	12	12	12	12	12			
				Page	B31	B31	B31	B101	C10			

• PSSN^{F/L}: For External Turning, Right-hand Insert for Right-hand Toolholder,
Left-hand Insert for Left-hand Toolholder
For Facing, Left-hand Insert for Right-hand Toolholder,
Right-hand Insert for Left-hand Toolholder

Recommended Cutting Conditions **D39~D40**

● : Std. Item



DTGN (External)

Side Rake Angle: -6°
Angle of Inclination: -6°

● Right-hand shown

● **Applicable Inserts**

Toolholder Description	Insert Description
DTGN [°] /L...-16	TN□A
	TN□G
	TN□M

Description	Std.		Dimension (mm)						Standard Corner-R(r _c)	Spare Parts						
	R	L	H1=h	B	L1	L2	F1	F2		Clamp	Screw	Spring	Shim	Shim Screw	Wrench	Wrench (sold separately)
DTGN [°] /L 2020K -16	●	●	20	20	125	25	25	20	0.8	CP-2D	CS-2D	SP-2D	DT-32	SB-3080TR	LW-2.5	FT-10
	●	●	25	25	150											

*When using inserts whose corner-R(r_c) is greater than 1.6mm, it will be necessary additional modifications of the shim in order to prevent workpiece and shim from interfering each other.

PTGN (External)

Side Rake Angle: -6°
Angle of Inclination: -6°

● Right-hand shown

PTFN (Facing)

Side Rake Angle: -6°
Angle of Inclination: -6°

● Right-hand shown

Description	Std.		Dimension (mm)						Standard Corner-R(r _c)	Spare Parts					
	R	L	H1=h	B	L1	L2	F1	F2		Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
PTGN [°] /L	●	●	12	12	80	18	16	12	0.8	LL-03N	LS-03N	-	P-03	-	FH-2
	●	●	16	16	100	22	20	14							
	●	●	20	20	125		24	25	20	0.8	LL-03TN	LS-03SN	-	P-03S	-
	●	●	25	25	150	32		22							
	●	●	16	16	100	24	20	17	0.8	LL-1N	LS-1N	LT-32N *LT-32N-20	LSP-1	PC-1	FH-2.5
	●	●	20	20			125	25							
	●	●	25	25	150	29	32	24	0.8	LL-2N	LS-2N	LT-42N *LT-42N-20	LSP-2	PC-2	LW-3
	●	●	25	25	150										
PTFN [°] /L	●	●	12	12	80	15	16	12.5	0.8	LL-03N	LS-03N	-	P-03	-	FH-2
	●	●	16	16	100	22.5	20	15							
	●	●	20	20	125		28	25	19	0.8	LL-03TN	LS-03SN	-	P-03S	-
	●	●	25	25	150	32		25							
	●	●	20	20	125	23	32	22	0.8	LL-1N	LS-1N	LT-32N *LT-32N-20	LSP-1	PC-1	FH-2.5
	●	●	25	25	150										
●	●	25	25	150	28	32	25	0.8	LL-2N	LS-2N	LT-42N *LT-42N-20	LSP-2	PC-2	LW-3	
●	●	25	25	150											28

*mark indicates short shank type

When using inserts whose corner-R(r_c) is greater than 1.6mm, please purchase a shim with * mark and use it in order to prevent workpiece and shim from interfering each other.

● Applicable Inserts

Toolholder Description	Insert Description
PT□N [°] /L12...-11	TN□□ 1103..
PT□N [°] /L...-11	
PT□N [°] /L...-16	TN□A 1604..
PT□N [°] /L...-22	TN□G 2204..

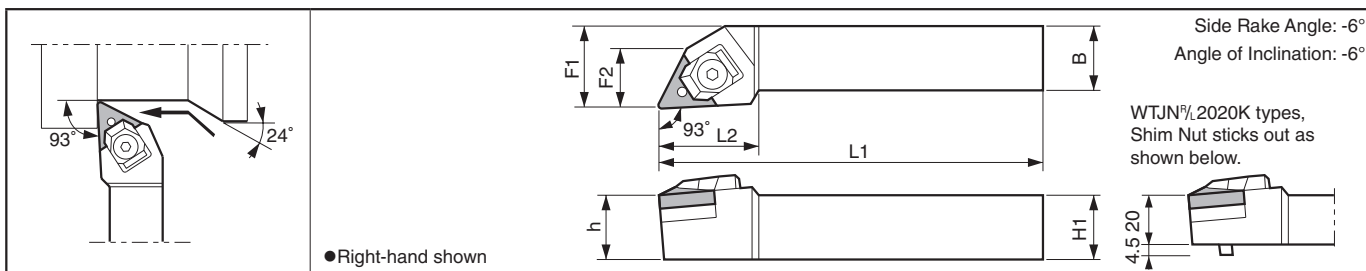
PTGN[°]/L1212F-11 } Insert applicable for above
PTFN[°]/L1212F-11 }

TN□□1103-type Insert is applicable.

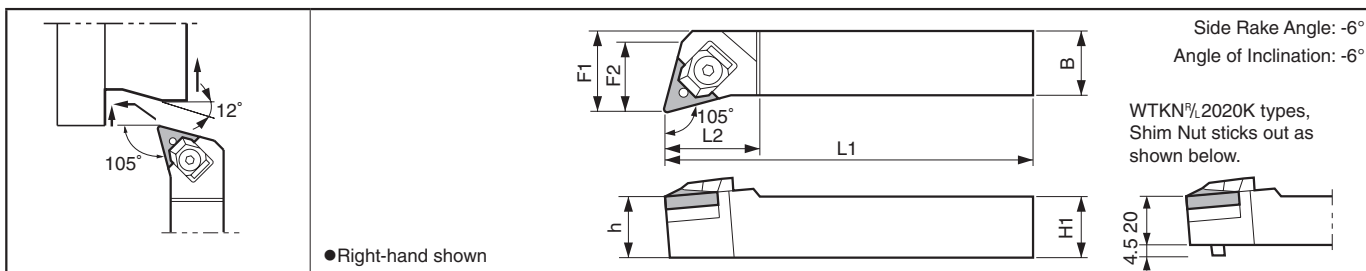
· PTFN[°]: Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

● : Std. Item

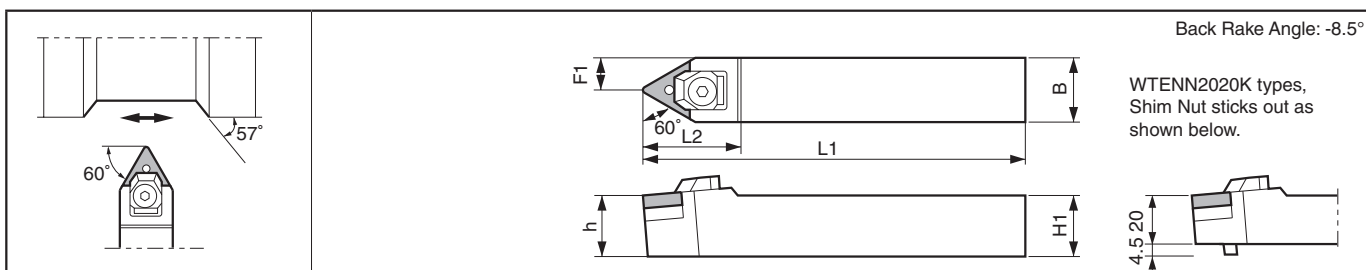
WTJN-N (External / Copying)



WTKN-N (External / Facing / Copying)



WTEN-N (External / Chamfering)



Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R(r _c)	Spare Parts					
	R	N	L	H1=h	B	L1	L2	F1	F2		Clamp Set	Shim	Shim Pin	Shim Nut	Wrench	Spacer
WTJN ^{1/2} 2020K-16N 2525M-16N	●	●	20	20	125	32	25	24	0.8	WCS-1N	WTN-33 *WTN -33-20	WP-1S	WN-1	LW-3	WSP-1	
WTKN ^{1/2} 2020K-16N 2525M-16N	●	●	20	20	125	32	25	-								
WTENN 2020K-16N 2525M-16N	●	●	20	20	125	32	10	-								

*When using inserts whose corner-R(r_c) is greater than 1.6mm, please purchase a shim (WTN-33-20) with * mark and use it in order to prevent workpiece and shim from interfering with each other.

Applicable Inserts

Toolholder Description	Insert Description			Applications	Finishing	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Medium-Roughing / High Feed Rate	Roughing	
WTJN ^{1/2} ...-16N	TN□A TN□G TN□M	1604..	Insert	PP	PQ	CQ	GS	PG	PS	PT	GT	PH		
WTKN ^{1/2} ...-16N				Size	16	16	16,22	1104,16	16	16,22	16	16	16	16,22
WTENN ...-16N				Page	B33	B33	B33	B33	B33	B33	B33	B34	B34	B34
			Insert	Applications	Single Sided / Roughing / High Feed	Roughing	Finishing	Finishing-Roughing	Medium-Roughing / Low Cutting Force	Soft Steel / Small ap	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	
				PX	Standard	^{1/2} L-S	^{1/2} L-□	^{1/2} L-25R	XF	XP	XQ	XS		
				Size	16,22	16,22	1104,16	1103,1104,16,22	16	16	16	16	16	
				Page	B34	B34	B38	B38,B39	B39	B35	B35	B35	B35	
	Applications	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials	
	Insert	MQ	MS	MU	C	ZS	GC	Without Chipbreaker	Ceramic	AH	^{1/2} L-A3	PCD	CBN	
	Size	16	16	16	16	16	16	1103,16	16	16	16	16	16	
	Page	B36	B36	B36	B37	B37	B37	B37	B103	B37	B37	C23	C11	

In wedge lock, use of ceramic insert other than silicon nitride insert is not recommended due to strong restrain force.

Recommended Cutting Conditions **D39~D40**

● : Std. Item

External Turning Toolholders [VN□□ Insert]

DVLN (External / Copying)

Side Rake Angle: -6°
Angle of Inclination: -9°

● Right-hand shown

● Applicable Inserts

Toolholder Description	Insert Description
DVLN ^{F/L} ...-16	VN□A VN□G VN□M 1604..

DVPN (External / Facing / Copying / Undercutting)

Side Rake Angle: -13°
Angle of Inclination: -10°

● Right-hand shown

● Applicable Inserts

Toolholder Description	Insert Description
DVPN ^{F/L} ...-16	VN□A VN□G VN□M 1604..

DVVN (External / Copying)

Back Rake Angle: -11°

● Right-hand shown

● Applicable Inserts

Toolholder Description	Insert Description
DVVNN...-16	VN□A VN□G VN□M 1604..

● Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R(r_s)	Spare Parts																				
	R	N	L	H1=h	B	L1	L2	F1	F2		Clamp	Screw	Spring	Shim	Shim Screw	Wrench	Wrench (sold separately)														
DVLN ^{F/L}	2020K-16	●	●	20	20	125	25	45	-	0.8																					
	2525M-16	●	●	25	25	150	32																								
DVPN ^{F/L}	2020K-16	●	●	20	20	125	27	40	28									CP-5D	CS-5D	SP-5D	DV-33	SB-4085TR	LW-3	FT-15							
	2525M-16	●	●	25	25	150	32																								
DVVNN	2020K-16		●	20	20	125	10	46	-																						
	2525M-16		●	25	25	150	12.5																								

● : Std. Item

MVLN (External / Copying)

Side Rake Angle: -6°
Angle of Inclination: -9°

● Right-hand shown

MVVN (External / Copying)

Back Rake Angle: -11°

Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R($\frac{1}{8}$)	Spare Parts				
	R	N	L	H1-h	B	L1	L2	F1	Clamp Set		Wrench	Shim	Lock Pin	Wrench	
	MVLN^{R/L}														
2020K -16	●		●	20	20	125	38	25		0.8	CPS-5 ^{R/L}	FH-2.5	MVN-32	TS-3S	FH-2
2525M-16	●		●	25	25	150		32							
MVVNN			●	20	20	125	39	10		0.8	CPS-5R	FH-2.5	MVN-32	TS-3S	FH-2
2525M-16			●	25	25	150		12.5							

• Clamp Set: CPS-5R for Right-hand Toolholder, CPS-5L for Left-hand Toolholder.

Applicable Inserts

Toolholder Description	Insert Description	Applications	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium	Roughing	Finishing-Medium	Stainless Steel / Finishing
MVLN^{R/L}...-16	VN□A	1604..	PP	^{R/L} -VC	VF	PQ	TN-V	Standard	^{R/L}	MQ
MVVNN...-16	VN□G VN□M		Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Non-ferrous Metals	Hard Materials		
		Insert								
		Size	16	16	16	16	16	16	16	16
		Page	B40	B40	B40	B40	B40	B40	B41	B41
		Insert			Without Chipbreaker	Ceramic	PCD	CBN		
		Size	16	16	16	16	16	16		
		Page	B41	B41	B41	B104	C23	C12		

Regarding rotation directions of the clamp set

Recommended Cutting Conditions **D39~D40**

MVVNN type (Neutral)

MVLNR type (Right-hand Toolholder)

Clamp set: (CPS-5R) has Right-hand thread.
When clamping the insert, turn the screw in the arrow direction (clockwise).
When removing the insert, turn the screw away from the arrow (counterclockwise).

MVLNL type (Left-hand Toolholder)

Clamp set: (CPS-5L) has Left-hand thread.
When clamping the insert, turn the screw in the arrow direction (counterclockwise).
When removing the insert, turn the screw away from the arrow (clockwise).

● : Std. Item

PVLN (External / Copying)

Side Rake Angle: -6°
Angle of Inclination: -9°

● Right-hand shown

PVPN (External / Facing / Copying / Undercutting)

Side Rake Angle: -13°
Angle of Inclination: -10°

● Right-hand shown

PVVN (External / Copying)

Back Rake Angle: -11°

Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R _(t)	Spare Parts			
	R	N	L	H1=h	B	L1	L2	F1	F2		Lock Pin	Lock Screw	Shim	Wrench
PVLN ^{β/L} 2525M-16Q	●	●	25	25	150	37	32	-	0.8	LP-6S	LS-15	KVN-32	LW-3	
PVPN ^{β/L} 2020K-16Q	●	●	20	20	125	30	25	22	0.8	LP-2S	LS-11	KVN-32	LW-3	
2525M-16Q	●	●	25	25	150		32	28		LP-6S				
PVVNN 2020K-16Q		●	20	20	125	35	10	-	0.8	LP-2S	LS-15	KVN-32	LW-3	
2525M-16Q		●	25	25	150	40	12.5	-		LP-6S				

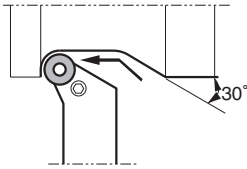
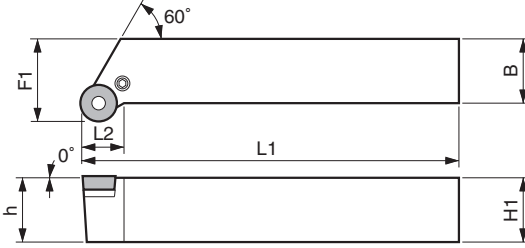
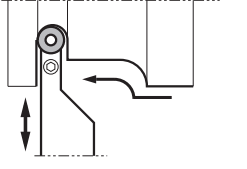
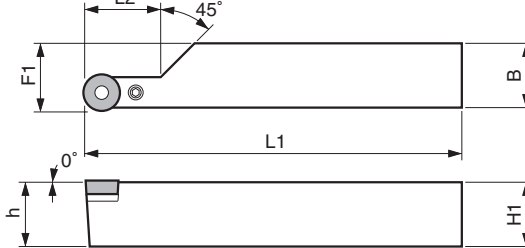
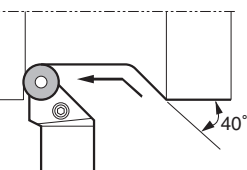
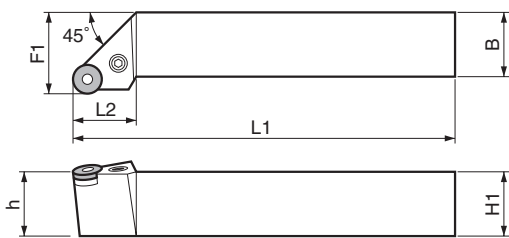
Applicable Inserts

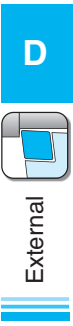
Toolholder Description	Insert Description	Applications	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium	Roughing	Finishing-Medium	Stainless Steel / Finishing
PVLN ^{β/L} ...-16Q	VN□A	1604..	PP	β/L -VC	VF	PQ	TN-V	Standard	β/L	MQ
PVPN ^{β/L} ...-16Q	VN□G		MS	MU	Without Chipbreaker	Ceramic	PCD	CBN		
PVVNN...-16Q	VN□M									
		Size	16	16	16	16	16	16	16	16
		Page	B40	B40	B40	B40	B40	B40	B41	B41
		Applications	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Non-ferrous Metals	Hard Materials		
		Size	16	16	16	16	16	16		
		Page	B41	B41	B41	B104	C23	C12		

Recommended Cutting Conditions ● D39~D40

● : Std. Item

PRGC / PRXC / PRGN (External / Facing / Copying)

<p>PRGC</p>  <p>●Right-hand shown</p>		<p>Side Rake Angle: 0° Angle of Inclination: 0°</p>
<p>PRXC</p>  <p>●Right-hand shown</p>		<p>Side Rake Angle: 0° Angle of Inclination: 0°</p>
<p>PRGN</p>  <p>●Right-hand shown</p>		<p>Side Rake Angle: -6° Angle of Inclination: -6°</p>



Toolholder Dimensions

Description	Std.		Dimension (mm)					Standard Corner-R(ε)	Spare Parts						
	R	L	H1=h	B	L1	L2	F1		Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench	
PRGC ^{R/L}	2020K-10	●	●	20	20	125	15	25	-	LL-05C	LS-05	LR-10C	LSP-1	PC-1	FH-2
	2525M-10	●	●	25	25	150	15	32	-	LL-05C	LS-05	LR-10C	LSP-1	PC-1	FH-2
	2020K-12	●	●	20	20	125	14	25	-	LL-1CN	LS-1N	LR-12C	LSP-1	PC-1	FH-2.5
	2525M-12	●	●	25	25	150	17	32	-	LL-1CN	LS-1N	LR-12C	LSP-1	PC-1	FH-2.5
PRXC ^{R/L}	2020K-10	●	●	20	20	125	25	20.5	-	LL-05C	LS-05	LR-10C	LSP-1	PC-1	FH-2
	2525M-10	●	●	25	25	150	30	25.5	-	LL-05C	LS-05	LR-10C	LSP-1	PC-1	FH-2
	2525Q-10	●	●	25	25	180	30	25.5	-	LL-05C	LS-05	LR-10C	LSP-1	PC-1	FH-2
	2525M-12	●	●	25	25	150	30	25.7	-	LL-1CN	LS-1N	LR-12C	LSP-1	PC-1	FH-2.5
PRGN ^{R/L}	2020K-09	●	●	20	20	125	19	25	-	LL-1N	LS-1N	LR-80	LSP-1	PC-1	FH-2.5
	2525M-12	●	●	25	25	150	26	32	-	LL-2N	LS-2N	LR-81	LSP-2	PC-2	LW-3

Applicable Inserts

Toolholder Description	Insert Description	Applications	Medium	Non-ferrous Metals					
PRGC ^{R/L} ...-10	RCGX RCMX	Insert	Standard	AQ					
PRGC ^{R/L} ...-12			1003M0						
PRXC ^{R/L} ...-10			1204M0						
PRXC ^{R/L} ...-12			1003M0						
PRGN ^{R/L} ...-09	RNMG	Insert	Standard						
PRGN ^{R/L} ...-12			090300						
			Size	10, 12	10				
			Page	B68	B68				
			Applications	Medium-Roughing					
			Size	09, 12					
			Page	B28					

Recommended Cutting Conditions D39~D40

● : Std. Item

External Turning Toolholders [WN□□ Insert]

DWLN (External / Facing)

Side Rake Angle: -6°
Angle of Inclination: -6°

● **Applicable Inserts**

Toolholder Description	Insert Description	
DWLN ^{F/L} ...-08	WN□A WN□G WN□M	0804...

Description	Std.		Dimension (mm)							Standard Corner-R(ε)	Spare Parts						
	R	L	H1=h	B	L1	L2	F1	F2	Clamp		Screw	Spring	Shim	Shim Screw	Wrench	Wrench (sold separately)	
DWLN ^{F/L} 2020K -08	●	●	20	20	125	34	25	20	0.8								
2525M -08	●	●	25	25	150	32											

PWLN (External / Facing)

Side Rake Angle: -6°
Angle of Inclination: -6°

● **Applicable Inserts**

Toolholder Description	Insert Description	
PWLN ^{F/L} ...-06	WN□A WN□G	0604..
PWLN ^{F/L} ...-08	WN□M	0804..

Description	Std.		Dimension (mm)							Standard Corner-R(ε)	Spare Parts					
	R	L	H1=h	B	L1	L2	F1	F2	Lever		Lock Screw	Shim	Shim Pin	Punch	Wrench	
PWLN ^{F/L} 1616H -06	●	●	16	16	100		20		0.8							
2020K -06	●	●	20	20	125	22	25	-								
2525M -06	●	●	25	25	150		32									
2020K -08	●	●	20	20	125	26	25	-	0.8							
2525M -08	●	●	25	25	150		32	23								

WWLN (External / Facing)

Side Rake Angle: -6°
Angle of Inclination: -6°


























● **Applicable Inserts**

Toolholder Description	Insert Description	
WWLN ^{F/L} ...-08	WN□A WN□G WN□M	0804..


Description	Std.		Dimension (mm)							Standard Corner-R(ε)	Spare Parts					
	R	L	H1=h	B	L1	L2	F1	F2	Clamp Set		Shim	Shim Pin	Shim Nut	Wrench		
WWLN ^{F/L} 2020K -08	●	●	20	20	125	30	25	-	1.2							
2525M -08	●	●	25	25	150		32	2.5								

● : Std. Item

● Applicable Inserts

Applications	Finishing	Finishing-Medium	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing
Insert	WP(Wiper) 	WQ(Wiper) 	PP 	PQ 	CQ 	CJ 	GS 	PG 	PS 
Size	08	08	08	08	08	08	06,08	08	08
Page	B42	B42	B42	B42	B42	B42	B43	B43	B43
Applications	Medium-Roughing / High Feed Rate	Roughing	Finishing	Medium	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	
Insert	PT 	Standard 	P/L-S 	P/L 	XP 	XQ 	XS 	MQ 	
Size	08	08	06	06	08	08	08	08	
Page	B43	B43	B45	B45	B44	B44	B44	B44	
Applications	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Hard Materials	
Insert	MS 	MU 	C 	ZS 	GC 	AH 	PCD 	CBN 	
Size	08	08	08	08	08	08	08	08	
Page	B44	B44	B45	B45	B45	B45	C23	C13	

*In wedge lock, use of ceramic insert other than silicon nitride insert is not recommended due to strong restrain force.

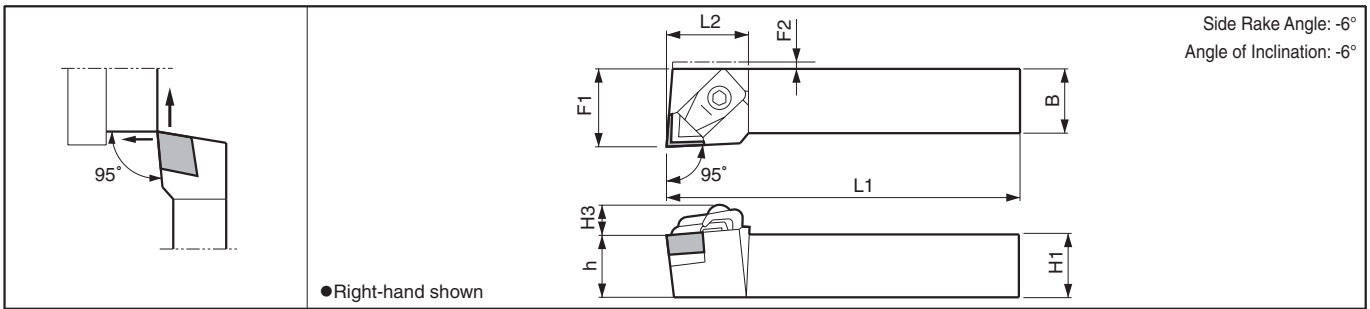
Recommended Cutting Conditions  **D39~D40**

D



External

CCLN (External / Facing)



Toolholder Dimensions

Description	Std.		Dimension (mm)								Standard Corner-R(r_c)	Spare Parts				
	R	L	H1-h	H3	B	L1	L2	F1	F2	Chipbreaker		Clamp Set	Wrench	Shim	Shim Screw	
	CCLN^{F/L}	●	●	20	14	20	125	32	27	5		0.8				
2020K -12	●	●	20	14	20	125	32	27	5	0.8	CB-16	CE-010	LW-4	SP-441 (SP-443)	M3X8 (M3X12)	
2525M -12	●	●	25	14	25	150	32	32	-	0.8	CB-17	CE-220	LW-4	SP-454	M4X10	
3225P -16	●	●	32	14	25	170	35	32	-	0.8	CB-17	CE-220	LW-4	SP-454	M4X10	

Shim & Shim Screw: When using CN□□1204 Insert, please purchase spare parts in () separately.

Applicable Inserts

Applications Ref. to Page	Cast Iron / Hard Materials	Hard Materials / Cast Iron
	B98	C19
Insert	Ceramic 	CBN (KBN900)
Toolholder Description		
CCLN^{F/L}...-12	CNGN1207..(CNGN1204..) CNMN1207	(CNMN1204)
CCLN^{F/L}...-16	CNGN1607..	-

Recommended Cutting Conditions **D39~D40**

Selection of Ceramic Insert

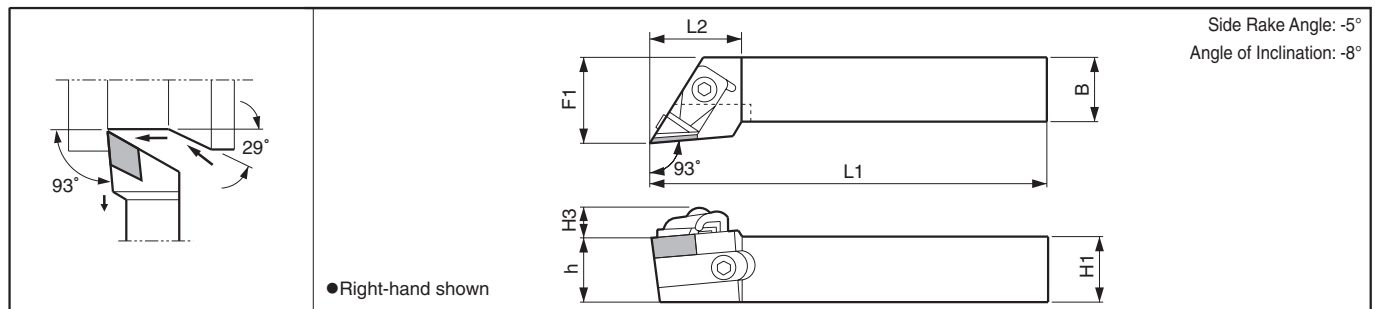
Select the suitable Ceramic Insert and specifications (Corner-R(r_c), Feed Rate, Chamfer, etc.) from the table below.

(FC250, Cutting Edge Angle: $0^\circ \sim 15^\circ$)

Insert Shape	Corner-R (r_c)	f (mm/rev)										ap (mm)	
		0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.60		
	RN	-	→										0.3~4
	SN	2.0	→										0.3~4
	SN	1.6	→										
	EN	1.2	→										0.3~4
	CN	0.8	→										
	TN	1.6	→										0.3~2
	DN	1.2	→										
DN		0.8	→										
Chamfer		0.05mm×20°		(0.1~0.2)mm×(20°~25°)				0.3mm×30°				-	
Insert Thickness		7.94mm										-	

● : Std. Item

CDJN (External / Copying / Back Turning)



Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner- $R(r_c)$	Spare Parts				
	R	L	H1-h	H3	B	L1	L2	F1	Chipbreaker		Clamp Set	Wrench	Shim	Shim Screw	
	CDJN^{R/L}	●	●	25	16	25	150	32	32		0.8				
	●	●	32			170				CB-14/15	CE-010	LW-4	556C ^{R/L}	HH5X16	

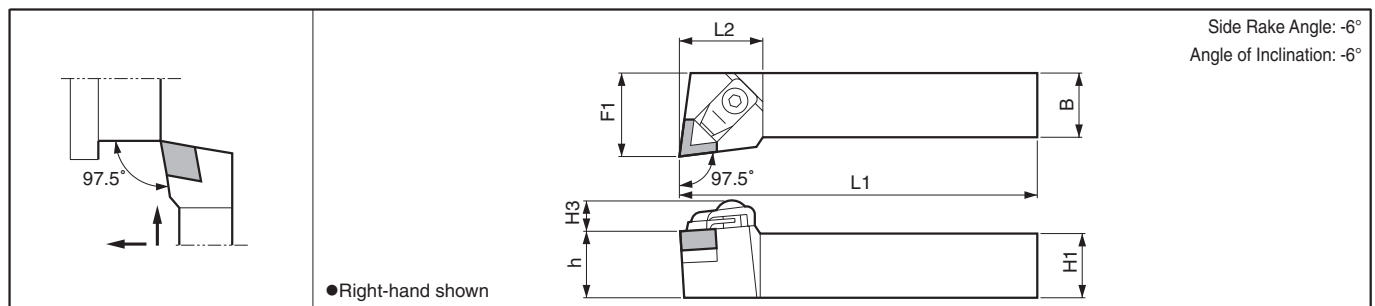
• Chipbreaker: CB-14 for Right-hand Toolholder, and CB-15 for Left-hand Toolholder.
• Shim: 556CR for Right-hand Toolholder, and 556CL for Left-hand Toolholder.

Applicable Inserts

Applications	Cast Iron / Hard Materials
Ref. to Page	B99
Insert	Ceramic
Toolholder Description	DNGN1507..
CDJN^{R/L}...-15	

Recommended Cutting Conditions \rightarrow **D39~D40**

CELN (External / Facing)



Toolholder Dimensions

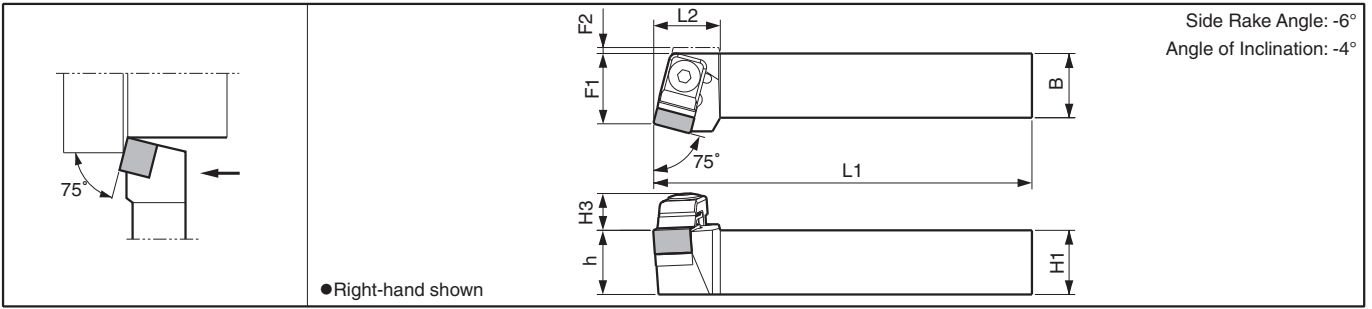
Description	Std.		Dimension (mm)							Standard Corner- $R(r_c)$	Spare Parts				
	R	L	H1-h	H3	B	L1	L2	F1	Chipbreaker		Clamp Set	Wrench	Shim	Shim Screw	
	CELN^{R/L}	●	●	25	15	25	150	32	32		0.8				
	●	●	25							CB-16	CE-010	LW-4	SP-342	M3X8	

Applicable Inserts

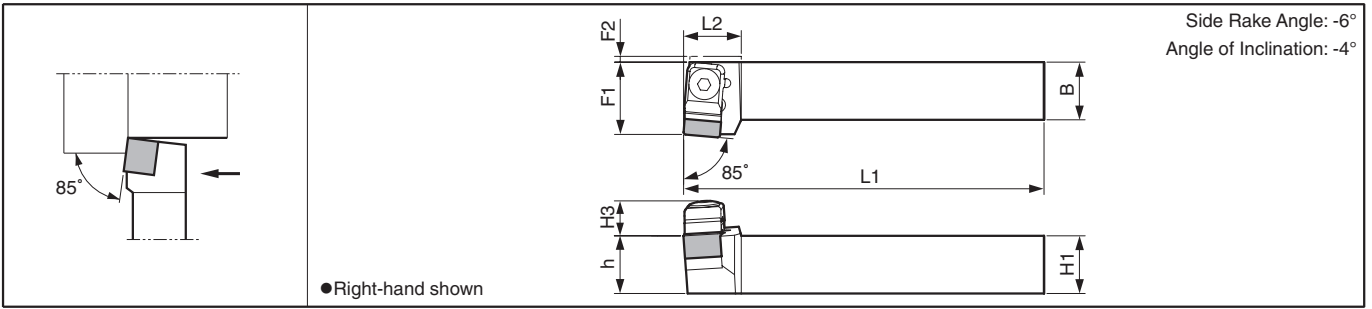
Applications	Cast Iron / Hard Materials
Ref. to Page	B99
Insert	Ceramic
Toolholder Description	ENGN1307..
CELN^{R/L}...-13	

Recommended Cutting Conditions \rightarrow **D39~D40**

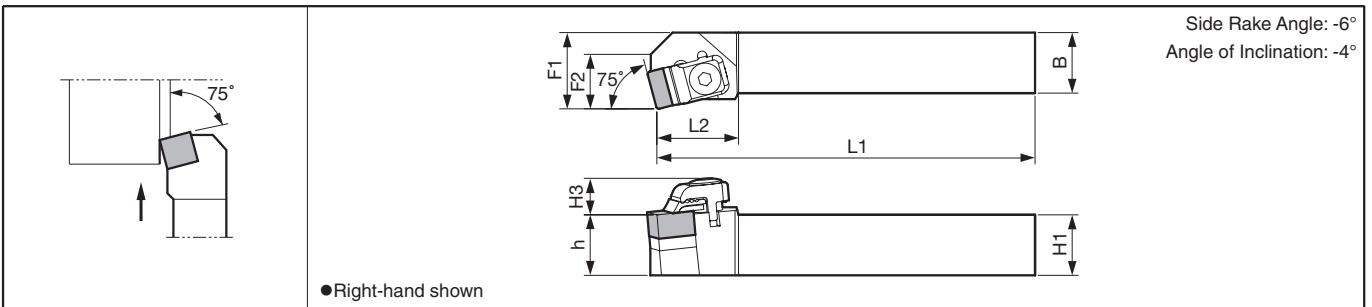
CSRN (External)



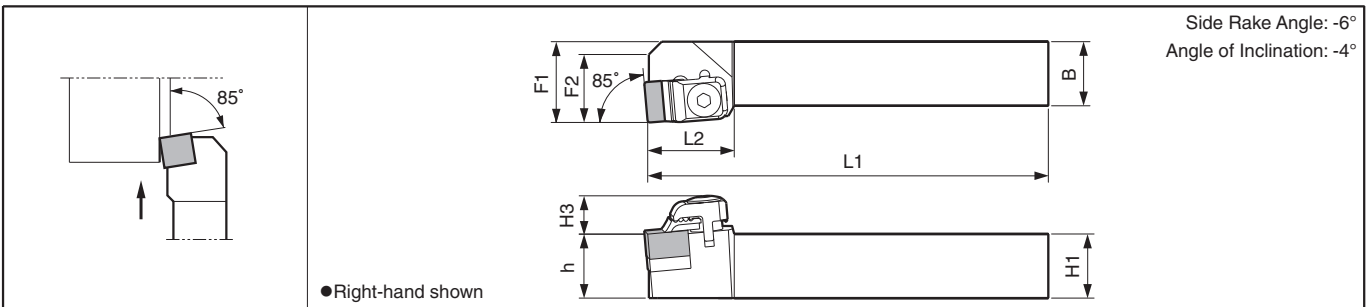
CS-N (External)



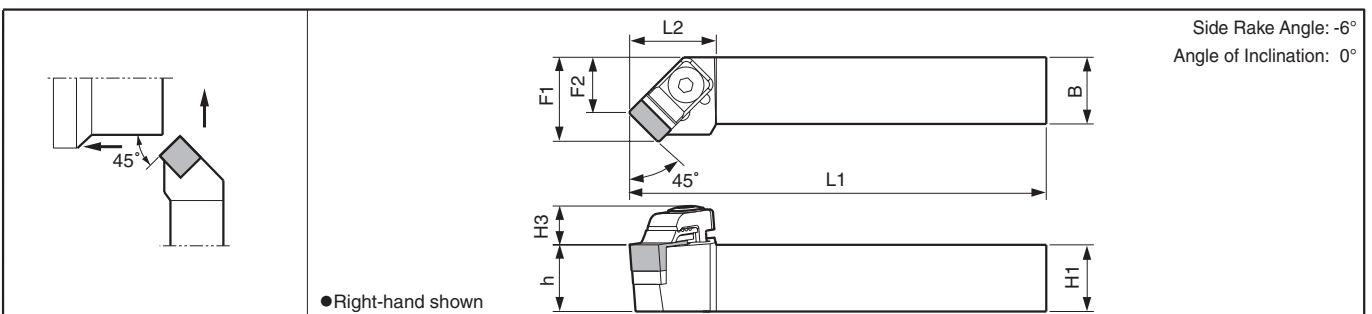
CSKN (Facing)



CSYN (Facing)



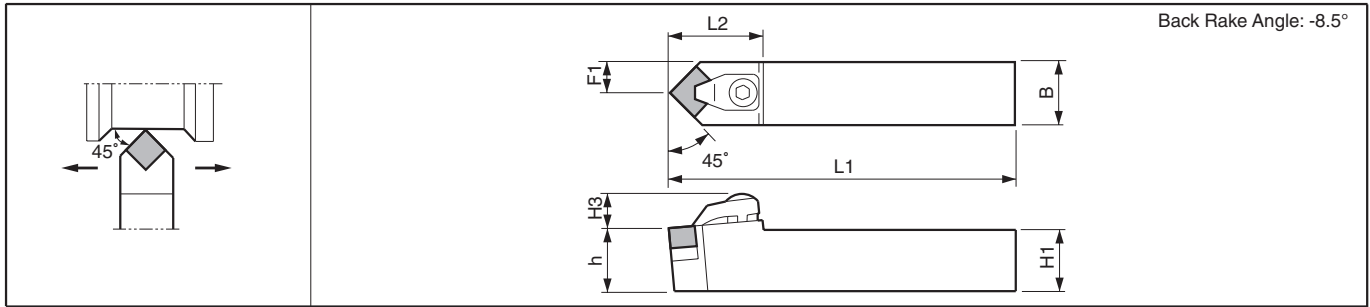
CSSN (External / Facing / Chamfering)



D

External

CSDN (External / Chamfering)



Toolholder Dimensions

Description	Std.		Dimension (mm)								Standard Corner-R(r/c)	Spare Parts					
	R	N	L	H1=h	H3	B	L1	L2	F1	F2		Chipbreaker	Clamp Set	Wrench	Shim	Shim Screw	
CSRN ^{P/L}	2020K -12	●	●	20	12	20	125	22	2	0.8	CB-11	CE-020	LW-4	SP-141 (SP-143)	M3X8 (M3X12)		
	2525M -12	●	●	25		25	150		22							27	-
	3225P -12	●	●	32	15	25	170	30	32.4							-	
	3225P -15	●		32		40	200		30								43
	4040R -15	●	●	40		40	200		30								43
CS-N ^{P/L}	2525M -12	●	●	25	12	25	150	20	32	-	0.8	CB-11	CE-020	LW-4	SP-141 (SP-143)	M3X8 (M3X12)	
CSKN ^{P/L}	2020K -12	●	●	20	12	20	125	27	25	18	0.8	CB-11	CE-020	LW-4	SP-141 (SP-143)	M3X8 (M3X12)	
	2525M -12	●	●	25		25	150		27								32
	3225P -15	●		32	15	25	170	37	32								20
CSYN ^{P/L}	2020K -12	●	●	20	12	20	125	27	25	21	0.8	CB-11	CE-020	LW-4	SP-141 (SP-143)	M3X8 (M3X12)	
	2525M -12	●	●	25		25	150		27								32
CSSN ^{P/L}	2020K -12	●	●	20	12	20	125	26	25								16
	2525M -12	●	●	25		25	150		26	32	23						
CSDNN	2020K -12		●	20	13	20	125	32	10	-	0.8	-	CE-040	LW-4	SP-141 (SP-143)	M3X8 (M3X12)	
	2525M -12		●	25		25	150		32								12.5
	3225P -12		●	32	25	170	32	12.5	-								

Shim & Shim Screw : When using SN□1204 Insert, please purchase spare parts in () separately.

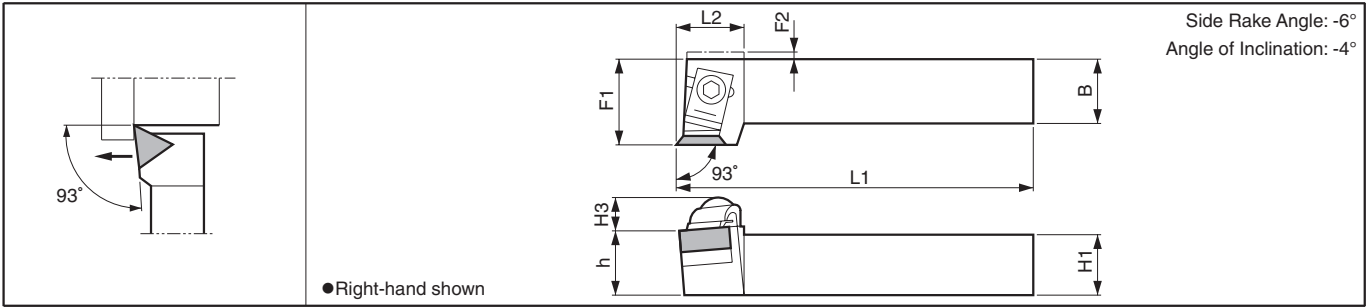
Applicable Inserts

Applications Ref. to Page	Cast Iron / Hard Materials		Cast Iron		Hard Materials / Cast Iron		When using as toolholder for CBN tools (KBN900), please purchase spare parts below separately.		
	B101,B102		B31		C19		Clamp Set	Shim	Shim Screw
Insert	Ceramic		Coated Carbide		CBN (KBN900)				
Toolholder Description									
CSRN ^{P/L} ...-12	SNGN1207.(SNGN1204..) SNMN1207..		(SNMN1204..)		(SNMN1204..)		CE-030A	SP-143	M3X12
CSRN ^{P/L} ...-15	SNGN1507..		-		-				
CS-N ^{P/L} ...-12	SNGN1207.(SNGN1204..) SNMN1207..		(SNMN1204..)		(SNMN1204..)		CE-030A	SP-143	M3X12
CSKN ^{P/L} ...-12	SNGN1207.(SNGN1204..) SNMN1207..		(SNMN1204..)		(SNMN1204..)		CE-030A	SP-143	M3X12
CSKN ^{P/L} ...-15	SNGN1507..		-		-				
CSYN ^{P/L} ...-12	SNGN1207.(SNGN1204..) SNMN1207..		(SNMN1204..)		(SNMN1204..)		CE-030A	SP-143	M3X12
CSSN ^{P/L} ...-12	SNGN1207.(SNGN1204..) SNMN1207..		(SNMN1204..)		(SNMN1204..)		CE-030A	SP-143	M3X12
CSDNN ...-12	SNGN1207.(SNGN1204..) SNMN1207..		(SNMN1204..)		(SNMN1204..)		*-	SP-143	M3X12

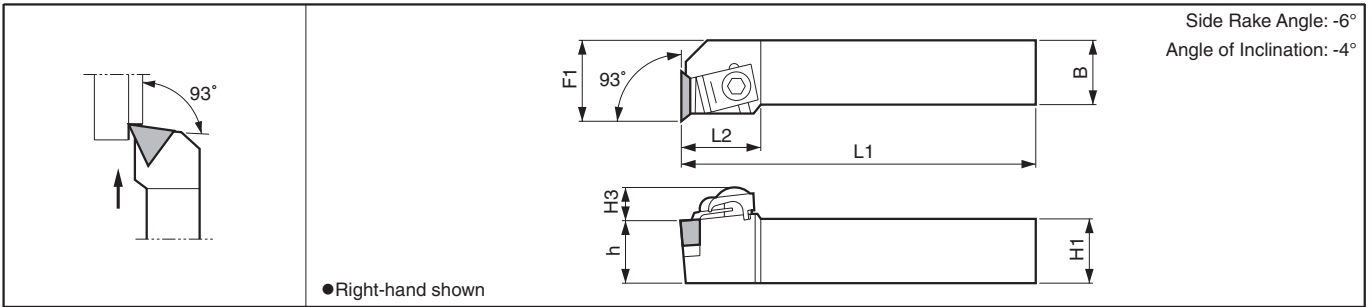
*CSDNN...-12: Clamp Set CE-040 is used continuously.

Recommended Cutting Conditions **D39~D40**

CTJN (External)



CTUN (Facing)



Toolholder Dimensions

Description	Std.		Dimension (mm)								Standard Corner-R(r_c)	Spare Parts				
	R	L	H1-h	H3	B	L1	L2	F1	F2	Chipbreaker		Clamp Set	Wrench	Shim	Shim Screw	
CTJN ^{R/L}	●	●	20	11	20	125	21	25	2	0.8	CB-12/13	CE-020	LW-4	SP-221 (SP-223)	M3X8 (M3X12)	
	●	●	25		25	150		32	-							
CTUN ^{R/L}	●	●	20	11	20	125	27	25	-	0.8	CB-13/12	CE-020	LW-4	SP-221 (SP-223)	M3X8 (M3X12)	
	●	●	25		25	150		32	-							

CTJN (Chipbreaker): CB-12 for Right-hand Toolholder, CB-13 for Left-hand Toolholder.
 CTUN (Chipbreaker): CB-13 for Right-hand Toolholder, CB-12 for Left-hand Toolholder.
 Shim & Shim Screw: When using TN□□1604 Insert, please purchase spare parts in () separately.

Applicable Inserts

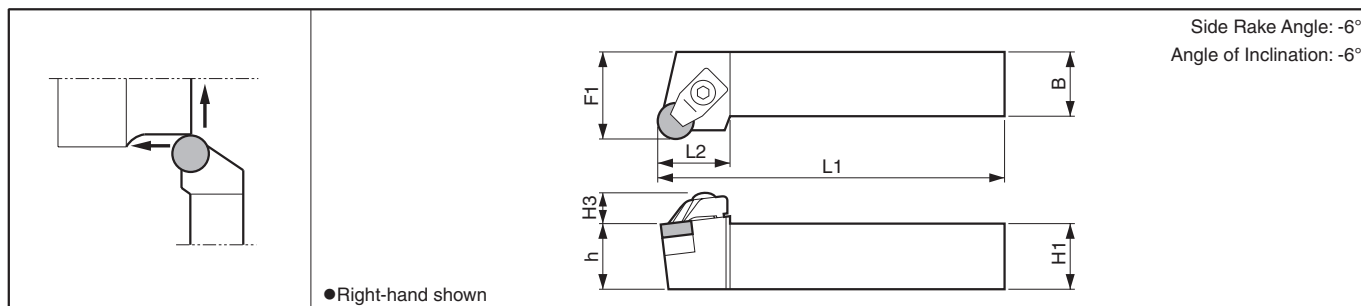
Applications	Cast Iron / Hard Materials	Hard Materials / Cast Iron
Ref. to Page	B103	C19
Insert	Ceramic	CBN (KBN900)
Toolholder Description		
CTJN ^{R/L} ...-16	TNGN1607.. (TNGN1604..) (TNMN1604..)	(TNMN1604..)
CTUN ^{R/L} ...-16		

Recommended Cutting Conditions \rightarrow D39~D40

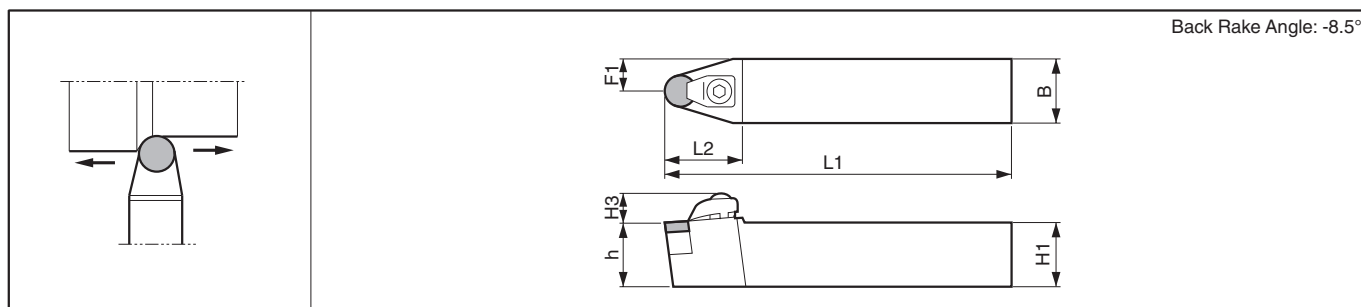
D

External

CRSN (External / Facing)



CRDN (External / Copying)



Toolholder Dimensions

Description	Std.	Dimension (mm)									Standard Corner-R(r_c)	Spare Parts			
		R	N	L	H1-h	H3	B	L1	L2	F1		Clamp Set	Wrench	Shim	Shim Screw
CRSN ^{R/L}	2020K -12	●	●	20	11	20	125	25	-	CE-030	LW-4	SP-841 (SP-843)	M3X8 (M3X12)		
	2525M -12	●	●	25		25	150							26	32
	3225P -12	●	●	32		25	170	28						10	
CRDNN	2020K -12		●	20	11	20	125	10	-	CE-030	LW-4	SP-841 (SP-843)	M3X8 (M3X12)		
	2525M -12		●	25		25	150							28	12.5
	3225P -12		●	32		25	170	35						16	
	3232P -15		●	32		32	170	20						20	
4040R -15		●	40	13	40	200	35	16	-	CE-040	LW-4	SP-861	M4X10		

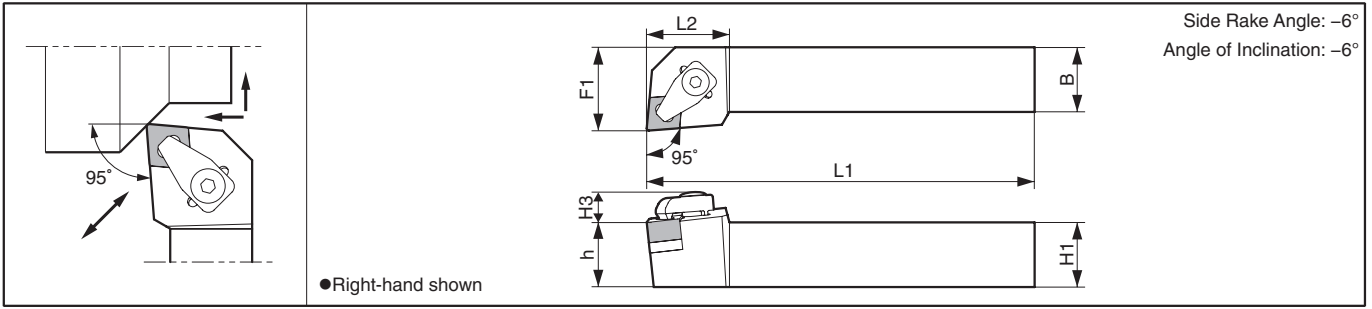
*Shim & Shim Screw: When using RN□□1204 Insert, please purchase spare parts in () separately.

Applicable Inserts

Applications Ref. to Page	Cast Iron / Hard Materials	Hard Materials / Cast Iron	When using as toolholder for CBN tools (KBN900), please purchase spare parts below separately.		
Insert	B100	C19	Clamp Set	Shim	Shim Screw
	Ceramic	CBN (KBN900)			
Toolholder Description					
CRSN ^{R/L} ...-12	RNGN120700(RNGN120400)	(RNMN120400)	CE-030A	SP-843	M3X12
CRDNN ...-12	RNGN120700(RNGN120400)	(RNMN120400)	CE-030A	SP-843	M3X12
CRDNN ...-15	RNGN150700	-	-	-	-

Recommended Cutting Conditions D39~D40

CCLN-GX (External / Facing / Back Turning)



Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R (°)	Spare Parts				
	R	L	H1-h	H3	B	L1	L2	F1	Clamp Set		Wrench	Shim	Shim Screw		
CCLN^{R/L} 2525M-12GX	●	●	25	13	25	150	30	32	1.2						
										CE-410	LW-4	SP-441	M3X8		

Applicable Inserts

Applications	Cast Iron
Ref. to Page	B98
Insert	Ceramic
Toolholder Description	CNGX1207..
CCLN^{R/L}...12GX	CNGX1207..

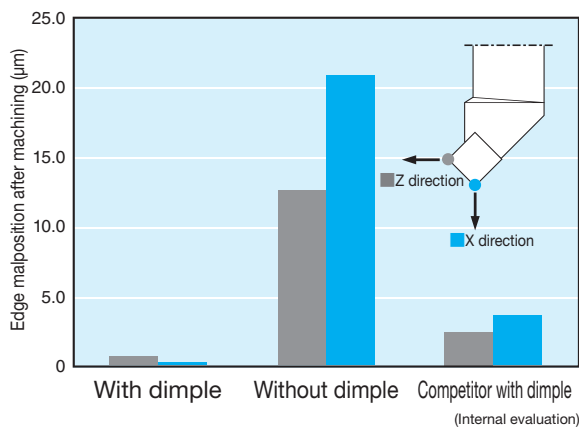
Recommended Cutting Conditions D39~D40

Features

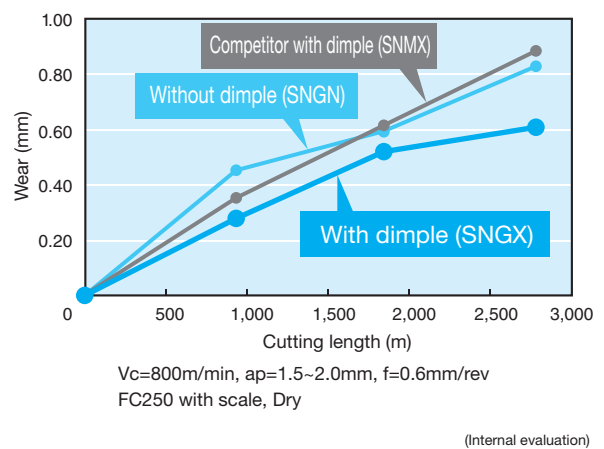
- Improved clamping stability due to the dimple design
- Improve machine stability and machinability



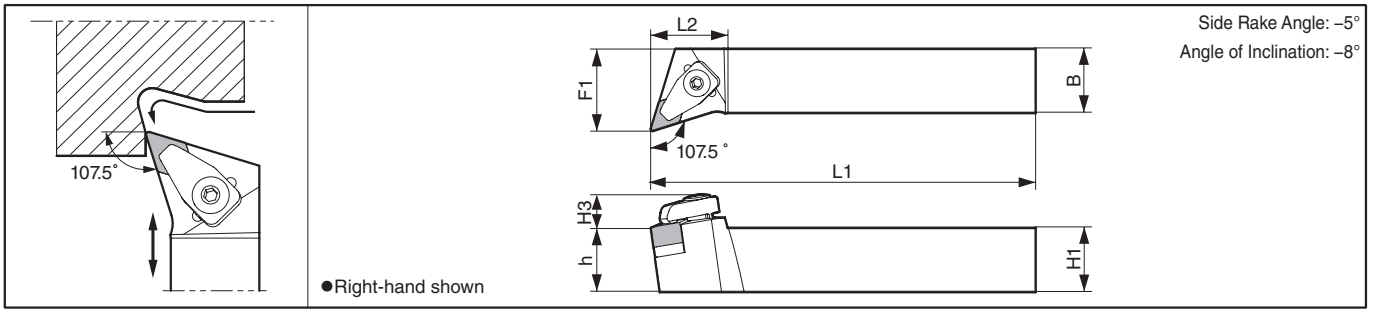
Edge malposition



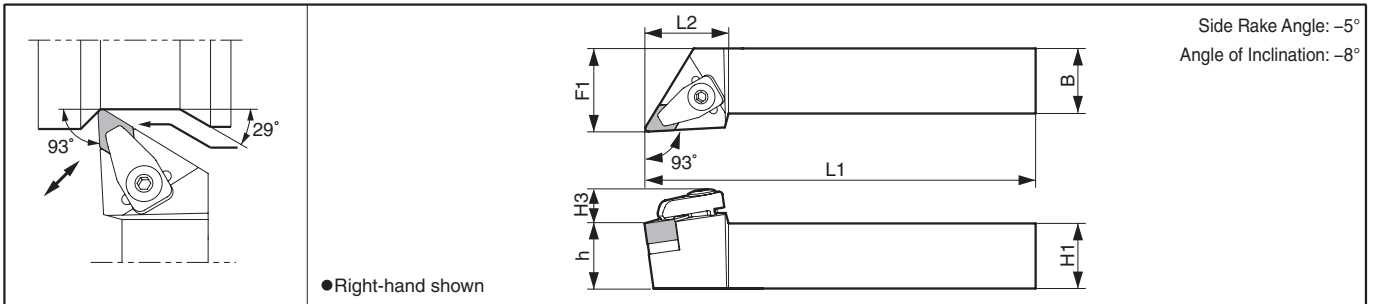
Cutting capability



CDHN-GX (External / Copying / Back Turning)



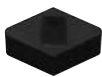
CDJN-GX (External / Copying / Back Turning)



Toolholder Dimensions

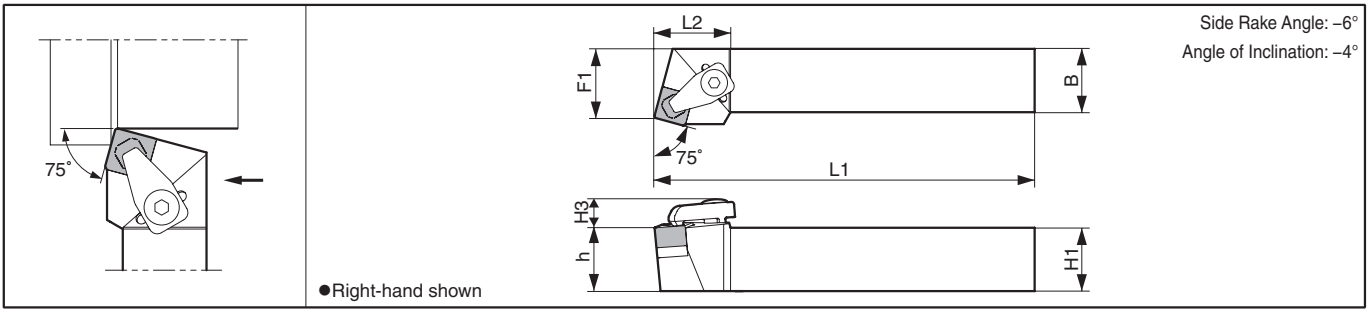
Description	Std.		Dimension (mm)							Standard Corner-R(r_c)	Spare Parts				
	R	L	H1-h	H3	B	L1	L2	F1	Clamp Set		Wrench	Shim	Shim Screw		
CDHN ^{R/L} 2525M-12GX	●	●	25	14	25	150	30	32	1.2	CE-410	LW-4	SP-521	M3X8		
	●	●		15			33			CE-430		SP-541			
CDJN ^{R/L} 2525M-12GX	●	●	25	14	25	150	32	32	1.2	CE-410	LW-4	SP-521	M3X8		
	●	●		15			38			CE-430		SP-541			

Applicable Inserts

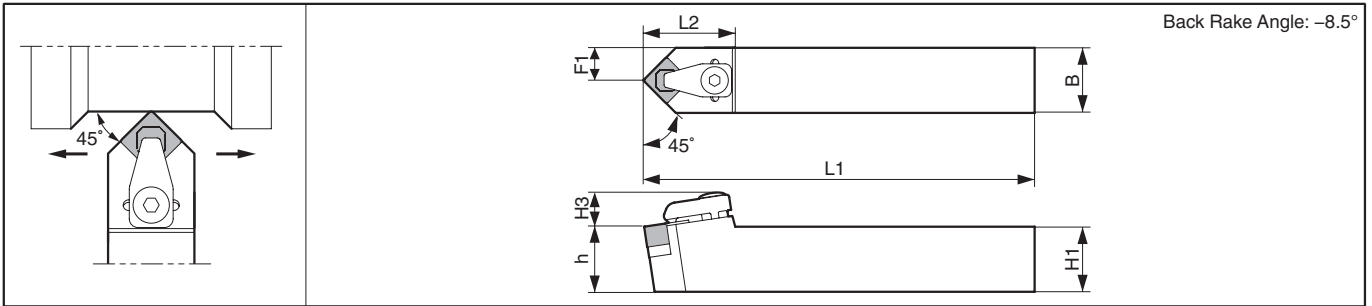
Applications	Cast Iron
Ref. to Page	B99
Insert	Ceramic 
Toolholder Description	
CDHN ^{R/L} 2525M-12GX	DNGX1207...
2525M-15GX	DNGX1507...
CDJN ^{R/L} 2525M-12GX	DNGX1207...
2525M-15GX	DNGX1507...

Recommended Cutting Conditions  D39~D40

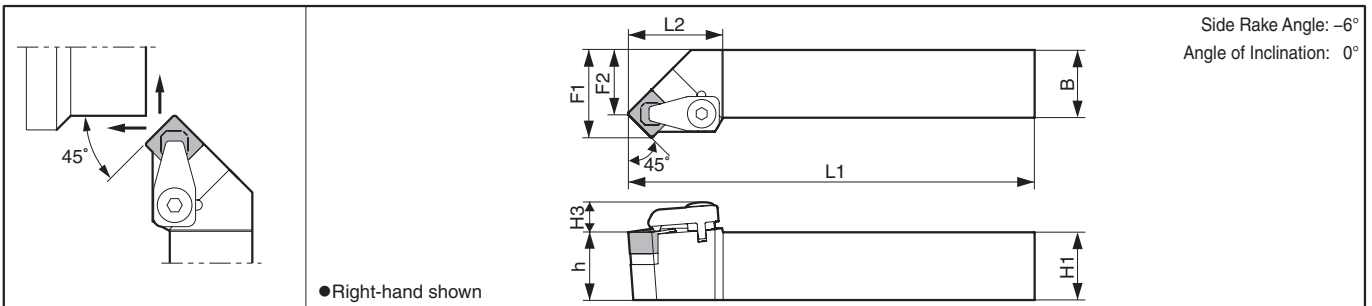
CSRN-GX (External)



CSDN-GX (External / Chamfering)



CSSN-GX (External / Facing / Chamfering)



Toolholder Dimensions

Description	Std.		Dimension (mm)								Standard Corner-R(r_c)	Spare Parts				
	R	N	L	H1=h	H3	B	L1	L2	F1	F2		Clamp Set	Wrench	Shim	Shim Screw	
CSRN ^{R/L}	●	●		25	12	25	150	30				1.2	CE-410	LW-4	SP-141	M3X8
	●	●		13	25	150	35	27	-						SP-162	M4X10
CSDNN	●	●		25	13	25	150	35	12.5	-		1.2	CE-410	LW-4	SP-141	M3X8
	●	●		14	25	150	40								SP-162	M4X10
CSSN ^{R/L}	●	●		25	12	25	150	35	32	23.6		1.2	CE-410	LW-4	SP-141	M3X8
	●	●		13	25	150	40	21.1							SP-162	M4X10

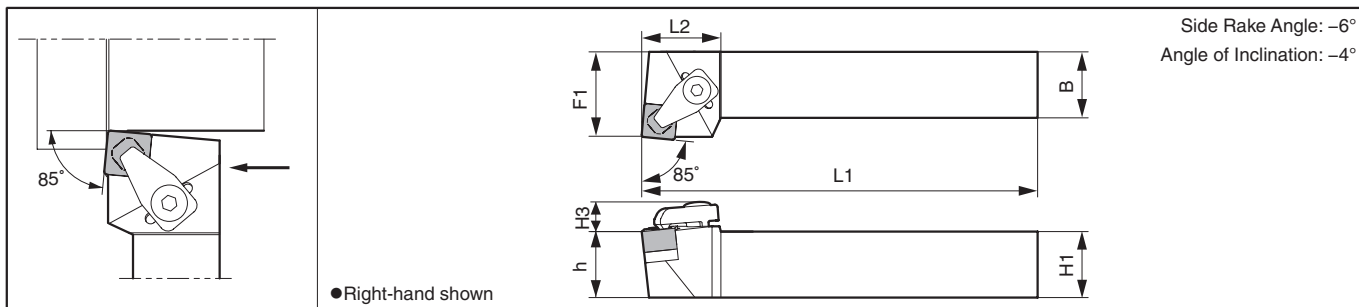
Applicable Inserts

Applications	Cast Iron
Ref. to Page	B102
Insert	Ceramic
Toolholder Description	
CSRN ^{R/L} 2525M-12GX	SNGX1207...
2525M-15GX	SNGX1507...
CSDNN 2525M-12GX	SNGX1207...
2525M-15GX	SNGX1507...
CSSN ^{R/L} 2525M-12GX	SNGX1207...
2525M-15GX	SNGX1507...

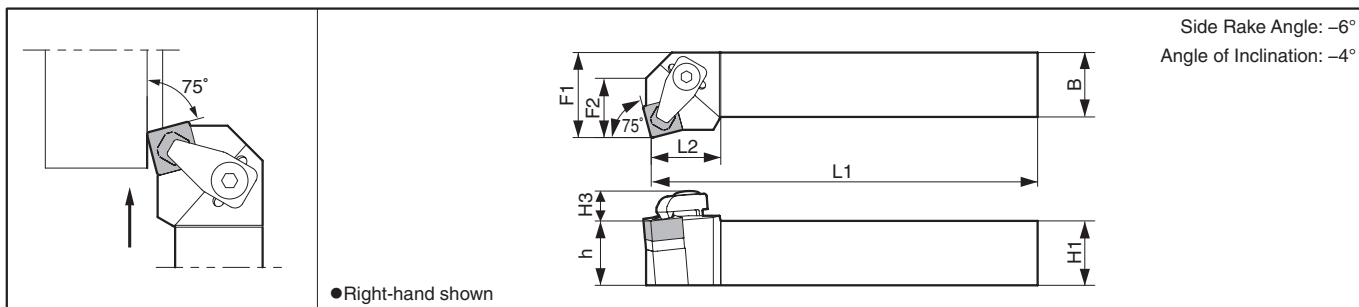
Recommended Cutting Conditions D39~D40

● : Std. Item

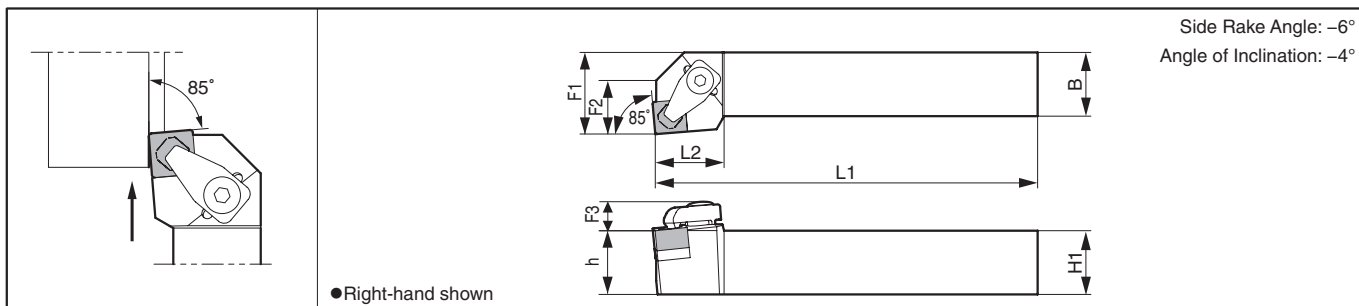
CS-N-GX (External)



CSKN-GX (Facing)



CSYN-GX (Facing)



Toolholder Dimensions

Description	Std.		Dimension (mm)								Standard Corner-R(r_c)	Spare Parts				
	R	L	H1-h	H3	B	L1	L2	F1	F2	Clamp Set		Wrench	Shim	Shim Screw		
	CS-N^{R/L} 2525M-12GX 2525M-15GX	●	●	25	12 13	25	150	30	32	-		1.2	CE-410	LW-4	SP-141 SP-162	M3X8 M4X10
CSKN^{R/L} 2525M-12GX 2525M-15GX	●	●	25	12 13	25	150	27 26	32	23	1.2	CE-410	LW-4	SP-141 SP-162	M3X8 M4X10		
CSYN^{R/L} 2525M-12GX 2525M-15GX	●	●	25	12 13	25	150	27 29	32	21 23	1.2	CE-410	LW-4	SP-141 SP-162	M3X8 M4X10		

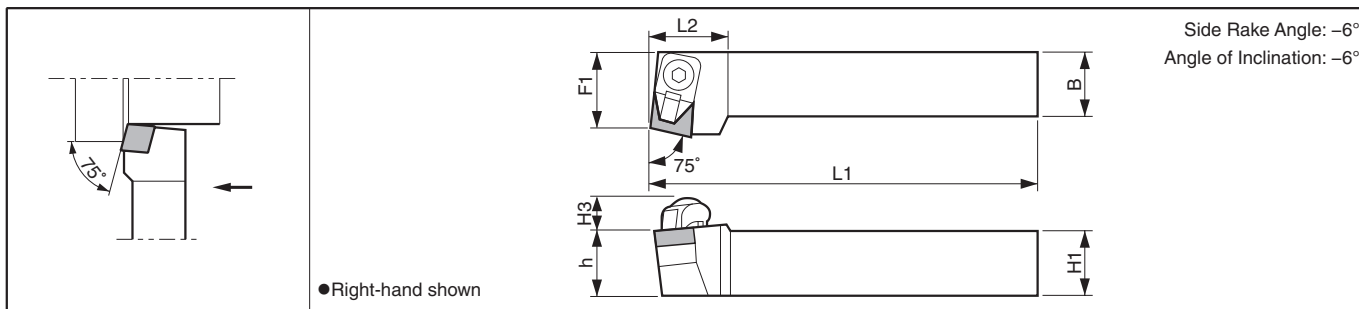
Applicable Inserts

Applications Ref. to Page	Cast Iron B102
Insert	Ceramic
Toolholder Description	
CS-N^{R/L} 2525M-12GX 2525M-15GX	SNGX1207... SNGX1507...
CSKN^{R/L} 2525M-12GX 2525M-15GX	SNGX1207... SNGX1507...
CSYN^{R/L} 2525M-12GX 2525M-15GX	SNGX1207... SNGX1507...

Recommended Cutting Conditions **D39~D40**

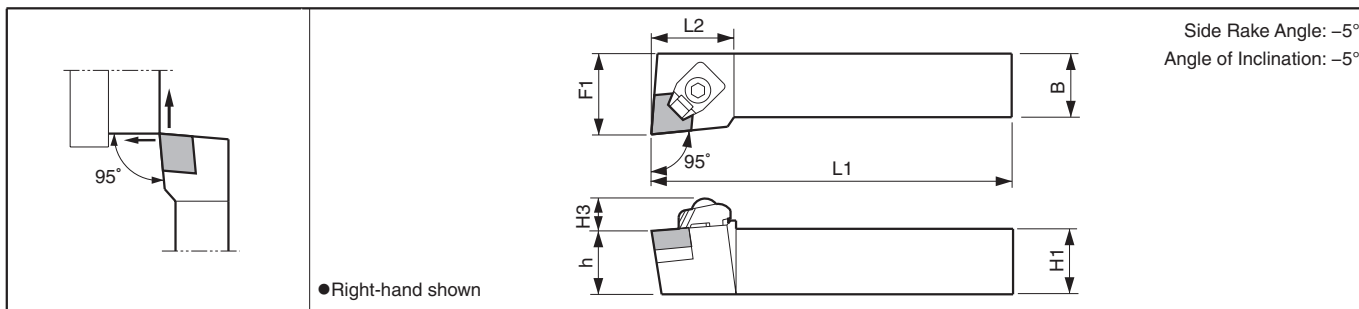
● : Std. Item

CCRN-A (External)



D

CCLN-A (External / Facing)



External

Toolholder Dimensions

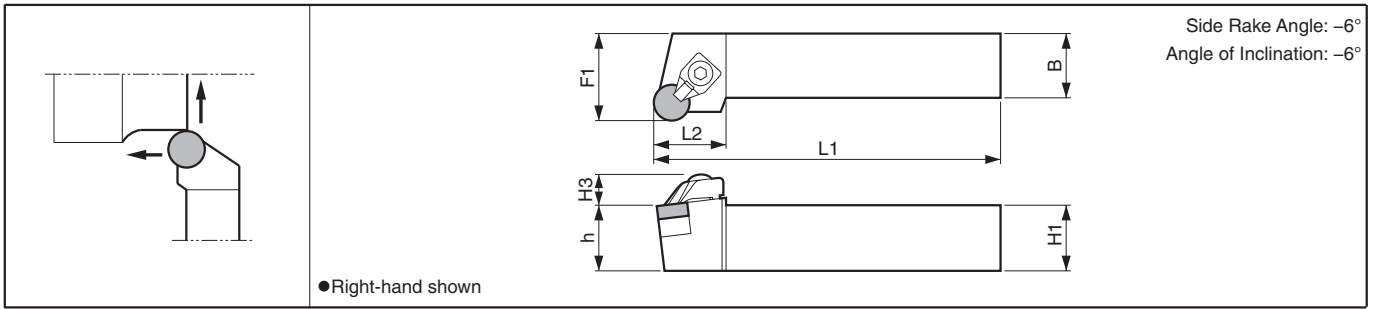
Description	Std.		Dimension (mm)							Standard Corner-R(r_c)	Spare Parts			
	R	L	H1=h	H3	B	L1	L2	F1	Clamp Set		Wrench	Shim	Shim Screw	
	●	●	25	11	25	150	27	27	0.8					
CCRN^{R/L} 2525M-09A	●	●	25	11	25	150	27	27	0.8	CE-030A	LW-4	SP-429	HH3X12	
CCLN^{R/L} 2525M-09A	●	●	25	11	25	150	28	32	0.8	CE-030A	LW-4	SP-429	HH3X12	

Applicable Inserts

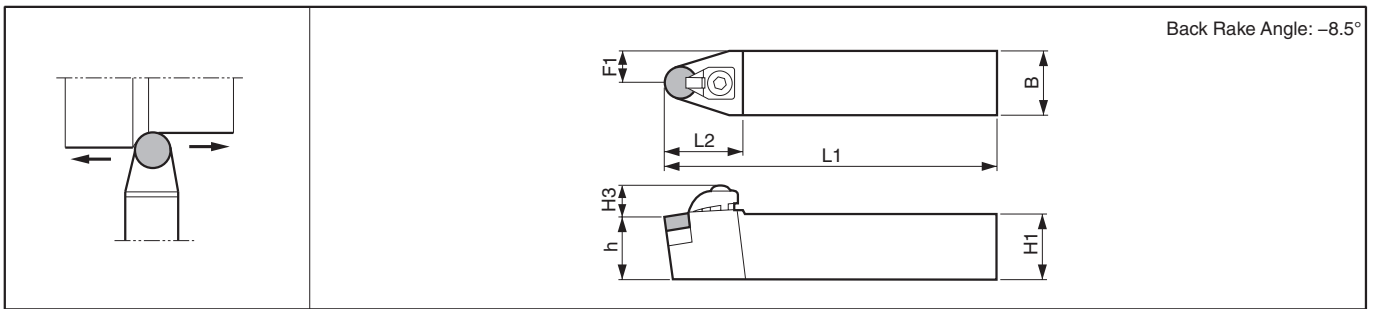
Applications	Hard Materials / Cast Iron
Ref. to Page	C19
Insert	CBN (KBN900)
Toolholder Description	
CCRN^{R/L}...-09A	CNMN0903..
CCLN^{R/L}...-09A	

* For CNMN1204 Insert toolholder, ref. to page **D22**
Recommended Cutting Conditions **D39~D40**

CRSN-A (External / Facing)



CRDN-A (External / Copying)



Toolholder Dimensions

Description	Std.		Dimension (mm)								Standard Corner-R (r)	Spare Parts				
	R	N	L	H1=h	H3	B	L1	L2	F1	Clamp Set		Wrench	Shim		Shim Screw	
CRSN ^{R/L}	2525M-09A	●	●	25	11	25	150	26	32	-	CE-030A	LW-4	SP-829	-	HH3X12	
	3225P-09A	●	●	32			170									
	2525M-12A	●	●	25	11	25	150	26	32	-			-	SP-849 (SP-843)	BH3X12	
	3225P-12A	●	●	32			170									
CRDNN	2525M-09A		●	25	11	25	150	29	12.5	-	CE-030A	LW-4	SP-829	-	HH3X12	
	3225P-09A		●	32			170									
	2525M-12A		●	25	11	25	150	28	12.5	-			-	SP-849 (SP-843)	BH3X12	
	3225P-12A		●	32			170									

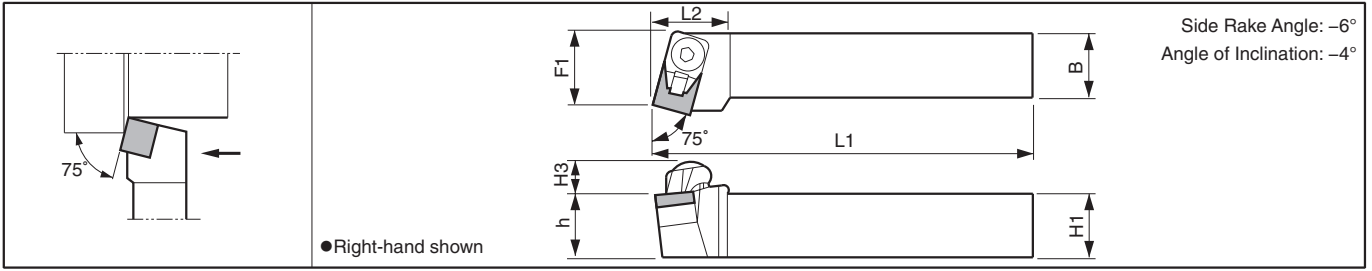
-12A toolholder Shim: When using RN□□1204 Insert, please purchase spare parts: SP-843 in () separately.

Applicable Inserts

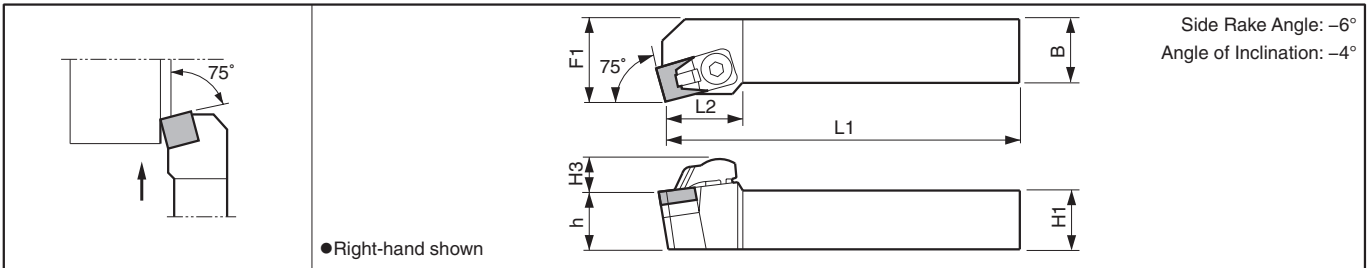
Applications Ref. to Page	Hard Materials / Cast Iron	Cast Iron / Hard Materials	When using as toolholder for ceramic tools, please purchase spare parts below separately.	
Toolholder Description	C19 CBN (KBN900)	B100 Ceramic	Shim	Shim Screw
CRSN ^{R/L} ...-09A	RNMN090300	(RNGN090400)	SP-826	-
CRSN ^{R/L} ...-12A	RNMN120300	(RNGN120400)	SP-843	M3X12
	(RNMN120400)	(RNGN120700)	SP-841	M3X8
CRDNN...-09A	RNMN090300	(RNGN090400)	SP-826	-
CRDNN...-12A	RNMN120300	(RNGN120400)	SP-843	M3X12
	(RNMN120400)	(RNGN120700)	SP-841	M3X8

Recommended Cutting Conditions D39~D40

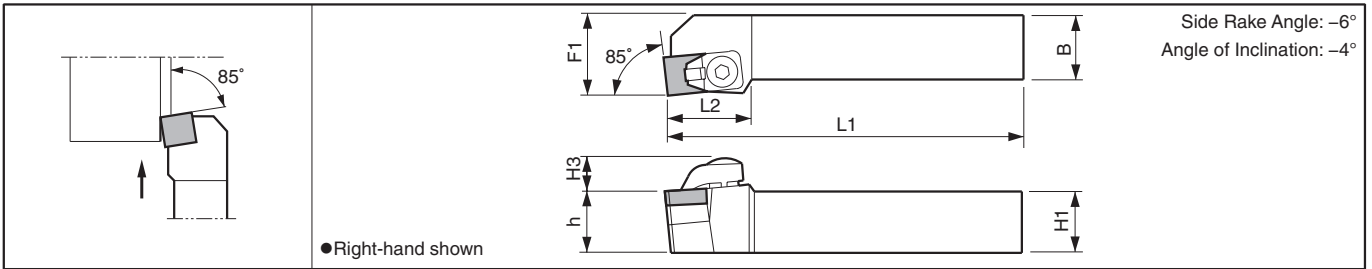
CSRN-A (External)



CSKN-A (Facing)



CSYN-A (Facing)



Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R (°)	Spare Parts				
	R	L	H1=h	H3	B	L1	L2	F1	Clamp Set		Wrench	Shim		Shim Screw	
CSRN ^{R/L}	●	●	25	11	25	150	22	27	0.8	CE-030A	LW-4	SP-129	-	HH3X12	
	●	●										-	SP-148 (SP-143)	BH3X12	
CSKNR	●		25	11	25	150	27	32	0.8	CE-030A	LW-4	SP-129	-	HH3X12	
	●						29					-	SP-148 (SP-143)	BH3X12	
CSYN ^{R/L}	●	●	25	11	25	150	27	32	0.8	CE-030A	LW-4	SP-129	-	HH3X12	
	●	●										-	SP-148 (SP-143)	BH3X12	

· -12A toolholder Shim: When using SN□□1204 Insert, please purchase spare parts: SP-143 in () separately.

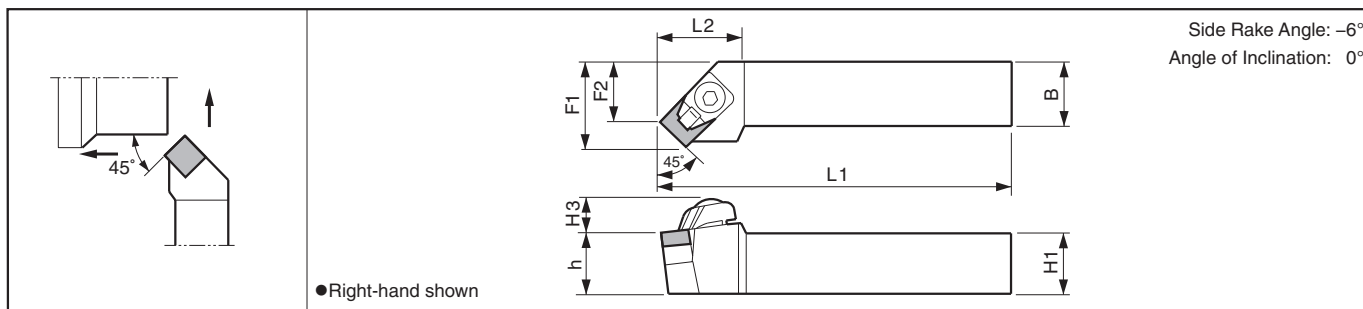
Applicable Inserts

Applications Ref. to Page	Hard Materials / Cast Iron		Cast Iron		Cast Iron / Hard Materials		When using as toolholder for ceramic tools, please purchase spare parts below separately.			
	C19	B31	CBN (KBN900)	Coated Carbide	B101, B102	Ceramic	Chipbreaker	Clamp Set	Shim	Shim Screw
Insert										
Toolholder Description										
CSRN ^{R/L}-09A	SNMN0903..	-								
CSRN ^{R/L}-12A	SNMN1203..	(SNMN1204..)			(SNGN1204..)(SNMN1204..)	CB-11	CE-020	SP-143	M3X12	M3X8
	(SNMN1204..)		(SNGN1207..)(SNMN1207..)							
CSKN ^{R/L}-09A	SNMN0903..	-								
CSKN ^{R/L}-12A	SNMN1203..	(SNMN1204..)			(SNGN1204..)(SNMN1204..)	CB-11	CE-020	SP-143	M3X12	M3X8
	(SNMN1204..)		(SNGN1207..)(SNMN1207..)							
CSYN ^{R/L}-09A	SNMN0903..	-								
CSYN ^{R/L}-12A	SNMN1203..	(SNMN1204..)			(SNGN1204..)(SNMN1204..)	CB-11	CE-020	SP-143	M3X12	M3X8
	(SNMN1204..)		(SNGN1207..)(SNMN1207..)							

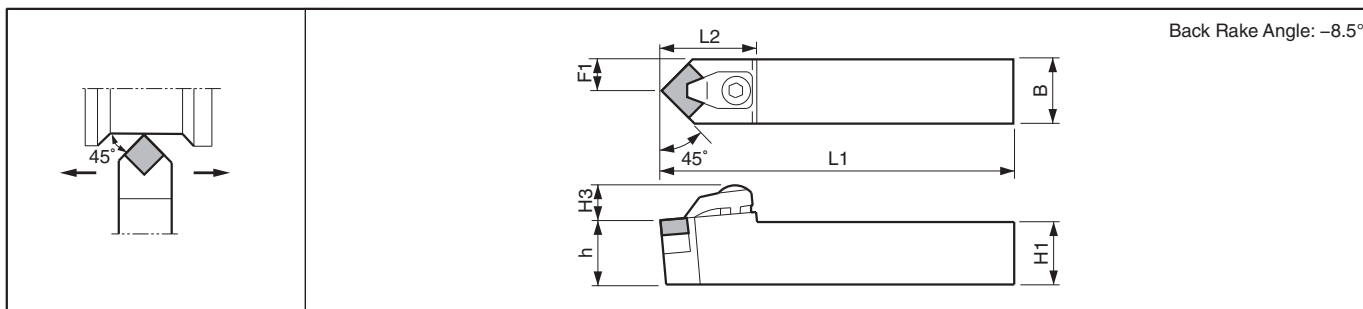
Recommended Cutting Conditions ● D39~D40

● : Std. Item

CSSN-A (External / Facing / Chamfering)



CSDN-A (External / Chamfering)



Toolholder Dimensions

Description	Std.		Dimension (mm)									Standard Corner-R(r_c)	Spare Parts				
	R	N	L	H1=h	H3	B	L1	L2	F1	F2	Clamp Set		Wrench	Shim		Shim Screw	
CSSN ^{F/L}	●	●	25	11	25	150	26	32	25	0.8	CE-030A	LW-4	SP-129	-	HH	BH	
													-	SP-148 (SP-143)	BH3X12		
CSDNN	●	●	25	13	25	150	32	12.5	-	0.8	CE-040	LW-4	SP-129	-	HH	BH	
			32			170							SP-148 (SP-143)	BH3X12			
			25			150							-	SP-148 (SP-143)	BH3X12		

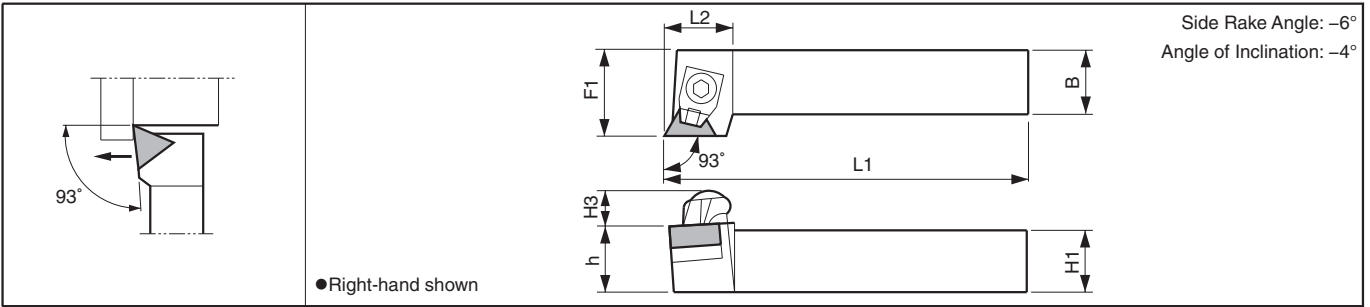
-12A toolholder Shim: When using SN□□1204 Insert, please purchase spare parts: SP-143 in () separately.

Applicable Inserts

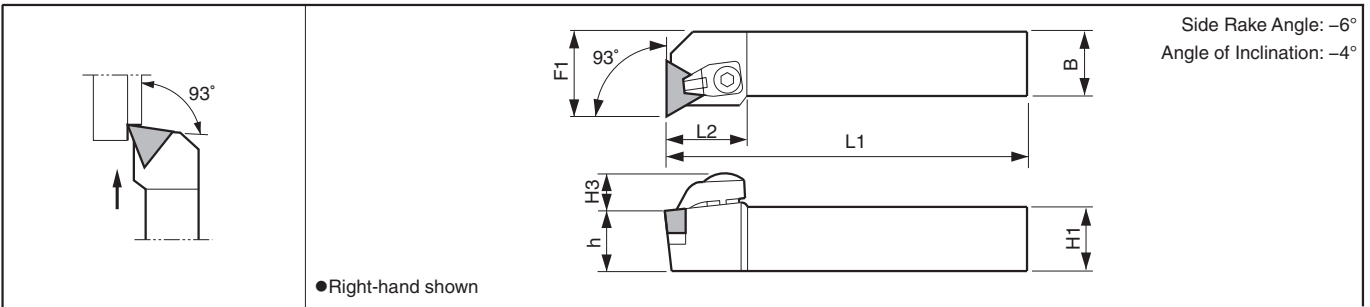
Applications Ref. to Page	Hard Materials / Cast Iron		Cast Iron		Cast Iron / Hard Materials		When using as toolholder for ceramic tools, please purchase spare parts below separately.			
	C19	B31	B101,B102	Ceramic	Chipbreaker	Clamp Set	Shim	Shim Screw		
Insert	CBN (KBN900)	Coated Carbide								
Toolholder Description										
CSSN ^{F/L} ...-09A	SNMN0903..	-	-	-	-	-	-	-	-	
CSSN ^{F/L} ...-12A	SNMN1203.. (SNMN1204..)	(SNMN1204..)	(SNGN1204..)(SNMN1204..) (SNGN1207..)(SNMN1207..)	CB-11	CE-020	SP-143 SP-141	M3X12 M3X8			
CSDNN...-09A	SNMN0903..	-	-	-	-	-	-			
CSDNN...-12A	SNMN1203.. (SNMN1204..)	(SNMN1204..)	(SNGN1204..)(SNMN1204..) (SNGN1207..)(SNMN1207..)	-	-	SP-143 SP-141	M3X12 M3X8			

Recommended Cutting Conditions → D39~D40

CTJN-A (External)





CTUN-A (Facing)



Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R(r _c)	Spare Parts			
	R	L	H1=h	H3	B	L1	L2	F1	Clamp Set		Wrench	Shim	Shim Screw	
CTJN ^{R/L} 2525M-11A	●	●	25	11	25	150	22	32	0.8	CE-030A	LW-4	SP-219	HH3X12	
CTUN ^{R/L} 2525M-11A	●	●	25	11	25	150	27	32	0.8	CE-030A	LW-4	SP-219	HH3X12	

Applicable Inserts

Applications Ref. to Page	Hard Materials / Cast Iron	Cast Iron / Hard Materials
	C19	B103
Insert	CBN (KBN900)	Ceramic
Toolholder Description		
CTJN ^{R/L} ...-11A	TNMN1103..	TNGN1103..
CTUN ^{R/L} ...-11A		

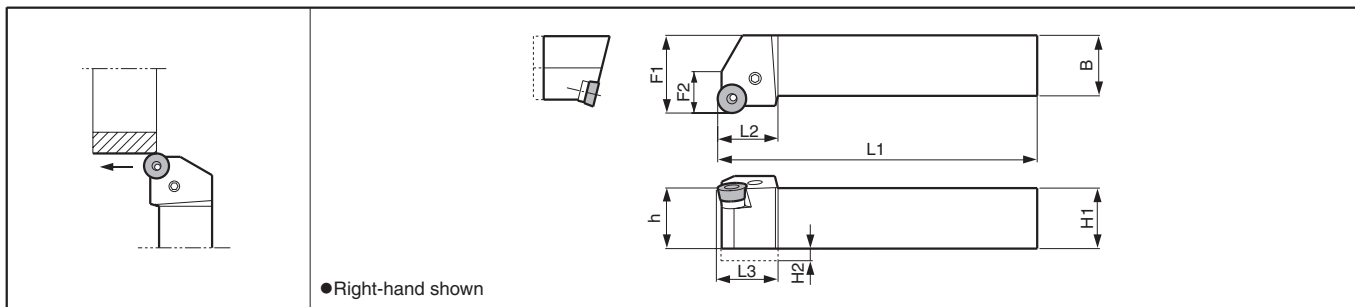
* TNMN1604 Insert toolholder is described in D26.

Recommended Cutting Conditions  D39~D40

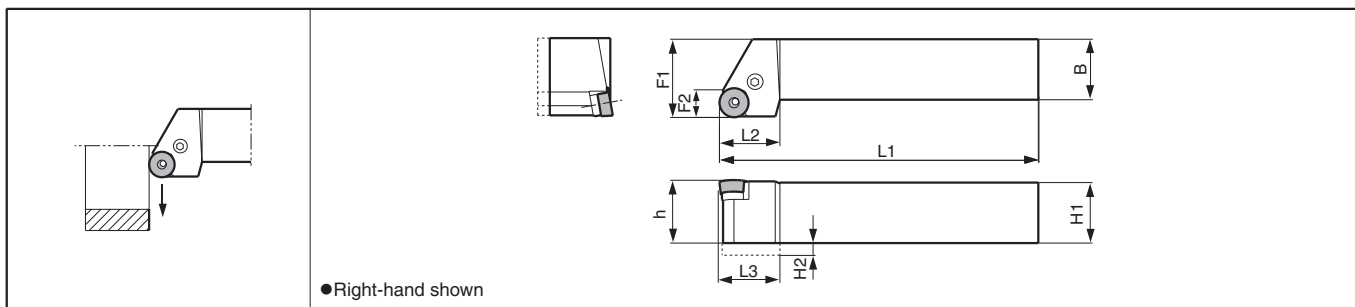
D

External

PRGC-BE (External)



PRGC-BF (Facing)

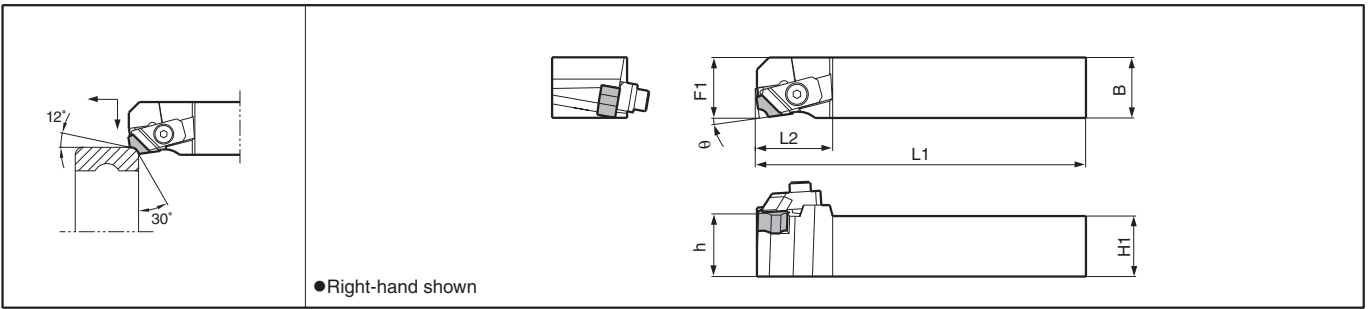


Toolholder Dimensions

Description	Std.	Dimension (mm)										Spare Parts						Applicable Inserts ● B95
		H1=h	H2	B	L1	L2	L3	F1	F2	Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench			
PRGCR	2020K-12BE	●	20	-	20	125	22	-	25	15	LL-1CN	LS-1N	LR-12C	LSP-1	PC-1	FH-2.5	RCMT 1204M0-BB	
	2525M-12BE	●	25	-	25	150	25	-	32	17							RCMT 1606M0-BB	
	2020K-16BE	●	20	5	20	125	27	27	29	22	LL-2C	LS-1T	LR-16C	LSP-2	PC-2			
	2525M-16BE	●	25	-	25	150	27	-	32	17								
PRGCR	2020K-12BF	●	20	-	20	125	22	-	25	10	LL-1CN	LS-1N	LR-12C	LSP-1	PC-1	FH-2.5	RCMT 1204M0-BB	
	2525M-12BF	●	25	-	25	150	25	-	32	11							RCMT 1606M0-BB	
	2020K-16BF	●	20	5	20	125	27	27	25	17	LL-2C	LS-1T	LR-16C	LSP-2	PC-2			
	2525M-16BF	●	25	-	25	150	27	-	32	17								

Recommended Cutting Conditions ● D39~D40

CBSN (External Round-Chamfering)



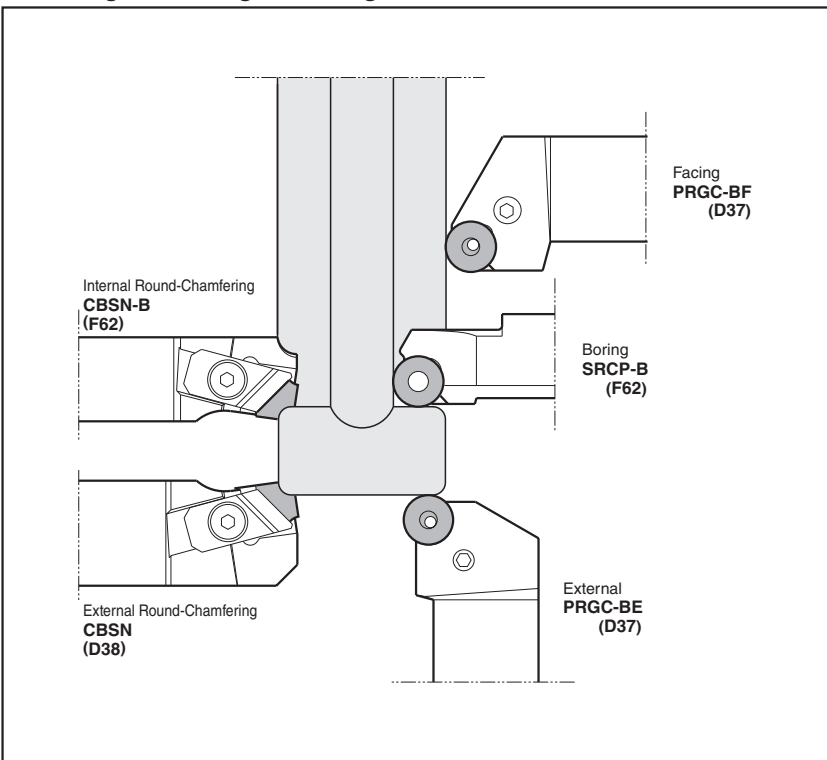
Toolholder Dimensions

Description	Std.		Dimension (mm)					θ	Spare Parts				Applicable Inserts ➔ B95
	R	L	H1=h	B	L1	L2	F1		Clamp Set	Wrench	Shim	Shim Screw	
CBSN ^{R/L} 2020K -12 2525M -12	●	●	20	20	125	32	20	9°	CP-RC ^{R/L}	LW-5	SP-RC	SP3X8	SNMF1204○○-21
	●	●	25	25	150		25						

· Clamp Set: CP-RCR for Right-hand Toolholder, and CP-RCL for Left-hand Toolholder.

Recommended Cutting Conditions ➔ D39~D40

Tooling for Bearing Machining



D

External

Recommended Cutting Conditions

Recommended Cutting Conditions - External Turning (Negative Insert)

[ap indicates radius]

ISO Classification	Workpiece Material	Hardness	Cutting Range	Applications	Recommended Chipbreaker	Recommended Insert Grade	Corner-R (re)	Lower Limit - Recommendation - Upper Limit		
								Vc (m/min)	ap (mm)	f (mm/rev)
P	Low Carbon Steel Low Carbon Alloy	HB ≤ 300	Finishing (Small ap)	Continuous Interruption	XF	PV710 PV720	0.4 0.8	250 - 350 - 520 240 - 320 - 480	0.05 -0.12- 0.6 0.05 -0.15- 0.6	0.03 - 0.1 - 0.22 0.04 - 0.12 - 0.25
			Finishing (Gloss Oriented)	Continuous Interruption	XP	TN610 TN620	0.4 0.8	250 - 320 - 400 240 - 310 - 370	0.2 -0.5- 0.7 0.2 -0.5- 0.7	0.07 - 0.12 - 0.2 0.07 - 0.12 - 0.2
			Finishing (Tool Life Oriented)	Continuous Interruption	XP	PV710 PV720	0.4 0.8	250 - 300 - 370 240 - 290 - 340	0.2 -0.5- 0.7 0.2 -0.5- 0.7	0.07 - 0.12 - 0.2 0.07 - 0.12 - 0.2
			Finishing-Medium (Gloss Oriented)	Continuous Interruption	XQ	TN610 TN620	0.4 0.8	250 - 320 - 400 240 - 280 - 340	0.5 - 1.0 - 1.5 0.5 - 1.0 - 1.5	0.17 - 0.25 - 0.3 0.17 - 0.25 - 0.3
			Finishing-Medium (Tool Life Oriented)	Continuous Interruption	XQ	PV710 PV720	0.8 0.8	250 - 300 - 370 240 - 280 - 340	0.5 - 1.0 - 1.5 0.5 - 1.0 - 1.5	0.17 - 0.25 - 0.3 0.17 - 0.25 - 0.3
			Medium-Roughing	Continuous Interruption	XS	PV720 CA515	0.8 0.8	220 - 260 - 320 160 - 210 - 260	0.8 - 1.5 - 2.0 0.8 - 1.5 - 2.0	0.25 - 0.3 - 0.4 0.25 - 0.3 - 0.4
			Roughing	Continuous Interruption	PG	CA515 CA525	0.8 1.2	180 - 220 - 260 150 - 200 - 240	1.0 - 2.5 - 3.5 1.0 - 2.5 - 3.5	0.2 - 0.3 - 0.4 0.2 - 0.3 - 0.4
			Medium-Roughing High Feed Rate	Continuous Interruption	PT	CA515 CA525	0.8 1.2	150 - 200 - 240 120 - 180 - 220	1.5 - 3.0 - 4.5 1.5 - 3.0 - 4.5	0.25 - 0.35 - 0.45 0.25 - 0.35 - 0.45
			Roughing High Feed Rate	Continuous Interruption	PH	CA515 CA525	1.2 1.6	150 - 200 - 240 120 - 180 - 220	2.0 - 5.0 - 8.0 2.0 - 5.0 - 8.0	0.4 - 0.6 - 0.8 0.3 - 0.5 - 0.7
			Roughing (Low Cutting Force)	Continuous Interruption	PX (Single Sided)	CA515 CA525	1.2 1.6	150 - 200 - 240 120 - 180 - 220	2.0 - 5.0 - 8.0 2.0 - 5.0 - 8.0	0.4 - 0.6 - 0.8 0.3 - 0.5 - 0.7
			Finishing (Time Oriented)	Continuous Interruption	WP (Wiper)	PV710 CA515	0.8 0.8	200 - 250 - 320 160 - 220 - 280	0.3 - 0.5 - 1.0 0.3 - 0.5 - 1.0	0.2 - 0.3 - 0.4 0.2 - 0.3 - 0.4
			Finishing-Medium (Time Oriented)	Continuous Interruption	WQ (Wiper)	PV710 CA525	0.8 0.8	180 - 220 - 280 130 - 180 - 240	1.0 - 2.0 - 3.0 1.0 - 2.0 - 3.0	0.2 - 0.3 - 0.4 0.2 - 0.3 - 0.4
	Finishing (Gloss Oriented)	Continuous Interruption	PP	TN610	0.4 0.8	200 - 250 - 320 180 - 230 - 300	0.2 - 0.5 - 1.5 0.2 - 0.5 - 1.5	0.04 - 0.16 - 0.28 0.05 - 0.2 - 0.35		
	Finishing (Tool Life Oriented)	Continuous Interruption	PP	PV710 PV720	0.4 0.8	200 - 250 - 320 200 - 240 - 290	0.2 - 0.5 - 1.5 0.2 - 0.5 - 1.5	0.04 - 0.16 - 0.28 0.05 - 0.2 - 0.35		
	Finishing-Medium (Gloss Oriented)	Continuous Interruption	PQ	TN610 TN620	0.8 1.2	180 - 230 - 300 160 - 220 - 260	0.5 - 1.5 - 2.5 0.5 - 1.5 - 2.5	0.1 - 0.2 - 0.3 0.1 - 0.17 - 0.25		
	Finishing-Medium (Tool Life Oriented)	Continuous Interruption	PQ	PV710 CA525	0.8 0.8	160 - 210 - 280 140 - 200 - 240	0.5 - 1.5 - 2.5 0.5 - 1.5 - 2.5	0.1 - 0.2 - 0.3 0.1 - 0.17 - 0.25		
	Medium-Roughing	Continuous Interruption	PG	CA515 CA525	0.8 1.2	150 - 200 - 240 120 - 160 - 200	1.0 - 2.5 - 3.5 1.0 - 2.5 - 3.5	0.2 - 0.3 - 0.4 0.2 - 0.3 - 0.4		
	Medium-Roughing High Feed Rate	Continuous Interruption	PT	CA515 CA525	0.8 1.2	120 - 180 - 230 100 - 150 - 200	1.5 - 3.0 - 4.5 1.5 - 3.0 - 4.5	0.25 - 0.35 - 0.45 0.25 - 0.35 - 0.45		
	Roughing High Feed Rate	Continuous Interruption	PH	CA515 CA525	1.2 1.6	120 - 180 - 230 100 - 150 - 200	2.0 - 5.0 - 8.0 2.0 - 5.0 - 8.0	0.4 - 0.6 - 0.8 0.3 - 0.5 - 0.7		
	Roughing (Low Cutting Force)	Continuous Interruption	PX (Single Sided)	CA515 CA525	1.2 1.6	120 - 180 - 230 100 - 150 - 200	2.0 - 5.0 - 8.0 2.0 - 5.0 - 8.0	0.4 - 0.6 - 0.8 0.3 - 0.5 - 0.7		
	Finishing (Gloss Oriented)	Continuous Interruption	PP	TN610 TN620	0.4 0.8	150 - 200 - 280 140 - 180 - 240	0.2 - 0.5 - 1.5 0.2 - 0.5 - 1.5	0.04 - 0.16 - 0.28 0.05 - 0.2 - 0.35		
	Finishing (Tool Life Oriented)	Continuous Interruption	PP	PV710 CA515	0.4 0.8	120 - 180 - 260 100 - 150 - 200	0.2 - 0.5 - 1.5 0.2 - 0.5 - 1.5	0.04 - 0.16 - 0.28 0.05 - 0.2 - 0.35		
	Finishing-Medium	Continuous Interruption	PQ	CA515 CA525	0.8 0.8	120 - 160 - 220 100 - 140 - 180	0.5 - 1.5 - 2.5 0.5 - 1.5 - 2.5	0.15 - 0.25 - 0.3 0.15 - 0.2 - 0.25		
	Medium-Roughing	Continuous Interruption	PG	CA515 CA525	0.8 0.8	120 - 150 - 200 100 - 130 - 180	1.0 - 2.0 - 3.0 1.0 - 2.0 - 3.0	0.2 - 0.3 - 0.5 0.15 - 0.2 - 0.3		
	Medium-Roughing High Feed Rate	Continuous Interruption	PT	CA515 CA525	0.8 1.2	100 - 140 - 180 80 - 120 - 160	1.5 - 3.0 - 4.5 1.5 - 3.0 - 4.5	0.25 - 0.35 - 0.45 0.25 - 0.35 - 0.45		
	Roughing High Feed Rate	Continuous Interruption	PH	CA515 CA525	1.2 1.6	100 - 140 - 180 80 - 120 - 160	2.0 - 5.0 - 8.0 2.0 - 5.0 - 8.0	0.4 - 0.6 - 0.8 0.3 - 0.5 - 0.7		
	Roughing (Low Cutting Force)	Continuous Interruption	PX (Single Sided)	CA515 CA525	1.2 1.6	100 - 140 - 180 80 - 120 - 160	2.0 - 5.0 - 8.0 2.0 - 5.0 - 8.0	0.4 - 0.6 - 0.8 0.3 - 0.5 - 0.7		



Recommended Cutting Conditions

Recommended Cutting Conditions - External Turning (Negative Insert)

[ap indicates radius]

ISO Classification	Workpiece Material	Hardness	Cutting Range	Applications	Recommended Chipbreaker	Recommended Insert Grade	Corner-R (re)	Lower Limit - Recommendation - Upper Limit		
								Vc (m/min)	ap (mm)	f (mm/rev)
M	Stainless Steel	HB ≤ 220	Finishing (Gloss Oriented)	Continuous Interruption	PQ	TN620	0.8	120 - 160 - 200	0.5 - 1.0 - 1.5	0.08 - 0.15 - 0.2
			Finishing	Continuous Interruption	MQ	CA6515 CA6525	0.4 0.8	120 - 180 - 240 100 - 160 - 220	0.5 - 1.0 - 1.5 0.5 - 1.0 - 1.5	0.08 - 0.15 - 0.2 0.05 - 0.1 - 0.15
			Medium-Roughing (Chip Control Oriented)	Continuous Interruption	MS	CA6515 CA6525	0.4 0.8	120 - 160 - 200 80 - 140 - 180	1.0 - 2.0 - 3.0 1.0 - 2.0 - 3.0	0.1 - 0.2 - 0.3 0.1 - 0.2 - 0.3
			Medium-Roughing (Sharpness Oriented)	Continuous Interruption	MU	CA6515 CA6525	0.4 0.8	120 - 160 - 200 80 - 140 - 180	1.0 - 2.0 - 3.0 1.0 - 2.0 - 3.0	0.15 - 0.25 - 0.35 0.15 - 0.25 - 0.3
			Roughing	Continuous Interruption	Standard	CA6515 CA6525	0.8 1.2	100 - 140 - 180 80 - 120 - 150	1.0 - 2.0 - 4.0 1.0 - 2.0 - 4.0	0.2 - 0.3 - 0.4 0.2 - 0.3 - 0.4
	Stainless Steel	HB ≤ 300	Finishing (Gloss Oriented)	Continuous Interruption	PQ	TN620	0.8	100 - 120 - 150 80 - 100 - 120	0.5 - 1.0 - 1.5 0.5 - 1.0 - 1.5	0.05 - 0.1 - 0.15 0.05 - 0.08 - 0.1
			Finishing	Continuous Interruption	MQ	CA6515 CA6525	0.4 0.8	100 - 120 - 150 80 - 100 - 120	0.5 - 1.0 - 1.5 0.5 - 1.0 - 1.5	0.08 - 0.15 - 0.2 0.05 - 0.1 - 0.15
			Medium-Roughing (Chip Control Oriented)	Continuous Interruption	MS	CA6515 CA6525	0.4 0.8	100 - 120 - 150 80 - 100 - 120	1.0 - 1.5 - 2.0 1.0 - 2.0 - 3.0	0.1 - 0.15 - 0.25 0.1 - 0.15 - 0.2
			Medium-Roughing (Sharpness Oriented)	Continuous Interruption	MU	CA6515 CA6525	0.4 0.8	100 - 120 - 150 80 - 100 - 120	1.0 - 1.5 - 2.0 1.0 - 2.0 - 3.0	0.1 - 0.15 - 0.25 0.1 - 0.15 - 0.2
			Roughing	Continuous Interruption	Standard	CA6515 CA6525	0.8 1.2	80 - 100 - 120 60 - 80 - 100	1.0 - 2.0 - 3.0 1.0 - 2.0 - 4.0	0.2 - 0.3 - 0.4 0.2 - 0.3 - 0.4
K	Gray Cast Iron	HB ≤ 250	High Speed Machining	Continuous Interruption	Without Chipbreaker	KBN475 KBN900 KBN900	0.8 1.2 1.2	400 - 800 - 1200 500 - 900 - 1200 500 - 700 - 900	0.05 - 0.2 - 0.5 0.1 - 0.5 - 1.0 0.5 - 1.0 - 1.5	0.1 - 0.2 - 0.3 0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Finishing (Gloss Oriented)	Continuous Interruption	Standard	PV7005 PV720	0.8 0.8	300 - 350 - 400 150 - 200 - 300	0.5 - 1.0 - 1.5 0.5 - 1.0 - 1.5	0.1 - 0.2 - 0.3 0.08 - 0.15 - 0.2
			Finishing (Ceramic)	Continuous Interruption	Without Chipbreaker	KA30 PT600M	1.2 0.8	300 - 500 - 700 300 - 450 - 600	0.3 - 0.5 - 1.0 0.3 - 0.5 - 1.0	0.1 - 0.2 - 0.3 0.1 - 0.2 - 0.3
			Medium (Ceramic)	Continuous Interruption	Without Chipbreaker	CS7050 KS6050	1.2 1.2	300 - 450 - 550 250 - 400 - 500	1.0 - 2.0 - 3.0 1.0 - 2.0 - 3.0	0.15 - 0.25 - 0.35 0.15 - 0.2 - 0.3
			Medium	Continuous Interruption	Standard	CA4505 CA4515	0.8 1.2	200 - 250 - 300 150 - 200 - 250	0.5 - 2.0 - 2.5 0.5 - 2.0 - 2.5	0.1 - 0.2 - 0.3 0.08 - 0.15 - 0.2
			Roughing	Continuous Interruption	ZS	CA4505 CA4515	0.8 1.2	200 - 250 - 300 150 - 200 - 250	1.0 - 2.0 - 4.0 1.0 - 2.0 - 4.0	0.2 - 0.3 - 0.4 0.2 - 0.3 - 0.4
	Nodular Cast Iron	HB ≤ 270	High Speed Machining	Continuous Interruption	Without Chipbreaker	KBN60M PT600M	0.4 0.8	200 - 300 - 400 200 - 250 - 350	0.1 - 0.3 - 0.5 0.1 - 0.5 - 1.0	0.1 - 0.15 - 0.2 0.1 - 0.2 - 0.4
			Finishing (Gloss Oriented)	Continuous Interruption	Standard	PV7005 PV720	0.8 0.8	150 - 250 - 300 120 - 200 - 250	0.5 - 1.0 - 1.5 0.5 - 1.0 - 1.5	0.1 - 0.2 - 0.3 0.08 - 0.15 - 0.2
			Medium	Continuous Interruption	Standard	CA4505 CA4515	0.8 1.2	150 - 200 - 250 120 - 180 - 220	0.5 - 2.0 - 2.5 0.5 - 2.0 - 2.5	0.1 - 0.2 - 0.3 0.08 - 0.15 - 0.2
			Roughing	Continuous Interruption	ZS	CA4505 CA4515	0.8 1.2	150 - 200 - 250 120 - 180 - 220	1.0 - 2.0 - 4.0 1.0 - 2.0 - 4.0	0.2 - 0.3 - 0.4 0.2 - 0.3 - 0.4
N	Non-ferrous Metals Copper Alloy Aluminum Aluminum Alloys	HB ≤ 100	High Speed Machining (Rainbow Surface Gross)	Continuous Interruption	Without Chipbreaker	KPD001	0.4	300 - 800 - 2000	0.05 - 0.5 - 1.0	0.05 - 0.1 - 0.15
			Finishing (Long Tool Life)	Continuous Interruption	A3	PDL025	0.4 0.8	400 - 500 - 700 400 - 500 - 700	0.5 - 1.0 - 2.0 0.5 - 1.0 - 2.0	0.1 - 0.2 - 0.25 0.1 - 0.2 - 0.25
			Finishing	Continuous Interruption	A3	KW10	0.8 0.8	400 - 500 - 700 400 - 500 - 700	0.5 - 1.0 - 2.0 0.5 - 1.0 - 2.0	0.1 - 0.2 - 0.25 0.1 - 0.2 - 0.25
			Medium	Continuous Interruption	AH	KW10	0.8 0.8	200 - 300 - 500 200 - 300 - 500	1.0 - 2.0 - 3.5 1.0 - 2.0 - 3.5	0.1 - 0.3 - 0.4 0.1 - 0.3 - 0.4
S	Titanium Alloys	HB ≤ 400	Precision Finishing (Rainbow Surface Gross)	Continuous Interruption	Without Chipbreaker	KPD001	0.4 0.4	100 - 150 - 180 70 - 120 - 150	0.05 - 0.3 - 0.5 0.05 - 0.3 - 0.5	0.03 - 0.1 - 0.15 0.03 - 0.07 - 0.1
			Finishing	Continuous Interruption	MQ	SW05	0.4 0.4	40 - 70 - 100 40 - 70 - 100	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.2 - 0.3 0.05 - 0.15 - 0.2
			Medium	Continuous Interruption	MU	SW05	0.8 0.8	40 - 60 - 80 40 - 60 - 80	0.5 - 1.0 - 3.0 0.5 - 1.0 - 3.0	0.1 - 0.25 - 0.35 0.1 - 0.2 - 0.3
	Heat-resistant Alloys	HB ≤ 350	Finishing	Continuous Interruption	MQ	PR1310	0.4 0.8	40 - 60 - 80 40 - 60 - 80	0.2 - 0.5 - 1.5 0.2 - 0.5 - 1.5	0.03 - 0.08 - 0.12 0.05 - 0.1 - 0.15
			Medium	Continuous Interruption	MS	PR1310	0.8 1.2	40 - 60 - 80 40 - 60 - 80	0.5 - 1.0 - 2.0 0.5 - 1.0 - 2.0	0.05 - 0.1 - 0.15 0.1 - 0.15 - 0.2
H	Hardened Steel Hard Materials	40-50 HRC	Finishing	Continuous Interruption	PQ Standard	CA515	0.8 0.8	60 - 100 - 120 30 - 50 - 70	0.1 - 0.3 - 0.5 0.1 - 0.3 - 0.5	0.05 - 0.08 - 0.1 0.05 - 0.08 - 0.1
		40-50HRC 50-65HRC	Finishing	Continuous Interruption	Without Chipbreaker	PT600M	0.8 1.2	60 - 80 - 100 30 - 40 - 60	0.2 - 0.5 - 0.7 0.2 - 0.5 - 0.7	0.05 - 0.1 - 0.15 0.05 - 0.1 - 0.15
		50-68 HRC	Finishing	Continuous Interruption	ME MET	KBN05M	0.8 1.2	100 - 150 - 200 90 - 140 - 180	0.05 - 0.3 - 0.5 0.05 - 0.3 - 0.5	0.05 - 0.08 - 0.1 0.05 - 0.08 - 0.1
			Medium	Continuous Interruption	Without Chipbreaker	KBN900	1.2	80 - 100 - 120	0.5 - 1.0 - 2.0	0.05 - 0.1 - 0.2
		Radius						70 - 90 - 110	0.3 - 0.7 - 1.0	0.05 - 0.1 - 0.15

D

External

Small Tools (External)

E1~E48



E

Summary of External Turning / Advice on one point **E2~E10**

Small Tools Identification System **E11**



Toolholders for Back Turning **E12~E19**

TKFB Insert	(Back Turning, Goose-neck Holder)	E12
TKF-AS Insert	(Back Turning, Goose-neck Holder)	E16
ABS Insert	(Back Turning)	E17
ABW Insert	(Back Turning)	E18



Goose-neck Holder **E20~E21**

DC□□ Insert	(Goose-neck Holder)	E20
VP□□ Insert	(Goose-neck Holder)	E21



Toolholders for External Turning (Back Clamp / Screw Clamp) **E22~E33**

CC□□ Insert	(Without Offset / With Offset)	E22
DC□□ Insert	(Without Offset / With Offset)	E24
DP□□ Insert	(Without Offset)	E28
TC / TP□□ Insert		E29
VB / VC□□ Insert	(Without Offset / With Offset)	E30
VP□□ Insert	(Without Offset / With Offset)	E32



External Sleeve Holder **E34~E36**

CC□□ Insert		E34
DC□□ Insert		E35
VB / VC□□ Insert		E36



Toolholders for Small Double Sided Tooling (Screw Clamp) **E37~E39**

CN□U Insert	(Without Offset)	E38
DN□U Insert	(Without Offset)	E38
TN□U Insert	(Without Offset)	E39



Toolholder for Double Sided Tooling for Automatic Lathe (Lever Lock) **E40~E41**

CN□□ Insert	(Without Offset)	E40
TN□□ Insert	(Without Offset)	E41



External Toolholder (Top Clamp) **E42~E43**

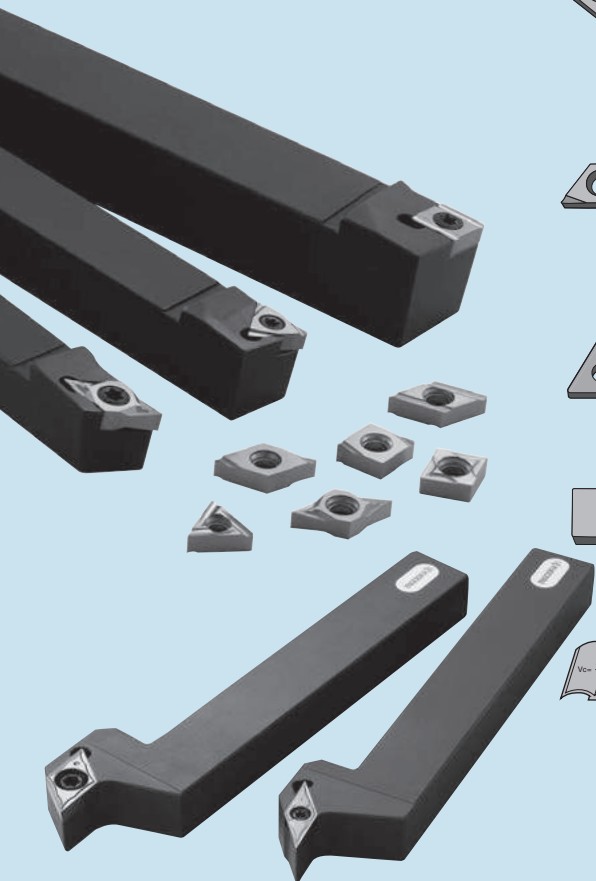
SP□R / SP□N Insert		E42
TP□R / TP□N Insert		E43



Technical Information **E44~E45**

Recommended Cutting Conditions **E44**

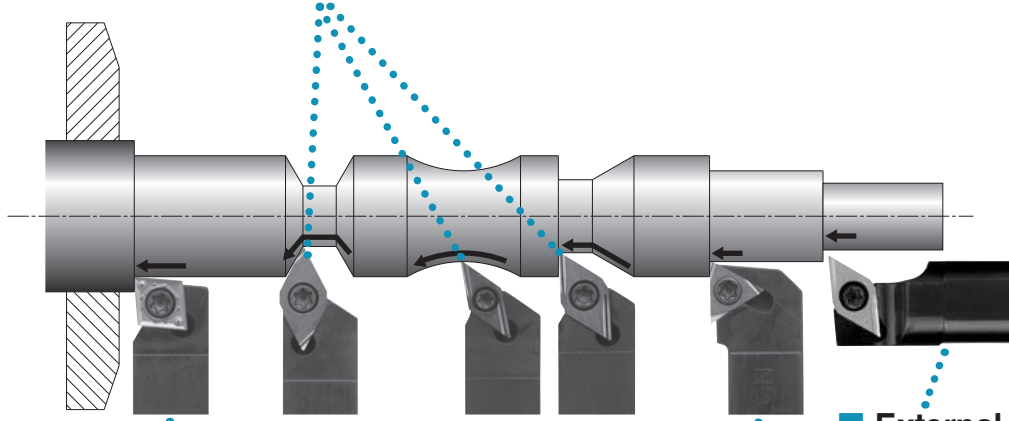
Alternative Toolholder Reference Table for Small Tools **E46~E48**



Summary of External Turning

External / Copying

ADJC-FF	SDJC-FF	SDJC	SDLC-FF	SDLP-FF	SDLN-FF	SDNC-F	SDNC
Back Clamp Without Offset	Screw Clamp Without Offset	Screw Clamp	Screw Clamp Without Offset	Screw Clamp Without Offset	Screw Clamp Without Offset	Screw Clamp	Screw Clamp
➡E24	➡E25	➡E25	➡E26,E28	➡E38	➡E27	➡E27	➡E27



External / Facing

ACLC-FF	SCLC-FF	SCLC	SCLN-FF
Back Clamp Without Offset	Screw Clamp Without Offset	Screw Clamp	Screw Clamp Without Offset
➡E22	➡E23	➡E23	➡E38

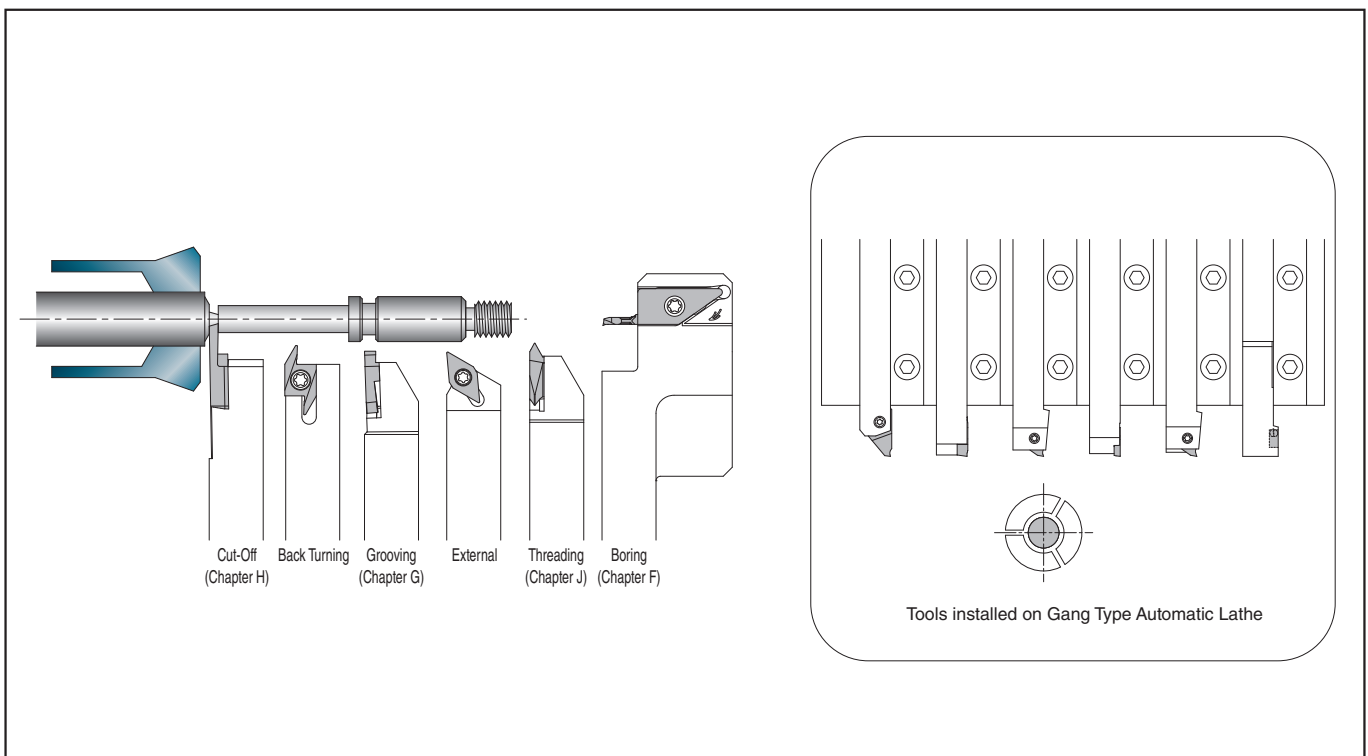
External

STGC(P)	STLN-FF
Screw Clamp	Screw Clamp Without Offset
➡E29	➡E39

External Sleeve Holder

S...SDLC
Screw Clamp Shank Dia. : $\varnothing 12 - \varnothing 25.4$
➡E35

Tooling example (1) CNC Automatic lathe (Gang Type)



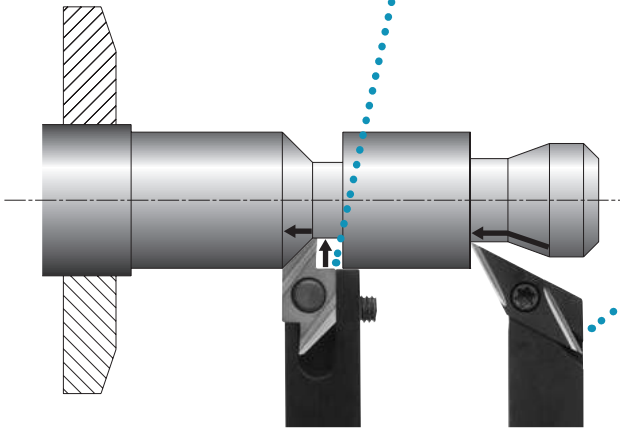
Tools installed on Gang Type Automatic Lathe

E

Small Tools

Back Turning

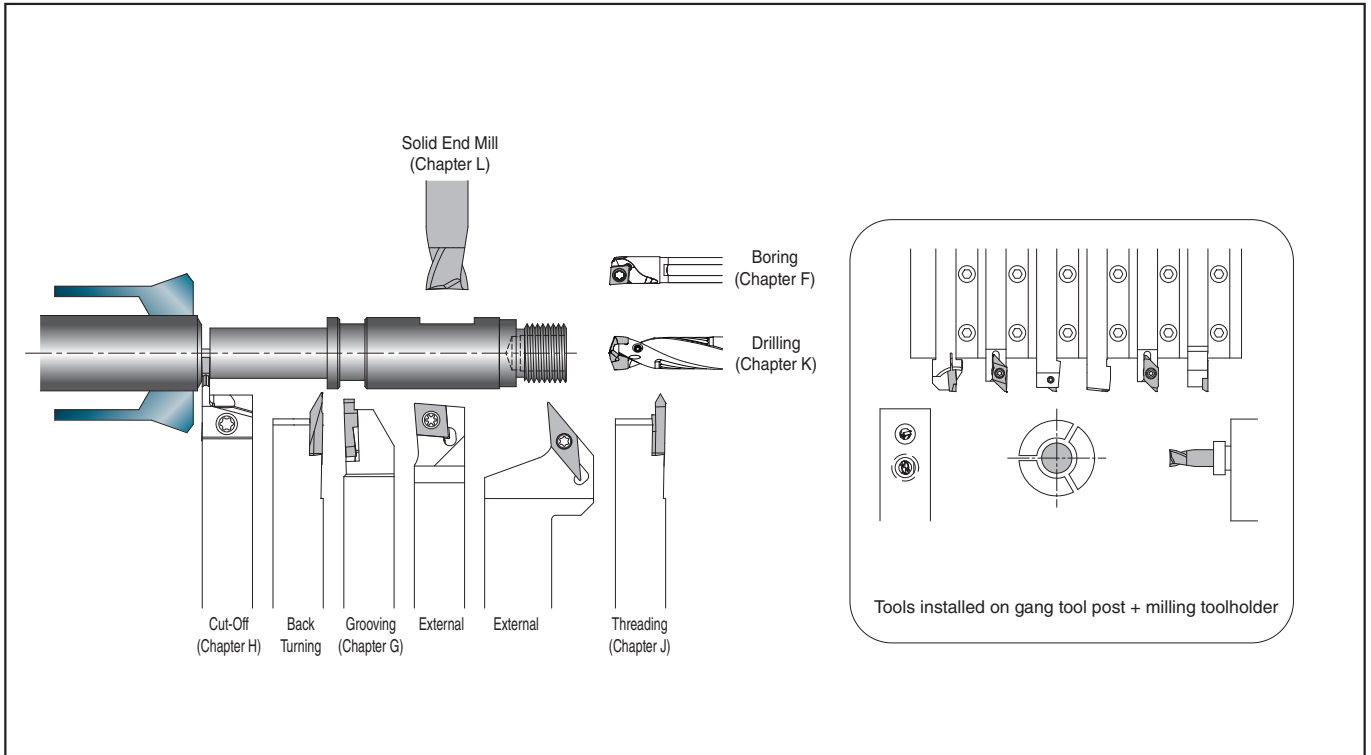
AABS-40F	SABS-40F	AABW-40F	SABW-40F	AABW-50F	SABW-50F	KTKF
Back Clamp Edge Width: 2.8 ap: ~4.0	Screw Clamp Edge Width: 2.8 ap: ~4.0	Back Clamp Edge Width: 4.7 ap: ~4.0	Screw Clamp Edge Width: 4.7 ap: ~4.0	Back Clamp Edge Width: 4.7 ap: ~5.0	Screw Clamp Edge Width: 4.7 ap: ~5.0	Screw Clamp Edge Width: 1.5 ~3.8 Max. ap: 1.8 ~5.5



External / Facing / Copying / Undercutting

SVPB	SVPP-FF
Screw Clamp	Screw Clamp Without Offset

Tooling example (2) CNC Automatic lathe (Gang Type)



Summary of External Turning

For Swiss tool automatic lathe (Gang type tool post)

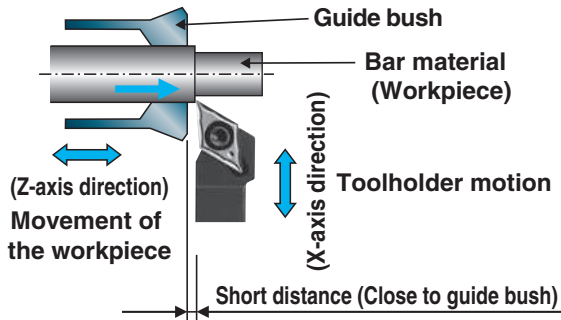
How to use Goose-neck holder



■ Swiss tool automatic lathe (Guide bush system)

Goose-neck holder is applicable to automatic lathes whose toolholder does not move to longitudinal direction (Z-axis direction).

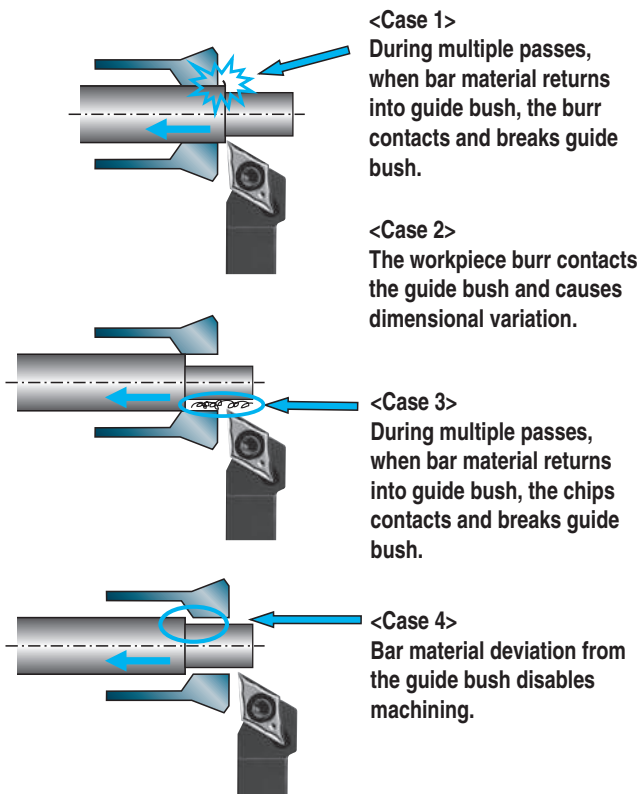
● In case of machining with the conventional toolholder



Goose-neck Holder is applicable to automatic lathe that toolholder does not move to longitudinal direction (Z-axis direction)

● Problems of machining with the conventional toolholder

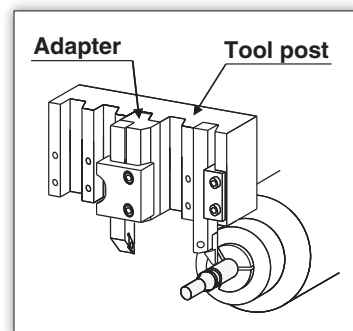
Problems of machining with the conventional toolholder



Problems of Toolholder Installation

When using a conventional toolholder

- 1) Additional space is required for an adapter.
- 2) Toolholder's handling is difficult due to limited space.
- 3) Necessary to buy an adapter.
- 4) An adapter may interfere with the next tool post.



E

Small Tools

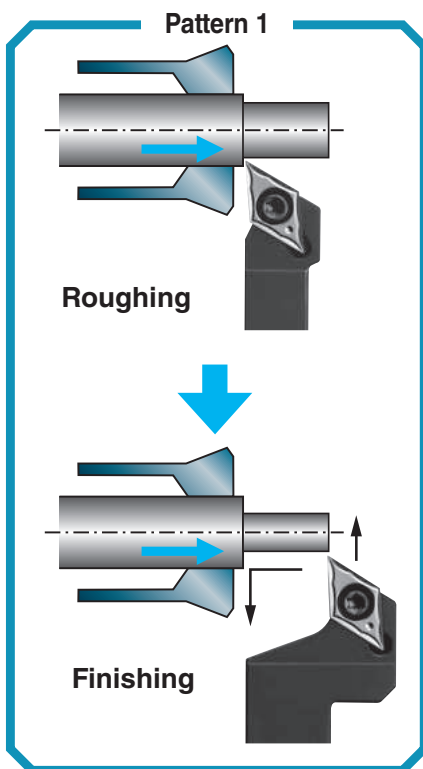
Advantages of Goose-neck Holder

Advantages of Using Goose-neck Holder

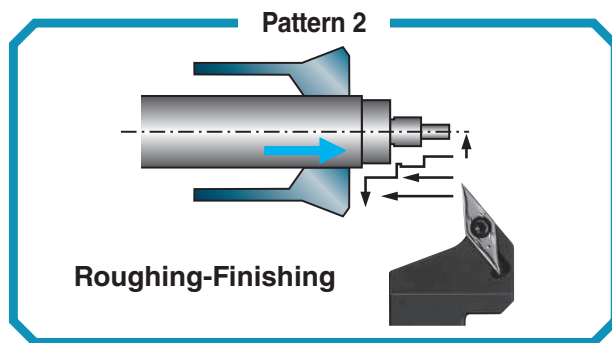
When using Goose-neck Holder

- 1) Machining precision improves by additional finishing process.
- 2) Chips do not come into the guide bush.
- 3) Better chip control due to large chip evacuation space.

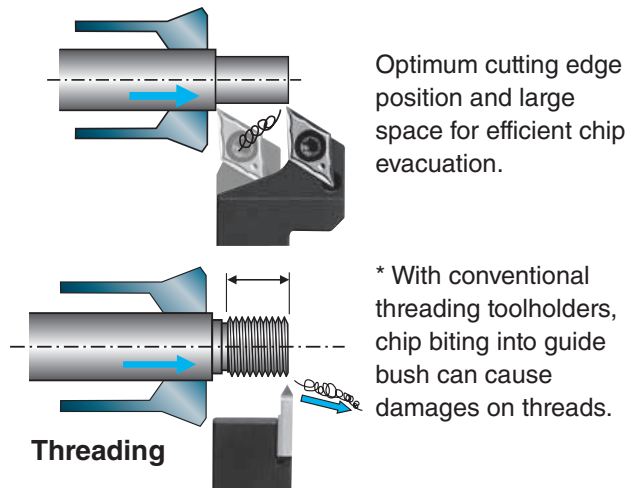
Available for machining after roughing without returning bar material into guide bush, preventing damages and improving precision.



Available for roughing and finishing with one Goose-neck Holder.



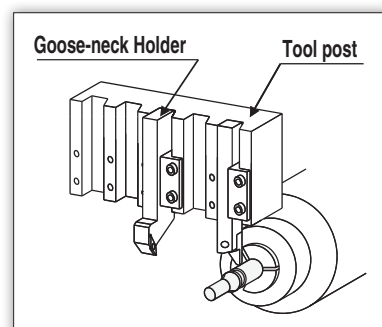
For better chip control



Advantages of Toolholder installation

When using a Goose-neck holder

- 1) Maximum number of toolholders can be attached.
- 2) No interference with next tool post.



Summary of External Turning

External Sleeve Holder

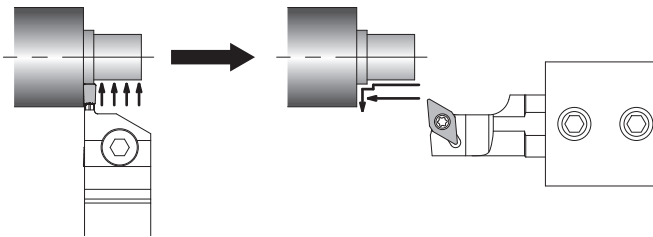
More tools attachable to CNC Automatic Lathe!

Limit to attachable tools at intricate part machining ▶▶▶ Use External Sleeve Holders

S...SCLC Screw Clamp Shank Dia. φ12 ~ φ25.4	S...SDUC Screw Clamp Shank Dia. φ14 ~ φ25.4	S...SDLC Screw Clamp Shank Dia. φ12 ~ φ25.4	S...SVUB(C) Screw Clamp Shank Dia. φ12 ~ φ25.4	

Ref. to Page R36~R43 for Tooling Layout and Automatic Lathe List by Manufacturer.

Finishing by Sleeve Holder



- 1) Roughing by grooving toolholder
- 2) Finishing by Sleeve Holder improves chip control and reduces cutting time

Tooling Example (3) CNC Automatic Lathe (Opposed Gang Type)

External / Facing

External / Copying

Grooving

(Chapter G)

Threading

(Chapter J)

Boring

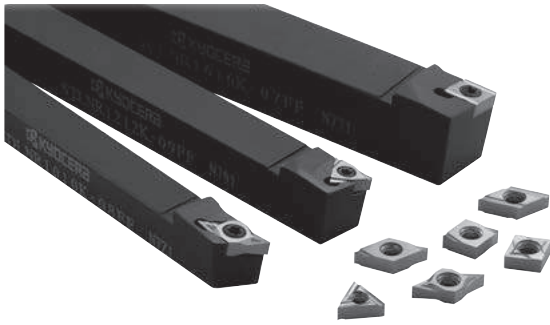
(Chapter F)

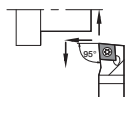
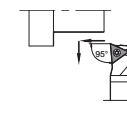
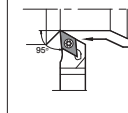
Ref. to Page R36~R43 for Tooling Layout and Automatic Lathe List by Manufacturer.

E

Small Tools

■ Toolholders for Small Double Sided Tooling (Screw Clamp)

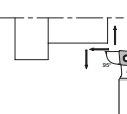
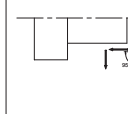


Applications	External / Facing	External / Up Facing	External / Copying
Cutting Edge Angle	95°	95°	95°
Screw Clamp (Without Offset)			
	SCLN	STLN	SDLN
Ref. to Page	➔ E38	➔ E39	➔ E38

Newly designed negative inserts (double-sided) enable high productivity and stability by economical doubled insert edge numbers
Sharp cutting equivalent to positive inserts (single-sided)

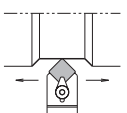
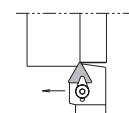
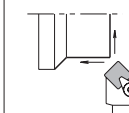
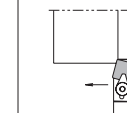
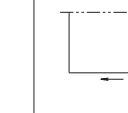
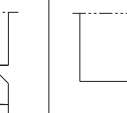
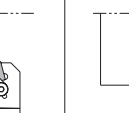
■ Toolholder for Double Sided Tooling for Automatic Lathe (Lever Lock, Without Offset)



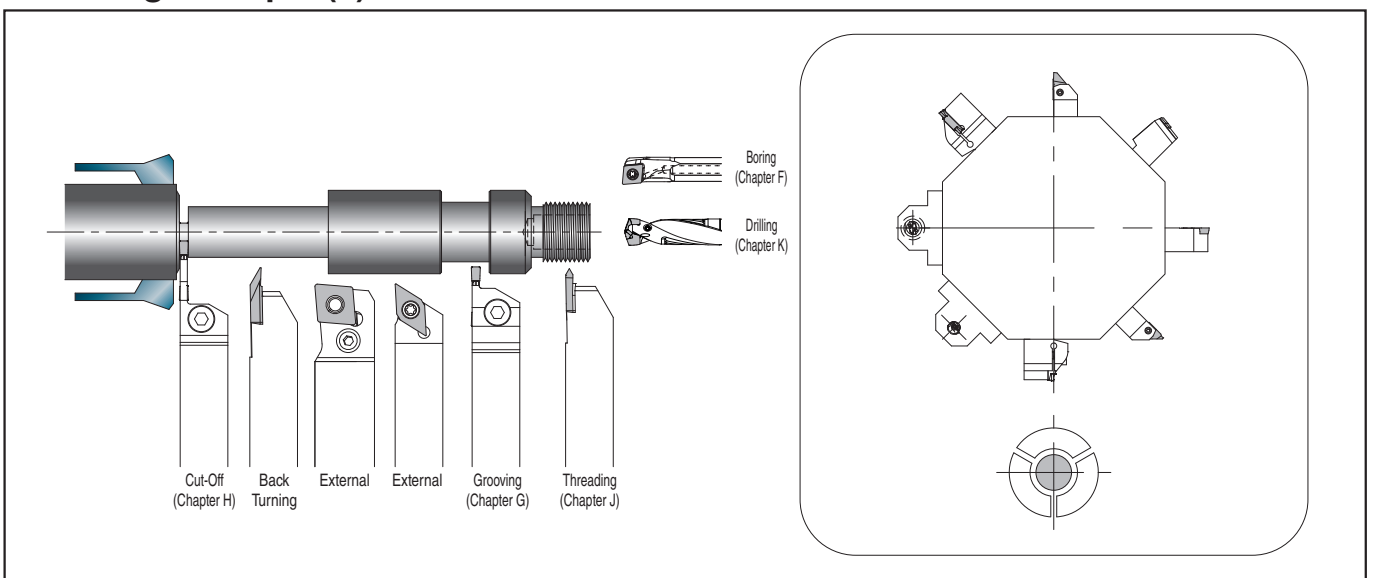
Applications	External / Facing	External / Up Facing
Cutting Edge Angle	95°	95°
Lever Lock (Without Offset)		
	PCLN-FF	PTLN-FF
Ref. to Page	➔ E40	➔ E41

The Lever lock type is available for small tools for external machining.

■ Top Clamp (for Insert without Hole)

Applications	External / Chamfering		External / Facing / Chamfering	External		Facing	
Cutting Edge Angle	45°	60°	45°	75°	91°	15°	-1°
Top Clamp							
	CSDP	CTPP	CSSP	CSBP	CTGP	CSKP	CTFP
Ref. to Page	➔ E42	➔ E43	➔ E42	➔ E42	➔ E43	➔ E42	➔ E43

■ Tooling Example (4)



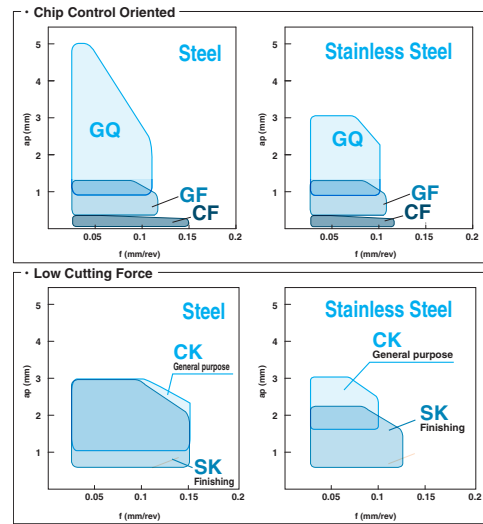
Ref. to Page ➔ R36~R43 for Tooling Layout and Automatic Lathe List by Manufacturer.



Advice on one point

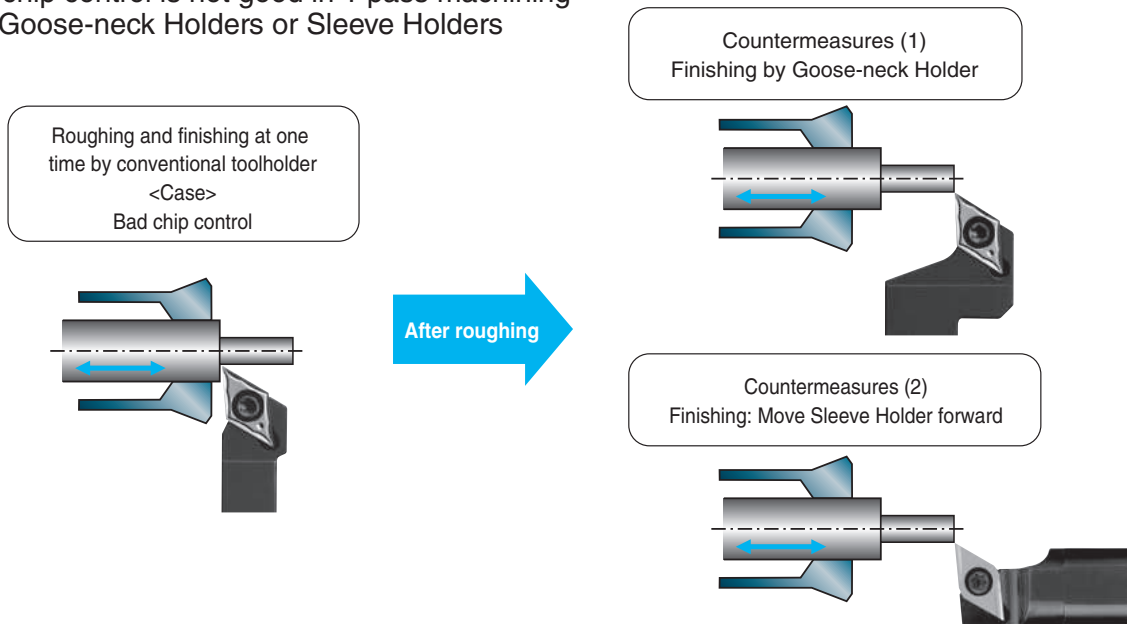
Chip control improvement at external machining

- 1) Choose a chipbreaker applicable for varying ap
 - Applicable to high precision cutting, sharp cutting due to periphery ground edge
 - Superior surface finish due to anti-adhesion polished edge



- 2) Improve chip control dividing tool passes into 2; roughing and finishing

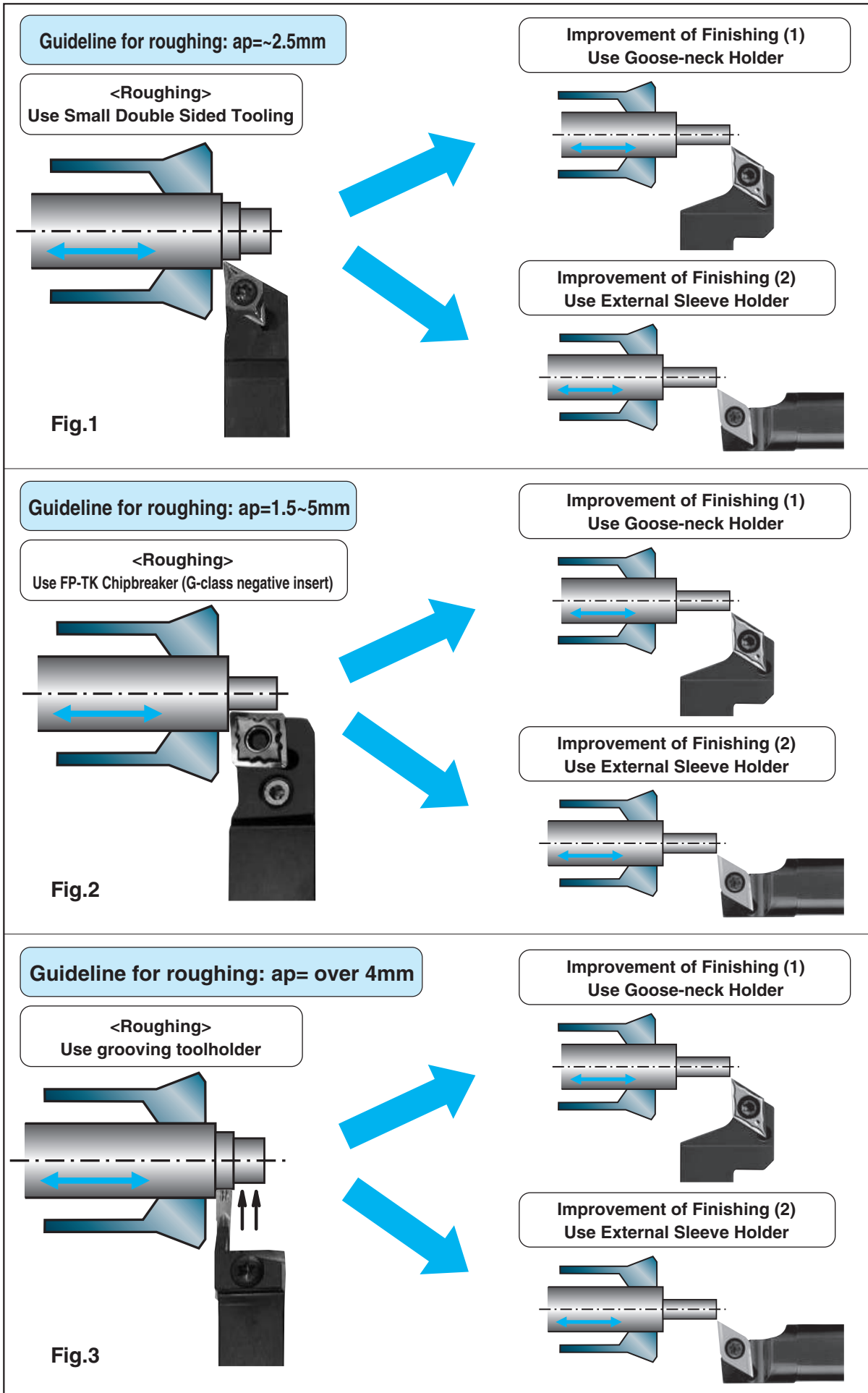
- When chip control is not good in 1 pass machining
 → Use Goose-neck Holders or Sleeve Holders



How to choose toolholders to improve productivity in external turning

Applications	Tooling Example	Toolholder	Advantages	Workpiece Dia.	Medium-roughing of steel (Radial ap: mm)
Medium-Roughing	SCLN-FF SDLN-FF STLN-FF	Small Double Sided Tooling (Screw Clamp)	Cost reduction	Over $\varphi 6$	ap \approx ~2.5mm
	PCLN-FF PTLN-FF	Toolholder for Double Sided Tooling for Automatic Lathe (Lever Lock) +FP-TK Chipbreaker	Cost reduction	Over $\varphi 16$	ap=1.5~5mm
Medium-Roughing + Finishing	Ref. to Page E9 Fig.1	Small Double Sided Tooling (Screw Clamp)	Cost reduction	Under $\varphi 16$	ap \approx ~2.5mm
		Goose-neck Holder (External Sleeve Holder)	Chip Control	-	-
	Ref. to Page E9 Fig.2	Toolholder for Double Sided Tooling for Automatic Lathe (Lever Lock) +FP-TK Chipbreaker	Cost reduction	$\varphi 16 \sim \varphi 32$	ap=1.5~5mm
		Goose-neck Holder (External Sleeve Holder)	Chip Control	-	-
Ref. to Page E9 Fig.3	Grooving Toolholder	Long curled chips are evacuated toward a fixed direction	$\varphi 16 \sim \varphi 32$	ap=over 4mm	
	Goose-neck Holder (External Sleeve Holder)	Chip Control	-	-	

● External toolholder selection for productivity improvement

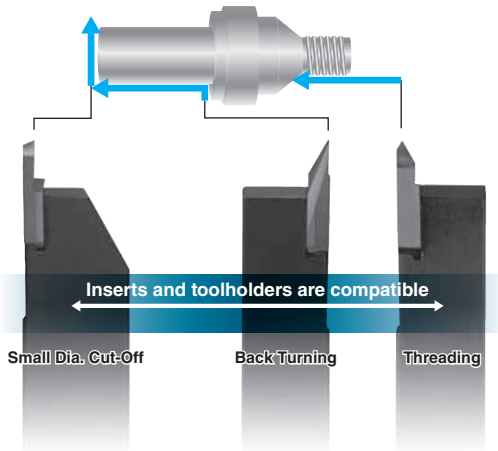


Summary of External Turning

Cutting tool for small workpiece

KTKF

Ref. to Page
E12



Inserts for back turning

TKFB

Ref. to Page
E12

- **Molded Chipbreaker (GQ Chipbreaker)** NEW
Added to anti-adhesion polished edge
Improved chip control
- **Insert Grades for Steel Machining PR1425**
- **Insert Grades for Stainless Steel Machining PR1535** NEW
- **"TKF..L-ASR" type is added in "TKF-AS" PCD inserts**



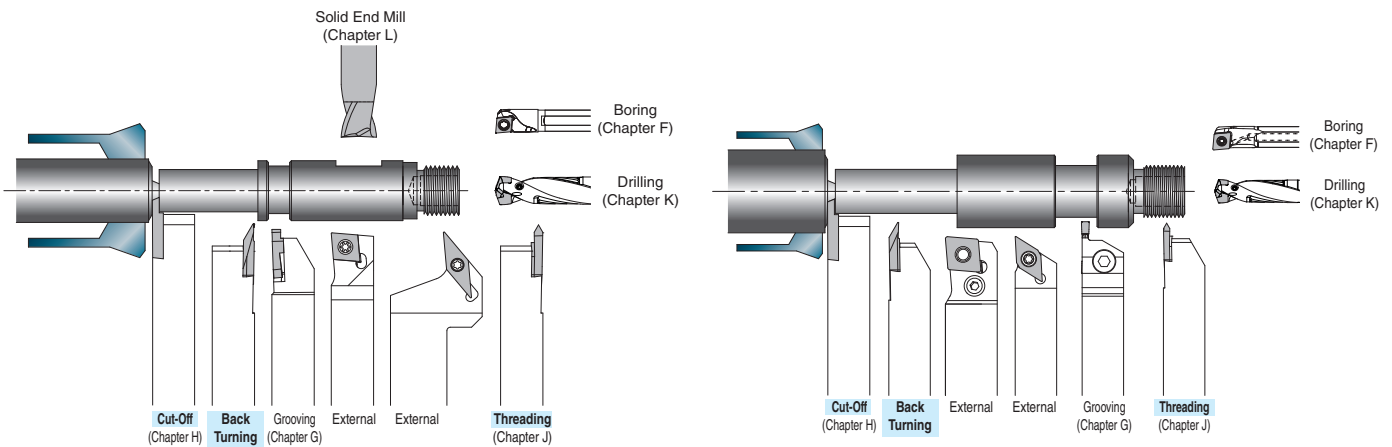
GQ Chipbreaker



TKF-AS

KTKF is applicable to back turning, threading and cut-off with one toolholder

● Tooling example of KTKF toolholder

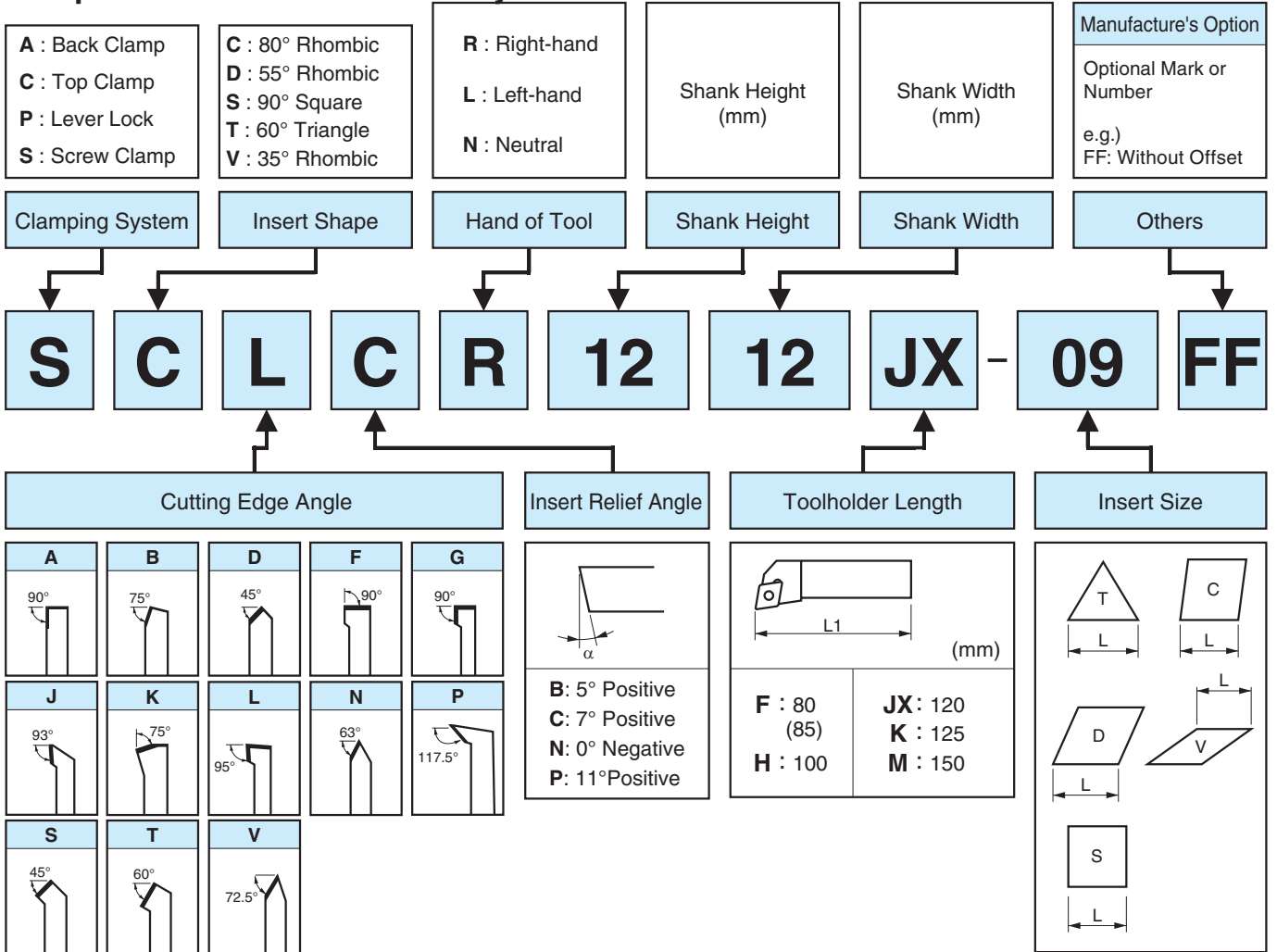


● Details of cutting edge

Small machining		General purpose		Large machining	
Description	Cutting Edge Length S	Description	Cutting Edge Length S	Description	Cutting Edge Length S
TKFB12R15..	2.1	TKFB12R28..	4.2	TKFB16R38..	5.8
-	-	TKFB12L28..	4.4	TKFB16L38..	6.2
For small diameter and short length workpiece Stable machining with minimum overhang		For general purpose Good chip control		Large ap at one pass	

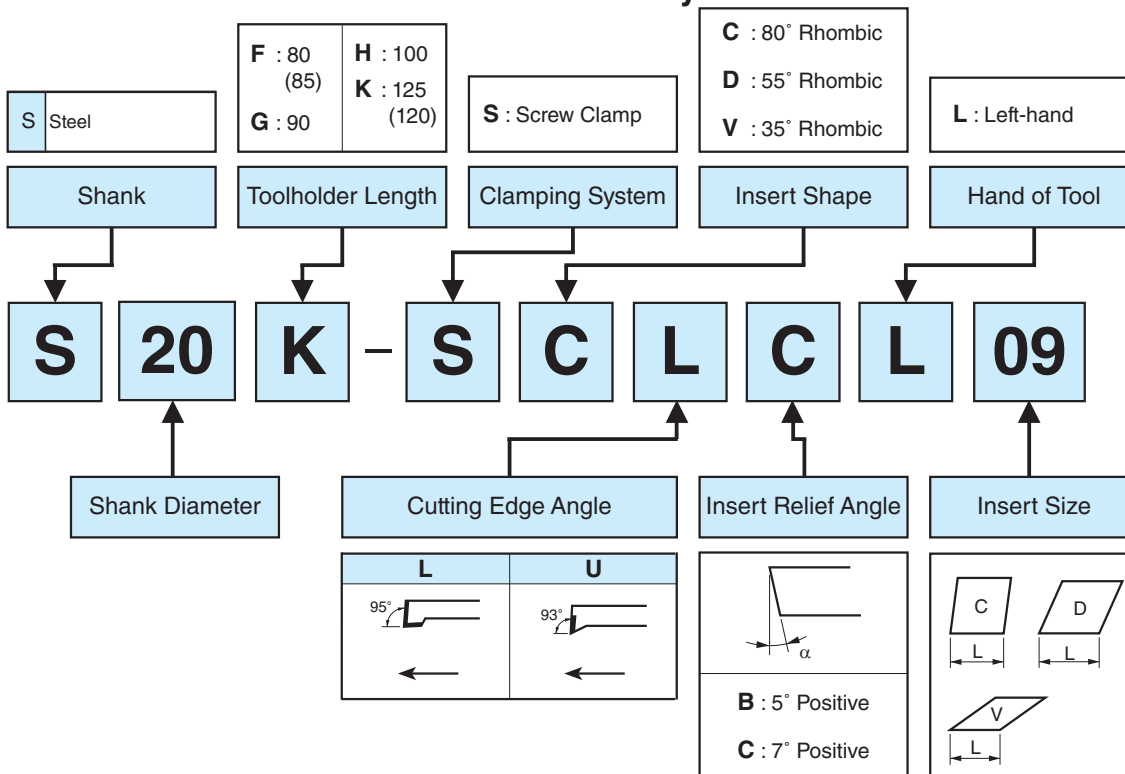
Small Tools Identification System

Square Shank Identification System



● Some back turning toolholders are Kyocera's original products, therefore their descriptions are not accordant with international standards.

External Sleeve Holder Identification System



● Specification may change without any prior notice.

● Due to the installation size constraints on the machine, the toolholder length of some products may not match with the symbol.

E

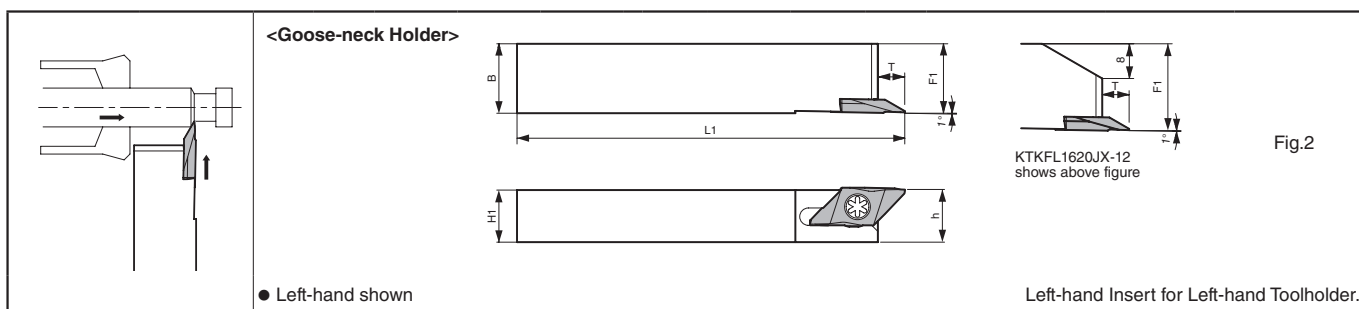
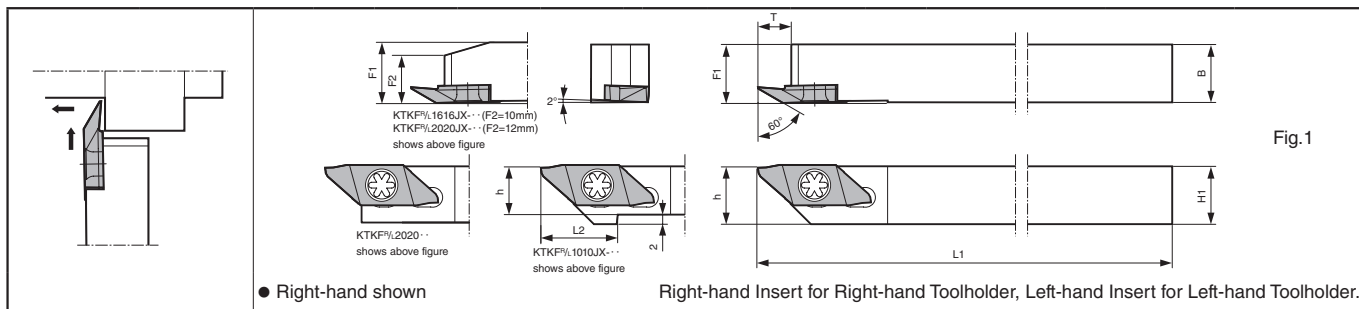


Small Tools



Toolholders for Back Turning [TKFB Insert]

KTKF / KTKF Goose-neck Holder



E



Small Tools

Toolholder Dimensions

Description	Std.		Dimension (mm)						Drawing	Spare Parts		Applicable Inserts	
	R	L	H1=h	B	L1	L2	F1	T		Clamp Screw	Wrench		
KTKF ^{R/L} 1010JX-12 1212JX-12 1616JX-12 2020JX-12	●	●	10	10	120	-	15	10	6	Fig.1	SB-4590TRWN	LTW-10S	TKFB12 ^{R/L} ...
	●	●	12	12			12						
	●	●	16	16			16						
	●	●	20	20			20						
KTKF ^{R/L} 1010JX-16 1212JX-16 1616JX-16 2020JX-16	●	●	10	10	120	-	20	10	8	Fig.1	SB-4590TRWN	LTW-10S	TKFB16 ^{R/L} ...
	●	●	12	12			12						
	●	●	16	16			16						
	●	●	20	20			20						
KTKF ^{R/L} 1212F-12 1212F-16	●	●	12	12	85	-	12	6	8	Fig.1	SB-4590TRWN	LTW-10S	TKFB12 ^{R/L} ...
	●	●						8					TKFB16 ^{R/L} ...
KTKFL 1216JX-12 1620JX-12		●	12	16	120	-	16	6	6	Fig.2	SB-4590TRWN	LTW-10S	TKFB12L...
		●	16	20			20						

· Dimension T shows the distance from the Toolholder to the cutting edge.

Applicable Inserts (Ref. to Page B92)

Insert Photo shows Right-hand	Description	Corner-R(r _c) (mm)
 ● Right-hand shown	TKFB 12R15005M	<0.05
	12R28005M	<0.05
	12R28010M	<0.1
	TKFB 16R38005M	<0.05
	16R38010M	<0.1
	TKFB 12L28005MR	<0.05
 ● Left-hand shown	12L28010MR	<0.1
	TKFB 16L38005MR	<0.05
	16L38010MR	<0.1

Recommended Cutting Conditions E45

Applicable Inserts (Molded Chipbreaker, P: Polished edge, Ref. to Page B93)

Insert	Description	Corner-R(r _c) (mm)
 ● Right-hand shown	TKFB 12R28005(P)-GQ	0.05
	12R28015(P)-GQ	0.15
	TKFB 16R38005(P)-GQ	0.05
	16R38015(P)-GQ	0.15

Recommended Cutting Conditions E45

Combination of Toolholders and Inserts

Toolholder	Right-hand	Toolholder	Left-hand
Insert	Right-hand	Insert	Left-hand

● : Std. Item

TKFB type GQ Chipbreaker for back Turning

Solution for problems in the conventional back-turning tools

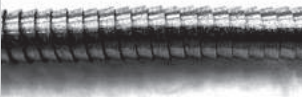
Original 3D molded chipbreaker realizes excellent surface finish by smooth chip control

Point 1 Original double-function chipbreaker for improved chip control


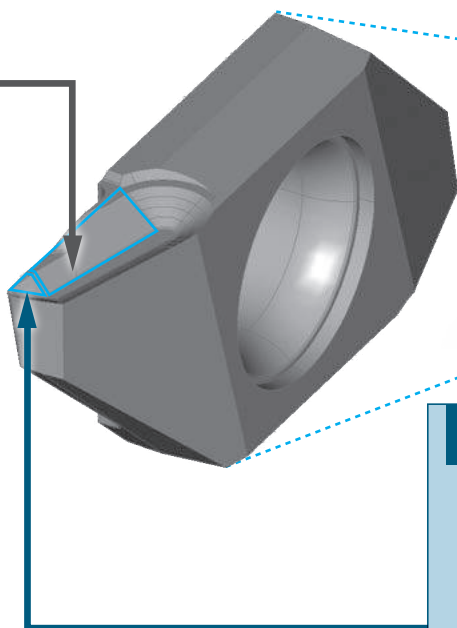
Function 1: External
Preventing chip entanglement

Stable chip control

GQ Chipbreaker




Competitor A (Ground Chipbreaker)


Function 2: Grooving
Preventing chip biting

Good surface roughness

GQ Chipbreaker



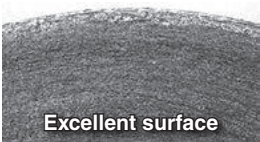
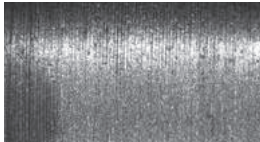
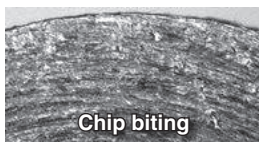
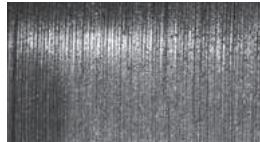
Competitor A (Ground Chipbreaker)



Point 2 Excellent surface finish by preventing chip biting and clogging

Surface finish comparison

Cutting Conditions : $V_c=100\text{m/min}$ $a_p=3.0\text{mm}$ $f=0.02\text{mm/rev}$ (Grooving), 0.05mm/rev (External)
Workpiece Material :S45C Wet

	TKFB GQ Chipbreaker		Competitor B (Ground Chipbreaker)	
	Facing	External	Facing	External
Workpiece surface	 Excellent surface $2.9\mu\text{mRz}$	 $3.8\mu\text{mRz}$	 Chip biting $31.2\mu\text{mRz}$	 $7.6\mu\text{mRz}$

GQ Chipbreaker realizes excellent surface finish with single pass. Suitable for cycle time reduction.



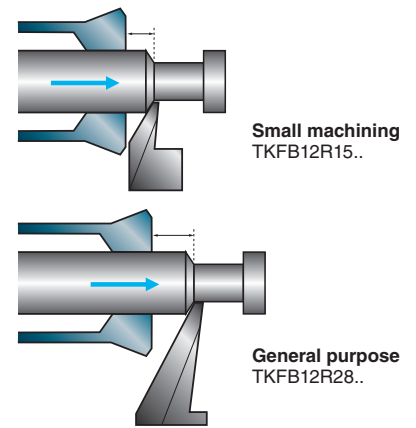
Toolholders for Back Turning [TKFB Insert]

Details of cutting edge and how to select

Details of cutting edge

Small machining		General purpose		Large machining	
Description	Cutting Edge Length S	Description	Cutting Edge Length S	Description	Cutting Edge Length S
TKFB12R15..	2.1	TKFB12R28..	4.2	TKFB16R38..	5.8
-	-	TKFB12L28..	4.4	TKFB16L38..	6.2
For small diameter and short length workpiece Stable machining with minimum overhang		For general purpose Good chip control		Large ap at one pass	

Selection



In case ap is same, if the insert with narrower edge width is used, overhang length from the guide bush is shorter, which enables better stability due to less workpiece deflection.
⇒ High precision machining

How to select back turning toolholder hand

Right-hand		Machining near the guide bush is possible Narrow cutting edge width of TKFB12R15005M → Optimum for small parts and high precision machining
Left-hand		Machining with a distance from guide bush Good chip control due to large space between the guide bush and the tool. → Excellent chip control in roughing and finishing (plural passes) Stable accuracy of external diameter dimension: When burrs occur, if a Left-hand toolholder is used, it is not necessary to return workpiece into guide bush in finishing. Also, Left-hand toolholders prevent guide bush wear caused by chip biting.

Workpiece movement and tool hand selection

In roughing and finishing

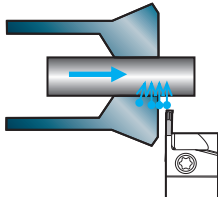
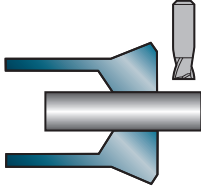
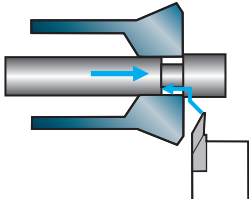
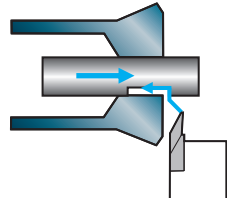
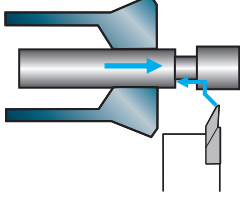
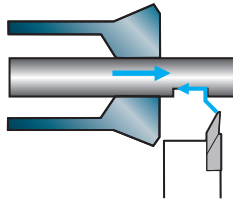
	Roughing	Workpiece position after roughing	Finishing
Right-hand			
Left-hand			

* Good dimension accuracy: If a Left-hand toolholder is used, burrs on workpiece generated in roughing do not damage the guide bush in finishing.

E

Small Tools

Chip control improvement in back turning

	Chip control improvement by tool pass changes I	Chip control improvement by tool pass changes II
<p>Roughing</p> <p>↓</p>	<p>● Roughing with grooving tools (1) GMM2420-020MW (Grooving)</p> 	<p>● Pre-Stage machining is processed with solid end mill (1) 2FESW040-040-04 (Solid End Mill)</p> 
<p>Finishing (Countermeasures 1) Use Right-hand toolholder</p>	<p>(1) When using TKFB12R28010M (for back turning / right hand)</p>  <p>Advantages : Good surface roughness Disadvantages : If a machining pass is long, the guide bush can not support the workpiece.</p>	<p>(1) When using TKFB12R28010M (for back turning / right hand)</p>  <p>Advantages : 1. Minimal deflection in long machining passes 2. Chips are broken into small pieces, though the workpiece material is sticky Disadvantages: The pre-stage machining may cause fractures, because of interrupted machining.</p>
<p>Finishing (Countermeasures 2) Use Left-hand toolholder</p>	<p>(2) When using TKFB12L28010M (for back turning / left hand)</p>  <p>Advantages : 1. Good surface roughness 2. High precision machining if the machined portion does not contact the guide bush. Disadvantages : If a machining pass is long, the guide bush can not support the workpiece.</p>	<p>(2) When using TKFB12L28010M (for back turning / left hand)</p>  <p>Advantages : 1. Minimal deflection in long machining passes 2. Chips are broken into small pieces, though the workpiece material is sticky. 3. High precision machining if the machined portion does not contact the guide bush. Disadvantages: The pre-stage machining may cause fractures, because of interrupted machining.</p>

E



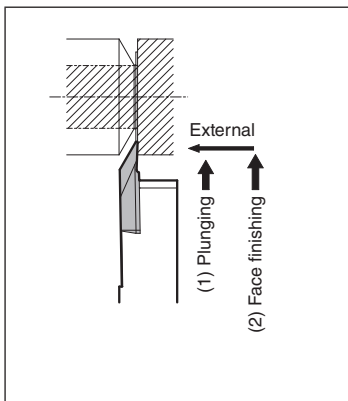
Small Tools



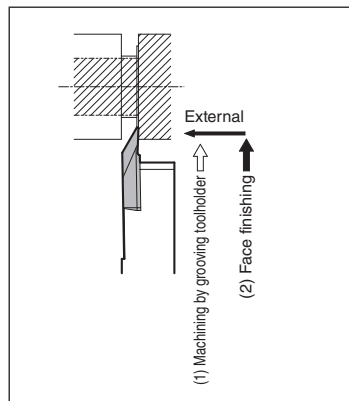
Countermeasure against peeled surface in face back turning

When peeled surface occurs on the workpiece face, please apply the countermeasures below.

● Countermeasures 1 Face finishing



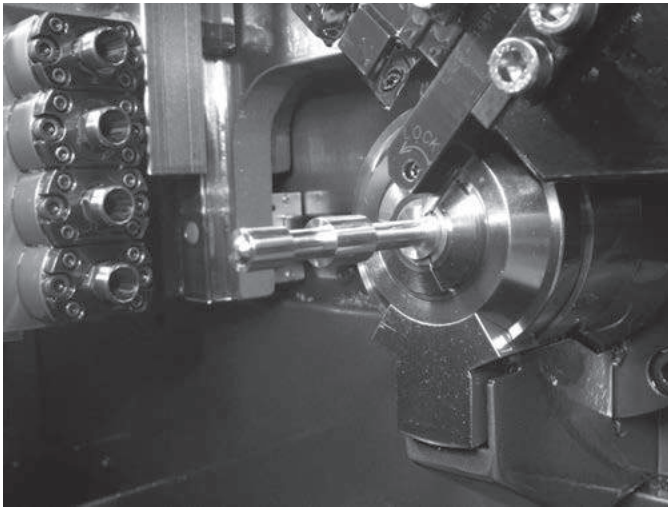
● Countermeasures 2 Face finishing after grooving



External Inserts [For KTKF Toolholder]

When using TKF-AS type Inserts

The KTKF toolholder can be used as a multi-functional tooling for non-ferrous metals and non-metals when combined with a TKF-AS insert. (Fig.1)



Example of spool machining

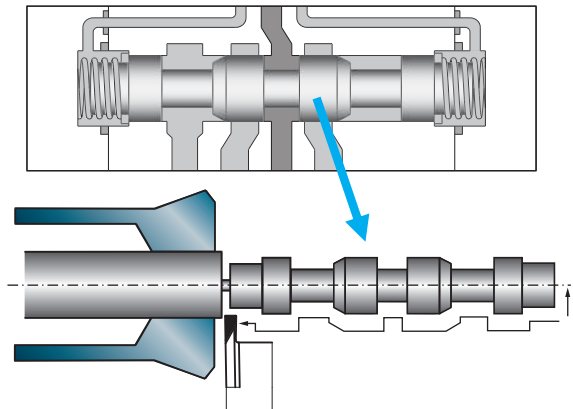
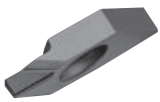





Fig.1 Example of the pass of KTKF toolholder + TKF-AS insert

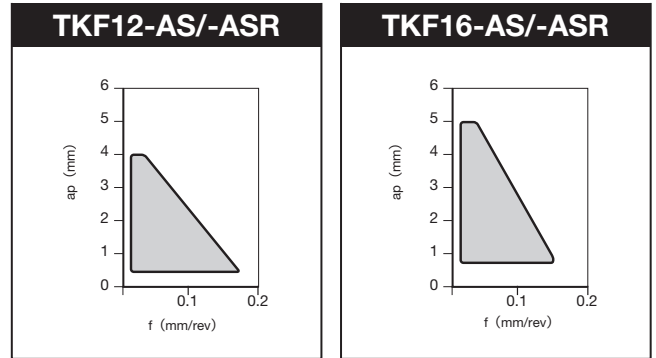
E

Small Tools

Applicable Inserts (Ref. to Page C32)

Insert Photo shows Right-hand	Description	
 <p>● Right-hand shown</p>	TKF12 ^{R/L} 200-AS	
	250-AS	
	TKF16 ^{R/L} 250-AS	
	TKF12L 200-ASR	
 <p>● Insert hand: Left-hand / PCD edge hand: Right-hand</p>	250-ASR	
	TKF16L 250-ASR	
	 <p>Turning / Grooving</p>	TKF12 ^{R/L} 150-NB
		200-NB
250-NB		
 <p>Grooving (Turning is possible)</p> <p>● Right-hand shown</p>	250-NB4.5	

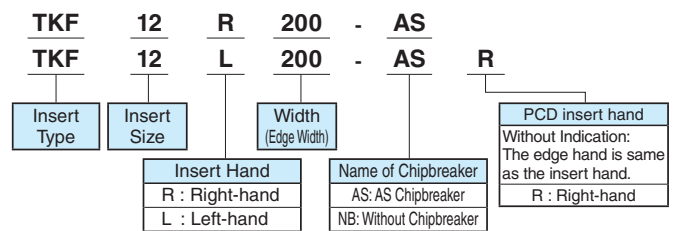
Applicable Range



* PCD Inserts for turning and Grooving

* Not recommended for cut-off

Inserts Identification System



Applicable Toolholders **E12**

Recommended Cutting Conditions **E45**

Note 1) The cutting edge of the TKF-AS / -ASR will be 1 mm lower than the center line when attached to the KTKF toolholder (Ref. to Fig.2). Adjust the height by making NC lathe parameter settings or inserting a plate.

2) If the 1 mm adjustment is not possible, use the TKF..-NB. (Ref. to Fig.3)

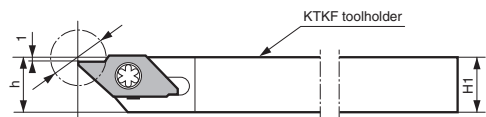


Fig.2 When a TKF-AS / -ASR insert is attached (The cutting edge is 1mm lower than the center line)

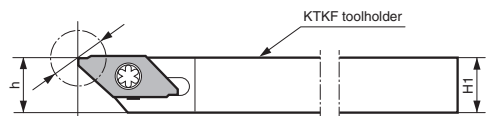
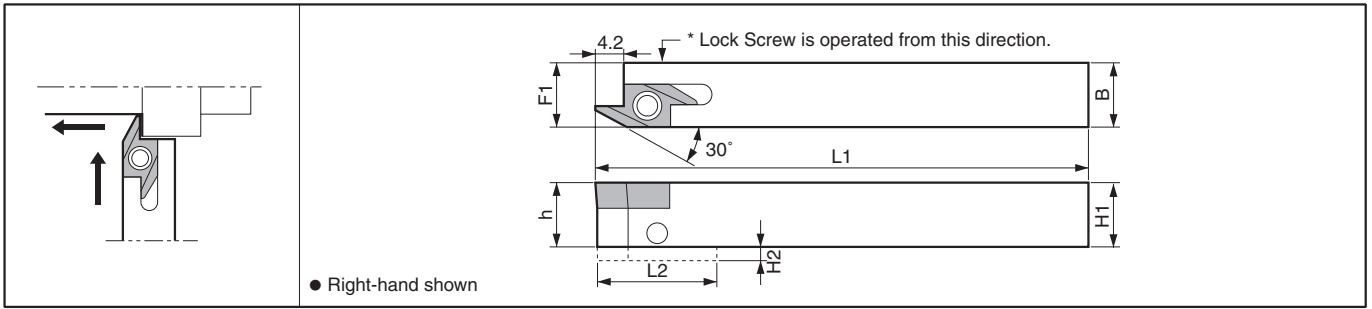
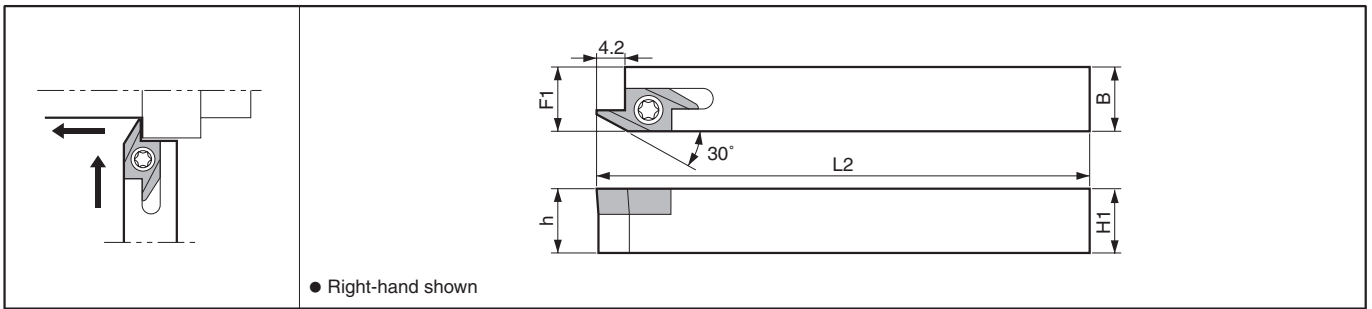


Fig.3 When a TKF-NB insert is attached

AABS-40F (Edge Width: 2.8mm, MAX. Depth: 4mm)



SABS-40F (Edge Width: 2.8mm, MAX. Depth: 4mm)



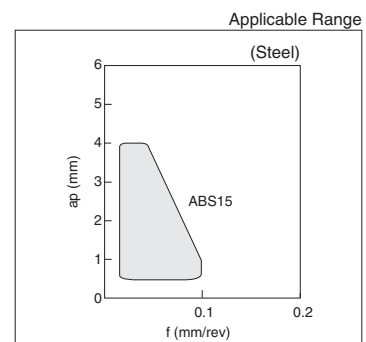
Toolholder Dimensions

Description	Std.	Dimension (mm)							Standard Corner-R(re)	Spare Parts			
		H1-h	H2	B	L1	L2	F1	Anchor Pin		Lock Screw	Clamp Screw	Wrench	
AABSR 1010JX-40F	●	10	-	10	-	-	10.2	0.15	LPA-11 LPA-13 LPA-17	HSB4X8R	-	FH-2	
	●	12	-	12	120	-	12.2						
	●	16	-	16	-	-	16.2						
SABSR 1010JX-40F	●	10	-	10	-	-	10.2	0.15	-	-	SB-3080TR	FT-10	
	●	12	-	12	120	-	12.2						
	●	16	-	16	-	-	16.2						
SABSR 1212F -40F	●	12	-	12	85	-	12.2	0.15	-	-	SB-3080TR	FT-10	
	●	20	-	20	125	-	20.2						

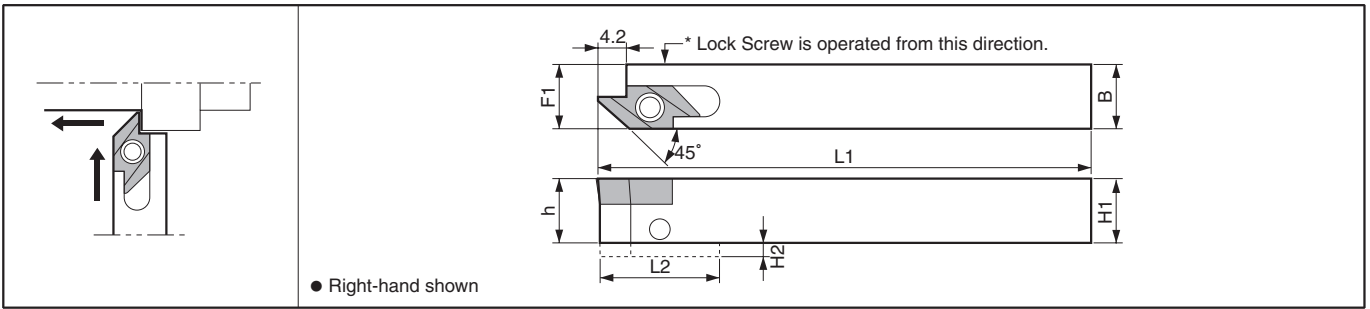
Applicable Inserts

Insert	Description	Corner-R(re) (mm)	Ref. to Page
	AABS15R4005	0.05	B94
	SABS15R4015	0.15	
	AABS15R4005M	<0.05	
	SABS15R4015M	<0.15	

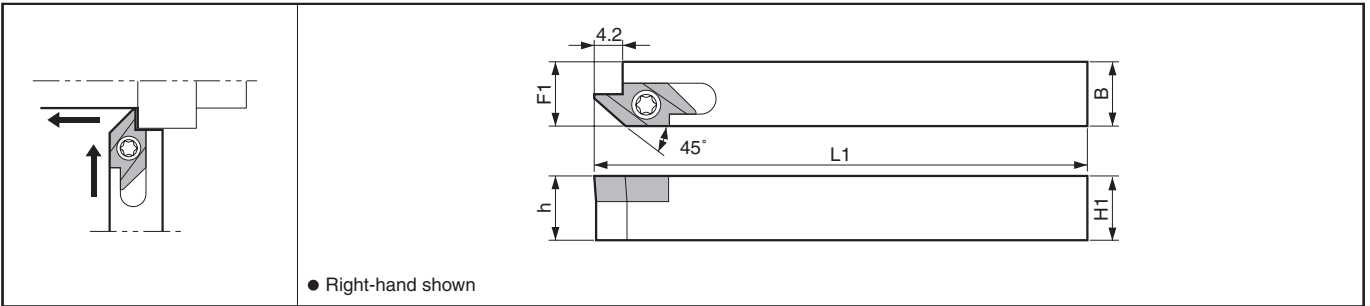
Recommended Cutting Conditions **E45**



AABW-40F (Edge Width: 4.7mm, MAX. Depth: 4mm)



SABW-40F (Edge Width: 4.7mm, MAX. Depth: 4mm)



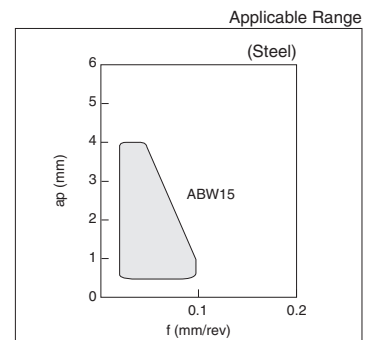
Toolholder Dimensions

Description	Std.	Dimension (mm)							Standard Corner-R _(r)	Spare Parts			
		H1-h	H2	B	L1	L2	F1	Anchor Pin		Lock Screw	Clamp Screw	Wrench	
AABWR 1010JX-40F	●	10	-	10	-	-	10.2	0.15	LPA-11	HSB4X8R	-	FH-2	
	●	12	-	12	120	-	12.2		LPA-13				
	●	16	-	16	-	-	16.2		LPA-17				
SABWR 1010JX-40F	●	10	-	10	-	-	10.2	0.15	-	-	SB-3080TR	FT-10	
	●	12	-	12	120	-	12.2						
	●	16	-	16	-	-	16.2						
SABWR 2020K -40F	●	20	-	20	125	-	20.2	0.15	-	-	SB-3080TR	FT-10	

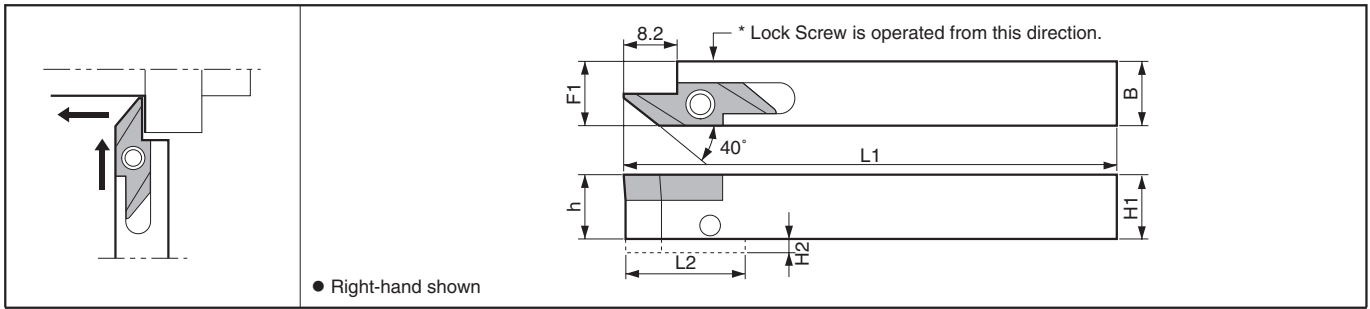
Applicable Inserts

Insert	Description	Corner-R _(r) (mm)	Ref. to Page
	ABW15R4005 15R4015	0.05 0.15	B94
	ABW15R4005M 15R4015M	<0.05 <0.15	

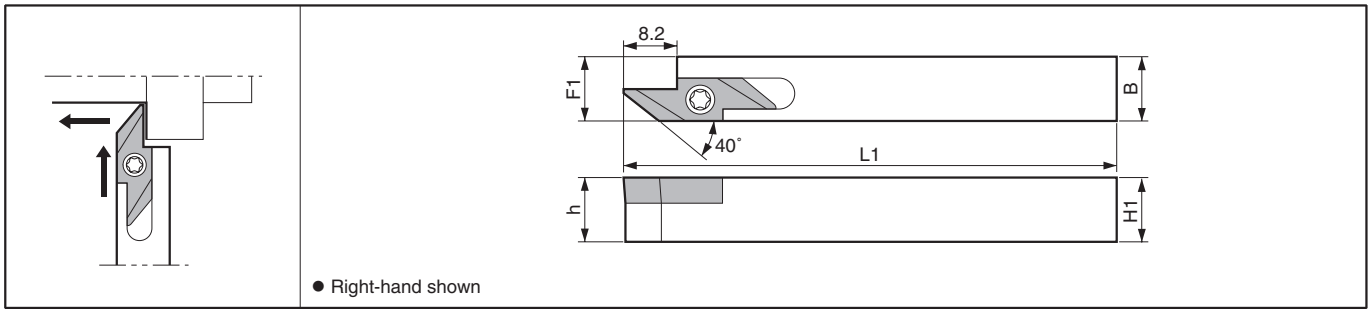
Recommended Cutting Conditions [E45](#)



AABW-50F (Edge Width: 4.7mm, MAX. Depth: 5mm)



SABW-50F (Edge Width: 4.7mm, MAX. Depth: 5mm)



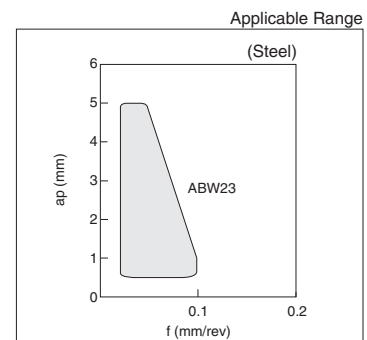
Toolholder Dimensions

Description	Std.	Dimension (mm)							Standard Corner-R(r_c)	Spare Parts			
		H1-h	H2	B	L1	L2	F1	Anchor Pin		Lock Screw	Clamp Screw	Wrench	
AABWR	1010JX-50F	●	10		10			10.2	0.15	LPA-11	HSB4X8R	-	FH-2
	1212JX-50F	●	12	-	12	120	-	12.2		LPA-13			
	1616JX-50F	●	16		16			16.2		LPA-17			
SABWR	1010JX-50F	●	10		10			10.2	0.15	-	-	SB-3080TR	FT-10
	1212JX-50F	●	12	-	12	120	-	12.2					
	1616JX-50F	●	16		16			16.2					
SABWR	2020K -50F	●	20	-	20	125	-	20.2	0.15	-	-	SB-3080TR	FT-10

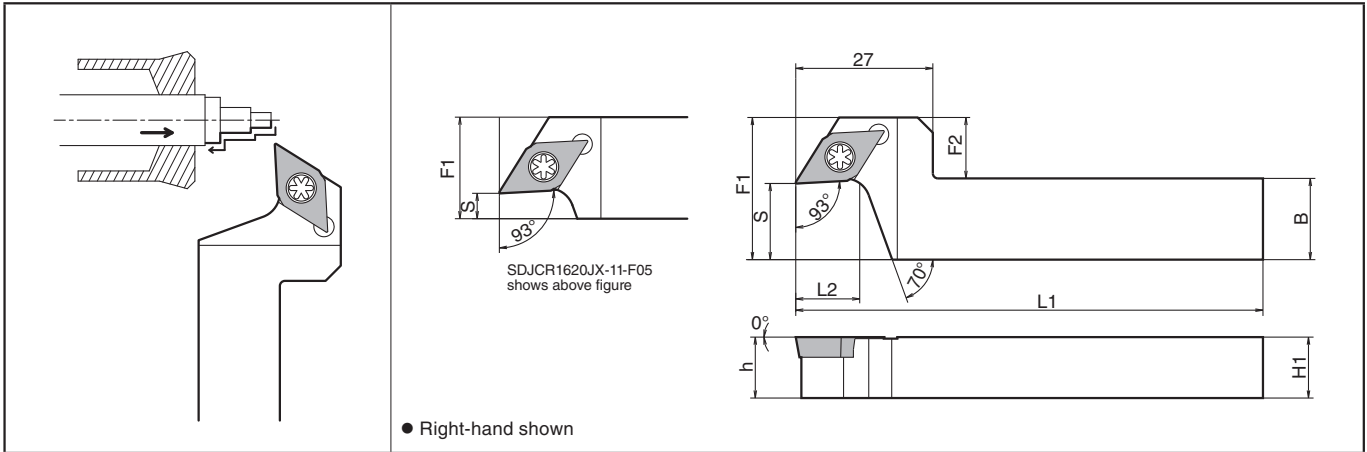
Applicable Inserts

Insert	Description	Corner-R(r_c) (mm)	Ref. to Page
	ABW23R5005 23R5015	0.05 0.15	B94
	ABW23R5005M 23R5015M	<0.05 <0.15	

Recommended Cutting Conditions **E45**



SDJC (External / Copying)



Toolholder Dimensions

Description	Std.	Dimension (mm)							Standard Corner-R(°)	Spare Parts		
		H1=h	B	L1	L2	F1	F2	S		Clamp Screw	Wrench	
SDJCR 1216JX-11-F05	●	12	16	120	12.6	18	2	5	0.2	SB-4085TR	FT-15	
1216JX-11-F15	●					28	12	15				
1620JX-11-F05	●	16	20			20	-	5				
1620JX-11-F15	●					28	8	15				

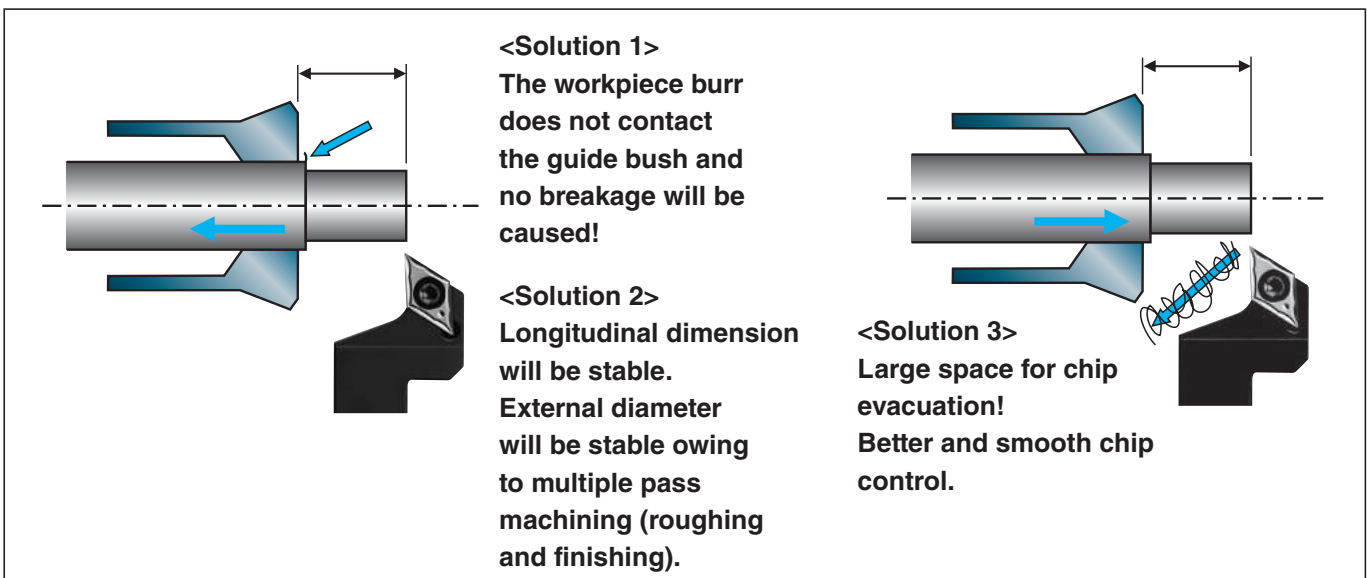
Applicable Inserts

Applications	Minute ap	Finishing	*Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. to Page	B57	B57	B58	B58	B58	B58	B61	B60	B62,B63	B62
Insert	CF	GF	WP(Wiper)	PP	GK	GQ	R-F	R-FSF	(E/F)R-U	FR-USF
Toolholder Description	DCGT11T3..	DCGT11T3..	DCMX11T3..	DCMT11T3..	DCMT11T3..	DCGT11T3..	DCGT11T3..	DCET11T3..	DCGT11T3..	DCET11T3..
Applications	Low Feed	Low Feed / Precision	Soft Steel / Finishing	Soft Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B64,B65	B64	B59	B59	B60	B65	B65	B65	C25	C15
Insert	(E/F)R-J	FR-JSF	XP	XQ	MQ	Without Chipbreaker	AH	R-A3	PCD	CBN
Toolholder Description	DCGT11T3..	DCET11T3..	DCMT11T3..	DCMT11T3..	DCMT11T3..	DCGW11T3..	DCGT11T3..	DCGT11T3..	DCMT11T3..	DCMW11T3..

* For WP chipbreaker, cutting edge offsets or program corrections are required. **F42**

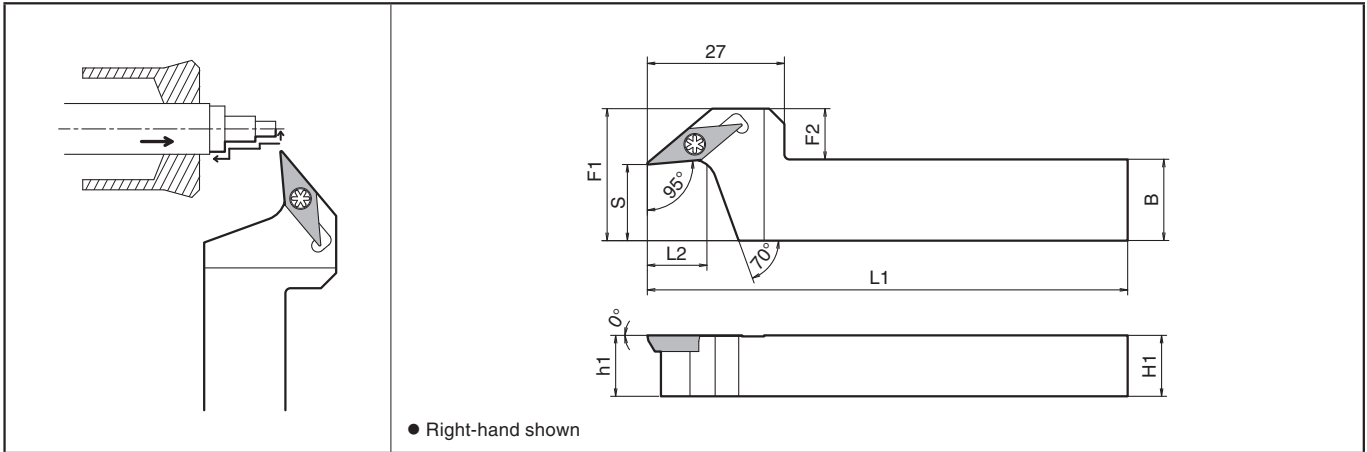
Recommended Cutting Conditions **E44**

Goose-neck holder is available for multiple passes at roughing and finishing!



● : Std. Item

SVLP (External / Copying)



Toolholder Dimensions

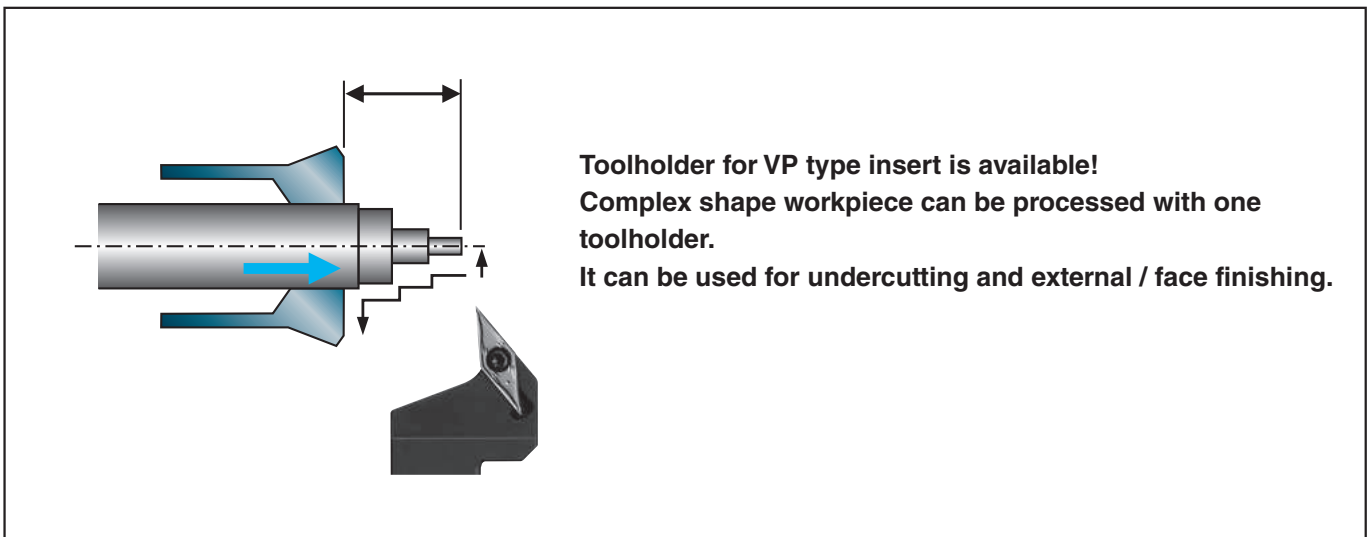
Description	Std.	Dimension (mm)							Standard Corner-R(r)	Spare Parts	
		H1=h	B	L1	L2	F1	F2	S		Clamp Screw	Wrench
SVLPR 1216JX-11-F15	●	12	16	120	12	26	10	15	0.2	SB-2570TR	FT-8
1620JX-11-F15	●	16	20				6				

Applicable Inserts

Applications	Minute ap	Finishing	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision				
Ref. to Page	B86	B86	B86	B87	B88	B88				
Insert	CF	CK	GF	R-FSF	FR-U	FR-USF				
Toolholder Description										
SVLPR...-11-F..	VPGT1103..	VPGT1103..	VPGT1103..	VPET1103..	VPET1103..	VPET1103..				

Recommended Cutting Conditions ➔ E44

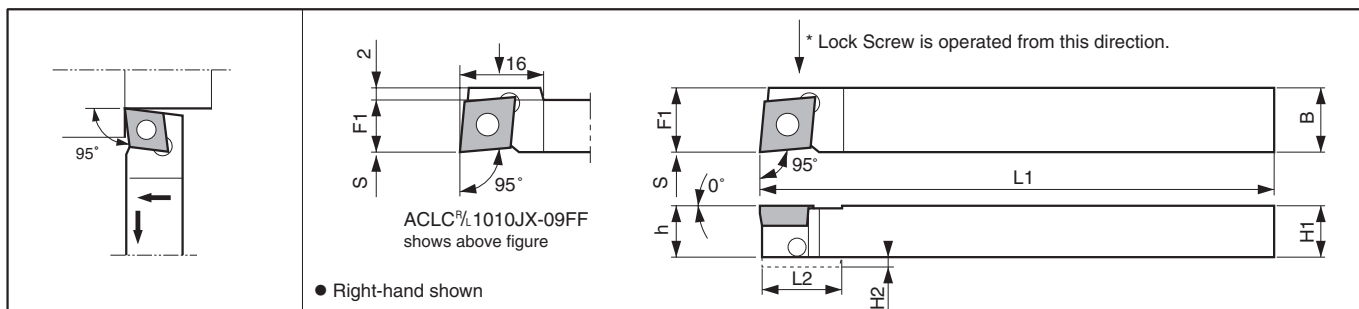
One toolholder for complex shape workpiece



Toolholder for VP type insert is available!
 Complex shape workpiece can be processed with one toolholder.
 It can be used for undercutting and external / face finishing.

External Toolholders [CC□□ Insert]

■ ACLC-FF (Without Offset) (External / Facing)



● Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R(r)	Spare Parts					
	R	L	H1-h	H2	B	L1	L2	F1	S		Anchor Pin	Lock Screw	Wrench			
ACLC ^{R/L} 1010JX-06FF	●	●	10	-	10	120	-	10		0	0.2					
	●	●	10	2	10			16	10			LPF-11	HSB4X8 ^{R/L}	FH-2		
	●	●	12	-	12	120	-	12				LPF-13				
ACLC ^{R/L} 1616JX-09FF	●	●	16	-	16			16								

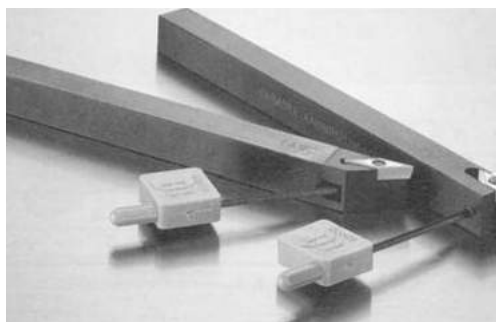
- Lock Screw: HSB4X8R for Right-hand Toolholder, HSB4X8L for Left-hand Toolholder.

● Applicable Inserts

Applications	Finishing	Finishing-Medium	Finishing-Medium	Low Feed	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B49	B50	B49,B50	B53,B54	B51	B55	B55	B55	C24	C14
Insert	GF	GK	GQ	(E/F) ^{R/L} -U	MQ	Without Chipbreaker	AH	^{R/L} -A3	PCD	CBN
Toolholder Description										
ACLC ^{R/L} ...-06FF	CCGT0602..	CCMT0602..	CCGT0602..	CCGT0602..	-	CCGW0602..	-	-	CCMT0602.. CCGW0602..	CCMW0602..
ACLC ^{R/L} ...-09FF	CCGT09T3..	CCMT09T3..	CCGT09T3..	CCGT09T3..	CCMT09T3..	CCGW09T3..	CCGT09T3..	CCGT09T3..	CCMT09T3.. CCGW09T3..	CCMW09T3..

Recommended Cutting Conditions **E44**

● Back Clamp Toolholders



1. The lock screw can be operated from the back side and allows simple insert replacement on Swiss type automatic lathes. (Fig.1)
2. Simple insert replacement by slightly turning the wrench. (Fig.2)
3. Rigid clamping with anchor pin and lock screw. (Fig.2)

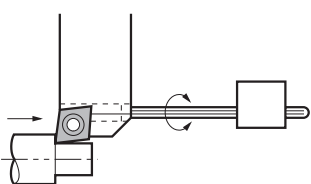


Fig.1

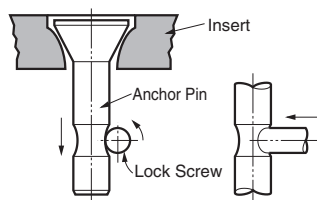
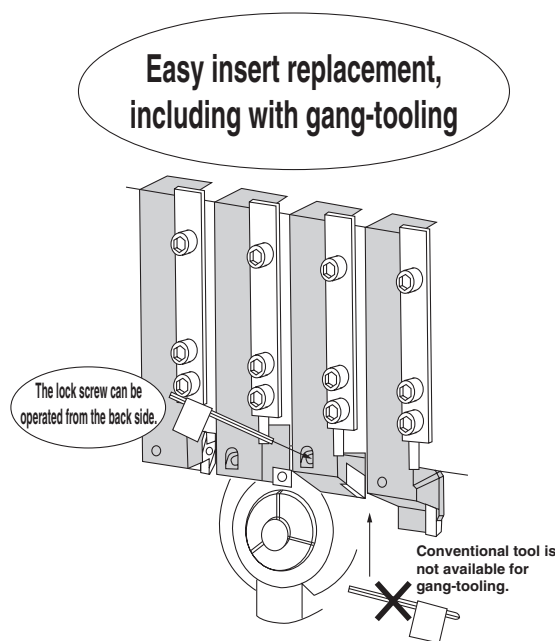
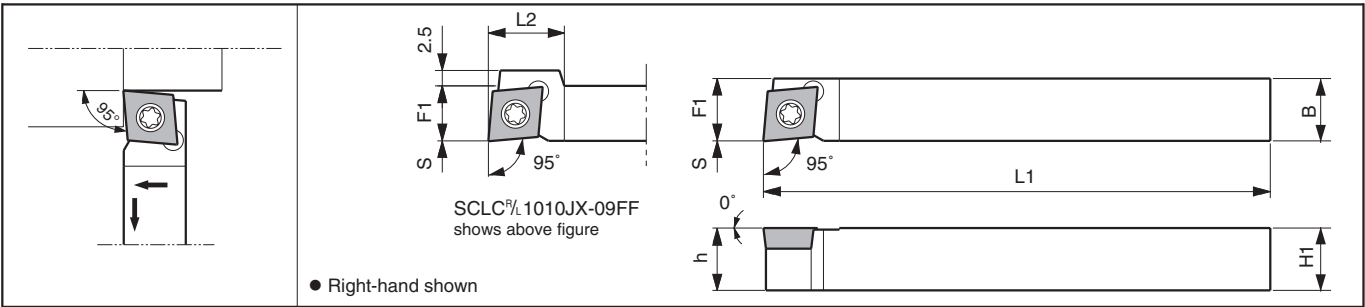


Fig.2



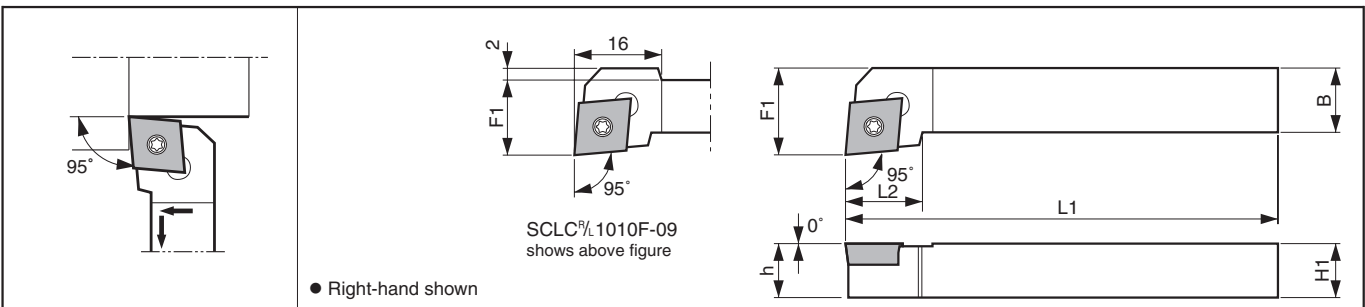
SCLC-FF (Without Offset) (External / Facing)



Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R(re)	Spare Parts			
	R	L	H1-h	B	L1	L2	F1	S	Clamp Screw		Wrench			
SCLC% 0808F-06FF 1212F-09FF	●	●	8	8	85	-	8	0	0.2	SB-2570TR SB-4085TR	FT-8 FT-15			
	●	●	12	12										
SCLC% 1010JX-06FF 1010JX-09FF 1212JX-09FF 1616JX-09FF NEW 2020JX-09FF	●	●	10	10	120	-	10	0	0.2	SB-2570TR SB-4085TR	FT-8 FT-15			
	●	●	10	10		15	10							
	●	●	12	12			12							
	●	●	16	16			16							
●	●	20	20		20									

SCLC (External / Facing)



Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R(re)	Spare Parts			
	R	L	H1-h	B	L1	L2	F1		Clamp Screw		Wrench	Wrench		
SCLC% 1010F -06 1010F -09 1212H -09 1616H -09 2020K -09 2525M -09 1616H -12 2020K -12 2525M -12	●	●	10	10	80	9	12		0.2	SB-2570TR SB-4085TR	FT-8 FT-15	-		
	●	●	10	10	80	14	14							
	●	●	12	12	100	15	16							
	●	●	16	16	15	20								
	●	●	20	20	125	20	25							
	●	●	25	25	150	22	32							
	●	●	16	16	100	20	20					0.4	SB-5090TR	-
●	●	20	20	125	22	25								
●	●	25	25	150	22	32								

Applicable Inserts (SCLC-FF / SCLC)

Applications Ref. to Page	Finishing B49	Finishing-Medium B50	Finishing-Medium B49,B50	Low Feed B53,B54	Stainless Steel B51	Cast Iron B55	Non-ferrous Metals B55	Non-ferrous Metals B55	Non-ferrous Metals C24	Hard Materials C14
Insert	GF	GK	GQ	(E/F)%-U	MQ	Without Chipbreaker	AH	%-A3	PCD	CBN
Toolholder Description										
SCLC%L...-06FF/-06	CCGT0602..	CCMT0602..	CCGT0602..	CCGT0602..	-	CCGW0602..	-	-	CCMT0602.. CCGW0602..	CCMW0602..
SCLC%L...-09FF/-09	CCGT09T3..	CCMT09T3..	CCGT09T3..	CCGT09T3..	CCMT09T3..	CCGW09T3..	CCGT09T3..	CCGT09T3..	CCMT09T3.. CCGW09T3..	CCMW09T3..
SCLC%L...-12	-	CCMT1204..	-	-	-	-	-	CCGT1204..	-	-

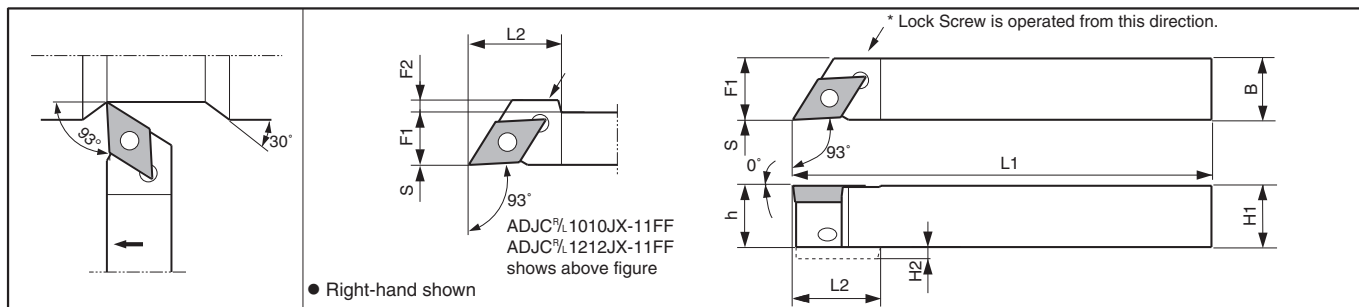
Recommended Cutting Conditions E44

● : Std. Item

E
Small Tools

External Toolholders [DC□□ Insert]

ADJC-FF (Without Offset) (External / Copying)



Toolholder Dimensions

Description	Std.		Dimension (mm)								Standard Corner-R(ε)	Spare Parts		
	R	L	H1-h	H2	B	L1	L2	F1	F2	S		Anchor Pin	Lock Screw	Wrench
ADJC^{R/L} 1010JX-07FF	●	●	10	-	10	120	20	10	-	0	0.2	LPF-11	HSB4X8 ^{R/L}	FH-2
ADJC^{R/L} 1010JX-11FF	●	●	10	2	10			10	3					
ADJC^{R/L} 1212JX-11FF	●	●	12	-	12			12	1					
ADJC^{R/L} 1616JX-11FF	●	●	16	-	16			-	-					

- Lock Screw: HSB4X8R for Right-hand Toolholder, HSB4X8L for Left-hand Toolholder.

Applicable Inserts

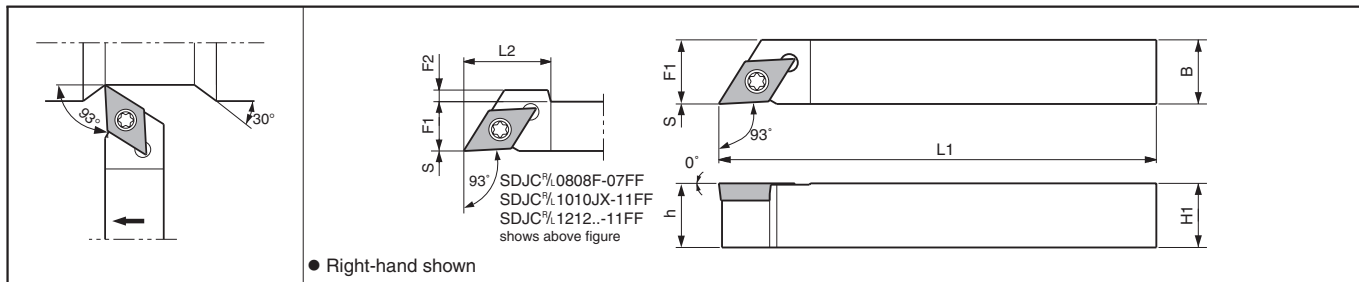
Applications	Minute ap	Finishing	Finishing	*Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed	
Ref. to Page	B57	B57	B57,B58	B58	B58	B58	B58	B58	B61	B60	B62,B63
Insert	CF	GF	CK	WP(Wiper)	PP	GK	GQ	^{R/L} -F	^{R/L} -FSF	(E/F) ^{R/L} -U	
Toolholder Description											
ADJC^{R/L}...-07FF	DCGT0702..	DCGT0702..	DCGT0702..	DCMX0702..	DCMT0702..	DCMT0702..	DCGT0702..	DCGT0702..	DCET0702..	DCGT0702..	
ADJC^{R/L}...-11FF	DCGT11T3..	DCGT11T3..	DCGT11T3..	DCMX11T3..	DCMT11T3..	DCMT11T3..	DCGT11T3..	DCGT11T3..	DCET11T3..	DCGT11T3..	
Applications	Low Feed / Precision	Low Feed	Soft Steel / Finishing	Soft Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials	
Ref. to Page	B62	B64,B65	B59	B59	B60	B65	B65	B65	C25	C15	
Insert	F ^{R/L} -USF	(E/F) ^{R/L} -J	XP	XQ	MQ	Without Chipbreaker	AH	^{R/L} -A3	PCD	CBN	
Toolholder Description											
ADJC^{R/L}...-07FF	DCET0702..	DCET0702..	DCMT0702..	-	DCMT0702..	DCGW0702..	-	-	DCMT0702..	DCMW0702..	
ADJC^{R/L}...-11FF	DCET11T3..	DC_T11T3..	DCMT11T3..	DCMT11T3..	DCMT11T3..	DCGW11T3..	DCGT11T3..	DCGT11T3..	DCMT11T3..	DCMW11T3..	

* For WP chipbreaker, cutting edge offsets or program corrections are required. **F42**

Recommended Cutting Conditions **E44**

External Toolholders [DC□□ Insert]

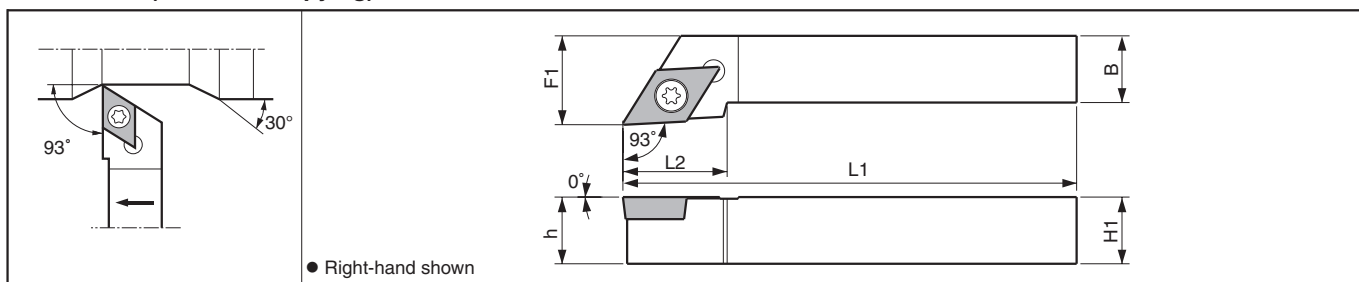
SDJC-FF (Without Offset) (External / Copying)



Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R(r)	Spare Parts				
	R	L	H1-h	B	L1	L2	F1	F2	S		Clamp Screw	Wrench			
SDJC [®] / _L 0808F -07FF 1212F -11FF	●	●	8	8	85	14	8	0.5	0	0.2	SB-2570TR	FT-8			
	●	●	12	12		20	12	1						SB-4085TR	FT-15
SDJC [®] / _L 1010JX-07FF 1010JX-11FF 1212JX-11FF 1616JX-11FF NEW 2020JX-11FF	●	●	10	10	120	-	10	-	0	0.2	SB-2570TR	FT-8			
	●	●	10	10		20	10	3						SB-4085TR	FT-15
	●	●	12	12		12	1								
	●	●	16	16		-	16	-							
●	●	20	20	-	20	-									

SDJC (External / Copying)



Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R(r)	Spare Parts			
	R	L	H1-h	B	L1	L2	F1							
SDJC [®] / _L 1010F -07	●	●	10	10	80	12	12			0.2	SB-2570TR	FT-8		
SDJC [®] / _L 1010F -11 1212H -11 1616H -11 2020K -11 2525M -11	●	●	10	10	80		12			0.2	SB-4085TR	FT-15		
	●	●	12	12	100	18	16							
	●	●	16	16		20								
	●	●	20	20		125	25							
●	●	25	25	150	23	32								

Applicable Inserts

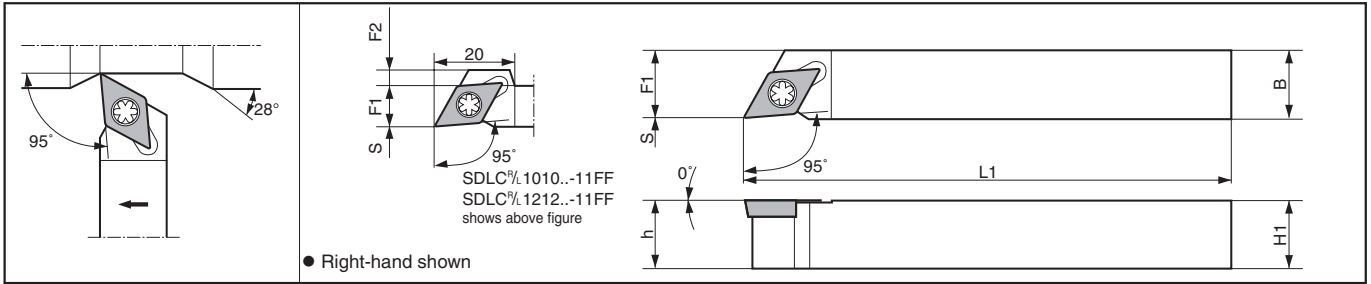
Applications	Minute ap	Finishing	Finishing	*Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed
Ref. to Page	B57	B57	B57,B58	B58	B58	B58	B58	B61	B60	B62,B63
Insert	CF	GF	CK	WP(Wiper)	PP	GK	GQ	¾-F	¾-FSF	(E/F)¾-U
Toolholder Description										
SDJC [®] / _L ...-07FF/-07	DCGT0702..	DCGT0702..	DCGT0702..	DCMX0702..	DCMT0702..	DCMT0702..	DCGT0702..	DCGT0702..	DCET0702..	DCGT0702..
SDJC [®] / _L ...-11FF/-11	DCGT11T3..	DCGT11T3..	DCGT11T3..	DCMX11T3..	DCMT11T3..	DCMT11T3..	DCGT11T3..	DCGT11T3..	DCET11T3..	DCGT11T3..
Applications	Low Feed / Precision	Low Feed	Soft Steel / Finishing	Soft Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B62	B64,B65	B59	B59	B60	B65	B65	B65	C25	C15
Insert	F¾-USF	(E/F)¾-J	XP	XQ	MQ	Without Chipbreaker	AH	¾-A3	PCD	CBN
Toolholder Description										
SDJC [®] / _L ...-07FF/-07	DCET0702..	DCET0702..	DCMT0702..	-	DCMT0702..	DCGW0702..	-	-	DCMT0702..	DCMW0702..
SDJC [®] / _L ...-11FF/-11	DCET11T3..	DC_T11T3..	DCMT11T3..	DCMT11T3..	DCMT11T3..	DCGW11T3..	DCGT11T3..	DCGT11T3..	DCMT11T3..	DCMW11T3..

* For WP chipbreaker, cutting edge offsets or program corrections are required. ● F42

Recommended Cutting Conditions ● E44

● : Std. Item

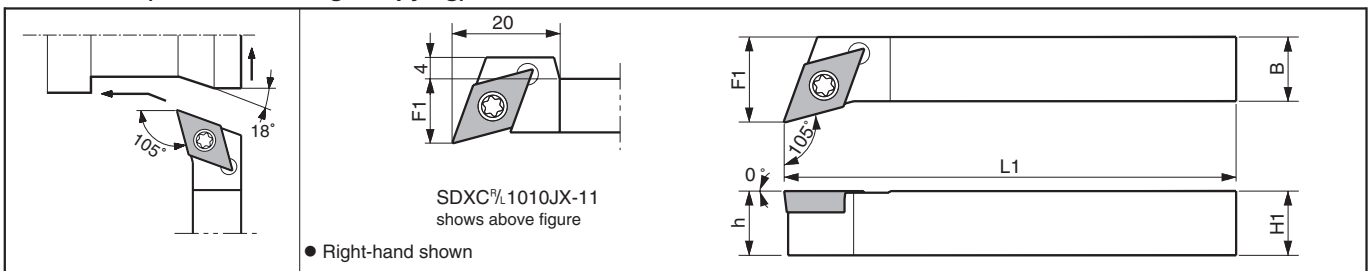
SDLC-FF (Without Offset) (External / Copying)



Toolholder Dimensions

Description	Std.		Dimension (mm)						Standard Corner-R (r)	Spare Parts			
	R	L	H1-h	B	L1	F1	F2	S		Clamp Screw	Wrench		
SDLC ^{3/4} 1010JX-07FF 1212JX-07FF 1616JX-07FF	●	●	10	10	120	10	-	0	0.2	SB-2570TR	FT-8		
	●	●	12	12		12	-	0					
	●	●	16	16		16	-	0					
SDLC ^{3/4} 1010JX-11FF 1212JX-11FF 1616JX-11FF	●	●	10	10	120	10	4	0	0.2	SB-4085TR	FT-15		
	●	●	12	12		12	2	0					
	●	●	16	16		16	-	0					
SDLC ^{3/4} 1212F -07FF	●	●	12	12	85	12	-	0	0.2	SB-2570TR	FT-8		
SDLC ^{3/4} 1010F -11FF 1212F -11FF 1616H -11FF	●	●	10	10	80	10	4	0	0.2	SB-4085TR	FT-15		
	●	●	12	12	85	12	2						
	●	●	16	16	100	16	-						

SDXC (External / Facing / Copying)



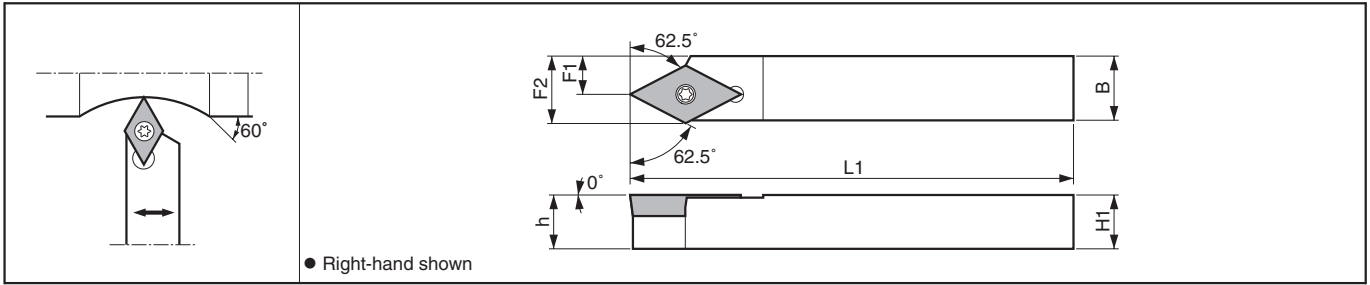
Toolholder Dimensions

Description	Std.		Dimension (mm)						Standard Corner-R (r)	Spare Parts			
	R	L	H1-h	B	L1	F1							
SDXC ^{3/4} 1010JX-07 1010JX-11 1212JX-11 1616JX-11	●	●	10	10	120	12			0.2	SB-2570TR	FT-8		
	●	●	10	10		12							
	●	●	12	12		16			0.2	SB-4085TR	FT-15		
	●	●	16	16		20							

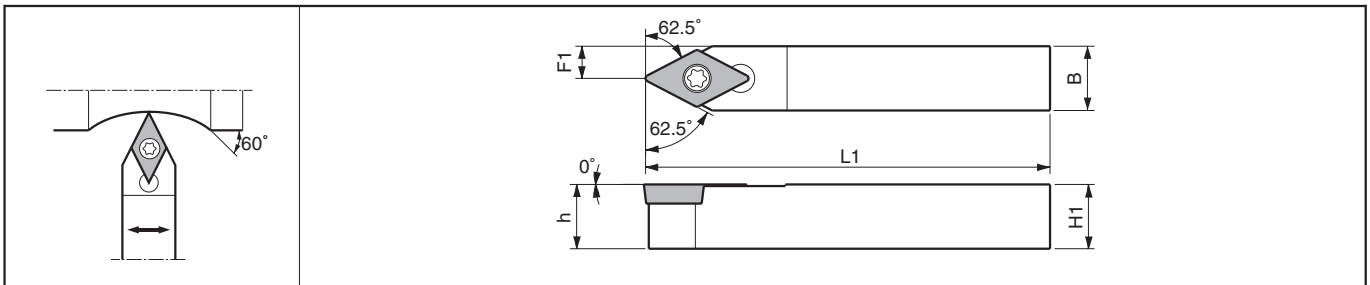
Applicable Inserts (SDLC-FF / SDXC)

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed
Ref. to Page	B57	B57	B57,B58	-	B58	B58	B58	B61	B60	B62,B63
Insert	CF	GF	CK	WP(Wiper)	PP	GK	GQ	^{3/4} L-F	^{3/4} L-FSF	(E/F) ^{3/4} -U
Toolholder Description										
SDLC ^{3/4} /L...-07FF	DCGT0702..	DCGT0702..	DCGT0702..	-	DCMT0702..	DCMT0702..	DCGT0702..	DCGT0702..	DCET0702..	DCGT0702..
SDXC ^{3/4} /L...-07										
SDLC ^{3/4} /L...-11FF	DCGT11T3..	DCGT11T3..	DCGT11T3..	-	DCMT11T3..	DCMT11T3..	DCGT11T3..	DCGT11T3..	DCET11T3..	DCGT11T3..
SDXC ^{3/4} /L...-11										
Applications	Low Feed / Precision	Low Feed	Soft Steel / Finishing	Soft Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B62	B64,B65	B59	B59	B60	B65	B65	B65	C25	C15
Insert	F ^{3/4} -USF	(E/F) ^{3/4} -J	XP	XQ	MQ	Without Chipbreaker	AH	^{3/4} L-A3	PCD	CBN
Toolholder Description										
SDLC ^{3/4} /L...-07FF	DCET0702..	DCET0702..	DCMT0702..	-	DCMT0702..	DCGW0702..	-	-	DCMT0702..	DCMW0702..
SDXC ^{3/4} /L...-07										
SDLC ^{3/4} /L...-11FF	DCET11T3..	DC_T11T3..	DCMT11T3..	DCMT11T3..	DCMT11T3..	DCGW11T3..	DCGT11T3..	DCGT11T3..	DCMT11T3..	DCMW11T3..
SDXC ^{3/4} /L...-11										

SDNC-F (External / Copying)



SDNC (External / Copying)



Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R(r)	Spare Parts		
	R	N	L	H1=h	B	L1	F1	F2	Clamp Screw		Wrench		
	●		●	10	10	120	7	10.5			0.2	SB-2570TR	FT-8
SDNC ^{R/L} 1010JX-07F		●	10	10	120	5	-		0.2	SB-2570TR	FT-8		
SDNCN 1010JX-07		●	12	12		6							
1212JX-07		●	10	10		5				0.2	SB-4085TR	FT-15	
1212JX-11		●	12	12		6							
1616JX-11		●	16	16		8							
SDNCN 0808F-07		●	8	8	85	4	-		0.2	SB-2570TR	FT-8		
SDNCN 1010F-11		●	10	10	80	5			0.2	SB-4085TR	FT-15		
1212F-11		●	12	12	85	6							
1616H-11		●	16	16	100	8							

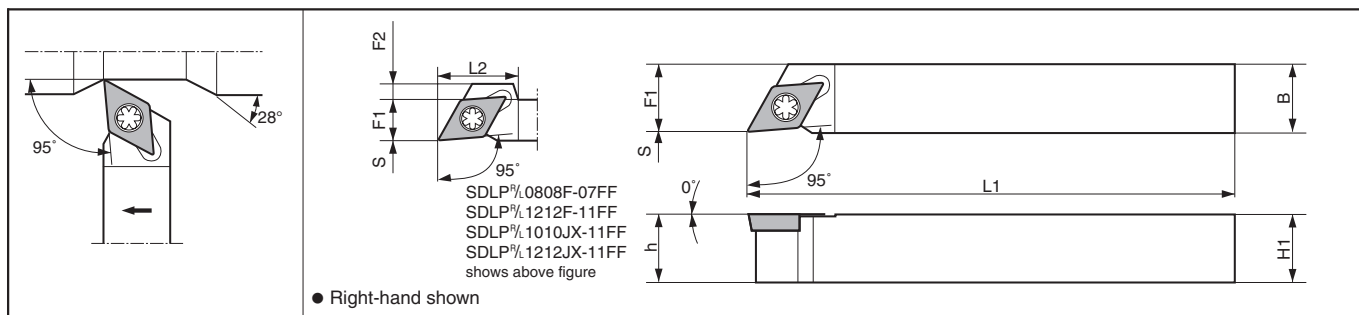
Applicable Inserts

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed
Ref. to Page	B57	B57	B57,B58	-	B58	B58	B58	B61	B60	B62,B63
Insert	CF	GF	CK	WP(Wiper)	PP	GK	GQ	^{R/L} -F	^{R/L} -FSF	(E/F) ^{R/L} -U
Toolholder Description										
SDNC ^{R/L} ...-07F	DCGT0702..	DCGT0702..	DCGT0702..	-	DCMT0702..	DCMT0702..	DCGT0702..	DCGT0702..	DCET0702..	DCGT0702..
SDNCN...-07	DCGT11T3..	DCGT11T3..	DCGT11T3..	-	DCMT11T3..	DCMT11T3..	DCGT11T3..	DCGT11T3..	DCET11T3..	DCGT11T3..
SDNCN...-11	DCET0702..	DCET0702..	DCMT0702..	-	DCMT0702..	DCGW0702..	-	-	DCMT0702..	DCMW0702..
Applications	Low Feed / Precision	Low Feed	Soft Steel / Finishing	Soft Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B62	B64,B65	B59	B59	B60	B65	B65	B65	C25	C15
Insert	F ^{R/L} -USF	(E/F) ^{R/L} -J	XP	XQ	MQ	Without Chipbreaker	AH	^{R/L} -A3	PCD	CBN
Toolholder Description										
SDNC ^{R/L} ...-07F	DCET0702..	DCET0702..	DCMT0702..	-	DCMT0702..	DCGW0702..	-	-	DCMT0702..	DCMW0702..
SDNCN...-07	DCET11T3..	DC_T11T3..	DCMT11T3..	DCMT11T3..	DCMT11T3..	DCGW11T3..	DCGT11T3..	DCGT11T3..	DCMT11T3..	DCMW11T3..
SDNCN...-11										

Recommended Cutting Conditions E44

External Toolholders [DP□□ Insert]

SDLP-FF (Without Offset) (External / Copying)



E

Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R (r _e)	Spare Parts				
	R	L	H1-h	B	L1	L2	F1	F2	S		Clamp Screw	Wrench			
SDLP ^{3/4} 0808F -07FF 1212F -11FF	●	●	8	8	85	14	8	0.5	0	0.2	SB-2570TR SB-4085TR	FT-8 FT-15			
	●	●	12	12		20	12	2							
SDLP ^{3/4} 1010JX-07FF 1010JX-11FF 1212JX-11FF 1616JX-11FF	●	●	10	10	120	-	10	-	0	0.2	SB-2570TR SB-4085TR	FT-8 FT-15			
	●	●	10	10		20	10	4							
	●	●	12	12		12	12	2							
	●	●	16	16		-	16	-							

Applicable Inserts

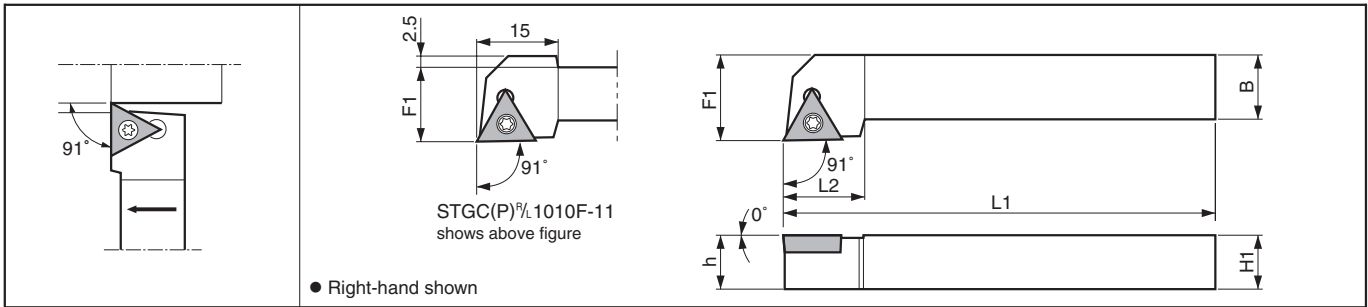
Applications	Finishing / Precision	Low Feed / Precision							
Ref. to Page	B66	B66							
Insert	^{3/4} L-FSF	F ^{3/4} -USF							
Toolholder Description									
SDLP ^{3/4} L...-07FF	DPET0702..	DPET0702..							
SDLP ^{3/4} L...-11FF	DPET11T3..	DPET11T3..							

Recommended Cutting Conditions E44

● : Std. Item

Small Tools

STGC(P) (External)



Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R(ε)	Spare Parts			
	R	L	H1-h	B	L1	L2	F1	Clamp Screw	Wrench					
STGC ^{R/L} 0808E -08	●	□	8	8	70	12	10	0.2	SB-2050TR	FT-6				
1010F -08	●	●	10	10	80		12							
STGC ^{R/L} 1010F -11	●	●	10	10	80	15	14	0.4	SB-2570TR	FT-8				
1212H -11	●	●	12	12	100		16							
1616H -11	●	●	16	16	20		20							
2020K -11	●	●	20	20	125		25							
2525M -11	●	●	25	25	150	20	32							
STGP ^{R/L} 0808E -08	●		8	8	70	12	10	0.2	SB-2050TR	FT-6				
1010F -08	□	□	10	10	80		12							
STGP ^{R/L} 1010F -11	●	●	10	10	80	15	14	0.2	SB-3080TR	FT-10				
1212H -11	●	●	12	12	100		16							
1616H -11	●	●	16	16	20		20							

Applicable Inserts (STGC)

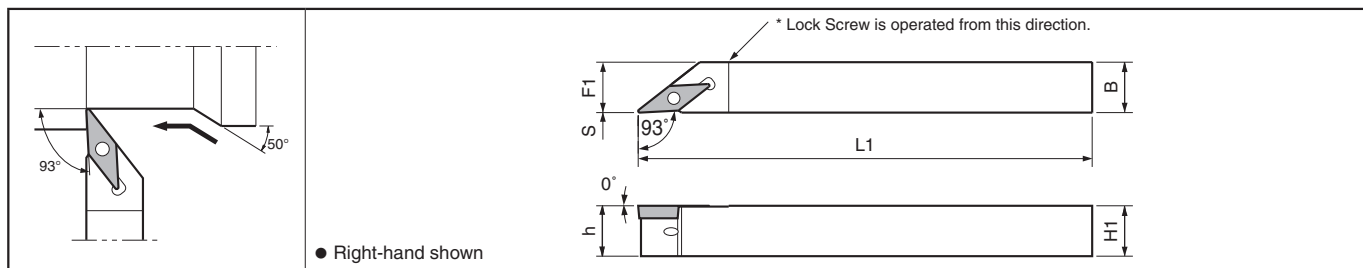
Applications	Low Feed	Low Feed / Precision	Cast Iron	Non-ferrous Metals	Non-ferrous Metals				
Ref. to Page	B72	B71	B73	B73	C26				
Insert	(E/F) 1/4-U	F 1/4-USF	Without Chipbreaker	1/4-A3	PCD				
Toolholder Description									
STGC ^{R/L}-08	TCGT0802..	TCET0802..	TCGW0802..	-	TCMT0802..				
STGC ^{R/L}-11	TCGT1103..	TCET1103..	TCGW1103..	TCGT1103..	TCMT1103.. TCGW1103..				

Applicable Inserts (STGP)

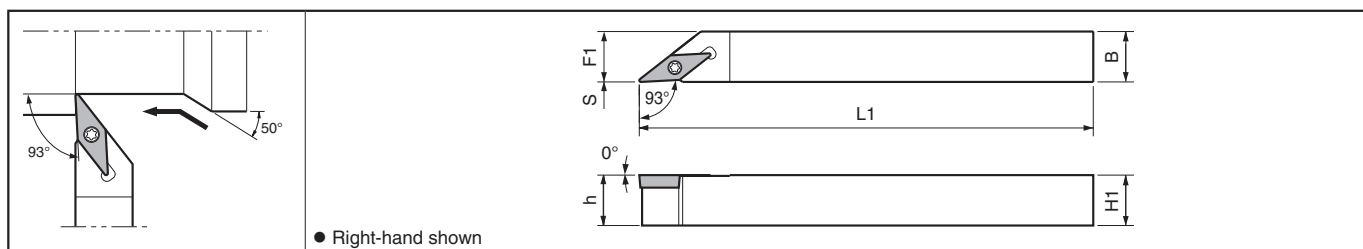
Applications	Minute ap	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Low Feed / Precision	Medium	Soft Steel / Finishing	Soft Steel / Finishing-Medium	Cast Iron
Ref. to Page	B74	B74	B75	B75, B76	B78	B78	B77	B75	B75	B79
Insert	CF	PP	HQ	1/4	1/4-FSF	F 1/4-USF	1/4-H	XP	XQ	Without Chipbreaker
Toolholder Description										
STGP ^{R/L}-08	TPGT0802..	-	-	TPGH0802..	TPET0802..	TPET0802..	-	-	-	TPGB0802..
STGP ^{R/L}-11	-	TPMT1103..	TPMT1103..	TPGH1103..	TPET1103..	TPET1103..	TPGH1103..	TPMT1103..	TPMT1103..	TPGB1103..
Applications	Non-ferrous Metals	Hard Materials								
Ref. to Page	C26 ~ C28	C16								
Insert	PCD	CBN								
Toolholder Description										
STGP ^{R/L}-08	TPMH0802.. TPGB0802..	TPGB0802..								
STGP ^{R/L}-11	TPMH1103.. TPGB1103..	TPGB1103..								

Recommended Cutting Conditions E44

AVJB-FF (Without Offset) (External / Copying)



SVJB-FF (Without Offset) (External / Copying)

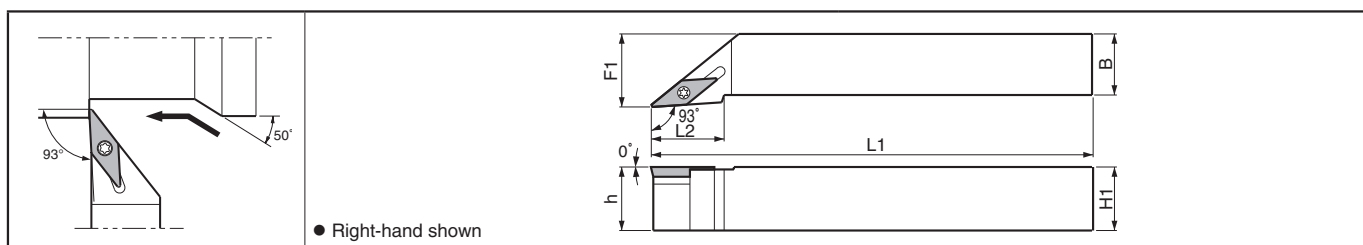


Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R(re)	Spare Parts			
	R	L	H1-h	B	L1	L2	F1	S	Anchor Pin		Lock Screw	Clamp Screw	Wrench	
AVJB ^{9/L}	●	●	10	10	120	-	10	0	0.4	LPF-11	HSB4X8 ^{9/L}	-	FH-2	
	●	●	12	12		12	LPF-1113							
	●	●	16	16		16	LPF-1117							
SVJB ^{9/L}	●	●	10	10	120	-	10	0	0.4	-	-	SB-2570TR	FT-8	
	●	●	12	12		12								
	●	●	16	16		16								
	●	●	20	20		20								

Lock Screw: HSB4X8R for Right-hand Toolholder, HSB4X8L for Left-hand Toolholder.

SVJB (External / Copying)



Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R(re)	Spare Parts				
	R	L	H1-h	B	L1	L2	F1	Clamp Screw	Wrench		Shim	Shim Screw	Wrench		
SVJB ^{9/L}	●	●	20	20	125	30	25	0.4	SB-2570TR	FT-8	-	-	-		
	●	●	25	25	150	35	32								
SVJB ^{9/L}	●	●	20	20	125	30	25	0.8	SB-40125TRN	FT-15	SVN-32N (SVN-32S)	SS-4N	LW-4		
	●	●	25	25	150		32								

For insert with corner-R(re) 0.2 or 0.4, shim of marked * is recommended (sold separately).

Applicable Inserts (AVJB-FF / SVJB-FF / SVJB)

Applications	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B82	B82	B82	B83	B82	B84	B85	B85	C28	C17
Insert	GP	VF	HQ	9/L-F	9/L-FSF	9/L-Y	AH	9/L-A3	PCD	CBN
Toolholder Description										
□ VJB ^{9/L} ...-11FF-11	VBMT1103..	VBMT1103..	VBMT1103..	VBGT1103..	VBET1103..	VBGT1103..	-	-	VBMT1103..	VBGW1103..
SVJB ^{9/L} ...-16N	VBMT1604..	VBMT1604..	VBMT1604..	-	-	VBGT1604..	VCGT1604..	VCGT1604..	VBMT1604..	VBGW1604..

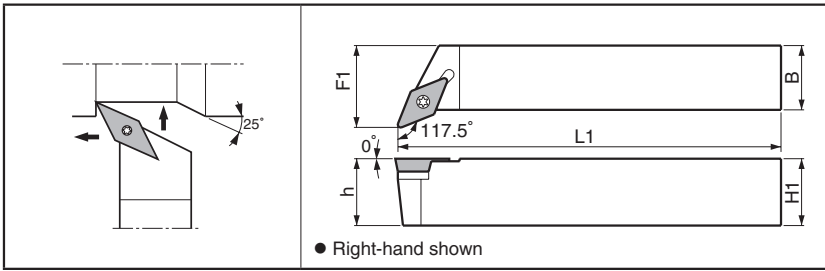
Recommended Cutting Conditions **E44**

● : Std. Item

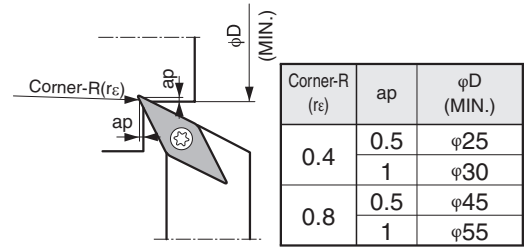
E

Small Tools

SVPB (External / Facing / Copying / Undercutting)



Undercutting diameter of SVPB

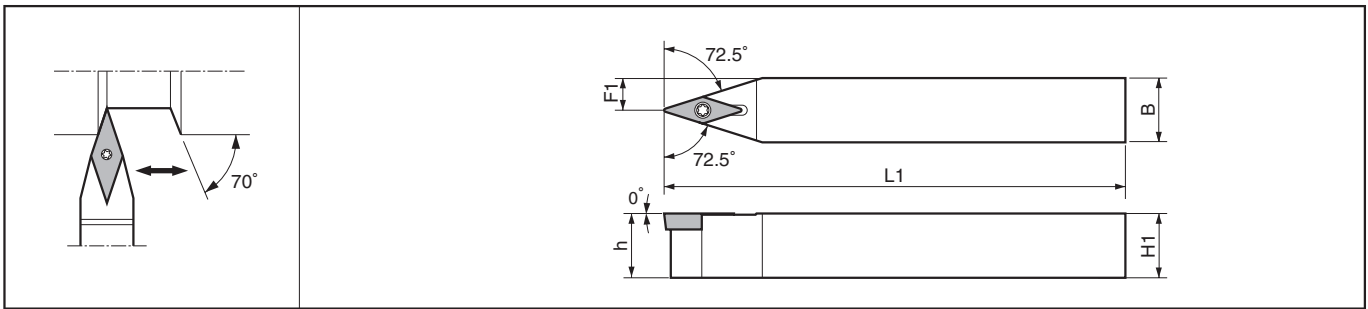


Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R(re)	Spare Parts				
	R	L	H1-h	B	L1	L2	F1	Clamp Screw	Wrench		Shim	Shim Screw	Wrench		
SVPB ^{1/2}	1010JX-11	●	●	10	10			14.5	0.4	SB-2570TR	FT-8	-	-	-	
	1212JX-11	●	●	12	12	120	-	16.5							
	1616JX-11	●	●	16	16			20.5							
SVPB ^{1/2}	2020K-11	●	●	20	20	125	-	25	0.4	SB-2570TR	FT-8	-	-	-	
	2525M-11	●	●	25	25	150	-	32							
SVPB ^{1/2}	2020K-16N	●	●	20	20	125	-	25	0.8	SB-40125TRN	FT-15	SVN-32N *(SVN-32S)	SS-4N	LW-4	
	2525M-16N	●	●	25	25	150	-	32							

For insert with corner-R(re) 0.2 or 0.4, shim of marked * is recommended (sold separately).

SVVB (External / Copying)



Toolholder Dimensions

Description	Std.	Dimension (mm)					Standard Corner-R(re)	Spare Parts				
		H1-h	B	L1	F1	Clamp Screw		Wrench	Shim	Shim Screw	Wrench	
SVVBN	1212F-11	●	12	12	85	6	0.4	SB-2570TR	FT-8	-	-	-
SVVBN	1010JX-11	●	10	10		5						
	1212JX-11	●	12	12	120	6						
SVVBN	1616JX-11	●	16	16		8						
SVVBN	1010F-11	●	10	10	80	5	0.4	SB-2570TR	FT-8	-	-	-
	1616H-11	●	16	16	100	8						
	2020K-11	●	20	20	125	10						
	2525M-11	●	25	25	150	12.5						
SVVBN	2020K-16N	●	20	20	125	10	0.8	SB-40125TRN	FT-15	SVN-32N *(SVN-32S)	SS-4N	LW-4
	2525M-16N	●	25	25	150	12.5						

For insert with corner-R(re) 0.2 or 0.4, shim of marked * is recommended (sold separately).

Applicable Inserts (SVPB / SVVB)

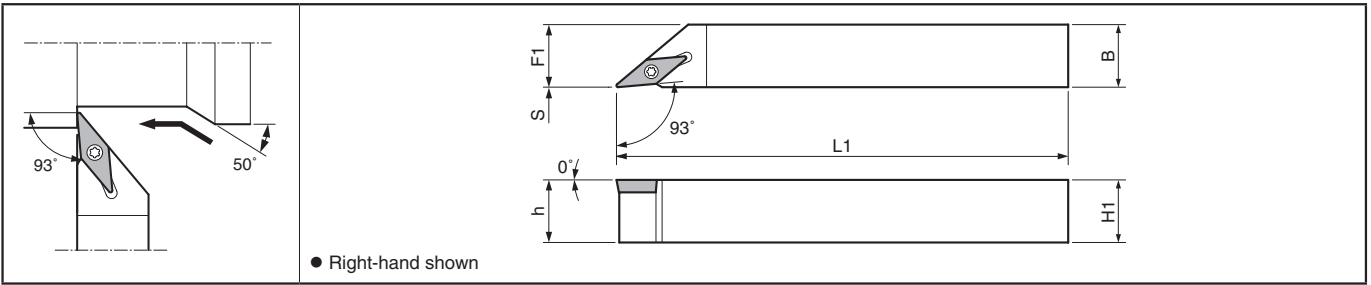
Applications	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B82	B82	B82	B83	B82	B84	B85	B85	C28	C17
Insert	GP	VF	HQ	%L-F	%L-FSF	%L-Y	AH	%L-A3	PCD	CBN
Toolholder Description										
SVPB ^{1/2} ...-11	VBMT1103..	VBMT1103..	VBMT1103..	VBGT1103..	VBET1103..	VBGT1103..	-	-	VBMT1103..	VBGW1103..
SVVBN...-11										
SVPB ^{1/2} ...-16N	VBMT1604..	VBMT1604..	VBMT1604..	-	-	VBGT1604..	VCGT1604..	VCGT1604..	VBMT1604..	VBGW1604..
SVVBN...-16N										

Recommended Cutting Conditions E44

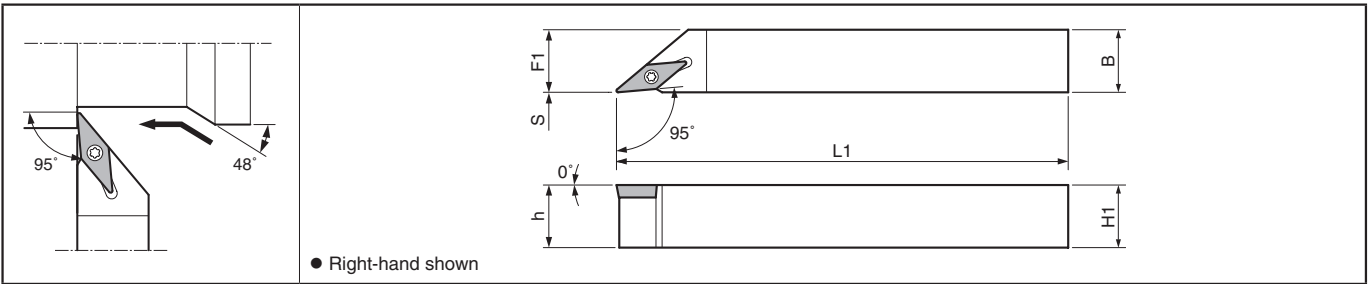
● : Std. Item

E
Small Tools

SVJP-FF (Without Offset) (External / Copying)



SVLP-FF (Without Offset) (External / Copying)



Toolholder Dimensions

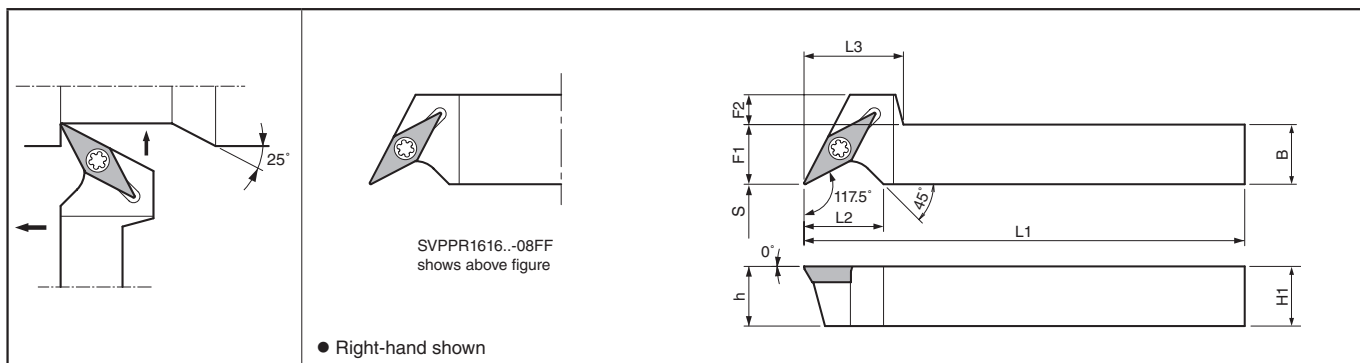
Description	Std.		Dimension (mm)								Standard Corner-R(ε)	Spare Parts			
	R	L	H1-h	B	L1	L2	L3	F1	S	Clamp Screw		Wrench			
SVJP ^{R/L} NEW	1212F -11FF	●	●	12	12	85			12	0	0.2	SB-2570TR	FT-8		
	1212JX-11FF	●	●	12	12			12							
	1616JX-11FF	●	●	16	16	120	-	-	16						
	2020JX-11FF	●	●	20	20			20							
SVLP ^{R/L}	1010JX-08FF	●	●	10	10			10	0	0.1	SB-2050TR	FT-6			
	1212JX-08FF	●	●	12	12	120	-	-					12		
	1616JX-08FF	●	●	16	16			16							
SVLP ^{R/L}	1212JX-11FF	●	●	12	12			12	0	0.2	SB-2570TR	FT-8			
	1616JX-11FF	●	●	16	16	120	-	-					16		
SVLP ^{R/L}	1212F -08FF	●	●	12	12	85	-	-	12	0	0.1	SB-2050TR	FT-6		
	1212F -11FF	●	●	12	12	85	-	-	12					0	0.2

Applicable Inserts

Applications	Minute ap	Finishing	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision				
Ref. to Page	B86	B86	B86	B87	B88	B88				
Insert	CF	CK	GF	^{R/L} -FSF	F ^{R/L} -U	F ^{R/L} -USF				
Toolholder Description										
SVLP ^{R/L} ...-08FF	-	VPGT0802..	-	VPET0802..	-	VPET0802..				
SV□P ^{R/L} ...-11FF	VPGT1103..	VPGT1103..	VPGT1103..	VPET1103..	VPET1103..	VPET1103..				

Recommended Cutting Conditions E44

SVPP-FF (Without Offset) (External / Facing / Copying / Undercutting)



Toolholder Dimensions

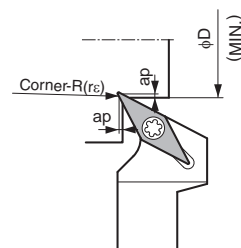
Description	Std.	Dimension (mm)									Standard Corner-R(rε)	Spare Parts			
		H1-h	B	L1	L2	L3	F1	F2	S	Clamp Screw		Wrench			
SVPPR 1010JX-08FF 1212JX-08FF 1616JX-08FF	●	10	10	120	12	16	10	4	0	0.1	SB-2050TR	FT-6			
	●	12	12				12	2					0		
	●	16	16				-	16					-		
SVPPR 1010JX-11FF 1212JX-11FF 1616JX-11FF	●	10	10	120	16	20	10	8	0	0.2	SB-2570TR	FT-8			
	●	12	12				12	6							
	●	16	16				16	2							
SVPPR 1212F -08FF 1212F -11FF	●	12	12	85	12	16	12	2	0	0.1	SB-2050TR	FT-6			
	●	12	12	85	16	20	12	6	0	0.2	SB-2570TR	FT-8			

Applicable Inserts

Applicable Inserts	Minute ap	Finishing	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. to Page	B86	B86	B86	B87	B88	B88
Insert	CF	CK	GF	F ¹ / _L -FSF	F ¹ / _L -U	F ¹ / _L -USF
Toolholder Description						
SVPPR...-08FF	-	VPGT0802..	-	VPET0802..	-	VPET0802..
SVPPR...-11FF	VPGT1103..	VPGT1103..	VPGT1103..	VPET1103..	VPET1103..	VPET1103..

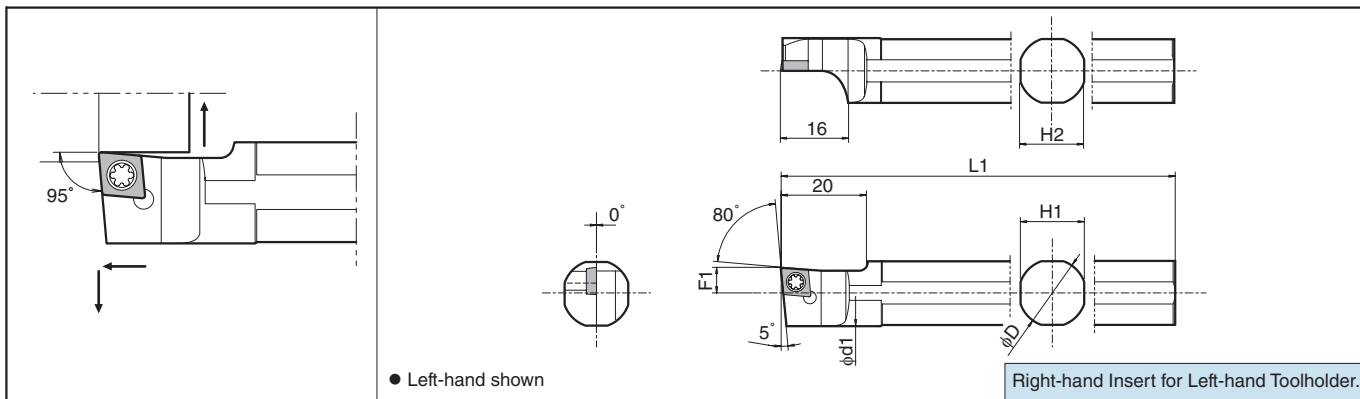
Recommended Cutting Conditions **E44**

Undercutting diameter of SVPP-FF



Corner-R (rε)	ap	φD (MIN.)
0.2	0.5	φ20
	1	φ25

S...SCLC (External / Facing)



● Left-hand shown

Right-hand Insert for Left-hand Toolholder.

● Toolholder Dimensions

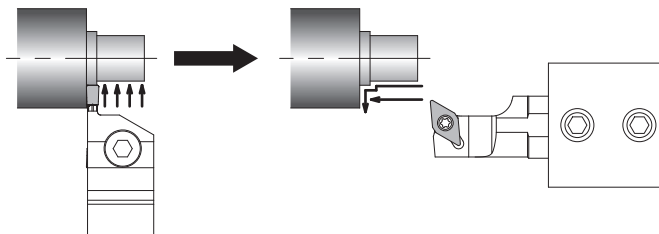
Description	Std.	Dimension (mm)						Standard Corner-R (r)	Spare Parts		
		φD	L1	F1	φd1	H1=H2	Clamp Screw		Wrench		
S12F -SCLCL06	●	12	80	6	13.4	11	0.4	SB-2560TR	FT-8		
S14H -SCLCL06	●	14	100			13					
S15F -SCLCL06	●	15.875	85			15					
S16F -SCLCL06	●	16				15					
S19G -SCLCL06	●	19.05	90			17					
S19K -SCLCL06	●		120			17					
S20G -SCLCL06	●	20	90	18	0.4	SB-4065TR	FT-15				
S20K -SCLCL06	●		120	18							
S19G -SCLCL09	●	19.05	90	17							
S19K -SCLCL09	●		120	17							
S20G -SCLCL09	●	20	90	18							
S20K -SCLCL09	●		120	18							
S25.0H -SCLCL09	●	25	100	10	24.4	0.4	SB-4065TR	FT-15			
S25K -SCLCL09	●	25.4	120		24.8						23

● Applicable Inserts

Applications Ref. to Page	Finishing B49	Finishing-Medium B50	Finishing-Medium B49,B50	Low Feed B53,B54	Stainless Steel B51	Cast Iron B55	Non-ferrous Metals B55	Non-ferrous Metals B55	Non-ferrous Metals C24	Hard Materials C14
Insert	GF	GK	GQ	(E/F)R-U	MQ	Without Chipbreaker	AH	R-A3	PCD	CBN
Toolholder Description										
S...SCLCL06	CCGT0602..	CCMT0602..	CCGT0602..	CCGT0602..	-	CCGW0602..	-	-	CCMT0602.. CCGW0602..	CCMW0602..
S...SCLCL09	CCGT09T3..	CCMT09T3..	CCGT09T3..	CCGT09T3..	CCMT09T3..	CCGW09T3..	CCGT09T3..	CCGT09T3..	CCMT09T3.. CCGW09T3..	CCMW09T3..

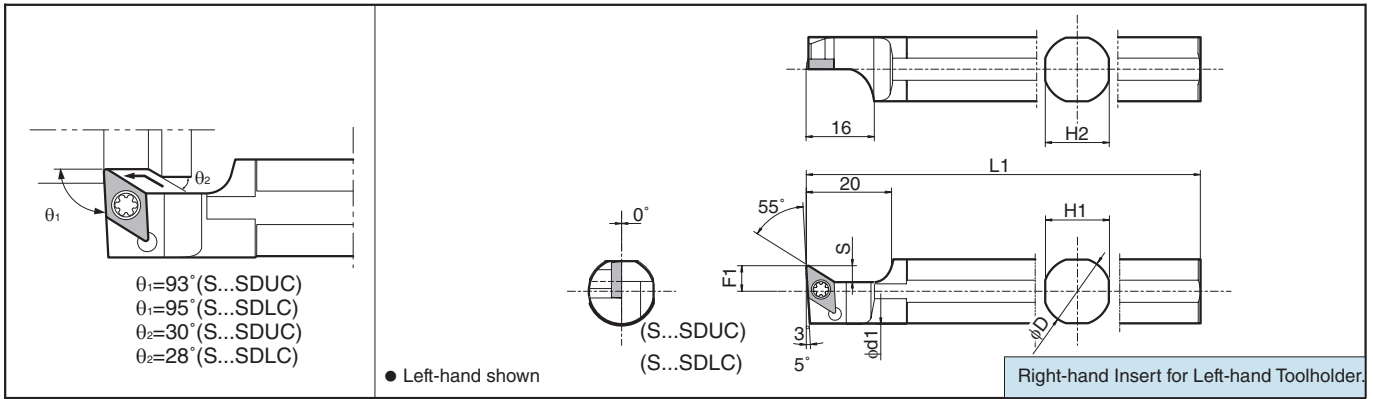
Recommended Cutting Conditions ➔ E44

● Finishing by Sleeve Holder



- 1) Roughing by grooving toolholder
- 2) Finishing by Sleeve Holder improves chip control and reduces cutting time

S...SDUC (External / Copying) / S...SDLC (External / Copying)



Toolholder Dimensions

Description	Std.	Dimension (mm)						Standard Corner-F (r)	Spare Parts			
		φD	L1	F1	φd1	H1=H2	S		Clamp Screw	Wrench		
S14H -SDUCL07	●	14	100	6	13.4	13	3.8	0.4	SB-2560TR	FT-8		
S15F -SDUCL07	●	15.875	85		15.4	15						
S19G -SDUCL07	●	19.05	90		18.4	17						
S19K -SDUCL07	●	20	120		19.4	18						
S20G -SDUCL07	●		90		10	18.4						
S20K -SDUCL07	●	120	19.4			18						
S19G -SDUCL11	●	19.05	90	21.4	20							
S19K -SDUCL11	●	20	120	24.4	23							
S20G -SDUCL11	●		90	24.8	23							
S20K -SDUCL11	●	120	25.4	120	24.8							
S22K -SDUCL11	●	22	120	24.8	23							
S25.0H-SDUCL11	●	25	100	24.4	23							
S25K -SDUCL11	●	25.4	120	24.8	23							
S12F -SDLCL07	●	12	80	6	13.4	11	3.8	0.4	SB-2560TR	FT-8		
S14H -SDLCL07	●	14	100		15.4	15						
S15F -SDLCL07	●	15.875	85		18.4	17						
S16F -SDLCL07	●	16	90		19.4	18						
S19G -SDLCL07	●	19.05	120		18.4	17						
S19K -SDLCL07	●	20	90		19.4	18						
S20G -SDLCL07	●		120	21.4	20							
S20K -SDLCL07	●	90	19.4	18	5.8	0.4	SB-4085TR	FT-15				
S19G -SDLCL11	●	19.05	120	24.4	23							
S19K -SDLCL11	●	20	90	24.8	23							
S20G -SDLCL11	●		120	25.4	120							
S20K -SDLCL11	●	90	24.8	23								
S22K -SDLCL11	●	22	120	24.8	23							
S25.0H-SDLCL11	●	25	100	24.4	23							
S25K -SDLCL11	●	25.4	120	24.8	23							

Applicable Inserts

Applications	Minute ap	Finishing	Finishing	*Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed
Ref. to Page	B57	B57	B57,B58	B58	B58	B58	B58	B61	B60	B62,B63
Insert	CF	GF	CK	WP(Wiper)	PP	GK	GQ	R-F	R-FSF	(E/F)R-U
Toolholder Description										
S...SD□CL07	DCGT0702..	DCGT0702..	DCGT0702..	DCMX0702..	DCMT0702..	DCMT0702..	DCGT0702..	DCGT0702..	DCET0702..	DCGT0702..
S...SD□CL11	DCGT11T3..	DCGT11T3..	DCGT11T3..	DCMX11T3..	DCMT11T3..	DCMT11T3..	DCGT11T3..	DCGT11T3..	DCET11T3..	DCGT11T3..
Applications	Low Feed / Precision	Low Feed	Soft Steel / Finishing	Soft Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B62	B64,B65	B59	B59	B60	B65	B65	B65	C25	C15
Insert	FR-USF	(E/F)R-J	XP	XQ	MQ	Without Chipbreaker	AH	R-A3	PCD	CBN
Toolholder Description										
S...SD□CL07	DCET0702..	DCET0702..	DCMT0702..	-	DCMT0702..	DCGW0702..	-	-	DCMT0702..	DCMW0702..
S...SD□CL11	DCET11T3..	DC_T11T3..	DCMT11T3..	DCMT11T3..	DCMT11T3..	DCGW11T3..	DCGT11T3..	DCGT11T3..	DCMT11T3..	DCMW11T3..

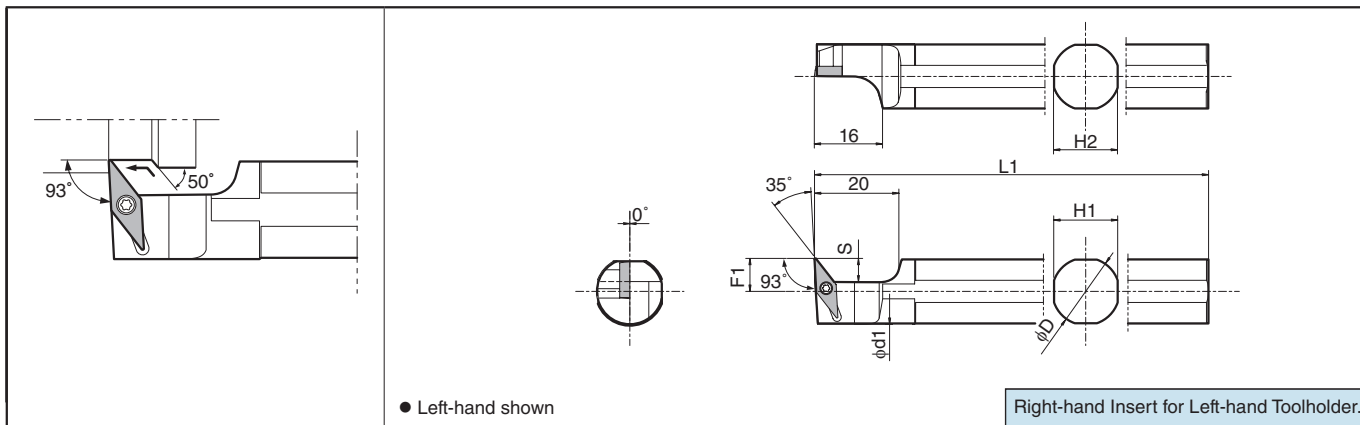
* For WP chipbreaker, cutting edge offsets or program corrections are required. (S...SDLC type can not be used) ● F42

● : Std. Item



External Sleeve Holder [VB□□ / VC□□ Insert]

S...SVUB(C) (External / Copying)



● Left-hand shown

Right-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Description	Std.	Dimension (mm)							Standard Corner-F (r)	Spare Parts			
		φD	L1	F1	φd1	H1-H2	S	Clamp Screw		Wrench			
S12F -SVUCL08	●	12	80	7.5	13.4	11	5.5	0.4	SB-2050TR	FT-6			
S14H -SVUCL08	●	14	100								13		
S15F -SVUCL08	●	15.875	85	8	15.4	15	0.4	SB-2570TR	FT-8				
S16F -SVUCL08	●	16											
S19G -SVUBL11	●	19.05	90	10.5	18.4	17	8	0.4	SB-2570TR	FT-8			
S19K -SVUBL11	●		120										
S20G -SVUBL11	●	20	90	10.5	19.4	18	8	0.4	SB-2570TR	FT-8			
S20K -SVUBL11	●		120										
S25.0H-SVUBL11	●	25	100	10.5	24.4	23	8	0.4	SB-2570TR	FT-8			
S25K -SVUBL11	●	25.4	120								24.8		

Applicable Inserts

Applications	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Non-ferrous Metals	Hard Materials	
Ref. to Page	B82	B82,B85	B82,B85	B83	B82	B84	C28	C17	
Insert	GP	VF	HQ	R-F	R-FSF	R-Y	PCD	CBN	
Toolholder Description									
S...SVUCL08	-	VCMT0802..	VCMT0802..	-	-	-	VCMT0802..	VCGW0802..	
S...SVUBL11	VBMT1103..	VBMT1103..	VBMT1103..	VBGT1103..	VBET1103..	VBGT1103..	VBMT1103..	VBGW1103..	

Recommended Cutting Conditions [E44](#)

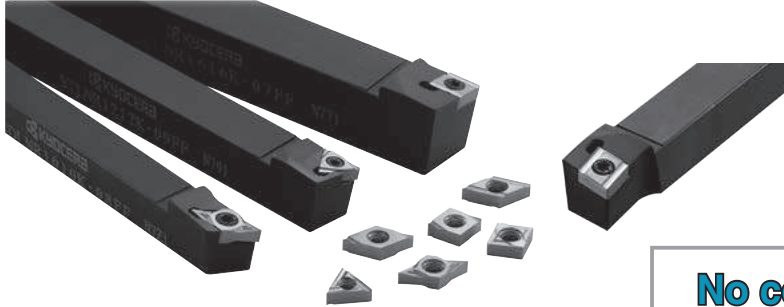
E

Small Tools

Toolholders for Automatic Lathe

Toolholders for Small Double Sided Tooling (Screw Clamp, Without Offset)

Specially designed negative inserts (double-sided) for small workpieces enables sharp cutting equivalent to positive inserts, achieving high productivity due to economical doubled insert edge numbers.



Designed small negative insert

TNGU09 Type



Small Double Sided Insert

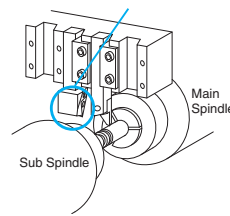
TNGG16 Type



Negative Insert

No constraint of tool position against tool post into the newly designed small negative insert.

The conventional toolholders for negative insert possibly interferes with sub spindle.



No interference with sub spindle

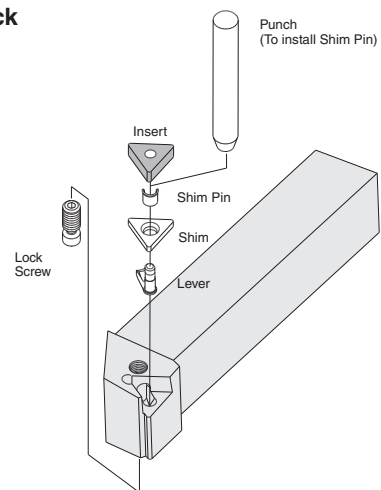
Toolholder for Double Sided Tooling for Automatic Lathe (Without Offset, Lever Lock)

For medium to large ap in automatic lathes (When machining workpieces of medium to large dia.)

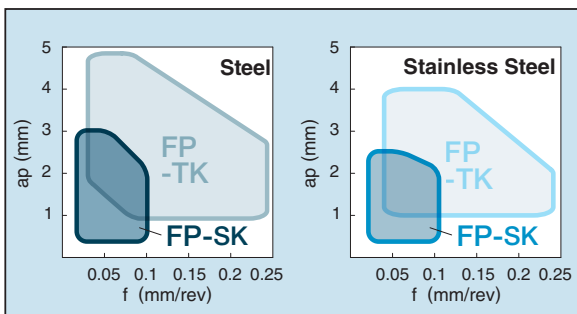


Sharp cutting oriented FP-SK/TK Chipbreaker with polished and sharp edge preparation.

● Lever Lock



● Applicable Chipbreaker Range



	Design		Advantages
			2-step dot design provides reliable chip control at various ap.
			Polished chipbreaker. Smooth chip control and less adhesion.

E

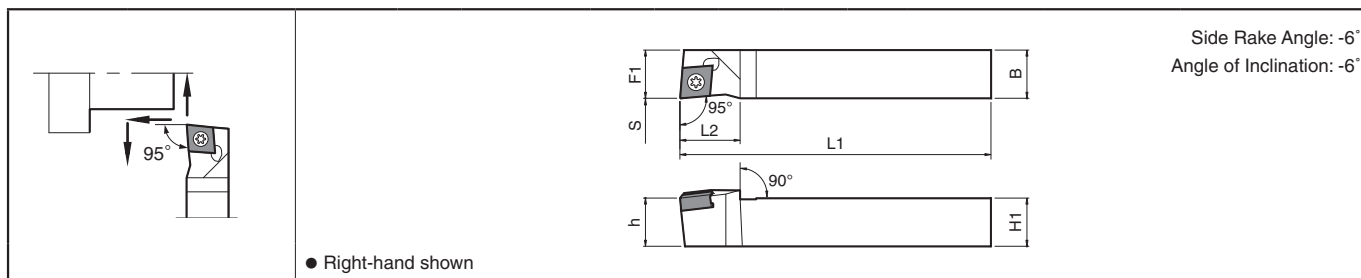


Small Tools



Toolholders for Small Double Sided Tooling

SCLN (Without Offset) (External / Facing)



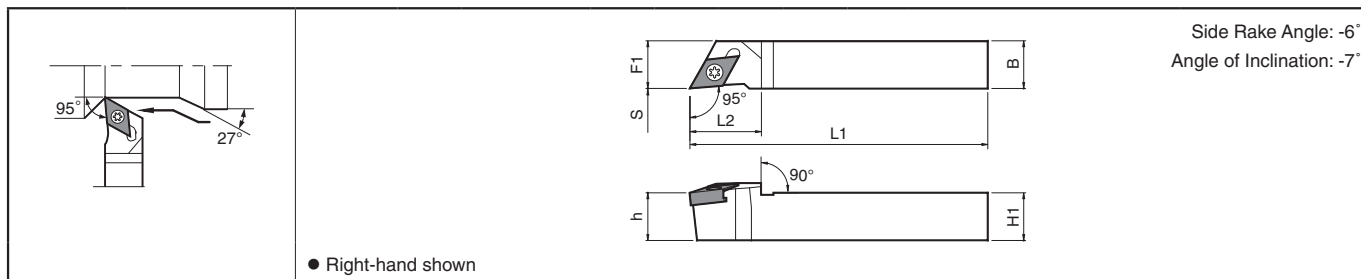
Toolholder Dimensions

Description	Std.	Dimension (mm)							Standard Corner-R (°)	Spare Parts		Applicable Inserts
		H1=h	B	L1	L2	F1	S	Clamp Screw		Wrench		
SCLNR 1010K-07FF	●	10	10	120	15	10	0	0.2	SB-3080TR	LTW-10SS	CNGU0703.. CNMU0703..	
1212F-07FF	●	12	12	85		12						
1212K-07FF	●	16	16	120		16						
1616K-07FF	●											

Applicable Inserts

Applications	Finishing-Medium	Medium-Roughing	Finishing	Low Feed
Ref. to Page	B46	B46	B46	B46
Insert	SK 	GK 	FR-F 	(F/E)R-U
Toolholder Description	SCLNR...-07FF	CNGU0703..	CNMU0703..	CNGU0703..

SDLN (Without Offset) (External / Copying)



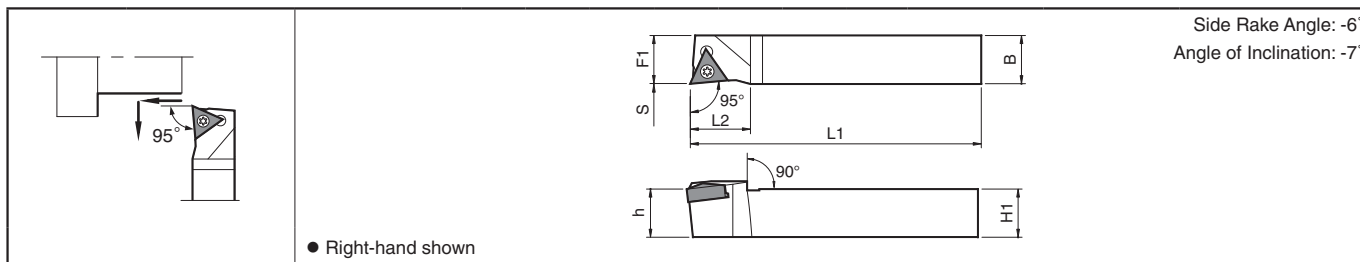
Toolholder Dimensions

Description	Std.	Dimension (mm)							Standard Corner-R (°)	Spare Parts		Applicable Inserts
		H1=h	B	L1	L2	F1	S	Clamp Screw		Wrench		
SDLNR 1010K-08FF	●	10	10	120	18	10	0	0.2	SB-3080TR	LTW-10SS	DNGU0803.. DNMU0803..	
1212F-08FF	●	12	12	85		12						
1212K-08FF	●	16	16	120		16						
1616K-08FF	●											

Applicable Inserts

Applications	Finishing-Medium	Medium-Roughing	Finishing	Low Feed
Ref. to Page	B47	B47	B47	B47
Insert	SK 	GK 	FR-F 	(F/E)R-U
Toolholder Description	SDLNR...-08FF	DNGU0803..	DNMU0803..	DNGU0803..

STLN (Without Offset) (External / Up Facing)



Toolholder Dimensions

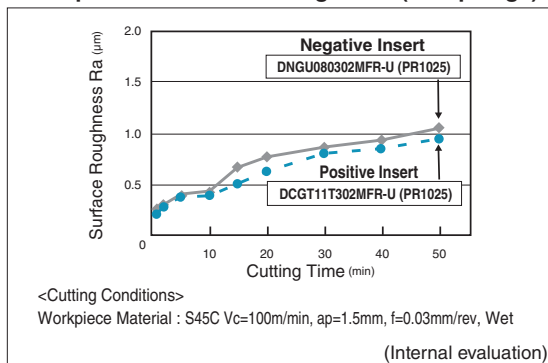
Description	Std.	Dimension (mm)							Standard Corner R _(te)	Spare Parts		Applicable Inserts
		H1=h	B	L1	L2	F1	S	Clamp Screw		Wrench		
STLNR 1010K-09FF	●	10	10	120	15	10	0	0.2	SB-2570TR	LTW-8SS	TNGU0903..	
1212F-09FF	●	12	12	85								
1212K-09FF	●	16	16	120	16							
1616K-09FF	●											

Applicable Inserts

Applications	Finishing	Low Feed
Ref. to Page	B48	B48
Insert	FR-F	(E/F)R-U
Toolholder Description		
STLNR...-09FF	TNGU0903..	TNGU0903..

Double-sided design allows all edges to be used. Compared to the positive type, the double-sided design offers less cost per insert and more stability.

Comparison of surface roughness (Sharp edge)



Case Studies

SUS303

- Spool <Dia. 6mm portion>
- Vc=66m/min
- ap=1.25mm
- f=0.025mm/rev
- Wet
- <Dia. 8mm portion>
- Vc=130m/min
- ap=0.25mm
- f=0.025mm/rev
- Wet

Required Surface Roughness 0.8µmRa

DNGU080302MF-SK (PR1025)	60,000pcs/insert (4 edges)
Competitor D (DCGT type)	20,000 pcs/insert (2 edges)

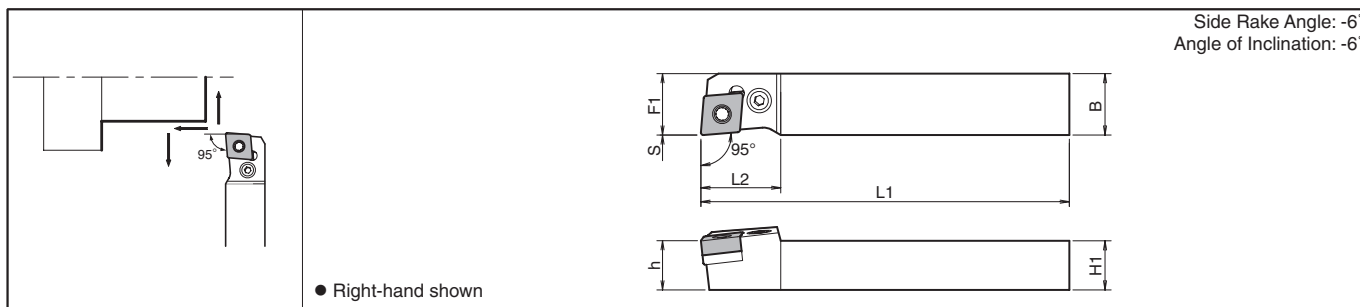
Competitor D (DCGT type) machined 10,000 pcs/edge. PR1025 machined 15,000 pcs./edge resulting in 3 times longer tool life per insert.
(Evaluation by the user)

Recommended Cutting Conditions

Workpiece Material	Insert Grades			
	PR1005	PR1025	PR1225	PR1425
Free-cutting steel	● Vc=100m/min (60 ~ 150)	-	-	-
Carbon steel / Alloy steel	⊕ Vc=100m/min (60 ~ 150)	⊕ Vc=100m/min (60 ~ 150)	⊕ Vc=100m/min (60 ~ 150)	● Vc=120m/min (60 ~ 200)
Stainless Steel	-	⊕ Vc=100m/min (60 ~ 150)	● Vc=80m/min (50 ~ 150)	○ Vc=100m/min (80 ~ 150)

- : Continuous to Light interruption / 1st Recommendation
- ⊕ : Continuous to Light interruption / 2nd Recommendation
- : Continuous / 1st Recommendation
- : Continuous / 2nd Recommendation

PCLN-FF (Without Offset) (External / Facing)



Toolholder Dimensions

Description	Std.	Dimension (mm)							Standard Corner-R (°)	Spare Parts					
		H1=h	B	L1	L2	F1	S	Lever		Lock Screw	Shim	Shim Pin	Punch	Wrench	
PCLNR 1620JX-12FF	●	16	20	120	26	20	0	0.8	LL-2N	LS-2N	LC-42N	LSP-2	PC-2	LW-3	
	●	20													

Applicable Inserts (1st Choice)

Applications	Finishing-Medium	Medium-Roughing
Ref. to Page	B17	B17
Insert		
Toolholder Description	CNGG1204..FP-SK	CNGG1204..FP-TK

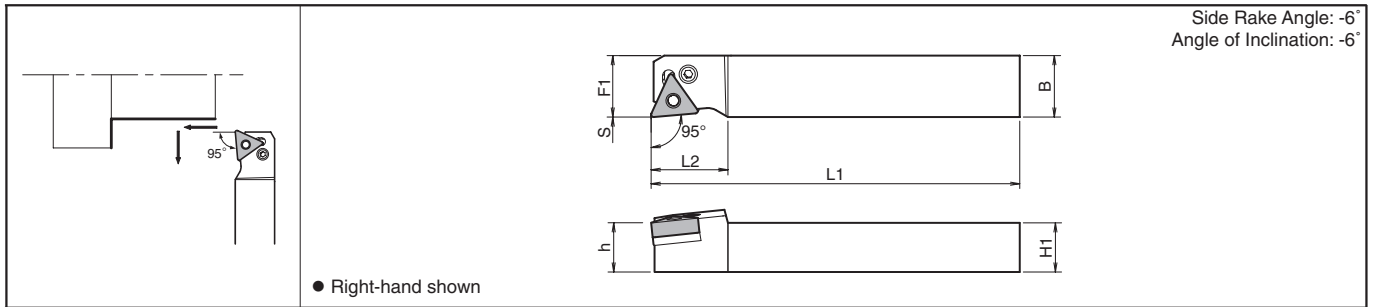
Recommended Cutting Conditions [E39](#)

Applicable Inserts (Optional)

Applications	Finishing	Finishing-Medium	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing
Insert								
Size	12	12	12	12	12	12	12	12
Page	B14	B14	B14	B14	B14	B14	B15	B15
Applications	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing	Roughing	Single-Sided / Roughing / High Feed Rate	Medium	Medium-Roughing / Low Cutting Force
Insert								
Size	12	12	12	12	12	12	12	12
Page	B15	B15	B15	B16	B16	B16	B20	B20
Applications	Soft Steel / Small ap	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron
Insert								
Size	12	12	12	12	12	12	12	12
Page	B17	B17	B17	B17	B18	B18	B18	B19
Applications	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Insert								
Size	12	12	12	12	12	12	12	12
Page	B19	B19	B19	B98	B19	B19	C23	C6,C7

● : Std. Item

PTLN-FF (Without Offset) (External / Up Facing)



Toolholder Dimensions

Description	Std.	Dimension (mm)						Standard Corner-R(re)	Spare Parts					
		H1=h	B	L1	L2	F1	S		Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
PTLNR 1620JX-16FF	●	16	20	120	24	20	0	0.8	LL-1N	LS-1N	LT-32N *LT-32N-20	LSP-1	PC-1	FH-2.5
	●	20												

· When using inserts whose corner-R(re) is greater than 1.6mm, please purchase a shim with * mark and use it in order to prevent workpiece and shim from interfering each other.

Applicable Inserts (1st Choice)

Applications	Finishing-Medium	Medium-Roughing
Ref. to Page	B35	B35
Insert		
Toolholder Description		
PTLNR...-16FF	TNGG1604..FP-SK	TNGG1604..FP-TK

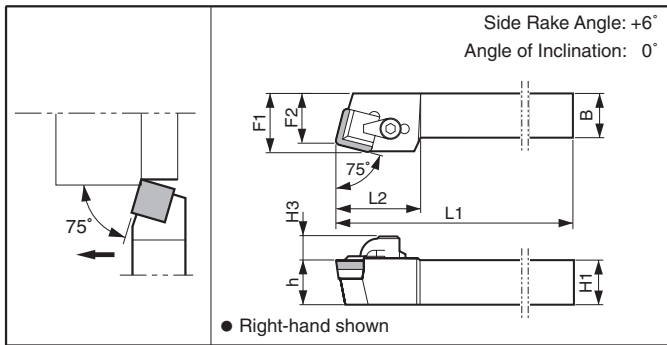
Recommended Cutting Conditions **E39**

Applicable Inserts (Optional)

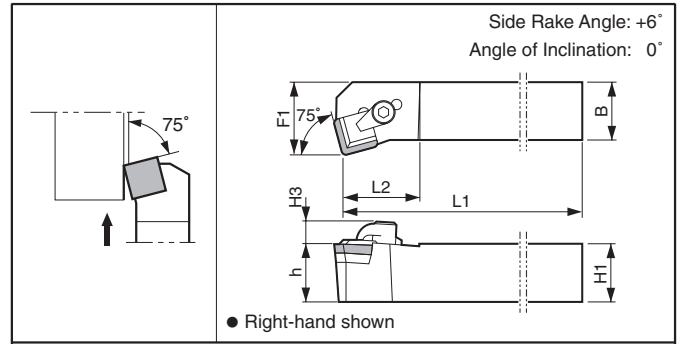
Applications	Finishing	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Medium-Roughing / High Feed Rate	Roughing
Insert									
Size	16	16	16	16	16	16	16	16	16
Page	B33	B33	B33	B33	B33	B33	B34	B34	B34
Applications	Single Sided / Roughing / High Feed Rate	Roughing	Finishing	Finishing-Roughing	Medium-Roughing / Low Cutting Force	Soft Steel / Small ap	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing
Insert									
Size	16	16	16	16	16	16	16	16	16
Page	B34	B34	B38	B38,B39	B39	B35	B35	B35	B35
Applications	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals
Insert									
Size	16	16	16	16	16	16	16	16	16
Page	B36	B36	B36	B37	B37	B37	B37	B103	B37
Applications	Non-ferrous Metals	Non-ferrous Metals	Hard Materials						
Insert									
Size	16	16	16						
Page	B37	C23	C10,C11						



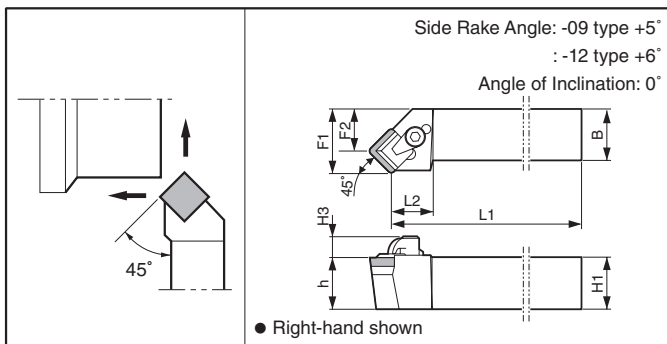
CSBP (External)



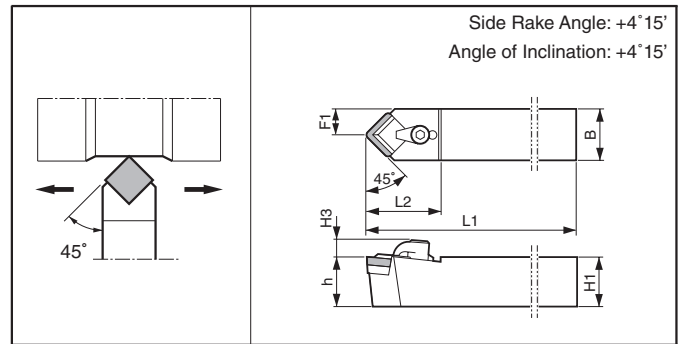
CSKP (Facing)



CSSP (External / Facing / Chamfering)



CSDP (External / Chamfering)



Toolholder Dimensions

Description	Std.		Dimension (mm)								Standard Corner-R(ε)	Spare Parts				
	R	N	L	H1-h	H3	B	L1	L2	F1	F2		Clamp Set	Wrench	Shim	Shim Screw	*Chipbreaker
CSBPR 1212F -09N	●			12	7.5	12	80	23	15.7	13	0.4	CPS-2P	LW-2.5	-	-	CB-S3220
CSKPR 1616H -09N	●			16	7.5	16	100	21	20	-	0.4	CPS-2P	LW-2.5	-	-	CB-S3220
CSKPR 2020K -12N	●			20	8.5	20	125	28	25	-	0.8	CPS-3	LW-3	KPS-42	SP3X8	CB-S4220
2525M -12N	●			25		25	150	32	-	-	-	-	-	-	-	-
CSSP^{FL} 1212F -09N	●	●		12	7.5	12	80	15	16	9	0.4	CPS-2P	LW-2.5	-	-	CB-S3220
1616H -09N	●	●		16		16	100	16	20	13	-	-	-	-	-	-
CSSP^{FL} 2020K -12N	●	●		20	8.5	20	125	19	25	16	0.8	CPS-3	LW-3	KPS-42	SP3X8	CB-S4220
2525M -12N	●	●		25		25	150		32	23	-	-	-	-	-	-
CSDPN 2020K -12N		●		20	8.5	20	125	32	10	-	0.8	CPS-3	LW-3	KPS-42	SP3X8	CB-S4220
2525M -12N		●		25		25	150		12.5	-	-	-	-	-	-	-

* Chipbreaker is not included. Purchase separately.

Applicable Inserts

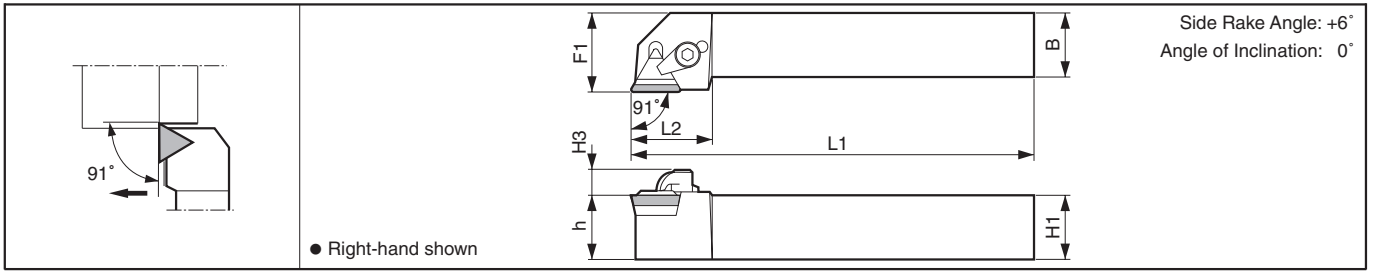
Applications	Medium	Medium	Finishing-Medium	Cast Iron	Cast Iron	Non-ferrous Metals			
Ref. to Page	B69	B69	B69	B69	B105	C29			
Insert									
Toolholder Description									
CSBPR...-09N	SPMR0903..	SPMR0903..	SPGR0903..	SPMN0903.. SPGN0903..	SPGN0903..	-			
CSKPR...-09N	SPMR0903..	SPMR0903..	SPGR0903..	SPMN0903.. SPGN0903..	SPGN0903..	-			
CSKPR...-12N	SPMR1203..	SPMR1203..	SPGR1203..	SPMN1203.. SPGN1203..	SPGN1203..	SPGN1203..			
CSSP^{FL}...-09N	SPMR0903..	SPMR0903..	SPGR0903..	SPMN0903.. SPGN0903..	SPGN0903..	-			
CSSP^{FL}...-12N	SPMR1203..	SPMR1203..	SPGR1203..	SPMN1203.. SPGN1203..	SPGN1203..	SPGN1203..			
CSDPN...-12N	SPMR1203..	SPMR1203..	SPGR1203..	SPMN1203.. SPGN1203..	SPGN1203..	SPGN1203..			

• CSKPR : Left-hand Insert for Right-hand Toolholder.
 • CSSP^{FL}: For External Turning, Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.
 For Facing, Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

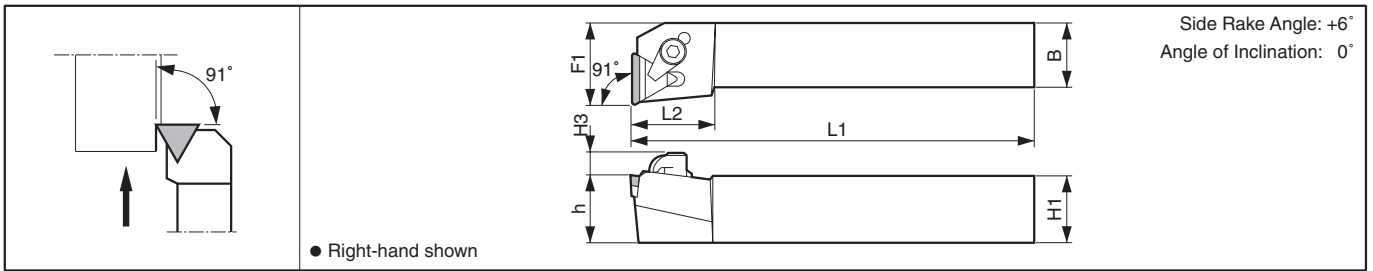
Recommended Cutting Conditions **E44**

● : Std. Item

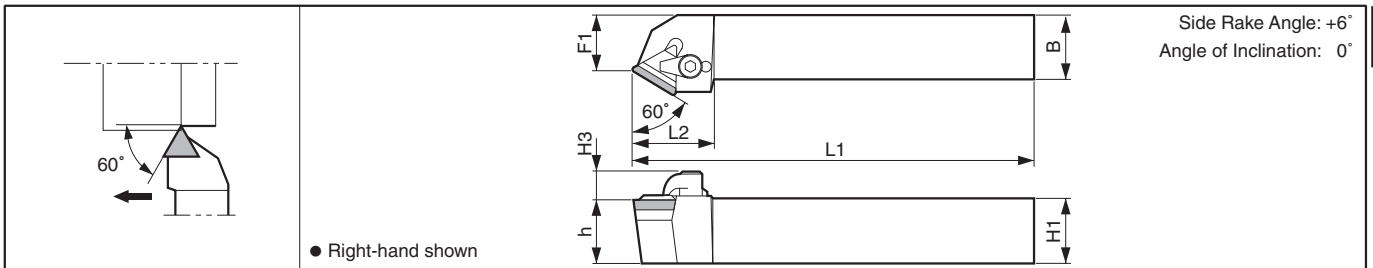
CTGP (External)



CTFP (Facing)



CTTP (External / Chamfering)



Toolholder Dimensions

Description	Std.		Dimension (mm)							Standard Corner-R (r _c)	Spare Parts				
	R	L	H1-h	H3	B	L1	L2	F1	Clamp Set		Wrench	Shim	Shim Screw	*Chipbreaker	
CTGP ^{3/4}	1212F -11N	● ●	12	8	12	80	18	16	0.4	CPS-2P	LW-2.5	-	-	CB-T2212	
	1616H -11N	● ●	16		16	100		20							
CTGP ^{3/4}	2020K -16N	● ●	20	8.5	20	125	26	25	0.8	CPS-3	LW-3	KPT-32	SP3X8	CB-T3220	
	2525M -16N	● ●	25		25	150		32							
CTFP ^{3/4}	1212F -11N	● ●	12	8	12	80	18	16	0.4	CPS-2P	LW-2.5	-	-	CB-T2212	
	1616H -11N	● ●	16		16	100		20							
CTFP ^{3/4}	2020K -16N	● ●	20	8.5	20	125	22	25	0.8	CPS-3	LW-3	KPT-32	SP3X8	CB-T3220	
	2525M -16N	● ●	25		25	150		32							
CTTP ^{3/4}	1212F -11N	● ●	12	8	12	80	22.5	9	0.4	CPS-2P	LW-2.5	-	-	CB-T2212	
	1616H -11N	● ●	16		16	100		13							
CTTP ^{3/4}	2020K -16N	● ●	20	8.5	20	125	28	17	0.8	CPS-3	LW-3	KPT-32	SP3X8	CB-T3220	
	2525M -16N	● ●	25		25	150		22							

* Chipbreaker is not included. Purchase separately.

Applicable Inserts

Applications	Finishing	Finishing	Finishing-Medium	Medium	Medium	Finishing-Medium	Cast Iron	Cast Iron	Non-ferrous Metals	Hard Materials
Ref. to Page	B80	B80	B80	B80	B80	B81	B81	B105	C29	C18
Insert							Without Chipbreaker	Ceramic	PCD	CBN
Toolholder Description										
CTGP ^{3/4} ...-11N	TPMR1103..	TPMR1103..	TPMR1103..	TPMR1103..	TPMR1103..	TPGR1103..	TPMN1103.. TPGN1103..	TPGN1103..	TPGN1103..	TPGN1103..
CTGP ^{3/4} ...-16N	TPMR1603..	TPMR1603..	TPMR1603..	TPMR1603..	TPMR1603..	TPGR1603..	TPMN1603.. TPGN1603..	TPGN1603..	TPGN1603..	TPGN1603..
CTFP ^{3/4} ...-11N	TPMR1103..	TPMR1103..	TPMR1103..	TPMR1103..	TPMR1103..	TPGR1103..	TPMN1103.. TPGN1103..	TPGN1103..	TPGN1103..	TPGN1103..
CTFP ^{3/4} ...-16N	TPMR1603..	TPMR1603..	TPMR1603..	TPMR1603..	TPMR1603..	TPGR1603..	TPMN1603.. TPGN1603..	TPGN1603..	TPGN1603..	TPGN1603..
CTTP ^{3/4} ...-11N	TPMR1103..	TPMR1103..	TPMR1103..	TPMR1103..	TPMR1103..	TPGR1103..	TPMN1103.. TPGN1103..	TPGN1103..	TPGN1103..	TPGN1103..
CTTP ^{3/4} ...-16N	TPMR1603..	TPMR1603..	TPMR1603..	TPMR1603..	TPMR1603..	TPGR1603..	TPMN1603.. TPGN1603..	TPGN1603..	TPGN1603..	TPGN1603..

CTFP^{3/4}: Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Recommended Cutting Conditions E44

● : Std. Item

E



Small Tools



Recommended Cutting Conditions - External Turning (Positive Insert)

[ap indicates radius]

ISO Classification	Workpiece Material	Hardness	Cutting Range	Applications	Recommended Chipbreaker	Recommended Insert Grade	Corner-R (r _e)	Lower Limit - Recommendation - Upper Limit		
								V _c (m/min)	ap (mm)	f (mm/rev)
*P	Low Carbon Steel Low Carbon Alloy	HB ≤ 300	Precision Finishing	Continuous Interruption	F	PR1425 PR1425	0.05 0.2	100 - 150 - 200 80 - 120 - 160	0.05 - 0.07 - 0.15 0.05 - 0.1 - 0.2	0.03 - 0.05 - 0.1 0.03 - 0.1 - 0.15
			Precision Finishing (Molded Chipbreaker)	Continuous	CF	PR1425	0.2	100 - 150 - 200	0.02 - 0.05 - 0.1	0.02 - 0.05 - 0.12
			Finishing	Continuous Interruption	GF	PR1425 PR1425	0.2 0.4	100 - 140 - 180 80 - 120 - 160	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Finishing-Medium	Continuous Interruption	GQ	PR1425 PR1425	0.2 0.4	80 - 120 - 160 60 - 100 - 140	0.8 - 3.0 - 5.0 0.8 - 2.0 - 3.0	0.03 - 0.05 - 0.1 0.03 - 0.05 - 0.1
			Low Feed & Large ap	Continuous	J, U	PR1425	0.2	80 - 100 - 140	0.5 - 2.0 - 3.5	0.02 - 0.05 - 0.1
	Medium Carbon Steel Medium Carbon Alloy	HB ≤ 330	Precision Finishing	Continuous Interruption	F	PR1425 PR1425	0.05 0.2	100 - 150 - 200 80 - 120 - 160	0.05 - 0.07 - 0.15 0.05 - 0.1 - 0.2	0.03 - 0.05 - 0.1 0.03 - 0.1 - 0.15
			Precision Finishing (Molded Chipbreaker)	Continuous	CF	PR1425	0.2	100 - 150 - 200	0.02 - 0.05 - 0.1	0.02 - 0.05 - 0.12
			Finishing	Continuous Interruption	GF	PR1425 PR1425	0.2 0.4	100 - 140 - 180 80 - 120 - 160	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Finishing-Medium	Continuous Interruption	GQ	PR1425 PR1425	0.2 0.4	80 - 120 - 160 60 - 100 - 140	0.8 - 3.0 - 5.0 0.8 - 2.0 - 3.0	0.03 - 0.05 - 0.1 0.03 - 0.05 - 0.1
			Low Feed & Large ap	Continuous	J, U	PR1425	0.2	80 - 100 - 140	0.5 - 2.0 - 3.5	0.02 - 0.05 - 0.1
	High Carbon Alloy	HB ≤ 280	Precision Finishing	Continuous Interruption	F	PR1425 PR1425	0.05 0.2	100 - 150 - 200 80 - 120 - 160	0.05 - 0.07 - 0.15 0.05 - 0.1 - 0.2	0.03 - 0.05 - 0.1 0.03 - 0.1 - 0.15
			Precision Finishing (Molded Chipbreaker)	Continuous	CF	PR1425	0.2	100 - 150 - 200	0.02 - 0.05 - 0.1	0.02 - 0.05 - 0.12
			Finishing	Continuous Interruption	GF	PR1425 PR1425	0.2 0.4	100 - 140 - 180 80 - 120 - 160	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Finishing-Medium	Continuous Interruption	GQ	PR1425 PR1425	0.2 0.4	80 - 120 - 160 60 - 100 - 140	0.8 - 3.0 - 5.0 0.8 - 2.0 - 3.0	0.03 - 0.05 - 0.1 0.03 - 0.05 - 0.1
			Low Feed & Large ap	Continuous	J, U	PR1425	0.2	80 - 100 - 140	0.5 - 2.0 - 3.5	0.02 - 0.05 - 0.1
M	Stainless Steel	HB ≤ 220	Finishing	Continuous Interruption	GF	PR1225 PR1535	0.2 0.4	80 - 100 - 120 60 - 80 - 100	0.1 - 0.3 - 0.5 0.3 - 0.5 - 1.0	0.03 - 0.05 - 0.1 0.05 - 0.1 - 0.15
			Medium	Continuous Interruption	GQ	PR1225 PR1535	0.2 0.4	80 - 100 - 120 60 - 80 - 100	0.5 - 1.5 - 3.0 0.5 - 1.0 - 2.0	0.03 - 0.08 - 0.12 0.05 - 0.1 - 0.15
	Stainless Steel	HB ≤ 300	Finishing	Continuous Interruption	GF	PR1225 PR1535	0.2 0.4	40 - 60 - 80 30 - 50 - 70	0.1 - 0.3 - 0.5 0.3 - 0.5 - 1.0	0.03 - 0.05 - 0.1 0.05 - 0.1 - 0.15
			Medium	Continuous Interruption	GQ	PR1225 PR1535	0.2 0.4	40 - 60 - 80 30 - 50 - 70	0.5 - 1.0 - 2.0 0.5 - 1.0 - 1.5	0.03 - 0.08 - 0.12 0.05 - 0.1 - 0.15
K	Gray Cast Iron	HB ≤ 250	Finishing	Continuous Interruption	Standard	CA4505 CA4505	0.4 0.4	100 - 120 - 150 80 - 100 - 120	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.1 - 0.15 - 0.2 0.05 - 0.1 - 0.15
			Medium	Continuous Interruption	Standard	CA4505 CA4505	0.4 0.8	100 - 120 - 150 80 - 100 - 120	0.5 - 1.0 - 2.0 0.5 - 1.0 - 2.0	0.1 - 0.15 - 0.2 0.05 - 0.1 - 0.15
	Nodular Cast Iron	HB ≤ 270	Finishing	Continuous Interruption	Standard	CA4515 CA4515	0.4 0.4	80 - 100 - 120 60 - 80 - 100	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.1 - 0.15 - 0.2 0.05 - 0.1 - 0.15
			Medium	Continuous Interruption	Standard	CA4515 CA4515	0.4 0.8	80 - 100 - 120 60 - 80 - 100	0.5 - 1.0 - 2.0 0.5 - 1.0 - 2.0	0.1 - 0.15 - 0.2 0.05 - 0.1 - 0.15
N	Non-ferrous Metals Copper Alloy Aluminum Aluminum Alloys (Si10% or less) etc.	HB ≤ 100	High Speed Machining (Rainbow Surface Gloss)	Continuous	Without Chipbreaker	KPD001	0.2	150 - 250 - 350	0.05 - 0.1 - 0.3	0.05 - 0.1 - 0.15
			Finishing (Long Tool Life)	Continuous Interruption	F, FSF	PDL025 PDL025	0.2 0.4	100 - 150 - 200 100 - 150 - 200	0.05 - 0.3 - 0.5 0.05 - 0.3 - 0.5	0.02 - 0.07 - 0.1 0.02 - 0.07 - 0.1
			Finishing	Continuous Interruption	F, FSF	KW10 KW10	0.2 0.4	100 - 150 - 200 100 - 150 - 200	0.05 - 0.3 - 0.5 0.05 - 0.3 - 0.5	0.02 - 0.07 - 0.1 0.02 - 0.07 - 0.1
			Medium	Continuous Interruption	U, USF	KW10 KW10	0.2 0.4	100 - 150 - 200 100 - 150 - 200	0.2 - 0.5 - 1.5 0.2 - 0.5 - 1.5	0.03 - 0.1 - 0.2 0.03 - 0.1 - 0.2
S	Titanium Alloys	HB ≤ 400	Precision Finishing (Rainbow Surface Gloss)	Continuous Interruption	Without Chipbreaker	KPD001 KPD001	0.2 0.4	100 - 120 - 150 70 - 100 - 120	0.05 - 0.1 - 0.3 0.05 - 0.1 - 0.3	0.03 - 0.07 - 0.1 0.03 - 0.07 - 0.1
			Medium	Continuous Interruption	FSF, USF	KW10 KW10	0.4 0.4	30 - 50 - 70 30 - 50 - 70	0.1 - 0.5 - 1.0 0.1 - 0.5 - 1.0	0.03 - 0.1 - 0.2 0.03 - 0.1 - 0.2
	Heat-resistant Alloys	HB ≤ 350	Finishing	Continuous Interruption	Without Chipbreaker	F, U KW10	0.4 0.8	10 - 30 - 50 10 - 30 - 50	0.1 - 0.3 - 0.5 0.2 - 0.5 - 0.7	0.03 - 0.05 - 0.1 0.03 - 0.05 - 0.1
			Finishing	Continuous Interruption	MQ	PR1310 PR1310	0.4 0.8	40 - 60 - 80 40 - 60 - 80	0.1 - 0.3 - 0.5 0.1 - 0.3 - 0.5	0.03 - 0.05 - 0.1 0.03 - 0.05 - 0.1
H	Hardened Steel Hard Materials	40 - 50 HRC	Finishing	Continuous Interruption	GK	PR1425 PR1425	0.2 0.4	40 - 60 - 80 40 - 60 - 80	0.1 - 0.3 - 0.5 0.1 - 0.3 - 0.5	0.02 - 0.07 - 0.1 0.02 - 0.07 - 0.1
		50 - 68 HRC	Finishing	Continuous Interruption	ME MET	KBN05M KBN05M	0.2 0.4	80 - 120 - 150 60 - 100 - 120	0.1 - 0.3 - 0.5 0.1 - 0.3 - 0.5	0.02 - 0.07 - 0.1 0.02 - 0.07 - 0.1

* For machining free-cutting steels, such as SUM, etc., use PR1005 at V_c=200m/min or less. For ap and f, refer to specs for low carbon steels.

E



Small Tools

Recommended Cutting Conditions - Back Turning

● KTKF E12

Workpiece Material		MEGACOAT NANO				MEGACOAT		Remarks
		PR1535		PR1425		PR1225		
		Grooving	Turning	Grooving	Turning	Grooving	Turning	
Carbon steel / Alloy steel	Vc (m/min)	☆60 ~ 150		★80 ~ 200		☆60 ~ 150		Coolant
	f (mm/rev)	0.01 ~ 0.03	0.02 ~ 0.15	0.01 ~ 0.03	0.02 ~ 0.15	0.01 ~ 0.03	0.02 ~ 0.15	
Stainless Steel	Vc (m/min)	★60 ~ 130		☆60 ~ 150		☆60 ~ 130		
	f (mm/rev)	0.01 ~ 0.02	0.02 ~ 0.1	0.01 ~ 0.02	0.02 ~ 0.1	0.01 ~ 0.02	0.02 ~ 0.1	

Workpiece Material		PVD Coated Carbide		Carbide		PCD		Remarks
		PR1025		KW10		KPD001		
		Grooving	Turning	Grooving	Turning	Grooving	Turning	
Carbon steel / Alloy steel	Vc (m/min)	☆60 ~ 150		-		-		Coolant
	f (mm/rev)	0.01 ~ 0.03	0.02 ~ 0.15	-		-		
Stainless Steel	Vc (m/min)	☆50 ~ 120		-		-		
	f (mm/rev)	0.01 ~ 0.02	0.02 ~ 0.1	-		-		
Cast Iron	Vc (m/min)	-		50 ~ 100		-		
	f (mm/rev)	-		0.01 ~ 0.02	0.02 ~ 0.15	-		
Aluminum	Vc (m/min)	-		200 ~ 450		200 ~ 500		
	f (mm/rev)	-		0.01 ~ 0.03	0.02 ~ 0.15	0.01 ~ 0.03	0.02 ~ 0.12	
Brass	Vc (m/min)	-		100 ~ 200		100 ~ 350		
	f (mm/rev)	-		0.01 ~ 0.05	0.02 ~ 0.2	0.01 ~ 0.05	0.02 ~ 0.15	

★: 1st Recommendation

☆: 2nd Recommendation

● KTKF (GQ Chipbreaker) E12

Workpiece Material		MEGACOAT NANO				MEGACOAT		Remarks
		PR1535		PR1425		PR1225		
		Grooving	Turning	Grooving	Turning	Grooving	Turning	
Carbon steel / Alloy steel	Vc (m/min)	☆60 ~ 150		★80 ~ 200		☆60 ~ 150		Coolant
	f (mm/rev)	0.01 ~ 0.04	0.02 ~ 0.15	0.01 ~ 0.04	0.02 ~ 0.15	0.01 ~ 0.04	0.02 ~ 0.15	
Stainless Steel	Vc (m/min)	★60 ~ 130		☆60 ~ 150		☆60 ~ 130		
	f (mm/rev)	0.01 ~ 0.03	0.02 ~ 0.1	0.01 ~ 0.03	0.02 ~ 0.1	0.01 ~ 0.03	0.02 ~ 0.1	

★: 1st Recommendation

☆: 2nd Recommendation

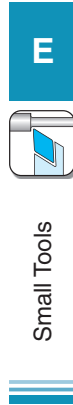
● ABS15, ABW15, ABW23 E17~E19

Workpiece Material		MEGACOAT NANO		MEGACOAT		PVD Coated Carbide		Remarks
		PR1425		PR1225		PR1025 (PR930)		
		Grooving	Turning	Grooving	Turning	Grooving	Turning	
Carbon steel / Alloy steel	Vc (m/min)	★80 ~ 180		☆60 ~ 150		☆80 ~ 100		Coolant
	f (mm/rev)	0.02	0.02 ~ 0.07	0.02	0.02 ~ 0.07	0.02	0.02 ~ 0.07	
Stainless Steel	Vc (m/min)	☆40 ~ 130		★40 ~ 120		☆30 ~ 50		
	f (mm/rev)	0.02	0.02 ~ 0.05	0.02	0.02 ~ 0.05	0.02	0.02 ~ 0.05	

★: 1st Recommendation




☆: 2nd Recommendation

Workpiece Material		Carbide		Remarks
		KW10		
		Grooving	Turning	
Aluminum	Vc (m/min)	150 ~ 200		Coolant
	f (mm/rev)	0.02	0.02 ~ 0.10	
Brass	Vc (m/min)	100 ~ 160		
	f (mm/rev)	0.03	0.02 ~ 0.15	



Alternative Toolholder Reference Table for Small Tools

Alternative Toolholder Reference Table for Small Tools (Back Clamp)

Insert Description	Conventional Toolholder					Alternative Toolholder			Ref. to Page		
	Description	Overall length (mm)	Spare Parts			Description	Overall length (mm)	Remarks			
			Anchor Pin 	Lock Screw 	Wrench 						
ABS.. 40	AABSR0810K-40F	125	LPA-11	HSB4X8R	FH-2	-	-	No Alternative	E17		
	AABSR1010K-40F	125	LPA-11								
	AABSR1212M-40F	150	LPA-13								
	AABSR1616M-40F	150	LPA-17								
ABW.. 40	AABWR0810K-40F	125	LPA-11	HSB4X8R	FH-2	-	-	No Alternative	E18		
	AABWR1010K-40F	125	LPA-11								
	AABWR1212M-40F	150	LPA-13								
	AABWR1616M-40F	150	LPA-17								
ABW.. 50	AABWR0810K-50F	125	LPA-11	HSB4X8R	FH-2	-	-	No Alternative	E19		
	AABWR1010K-50F	125	LPA-11								
	AABWR1212M-50F	150	LPA-13								
	AABWR1616M-50F	150	LPA-17								
CC..	ACLC [®] /L0810K-06F	125	LPA-11	HSB4X8R (Right-hand toolholder) HSB4X8L (Left-hand toolholder)	FH-2	SCLC [®] /L0808F-06FF	120	Clamping system is different.	E23		
	ACLC [®] /L1010K-06F	125	LPA-11			ACLC [®] /L1010JX-06FF	120		E22		
	ACLC [®] /L1010K-09F	125	LPA-13			ACLC [®] /L1010JX-09FF	120				
	ACLC [®] /L1212M-09F	150	LPA-13			ACLC [®] /L1212JX-09FF	120				
	ACLC [®] /L1616M-09F	150	LPA-17			ACLC [®] /L1616JX-09FF	120				
DC..	ADJC [®] /L0810K-07F	125	LPA-11	HSB4X8R (Right-hand toolholder) HSB4X8L (Left-hand toolholder)	FH-2	SDJC [®] /L0808F-07FF	120	Clamping system is different.	E25		
	ADJC [®] /L1010K-07F	125	LPA-11			ADJC [®] /L1010JX-07FF	120		E24		
	ADJC [®] /L1010K-11F	125	LPA-13			ADJC [®] /L1010JX-11FF	120				
	ADJC [®] /L1212M-11F	150	LPA-13			ADJC [®] /L1212JX-11FF	120				
	ADJC [®] /L1616M-11F	150	LPA-17			ADJC [®] /L1616JX-11FF	120				
	ADNCR0810K-07F	125	LPA-11			HSB4X8R	FH-2	-	-	No Alternative	E27
	ADNCR1010K-07F	125	LPA-11								
	ADNCR1010K-11F	125	LPA-13					SDNCN1010JX-07	120	Clamping system is different. Neutral	
ADNCR1212M-11F	150	LPA-13	SDNCN1010JX-11	120							
ADNCR1616M-11F	150	LPA-17	SDNCN1212JX-11	120							
VB..	AVJB [®] /L1010K-11F	125	LPA-11	HSB4X8R (Right-hand toolholder) HSB4x8L (Left-hand toolholder)	FH-2	AVJB [®] /L1010JX-11FF	120		E30		
	AVJB [®] /L1212M-11F	150	LPA-1113			AVJB [®] /L1212JX-11FF	120				
	AVJB [®] /L1616M-11F	150	LPA-1117			AVJB [®] /L1616JX-11FF	120				
	AVVB [®] /L1010K-11F	125	LPA-11			HSB4x8R (Right-hand toolholder) HSB4X8L (Left-hand toolholder)	FH-2	SVVBN1010JX-11	120	Clamping system is different. Neutral	E31
	AVVB [®] /L1212M-11F	150	LPA-1113					SVVBN1212JX-11	120		
	AVVB [®] /L1616M-11F	150	LPA-1117					SVVBN1616JX-11	120		


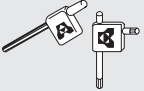
Note) The corresponding alternative toolholder may be different from the conventional toolholder in insert clamping system or insert size. Make sure of their specifications by referring to the catalog or other documents.

E

Small Tools

Alternative Toolholder Reference Table for Small Tools

Alternative Toolholder Reference Table for Small Tools (Screw Clamp)

Insert Description	Conventional Toolholder				Alternative Toolholder			Ref. to Page	
	Description	Overall length (mm)	Spare Parts		Description	Overall length (mm)	Remarks		
			Clamp Screw	Wrench					
									
ABS.. 40	SABSR0810K-40F	125	SB-3080TR	FT-10	-	-	No Alternative	-	
	SABSR1010K-40F	125			SABSR1010JX-40F	120			E17
	SABSR1212M-40F	150			SABSR1212JX-40F	120			
	SABSR1616M-40F	150			SABSR1616JX-40F	120			
ABW.. 40	SABWR0810K-40F	125	SB-3080TR	FT-10	-	-	No Alternative	-	
	SABWR1010K-40F	125			SABWR1010JX-40F	120		E18	
	SABWR1212M-40F	150			SABWR1212JX-40F	120			
	SABWR1616M-40F	150			SABWR1616JX-40F	120			
ABW.. 50	SABWR0810K-50F	125	SB-3080TR	FT-10	-	-	No Alternative	-	
	SABWR1010K-50F	125			SABWR1010JX-50F	120		E19	
	SABWR1212M-50F	150			SABWR1212JX-50F	120			
	SABWR1616M-50F	150			SABWR1616JX-50F	120			
CC..	SCAC [®] /L0808K-06	125	SB-2570TR	FT-8	SCLC [®] /L0808F-06FF	85	Cutting edge angle is different.	E23	
	SCAC [®] /L1010K-06	125			SCLC [®] /L1010JX-06FF	120			
	SCAC [®] /L1010K-09	125	SB-4085TR	FT-15	SCLC [®] /L1010JX-09FF	120			
	SCAC [®] /L1212M-09	150			SCLC [®] /L1212JX-09FF	120			
	SCAC [®] /L1616M-09	150			SCLC [®] /L1616JX-09FF	120			
	SCACR1212F-09FF	85	SB-4085TR	FT-15	SCLCR1212JX-09FF	120			
SCLC [®] /L0808E-06	70	SB-2570TR	FT-8	SCLC [®] /L0808F-06FF	85				
DC..	SDJC [®] /L0808F-07F	80	SB-2570TR	FT-8	SDJC [®] /L0808F-07FF	85	Insert size is different. Neutral Neutral Short length type Neutral Neutral Neutral	E25	
	SDJC [®] /L1010F-07F	80			SDJC [®] /L1010JX-07FF	120			
	SDJC [®] /L1010F-11F	80	SB-4085TR	FT-15	SDJC [®] /L1010JX-11FF	120			
	SDJC [®] /L1212H-11F	100			SDJC [®] /L1212JX-11FF	120			
	SDJC [®] /L1616H-11F	100			SDJC [®] /L1616JX-11FF	120			
	SDLC [®] /L1010F-07FF	80	SB-2570TR	FT-8	SDLC [®] /L1010JX-07FF	120			
	SDLC [®] /L1212H-07FF	100			SDLC [®] /L1212F-07FF	85		Short length type	
	SDLC [®] /L1616H-07FF	100			SDLC [®] /L1212JX-07FF	120			
	SDLC [®] /L1212H-11FF	100	SB-4085TR	FT-15	SDLC [®] /L1616JX-07FF	120			
	SDLCL1616H-11FF	100			SDLC [®] /L1212JX-11FF	120			
	SDNC [®] /L1010F-07F	80	SB-2570TR	FT-8	SDNC [®] /L1010JX-07F	120			
	SDNC [®] /L1010F-11F	80	SB-4085TR	FT-15	SDNC [®] /L1010JX-07F	120			
	SDNC [®] /L1212H-11F	100	SB-4085TR	FT-15	SDNCN1010JX-11	120			
					SDNCN1212F-11	85		Neutral Short length type	
SDNC [®] /L1616H-11F	100	SB-4085TR	FT-15	SDNCN1212JX-11	120	Neutral			
SDNCN0808E-07	70	SB-2570TR	FT-8	SDNCN1616JX-11	120	Neutral			
SDNCN1010F-07	80			SDNCN0808F-07	85				
SDNCN1212H-07	100			SDNCN1010JX-07	120				
SDNCN1212H-11	100	SB-4085TR	FT-15	SDNCN1212JX-07	120				
SDNCN1212F-11	85	SB-4085TR	FT-15	SDNCN1212F-11	85	Short length type			
				SDNCN1212JX-11	120				
SDXC [®] /L1010F-07	80	SB-2570TR	FT-8	SDXC [®] /L1010JX-07	120				
SDXC [®] /L1010F-11	80	SB-4085TR	FT-15	SDXC [®] /L1010JX-11	120				
SDXC [®] /L1212H-11	100			SDXC [®] /L1212JX-11	120				
SDXC [®] /L1616H-11	100			SDXC [®] /L1616JX-11	120				
DLP..	SDLP [®] /L0808F-07F	80	SB-2570TR	FT-8	SDLP [®] /L0808F-07FF	85	E28		
	SDLP [®] /L1010F-07F	80			SDLP [®] /L1010JX-07FF	120			
	SDLP [®] /L1010F-11F	80	SB-4085TR	FT-15	SDLP [®] /L1010JX-11FF	120			
	SDLP [®] /L1212H-11F	100			SDLP [®] /L1212JX-11FF	120			
	SDLP [®] /L1616H-11F	100			SDLP [®] /L1616JX-11FF	120			

Note) The corresponding alternative toolholder may be different from the conventional toolholder in insert clamping system or insert size.
Make sure of their specifications by referring to the catalog or other documents.



Small Tools



Alternative Toolholder Reference Table for Small Tools

Alternative Toolholder Reference Table for Small Tools (Screw Clamp)

Insert Description	Conventional Toolholder				Alternative Toolholder			Ref. to Page	
	Description	Overall length (mm)	Spare Parts		Description	Overall length (mm)	Remarks		
			Clamp Screw	Wrench					
VB..	SVJB [®] /L1010F-11F	80	SB-2570TR	FT-8	SVJB [®] /L1010JX-11FF	120		E30	
	SVJB [®] /L1212H-11F	100			SVJB [®] /L1212JX-11FF	120			
	SVJB [®] /L1616H-11F	100			SVJB [®] /L1616JX-11FF	120			
	SVPB [®] /L1010F-11	80			SVPB [®] /L1010JX-11	120			
	SVPB [®] /L1212H-11	100			SVPB [®] /L1212JX-11	120			
	SVPB [®] /L1616H-11	100			SVPB [®] /L1616JX-11	120			
	SVVBN1212H-11	100			SVVBN1212JX-11	120			
VP..	SVLP [®] /L1010F-08FF	80	SB-2570TR	FT-8	SVLP [®] /L1010JX-08FF	120		E32	
	SVLP [®] /L1212H-08FF	100			SVLP [®] /L1212F-08FF	85			Short length type
	SVLP [®] /L1616H-08FF	100			SVLP [®] /L1212JX-08FF	120			
	SVLP [®] /L1010F-11F	80			SVLP [®] /L1616JX-08FF	120			
	SVLP [®] /L1212H-11F	100			SVLP [®] /L1010JX-08FF	120			Insert size is different.
	SVLP [®] /L1616H-11F	100			SVLP [®] /L1212F-11FF	85			Short length type
					SVLP [®] /L1212JX-11FF	120			
					SVLP [®] /L1616JX-11FF	120			
	SVPPR1010F-11	80			SVPBR1010JX-11	120			Insert relief angle is different.
					SVPPR1010JX-11FF	120			Without Offset
	SVPPR1212H-11	100			SVPBR1212JX-11	120			Insert relief angle is different.
					SVPPR1212JX-11FF	120			Without Offset
	SVPPR1616H-11	100			SVPBR1616JX-11	120			Insert relief angle is different.
		SVPPR1616JX-11FF	120	Without Offset					
SVPPL1616H-11	100	SVPBL1616JX-11	120	Insert relief angle is different.					

Note) The corresponding alternative toolholder may be different from the conventional toolholder in insert clamping system or insert size. Make sure of their specifications by referring to the catalog or other documents.

Alternative Toolholder Reference Table for Small Tools (Screw Clamp)
Toolholders for Back Turning

Insert Description	Conventional Toolholder				Alternative Toolholder			Ref. to Page
	Description	Overall length (mm)	Spare Parts		Description	Overall length (mm)	Remarks	
			Clamp Screw	Wrench				
TKFB..	KTKF [®] /L1010K-12	125	SB-4590TRWN	LTW-10S	KTKF [®] /L1010JX-12	120		E12
	KTKF [®] /L1212M-12	150			KTKF [®] /L1212JX-12	120		
	KTKF [®] /L1616M-12	150			KTKF [®] /L1616JX-12	120		
	KTKF [®] /L1010K-16	125			KTKF [®] /L1010JX-16	120		
	KTKF [®] /L1212M-16	150			KTKF [®] /L1212JX-16	120		
	KTKF [®] /L1616M-16	150			KTKF [®] /L1616JX-16	120		

Note) The corresponding alternative toolholder may be different from the conventional toolholder in insert clamping system or insert size. Make sure of their specifications by referring to the catalog or other documents.



F

Product Introduction F2~F5

Identification System / Product Lineup F6~F11

Solid Tip-Bars for Micro Boring F12~F37

EZ Bars	EZB-HP / EZB-ST / EZB-NB	F14
EZ Bars PLUS	S-SCLC / C-SCLC	F19
EZ Bars (Copying)	EZVB	F20
System Tip-Bars	VNB-S / VNB / VNBT / VNBX-S	F28
Twin-Bars	TWB / TWBT	F34
2-Edge Tip-Bars	HPB / HPBT	F36
Tip-Bars	PSB-S / PSBT-S → will be switched to EZB / HPBT	F37

Boring Bars for Positive Inserts F38~F53

CC□□ Insert	F38
CP□□ Insert	F40
DC□□ Insert	F42
JC□□ Insert	F46
TC□□ Insert	F47
TB / TP□□ Insert	F48
VB / VC / VP□□ Insert	F52
WB / WP□□ Insert	F58
SP□□ Insert	F60
TP□□ Insert (without Hole)	F61

Boring Toolholders for Bearing Machining (Square Shank) F62

AD Bars F63~F66

CN□□ Insert	F63
DN□□ Insert	F64
TN□□ Insert	F64
CC□□ Insert	F65
DC□□ Insert	F65
Boring Adapter (with coolant hole / anti-vibration damper system)	F66

Boring Bars for Negative Inserts F67~F78

CN□□ Insert	F67
DN□□ Insert	F69
SN□□ Insert	F73
TN□□ Insert	F74
WN□□ Insert	F76

Boring Bars for Ceramic Tools F79~F80

Boring Bars for Solid CBN Tools F81

Sleeves F82~F86

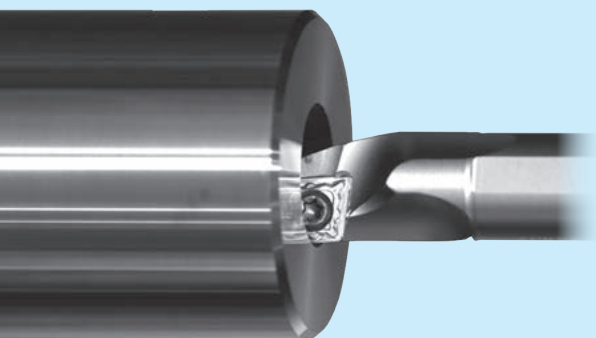
EZH-CT / EZH-HP / EZH-ST	F82
PH	F84
SHA / SH / SHC / SJS	F84

Assembly (AS) List / Former Parts List F87

Alternative Toolholder Reference Table for Boring Bar F88~F91

Recommended Cutting Conditions F92~F94

Parts Compatibility of Lever Lock Toolholders R44

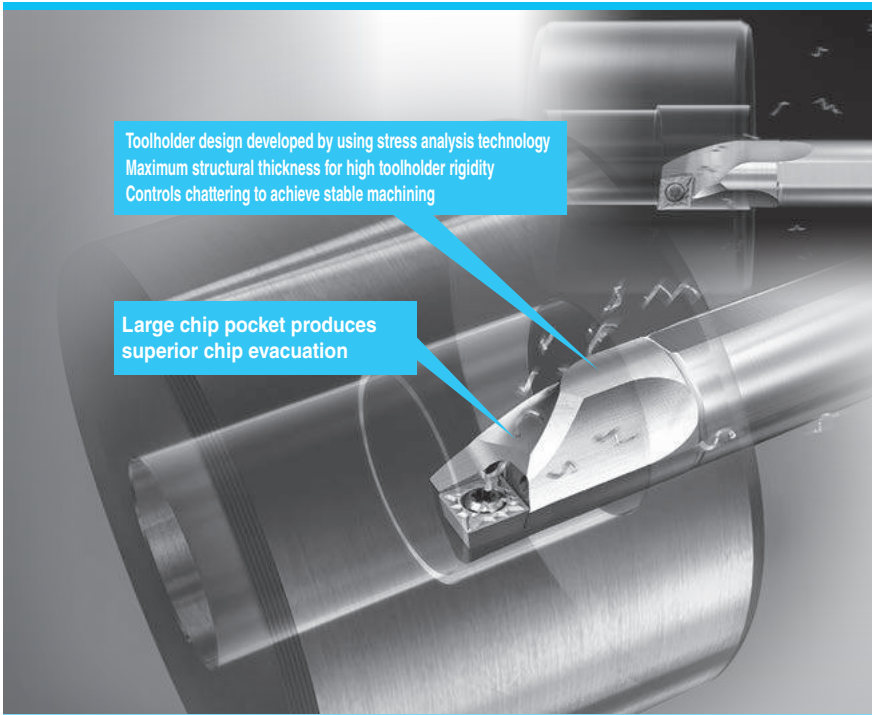


Dynamic Bar

F



Boring

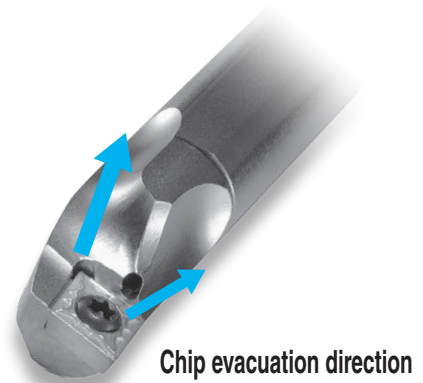


Dynamic design by using the latest computer simulation technology

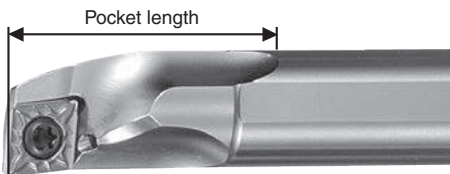
Superior chip evacuation (External coolant)

	Dynamic Bar	Competitor A	Competitor B
Inside the workpiece			

In the products of competitor A and B chips remain inside the workpiece, but chips from the Dynamic Bar are all evacuated from the workpiece.



Comparison of pocket length



Description	Pocket length (mm)	
	Dynamic Bar	Competitor A
A16-SCLPR09-18 type	37	29
A20-SCLCR09-22 type	48	32

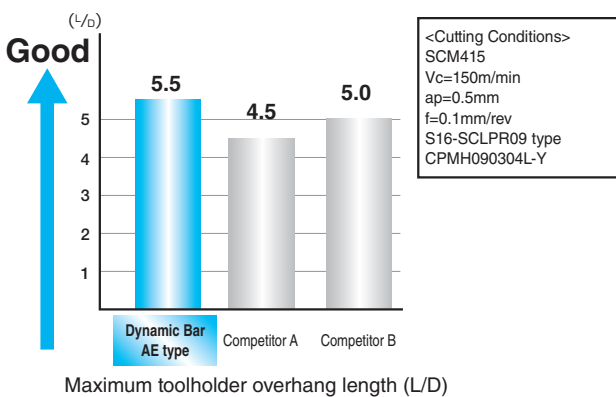
Chip evacuation direction

SCLC(P) type	STLB(P) type
Better evacuation by backward chip flow	

The Dynamic Bar achieves superior chip evacuation

High rigidity and chattering resistance are ensured by using a special alloy and with help of stress analysis technology.

Comparison of vibration tendency



Comparison of surface finish

Vibration of the Dynamic Bar was minimal even at high cutting speeds, enabling stable machining.

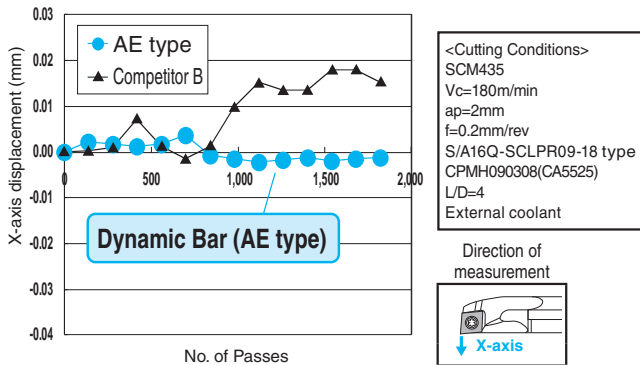
	Dynamic Bar	Competitor A	Competitor B
Surface wall			
Surface Roughness	Ra=0.4μm Rz=2.3μm	Ra=0.6μm Rz=3.6μm	Ra=3.4μm Rz=14.0μm
Oscillatory waveform			

<Cutting Conditions>
SCM415
Vc=210m/min
ap=0.5mm
f=0.1mm/rev
A16Q-SCLPR09-18 type
CPMT090304XP (PV7020)
L/D=4
External coolant

Direction of vibration measurement

Cutting Point Precision

The AE Dynamic Bar maintains precise cutting edge positional accuracy through the use of a special alloy, thereby achieving high precision machining.



Toolholder Lineup

Excellent Bar (AE type)

Excellent Bar with coolant hole (internal coolant) (A... AE) enables better chip evacuation.



Steel Shank Bar

The steel shank bar (without coolant hole) provides superior cost performance



Advantages of Dynamic Bar SDUC

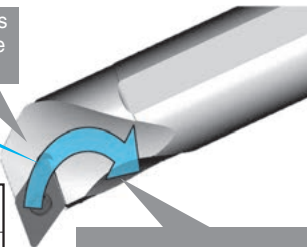
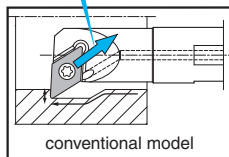
New design and concept focusing on chip evacuation

New design

Streamlined pocket enables an effective chip evacuation

Large chip pocket allows chips to flow through the backside of the bar

Chip flow

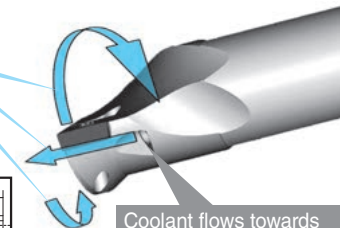
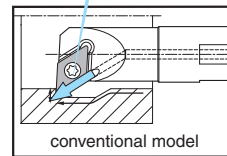


Side chip pocket directs chips outside of workpiece

New concept

Coolant flows toward the workpiece's inner surface

Coolant flow



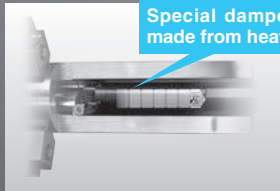
Coolant flows towards the inner surface of the workpiece enabling smooth chip evacuation

AD Bars Interchangeable Head Boring Bars with Anti-vibration Dampener System

F63

The AD (Advanced Dampener) system enables a maximum overhang of 6 times L/D. Highly efficient machining: The anti-vibration dampener effect enables large cutting-depths and high feed rates. Applicable for a variety of machining conditions due to the interchangeable head design.

Special dampener system made from heavy metal

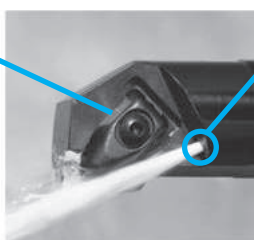


Double Clamp Boring Bars for Negative Inserts

Stable machining is realized in Double Clamp and Direction adjustment mechanism coolant hole.

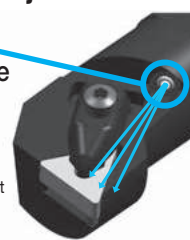
Improved Clamping Rigidity

Firmly clamp the insert in two directions with one action. Along with improving the accuracy of the insert position, long tool life can be achieved.



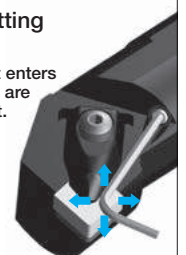
Direction adjustment mechanism coolant hole

Discharge direction of coolant is adjustment flexible focusing on coolant to edge reliably builds up
 Not applicable to high-pressure coolant



Nozzle setting

Wrench etc. that enters 2.5 or less holes are used, and adjust.



F



Boring



Kyocera's original EZ adjust structure

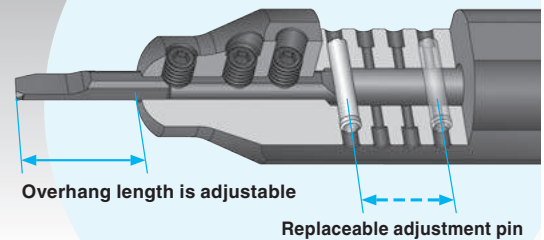
- Easy adjustment and high precision
- EZ Bars prevent deviation with high-rigidity clamping

Wide range of items applicable to various applications

MEGACOAT PR1225 for stable machining and extended tool life



Kyocera's original EZ adjust structure



F

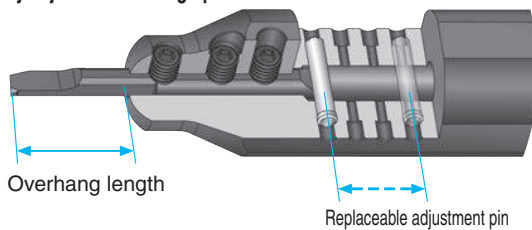


Boring

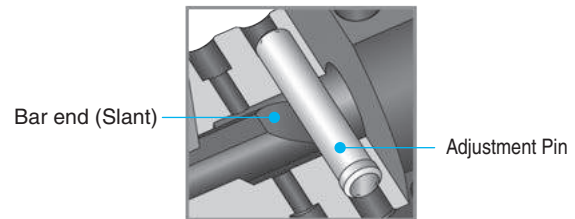
EZ adjust structure

Bar overhang is adjustable by replacing adjustment pin.
Internal coolant sleeve (EZH-CT) is available.

1 Easy adjustment and high precision



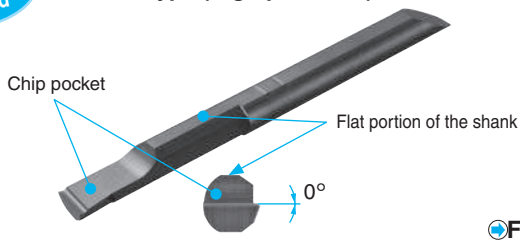
Excellent clamping force



2 2 types of bars

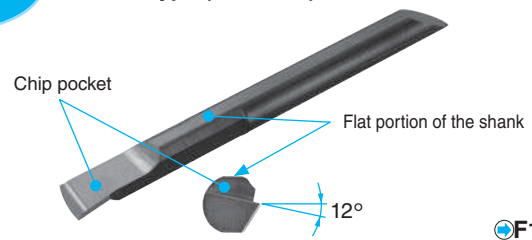
Precision-oriented

HP type (High precision)



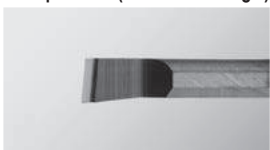
Cost-oriented

ST type (Standard)



3 Chipbreakers for various applications

H Chipbreaker (Without lead angle)



Tough edge (General purpose)

F Chipbreaker (With lead angle)



Sharp cutting (For finishing)

NB (Without chipbreaker)



Non-ferrous Metals

• 2 types of corner-R for each chipbreaker

H Chipbreaker: 0.08mm, 0.15mm

F Chipbreaker: 0.05mm, 0.15mm

NB (Without Chipbreaker): 0.05mm (PR1225)

0.035mm (PCD-CBN)

* Lineup depend on description

Along with the solid type, EZVB (for Boring, Internal Facing and Copying) and indexable type "EZ Bar PLUS" are added to the lineup



HP Type 2-Edge Tip-Bars

- Economically excellent 2-Edge
- Min. Bore Dia. Line Up from $\phi 2.0$ to Up
- Easy-to-Use Adjustable Overhang Length
- Integrated shank enables installation with standard sleeves
- Special sleeves for various machine types

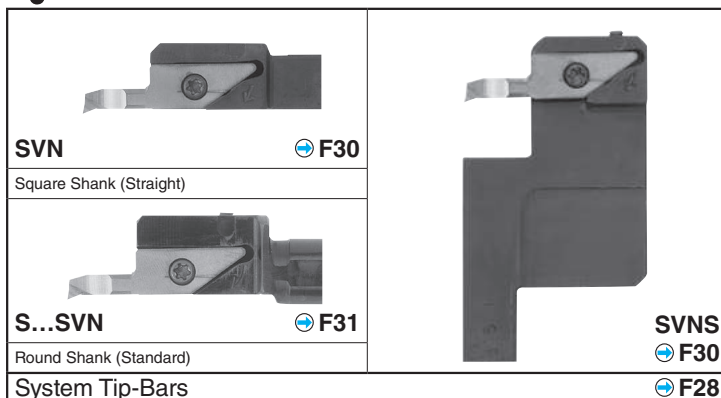
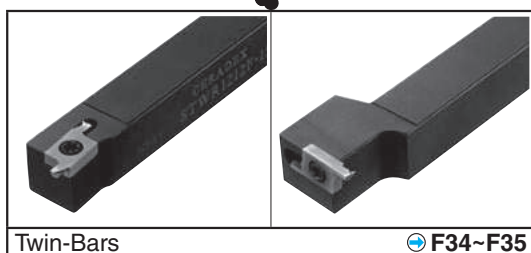
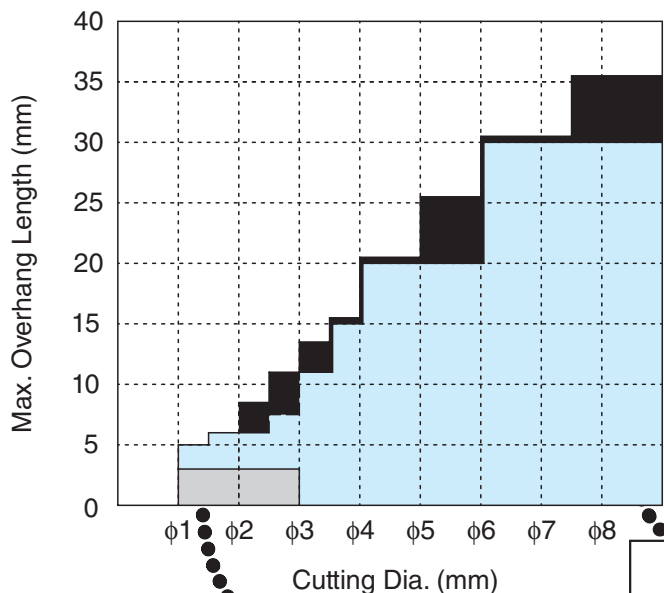


Boring	Back Boring	Grooving	Face Grooving	Threading
HPB Ⓢ F36	HPBT Ⓢ F36	HPG Ⓢ G46	HPFG Ⓢ G71	HPT Ⓢ J28
Min. Bore Dia.: $\phi 2\sim\phi 7$ Corner-R(r_e): 0.05	Min. Bore Dia.: $\phi 4\sim\phi 5$ Corner-R(r_e): 0.05	Min. Bore Dia.: $\phi 4\sim\phi 7$ Edge Width: 1.0~2.0mm Depth: 1.0~2.0mm	Min. Face Groove Dia.: $\phi 8$ Edge Width: 1.0~3.0mm Depth: 2.0~3.0mm	Min. Pilot Hole Dia.: $\phi 4.5\sim\phi 8$ M : 0.75~1.5mm UN : 28~16TPI W : 24~18TPI Rc : 28~19TPI



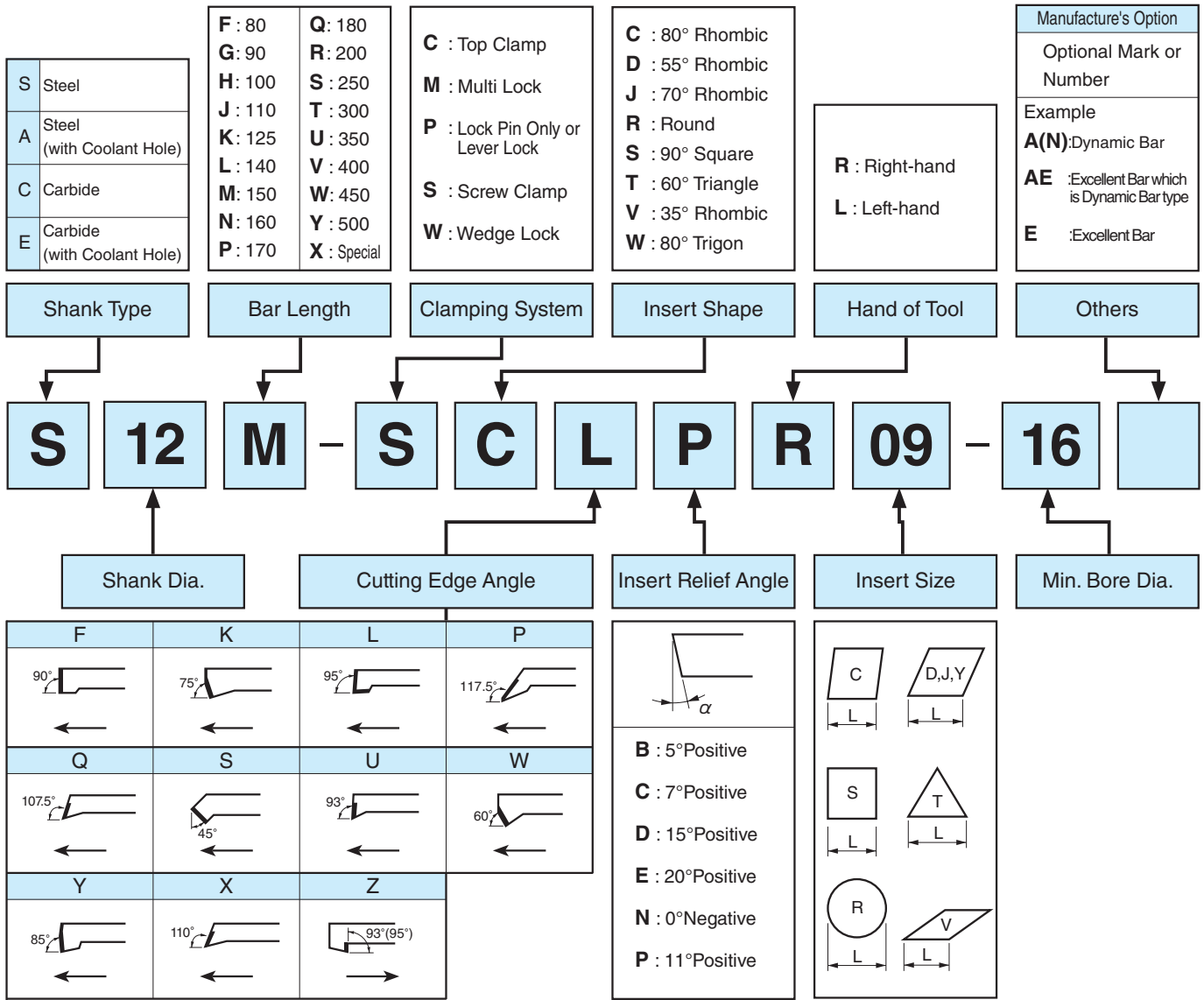
● Guide for usage (Adjustable overhang type)

Solid Tip-Bars Type: Min. Bore Dia. $\phi 1\sim$



Product Lineup

Boring Bar Identification System (Round Shank)

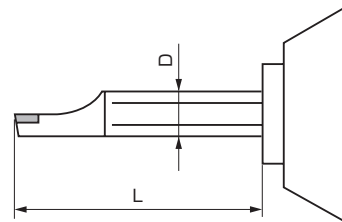


Anti-vibration interchangeable head mechanism Boring Bar "AD Bars"

For the identification system for boring bars with interchangeable head, Ref. to page F63

Guide Line for Overhang Length of Boring Bar (Workpiece Material : S45C)

Overhang Length (L / D)	Shank Material
3	Steel
4	Steel (Dynamic Bar)
5	Excellent
5.5	Excellent (Dynamic Bar)
6	AD Bars (with Anti-vibration Dampener System)
7	Carbide



Carbide Shank Boring Bar

Short Shank Series

Short Shank Types with length of 1/2 and 2/3 of standard type are available. (-1/2 or -2/3 is shown at the end of the description)

When installing on machines, no additional machining (to change toolholder length) is required.

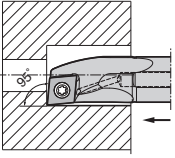
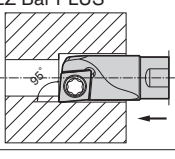
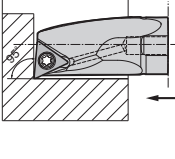
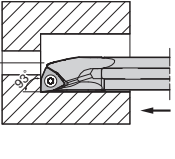


Solid Tip-Bars for Micro Boring

Applications	Solid Tip-Bars Type	Shape	Shank Type Max. Overhang Length (L/D)	Min. Bore Dia. φA													Ref. to Page for Toolholders	Summary	
				1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7			7.5
Boring	EZB-HP EZ Bars ➔ F14		Solid L/D≈-5	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	EZB-HP-LT EZ Bars (Long Type) ➔ F15		Solid	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	EZB-ST EZ Bars ➔ F16	Solid L/D≈-5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	F22-F27	
	EZB-NB EZ Bars (MEGACOAT) ➔ F17	Solid L/D≈-5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	EZB-NB EZ Bars CBN ➔ F17		Solid					●	●	●	●	●	●	●	●	●			
	EZB-NB EZ Bars PCD ➔ F17		Solid L/D≈-5						●	●	●	●	●	●	●	●	●		
	TWB Twin-Bars ➔ F34		Solid	●	●	●	●	●										F34	
	TWBT Twin-Bars ➔ F35		Solid	●	●	●	●	●										F35	
	VNB-S System Tip-Bars ➔ F28		Solid	●	●	●	●	●	●									F30	
	VNB System Tip-Bars ➔ F29		Solid			●	●	●	●	●	●	●	●	●	●	●	●	F31	
VNBX-S System Tip-Bars ➔ F32		Solid	●	●	●	●	●	●									F33		
HPB 2-Edge Tip-Bars ➔ F36		Solid L/D≈-5			●	●	●	●	●	●	●	●	●	●	●	●	F26		
PSB-S Tip-Bars ➔ F37		Solid L/D≈-5			●	●	●	●	●	●	●	●	●	●	●	●	F84		
Back Boring	VNBT System Tip-Bars ➔ F29		Solid						●	●							F30		
	HPBT 2-Edge Tip-Bars ➔ F36		Solid L/D≈-5						●	●							F26		
	PSBT-S Tip-Bars ➔ F37		Solid L/D≈-5						●	●							F84		
Copying	EZVB EZ Bars ➔ F20		Solid					●	●	●	●						F23-F27		

Product Lineup

Dynamic Bar / EZ Bar PLUS

Applications	Overview Shape	Boring Bar Type	Shank Type Max. Overhang Length (L/D)	Coolant Hole		Min. Bore Dia. φA																				Ref. to Page for Toolholders				
				Yes	No	5	6	7	8	10	12	13	14	16	18	20	22	23	25	26	27	30	31	32	34		40	50		
Boring / Internal Facing		A...SCLC-AE	Excellent L/D=-5.5	●					●	●		●		●		●												F39		
		S...SCLC-AE	Excellent L/D=-5.5	○	●	●	●	●																						
		S...SCLC-A	Steel L/D=-4	○						●	●		●		●		●													
		C...SCLC-A(N)	Carbide L/D=-7	○	●	●	●	●																						
		E...SCLC-A(N)	Carbide L/D=-7	●						●	●		●		●		●													
		A...SCLP-AE	Excellent L/D=-5.5	●							●		●	●	●		●													F41
		S...SCLP-A	Steel L/D=-4	○							●		●	●	●		●													
		E...SCLP-A(N)	Carbide L/D=-7	●							●		●	●	●		●													
	EZ Bar PLUS		S...SCLC-EZ	Steel L/D=-3	○	●		●																				F19		
			C...SCLC-EZ	Carbide L/D=-5	○	●		●																						
		A...STLP-AE	Excellent L/D=-5.5	●						●	●		●	●	●		●		●		●							F49		
		S...STLB-AE	Steel L/D=-4	○					●																					
		S...STLB(P)-A	Steel L/D=-4	○					●	●	●		●	●	●		●													
		E...STLP-A(N)	Carbide L/D=-7	●						●	●		●	●	●		●													
		C...STLB-A(N)	Carbide L/D=-7	○					●																					
A...STLC-AE		Excellent L/D=-5.5	●							●	●		●		●		●												F47	
S...STLC-A	Steel L/D=-4	○							●	●		●		●		●														
	S...SWUB-AE	Excellent L/D=-5.5	○		●	●	●																				F59			
	A...SWUB(P)-AE	Excellent L/D=-5.5	●						●	●		●		●		●														
	S...SWUB(P)-A	Steel L/D=-4	○		●	●	●	●		●	●		●		●		●													
	C...SWUB-A(N)	Carbide L/D=-7	○		●	●	●																							
	E...SWUB(P)-A(N)	Carbide L/D=-7	●						●	●		●		●		●														

F

Boring

Dynamic Bar

Applications	Overview Shape	Boring Bar Type	Shank Type Max. Overhang Length (L/D)	Coolant Hole		Min. Bore Dia. ϕA																				Ref. to Page for Toolholders				
				Yes	No	5	6	7	8	10	12	13	14	16	18	20	22	23	25	26	27	30	31	32	34		40	50		
Copying		A...SDUC-AE	Excellent L/D=-5.5	●																										F43
		S...SDUC-A	Steel L/D=-4	○										●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		E...SDUC-A	Carbide L/D=-7	●										●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		A...SDQC-AE	Excellent L/D=-5.5	●																										F44
		S...SDQC-A	Steel L/D=-4	○																										
		E...SDQC-A	Carbide L/D=-7	●																										
		A...SVJB(C)-AE	Excellent L/D=-5.5	●																										F52
		A...SVJP-AE			●																									
		S...SVJB(C)-A	Steel L/D=-4	○																										
		S...SVJP-A	Steel L/D=-4	○																										
		A...SVPC(B)-AE	Excellent L/D=-5.5	●																										F54
		S...SVPC(B)-A	Steel L/D=-4	○																										
		E...SVPC(B)-A	Carbide L/D=-7	●																										
		A...SVUB(C)-AE	Excellent L/D=-5.5	●																										F57
		S...SVUB(C)-A	Steel L/D=-4	○																										
E...SVUB(C)-A		Carbide L/D=-7	●																											
Back Copying		A...SDZC-AE	Excellent L/D=-5.5	●																									F45	
		S...SDZC-A	Steel L/D=-4	○																										
		E...SDZC-A	Carbide L/D=-7	●																										
		A...SVZB(C)-AE	Excellent L/D=-5.5	●																									F57	
		S...SVZB(C)-A	Steel L/D=-4	○																										
		E...SVZB(C)-A	Carbide L/D=-7	●																										

For Min. Bore Dia. ϕA , the figure under ● may be applied depending on the toolholder type.



Product Lineup

Boring Bars

Applications	Boring Bar Type	Shape	Shank Type Max. Overhang Length (L/D)	Coolant Hole		Insert Type	Min. Bore Dia. φA																	Ref. to Page for Toolholders
				Yes	No		5	6	7	8	10	12	14	16	18	20	25	30	32	40	50	63		
Boring / Internal Facing	NEW A...DCLN12		Steel L/D=-3	●		Negative													●	●	●	F67		
	S...PCLN○○		Steel L/D=-3		○	Negative													●	●	●	F68		
	A...PCLN09		Steel L/D=-3	●		Negative													●	●	●	F68		
	NEW A...DWLN08		Steel L/D=-3	●		Negative														●	●	●	F77	
	S...PWLN○○		Steel L/D=-3		○	Negative														●	●	●	F76 F78	
	A...PWLN06		Steel L/D=-3	●		Negative														●	●	●	F76	
	S...WWLN08-E		Excellent L/D=-5		○	Negative														●	●	●	F78	
	C...STXP(B)		Carbide L/D=-7		○	Positive			●	●	●												F51	
	C...SJLC		Carbide L/D=-7		○	Positive	●																F46	
	S...STWP-E		Excellent L/D=-5		○	Positive					●	●								●			F50	
S...STWP		Steel L/D=-3		○	Positive					●	●								●			F50		
NEW A...DDUN15		Steel L/D=-3	●		Negative															●	●	●	F70	
S...PDUN11		Steel L/D=-3		○	Negative														●	●		F69		
A...PDUN11		Steel L/D=-3	●		Negative														●	●		F69		
S...PDUN15		Steel L/D=-3		○	Negative														●	●	●	F71		
S...PDQN15		Steel L/D=-3		○	Negative														●	●	●	F71		
Back Copying	C...STZB		Carbide L/D=-7		○	Positive			●													F51		
	C...SJZC		Carbide L/D=-7		○	Positive	●																F46	
	S...PDZN15		Steel L/D=-3		○	Negative														●	●	●	F71	
Boring	S...CTUP		Steel L/D=-3		○	Positive					●								●	●	●	F61		
	NEW A...DTFN○○		Steel L/D=-3	●		Negative														●	●	●	F74	
	S...PTUN○○		Steel L/D=-3		○	Negative													●	●	●	●	F75	
	A...PTUN11		Steel L/D=-3	●		Negative														●	●	●	F75	
	NEW A...DSKN12		Steel L/D=-3	●		Negative															●	●	●	F73
	S...SSKP		Steel L/D=-3		○	Positive														●	●		F60	
	S...CSKP		Steel L/D=-3		○	Positive														●	●	●	F60	

For Min. Bore Dia. φA, the figure under ● may be applied depending on the toolholder type.

AD Bars Interchangeable Head Boring Bars with Anti-vibration Dampener System

Applications	Boring Bar Type	Shape	Shank Type Max. Overhang Length (L/D)	Coolant Hole		Insert Type	Min. Bore Dia. ϕA										Ref. to Page for Toolholders				
				Yes	No		7	8	10	12	14	16	18	20	25	30		32	40	43	50
Boring / Internal Facing	HA...PCLN12		Anti-vibration Dampener System L/D≈-5.5	●		Negative												●	●	●	F63
	HA...SCLC09		Anti-vibration Dampener System L/D≈-6	●		Positive												●			F65
Copying	HA...PDUN15		Anti-vibration Dampener System L/D≈-6	●		Negative													●	●	F64
	HA...SDUC11		Anti-vibration Dampener System L/D≈-6	●		Positive													●		F65
Boring	HA...PTFN16		Anti-vibration Dampener System L/D≈-6	●		Negative													●	●	F64



Boring Toolholders for Bearing Machining (Square Shank)

Applications	Boring Bar Type	Shape	Min. Bore Dia. ϕA						Ref. to Page for Toolholders
			20	25	30	32	40	50	
Boring	SRCP-B		●			●			F62

Applications	Boring Bar Type	Shape	Min. Bore Dia. ϕA						Ref. to Page for Toolholders
			20	25	30	32	40	50	
Round-Chamfering	CBSN-B		●						F62

Boring Bars for Ceramic / Solid CBN Tools (L/D≈-3)

Applications	Boring Bar Type	Shape	Min. Bore Dia. ϕA								Ref. to Page for Toolholders
			16	18	20	25	30	32	40	50	
Boring / Internal Facing	S...CELN									●	F79
Boring	S...CTUP		●		●	●	●	●	●	F61	
	S...CSKP				●	●	●	●	●	F60	
	S...CSKN									●	F79

For Min. Bore Dia. ϕA , the figure under ● may be applied depending on the toolholder type.

Applications	Boring Bar Type	Shape	Min. Bore Dia. ϕA								Ref. to Page for Toolholders	
			20	25	30	32	40	50				
Boring / Internal Facing	S...CCLN-GX									●	●	F80
Boring / Copying	S...CDUN-GX									●	●	F80
Boring	S...CSKN-GX									●	●	F80
Boring / Internal Facing	S...CCLN-A									●		F81
Boring	S...CTUN-A				●							F81

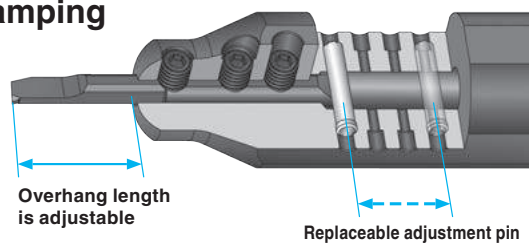
Easy adjustment and high precision EZ Bars

Kyocera's original EZ adjust structure

- Easy adjustment and high precision
- EZ Bars prevent deviation with high-rigidity clamping

Wide range of items applicable to various applications

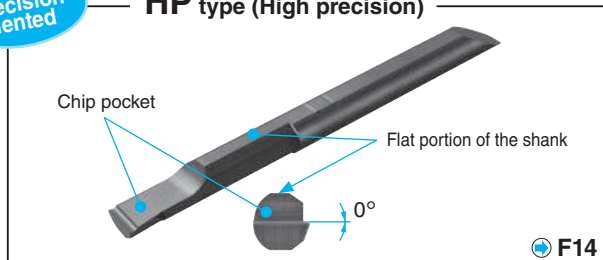
Kyocera's original EZ adjust structure



2 types of bars

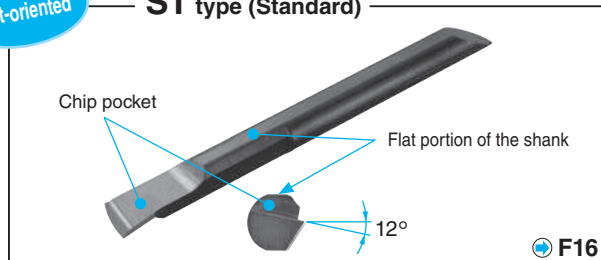
Precision-oriented

HP type (High precision)



Cost-oriented

ST type (Standard)



Bar Tolerance

Bar setting image	Bar Tolerance	Offset (F)	Overall length (Z)	Edge Height (Y)	Min. Bore Dia.
<p>Y = Edge Height</p> <p>F = Offset</p> <p>Z = Bar length</p>	Precision-oriented HP type (High precision)	±0.025mm	±0.05mm	+0.05/0mm	Same as Shank Dia.
	Cost-oriented ST type (Standard)	±0.06mm	±0.1 mm	+0.06/0mm	Not same as Shank Dia.

* Ref. to page of "Dimension" for details.

Lineup expansion Along with the solid type, indexable type "EZ Bar PLUS" is newly added



3 types of sleeve (EZH-CT, EZH-HP, EZH-ST)

EZH-CT



High precision, with coolant hole (Adjustable)

EZH-HP



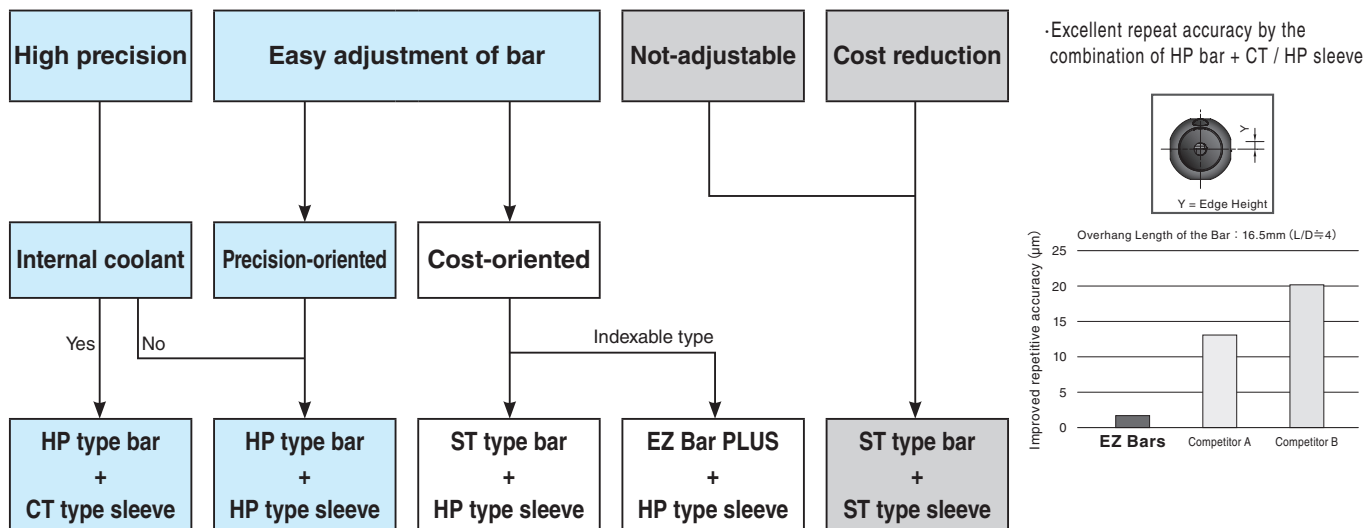
Overhang length is adjustable (Adjustable)

EZH-ST



Not-adjustable

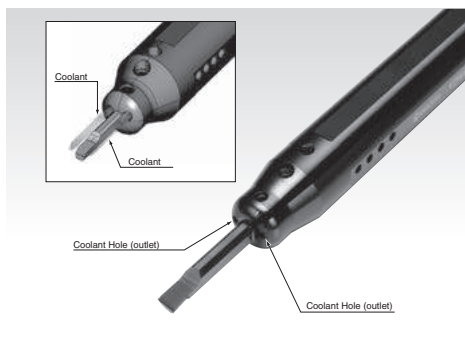
How to select bars and sleeves for each application



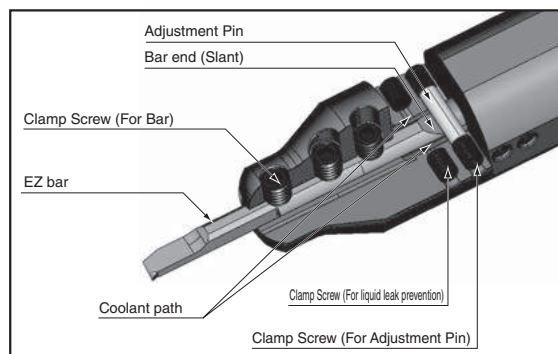
EZH-CT type (high precision / with coolant hole) is added in the EZH sleeve lineup

Kyocera's unique EZ adjust structure and internal coolant system improve dimensional accuracy and surface

Coolant discharge system of EZH-CT



Structure of EZH-CT



How to fix EZ Bars (EZH-CT sleeve)

How to use adjustment pin and prevent liquid leak (Fig.1)

- (1) Put the adjustment pin into the hole according to the overhang length. Push it into the sleeve, using the wrench (LW-1.5).
- (2) Tighten the clamp screw for the adjustment pin "HS3x4P" using the wrench "LW-1.5" from the both sides of the sleeve.
- (3) Put the clamp screws "HS3x4P" into the holes for liquid leak prevention, using the wrench "LW-1.5" and fix them from the both sides of the sleeve.

How to fix bar (Fig.2)

- (1) With the chip pocket upward, set the bar into the sleeve.
Press the slant of the end of the bar with the adjustment pin.
Make sure that the bar does not move (Fig.3)
- (2) Tighten the clamp screw with wrench (LW-2) and fix the bar.
(Use LW-1.5 if shank dia. is 3mm or less)

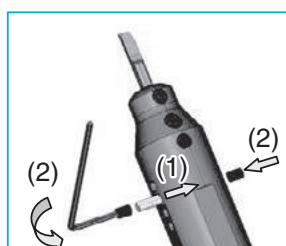


Fig.1 How to use adjustment pin

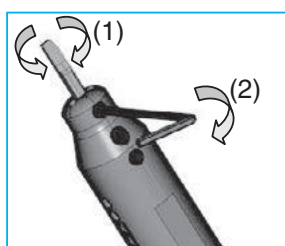


Fig.2 How to fix bar

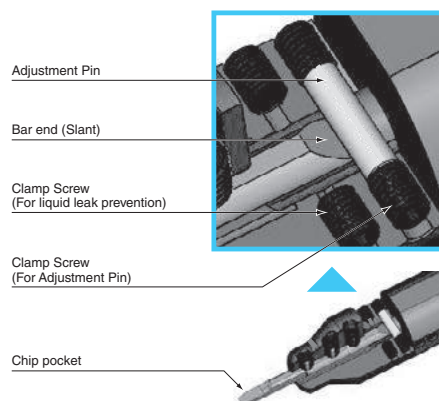
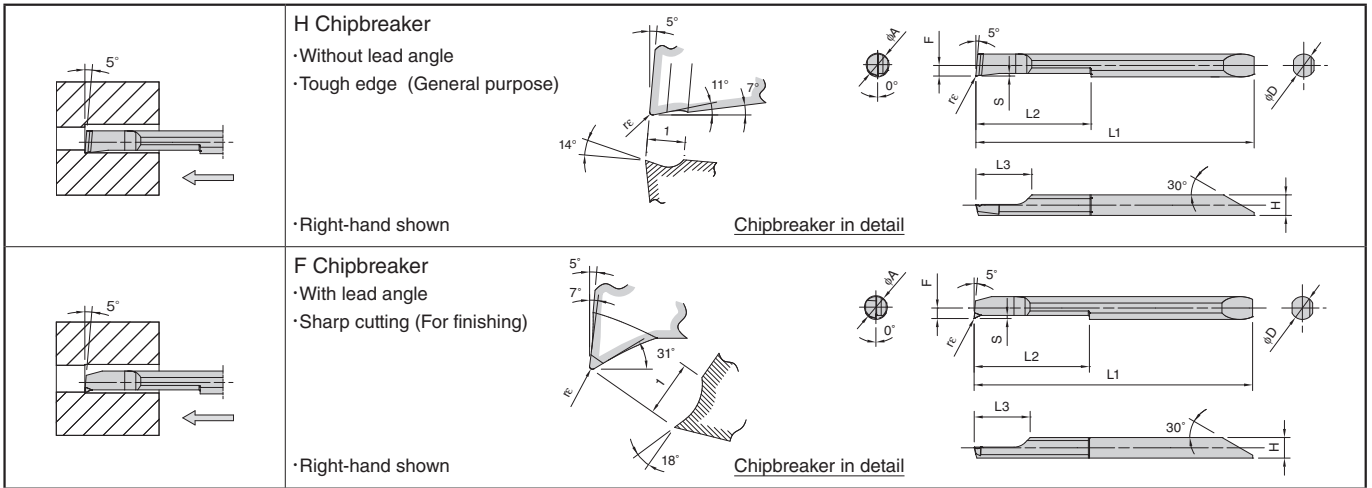


Fig.3 Fixed bar

EZ Bars

EZB-HP (Boring)



EZ Bars Dimensions

Description	Min. Bore Dia.	Dimension (mm)									Grades		Applicable Sleeves ● F22~F27
		φA	φD	H	L1	L2	L3	F	S	rε	MEGACOAT	Carbide	
											PR1225	NEW GW05	
EZBR 020020HP-008H	2	2	1.8	32	8	4.9	0.85	0.25	0.08±0.015	●	●	EZH020...	
	2.5	2.5	2.3	35	10.5	4.9	1.1	0.25	0.08±0.015	●		EZH025...	
									0.15±0.02	●			
	3	3	2.7	38.9	13	6.9	1.35	0.3	0.08±0.015	●	●	EZH030...	
									0.15±0.02	●			
	3.5	3.5	3.2	41.9	15	6.9	1.6	0.4	0.08±0.015	●		EZH035...	
									0.15±0.02	●			
	4	4	3.6	48.8	20	9.8	1.85	0.4	0.08±0.015	●	●	EZH040...	
									0.15±0.02	●			
	5	5	4.6	58.1	25	9.8	2.35	0.5	0.08±0.015	●	●	EZH050...	
0.15±0.02									●				
6	6	5.6	66.1	30	11.8	2.85	0.6	0.08±0.015	●	●	EZH060...		
								0.15±0.02	●				
EZBR 020020HP-005F	2	2	1.8	32	8	4.9	0.85	0.25	0.05±0.01	●		EZH020...	
	2.5	2.5	2.3	35	10.5	4.9	1.1	0.3	0.05±0.01	●		EZH025...	
									0.15±0.02	●			
	3	3	2.7	38.9	13	6.9	1.35	0.4	0.05±0.01	●		EZH030...	
									0.15±0.02	●			
	3.5	3.5	3.2	41.9	15	6.9	1.6	0.5	0.05±0.01	●		EZH035...	
									0.15±0.02	●			
	4	4	3.6	48.8	20	9.8	1.85	0.5	0.05±0.01	●		EZH040...	
									0.15±0.02	●			
	5	5	4.6	58.1	25	9.8	2.35	0.7	0.05±0.01	●		EZH050...	
0.15±0.02									●				
6	6	5.6	66.1	30	11.8	2.85	0.9	0.05±0.01	●		EZH060...		
								0.15±0.02	●				

Tolerance: Offset ±0.025mm (of the reference pin), overall length ±0.05mm, edge height +0.05/0mm

Recommended Cutting Conditions **F18**

EZ Bars Identification System

EZ	B	R	020	020	HP	- 008	H
Symbol of EZ Bars	Applications B: Boring Bars	Insert Hand R: Right-hand	Min. Bore Dia. 020: 2mm 025: 2.5mm ⋮	Shank Dia. 020: 2mm 025: 2.5mm ⋮	Symbol of Precision HP: High Precision ST: Standard	Corner-R(rε) 008: 0.08mm 015: 0.15mm ⋮	Name of Chipbreaker H: Without lead angle F: With lead angle NB: Without chipbreaker

● : Std. Item

EZ Bars are sold in 1 piece boxes



Boring

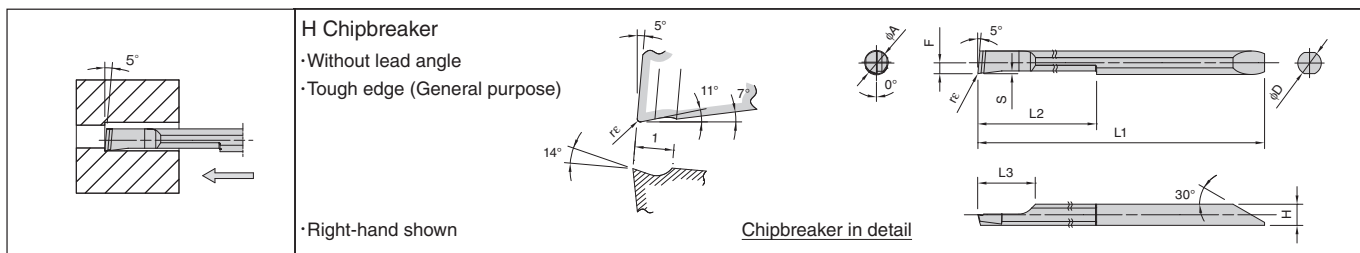
Solid

Positive

AD Bars

Negative

EZB-HP (Boring, Long Type)



EZ Bars Dimensions

Description	Min. Bore Dia.	Dimension (mm)											Grades MEGACOAT	Applicable Sleeves ● F22-F27		
		φA	φD	H	L1	L2	L3	*Overhang Length				F			S	rε
								No.1	No.2	No.3	No.4					
EZBR 020020HP-008H-LT	2	2	1.8	36	12	4.9	12.5	8.5	-	-	0.85	0.25	0.08±0.015	●	EZH020...	
025025HP-008H-LT	2.5	2.5	2.3	39.5	15		15.5	11.5	-	-	1.1			0.25	●	EZH025...
030030HP-008H-LT	3	3	2.7	47.9	18	6.9	22.5	18.5	14.5	-	1.35	0.3		●	EZH030...	
035035HP-008H-LT	3.5	3.5	3.2	51.9	21		25.5	21.5	17.5	-	1.6			0.3	●	EZH035...
040040HP-008H-LT	4	4	3.6	60.8	28	9.8	32.5	28.5	24.5	20.5	1.85	0.4		●	EZH040...	
050050HP-008H-LT	5	5	4.6	73.1	35		40.5	35.5	30.5	25.5	2.35			0.5	●	EZH050...
060060HP-008H-LT	6	6	5.6	83.1	42	11.8	47.5	42.5	37.5	32.5	2.85	0.6		●	EZH060...	

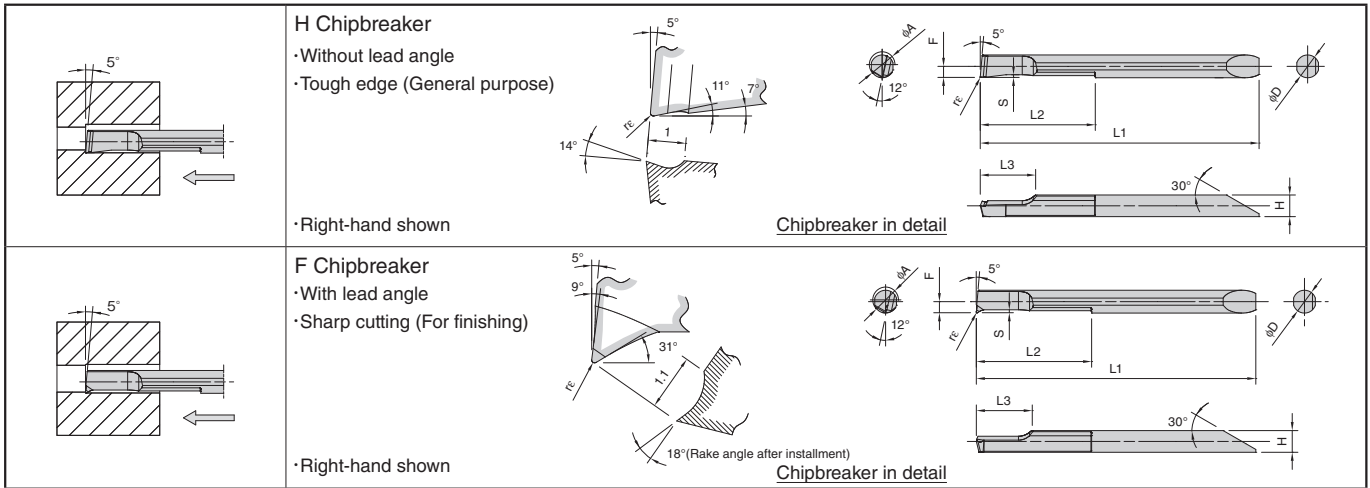
*In case of overhang length mentioned in italics, modified insert is required

Recommended Cutting Conditions **F18**



EZ Bars

EZB-ST (Boring)



EZ Bars Dimensions

Description	Min. Bore Dia.	Dimension (mm)								Grades		Applicable Sleeves ● F22~F27
		φA	φD	H	L1	L2	L3	F	S	re	MEGACOAT	
											PR1225	
EZBR 020017ST-008H	2	1.7	1.5	27.3	7	4.7	0.79	0.19	0.08±0.015	●	EZH017...	
025020ST-008H	2.5	2	1.82	32	8	4.8	0.94	0.16	0.08±0.015	●	EZH020...	
025020ST-015H									0.15±0.02	●		
030025ST-008H	3	2.5	2.3	35	10.5	4.8	1.19	0.15	0.08±0.015	●	EZH025...	
030025ST-015H									0.15±0.02	●		
035030ST-008H	3.5	3	2.8	39	13	6.8	1.44	0.18	0.08±0.015	●	EZH030...	
035030ST-015H									0.15±0.02	●		
040035ST-008H	4	3.5	3.3	42	15	6.7	1.69	0.24	0.08±0.015	●	EZH035...	
040035ST-015H									0.15±0.02	●		
045040ST-008H	4.5	4	3.8	49	20	9.7	1.94	0.27	0.08±0.015	●	EZH040...	
045040ST-015H									0.15±0.02	●		
055050ST-008H	5.5	5	4.8	58.2	25	9.7	2.44	0.33	0.08±0.015	●	EZH050...	
055050ST-015H									0.15±0.02	●		
065060ST-008H	6.5	6	5.8	66.2	30	11.8	2.94	0.38	0.08±0.015	●	EZH060...	
065060ST-015H									0.15±0.02	●		
075070ST-008H	7.5	7	6.8	74.2	35	11.7	3.44	0.44	0.08±0.015	●	EZH070...	
075070ST-015H									0.15±0.02	●		
EZBR 020017ST-005F	2	1.7	1.5	27.3	7	4.7	0.79	0.2	0.05±0.01	●	EZH017...	
025020ST-005F	2.5	2	1.82	32	8	4.8	0.94	0.16	0.05±0.01	●	EZH020...	
025020ST-015F									0.15±0.02	●		
030025ST-005F	3	2.5	2.3	35	10.5	4.8	1.19	0.2	0.05±0.01	●	EZH025...	
030025ST-015F									0.15±0.02	●		
035030ST-005F	3.5	3	2.8	39	13	6.8	1.44	0.26	0.05±0.01	●	EZH030...	
035030ST-015F									0.15±0.02	●		
040035ST-005F	4	3.5	3.3	42	15	6.7	1.69	0.33	0.05±0.01	●	EZH035...	
040035ST-015F									0.15±0.02	●		
045040ST-005F	4.5	4	3.8	49	20	9.7	1.94	0.31	0.05±0.01	●	EZH040...	
045040ST-015F									0.15±0.02	●		
055050ST-005F	5.5	5	4.8	58.2	25	9.7	2.44	0.45	0.05±0.01	●	EZH050...	
055050ST-015F									0.15±0.02	●		
065060ST-005F	6.5	6	5.8	66.2	30	11.7	2.94	0.59	0.05±0.01	●	EZH060...	
065060ST-015F									0.15±0.02	●		
075070ST-005F	7.5	7	6.8	74.2	35	11.7	3.44	0.65	0.05±0.01	●	EZH070...	
075070ST-015F									0.15±0.02	●		

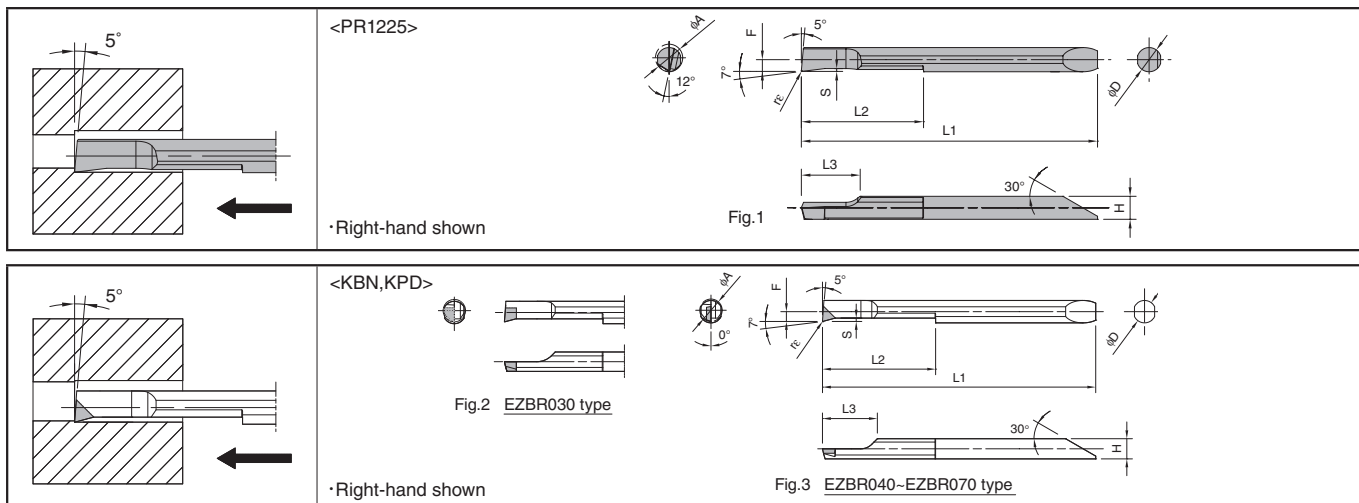
Tolerance: Offset ±0.06mm , overall length ±0.1mm, edge height +0.06/0mm

Recommended Cutting Conditions ● F18

● : Std. Item

EZ Bars are sold in 1 piece boxes

EZB-NB (Boring)



EZ Bars Dimensions

Description	Min. Bore Dia.	Dimension (mm)								Drawing	Grades			Applicable Sleeves ● F22-F27	
		φA	φD	H	L1	L2	L3	F	S		re	MEGACOAT	MEGA CBN		PCD
												PR1225	KBN05M		KPD001
EZBR 020017-005NB 025020-005NB 030025-005NB 035030-005NB 040035-005NB 045040-005NB 055050-005NB 065060-005NB 075070-005NB	2	1.7	1.5	27.3	7	4.7	0.79	0.2	±0.015 0.05	Fig.1	●			EZH017...	
	2.5	2	1.82	32	8	4.8	0.94	0.16			●			EZH020...	
	3	2.5	2.3	35	10.5	4.8	1.19	0.16			●			EZH025...	
	3.5	3	2.8	39	13	6.8	1.44	0.19			●			EZH030...	
	4	3.5	3.3	42	15	6.7	1.69	0.25			●			EZH035...	
	4.5	4	3.8	49	20	9.7	1.94	0.28			●			EZH040...	
	5.5	5	4.8	58.2	25	9.7	2.44	0.33			●			EZH050...	
	6.5	6	5.8	66.2	30	11.7	2.94	0.39			●			EZH060...	
	7.5	7	6.8	74.2	35	11.7	3.44	0.45			●			EZH070...	
EZBR 030030-003NB 040040-003NB 050050-003NB 060060-003NB 070070-003NB	3	3	2.6	38.8	13	6.8	1.25	0.3	±0.015 0.035	Fig.2 Fig.3		●		EZH030...	
	4	4	3.6	48.8	20	9.8	1.75	0.5				●		EZH040...	
	5	5	4.6	58.1	25	9.8	2.25					●		EZH050...	
	6	6	5.6	66.1	30	11.8	2.75					●		EZH060...	
	7	7	6.6	74.1	35	11.8	3.25					●		EZH070...	
EZBR 040040-003NB 050050-003NB 060060-003NB 070070-003NB	4	4	3.6	48.8	20	9.8	1.75	0.5	±0.015 0.035	Fig.3			●	EZH040...	
	5	5	4.6	58.1	25	9.8	2.25					●		EZH050...	
	6	6	5.6	66.1	30	11.8	2.75					●		EZH060...	
	7	7	6.6	74.1	35	11.8	3.25					●		EZH070...	

Recommended Cutting Conditions **F18**

Edge Preparation

Grades	Edge Preparation	Remarks
PR1225	Sharp Edge	-
KBN05M	T00815	0.08mmx15° Chamfered Cutting Edge
KPD001	Sharp Edge	-

EZ Bars

◆ Recommended Cutting Conditions

● H Chipbreaker (EZB-HP..H type / EZB-ST..H type)

Workpiece Material	Insert Grades (Cutting Speed Vc: m/min)		EZB020/025 type		EZB030/035 type		EZB040/045 type		EZB050/055/ 060/065/075 type		Remarks
	MEGACOAT	Carbide	ap(mm), f(mm/rev)								
	PR1225	GW05	ap	f	ap	f	ap	f	ap	f	
Carbon Steel / Alloy Steel	30~100	-	~0.3	~0.03	~0.4	~0.04	~0.45	~0.07	~0.5	~0.1	Coolant
Stainless Steel	30~80	-	~0.2	~0.02	~0.3	~0.03	~0.35	~0.05	~0.4	~0.07	
Non-ferrous Metals	-	~100	~0.3	~0.05	~0.4	~0.06	~0.45	~0.1	~0.5	~0.15	

● H Chipbreaker [EZB-HP..H-LT type (Long type)]

Workpiece Material	Insert Grades (Cutting Speed Vc: m/min)		EZB020/025/030/035 type				EZB040/050/060 type				Remarks
	MEGACOAT		ap(mm), f(mm/rev)								
	PR1225		ap	f	ap	f	ap	f	ap	f	
Carbon Steel / Alloy Steel	30~60		~0.3		~0.05		~0.4		~0.1		Coolant
Stainless Steel	20~40		~0.25		~0.05		~0.3		~0.07		

● F Chipbreaker (EZB-HP..F type / EZB-ST..F type)

Workpiece Material	Insert Grades (Cutting Speed Vc: m/min)		EZB020/025 type		EZB030/035 type		EZB040/045 type		EZB050/055/ 060/065/075 type		Remarks
	MEGACOAT		ap(mm), f(mm/rev)								
	PR1225		ap	f	ap	f	ap	f	ap	f	
Carbon Steel / Alloy Steel	30~100		~0.2	~0.03	~0.2	~0.05	~0.3	~0.07	~0.3	~0.07	Coolant
Stainless Steel	30~80		~0.2	~0.02	~0.2	~0.03	~0.25	~0.05	~0.25	~0.05	

● NB (Without chipbreaker)

Workpiece Material	Insert Grades (Cutting Speed Vc: m/min)		EZB020/025 type		EZB030/035 type		EZB040/045 type		EZB050/055/ 060/065/075 type		Remarks
	MEGACOAT		ap(mm), f(mm/rev)								
	PR1225		ap	f	ap	f	ap	f	ap	f	
Carbon Steel / Alloy Steel	30~100		~0.3	~0.03	~0.4	~0.04	~0.45	~0.07	~0.5	~0.1	Coolant
Stainless Steel	30~80		~0.2	~0.02	~0.3	~0.03	~0.35	~0.05	~0.4	~0.07	
Non-ferrous Metals	60~100		~0.3	~0.05	~0.4	~0.06	~0.45	~0.07	~0.5	~0.1	

Workpiece Material	Insert Grades (Cutting Speed Vc: m/min)		EZB030 type		EZB040/045 type		EZB050/060/070 type		Remarks
	MEGACOAT CBN	PCD	ap(mm), f(mm/rev)						
	KBN05M	KPD001	ap	f	ap	f	ap	f	
Non-ferrous Metals	-	~300	-	-	~0.45	~0.1	~0.5	~0.15	Coolant
Hard Materials	~100	-	~0.07	~0.03	~0.10	~0.05	~0.15	~0.07	

■ Compatibility of EZ Bars

EZ Bars are compatible with conventional Tip-Bars.

Sleeves \ Insert	EZB...HP	EZB...ST/NB	HPB...(Conventional)
EZH...CT/HP	✓	✓	✓ ^{*1} ✓ ^{*2} (Compatible)
EZH...ST	✓	✓	✓ ^{*1} (Compatible)
PSH... (Discontinued Description)	✓ ^{*1} (Compatible)	✓ ^{*1} (Compatible)	✓

*1 Some diameter types of conventional Tip-Bars are incompatible.

*2 Use them without Adjustment Pins. Overhang length of bar is not adjustable.

F



Boring

Solid

Positive

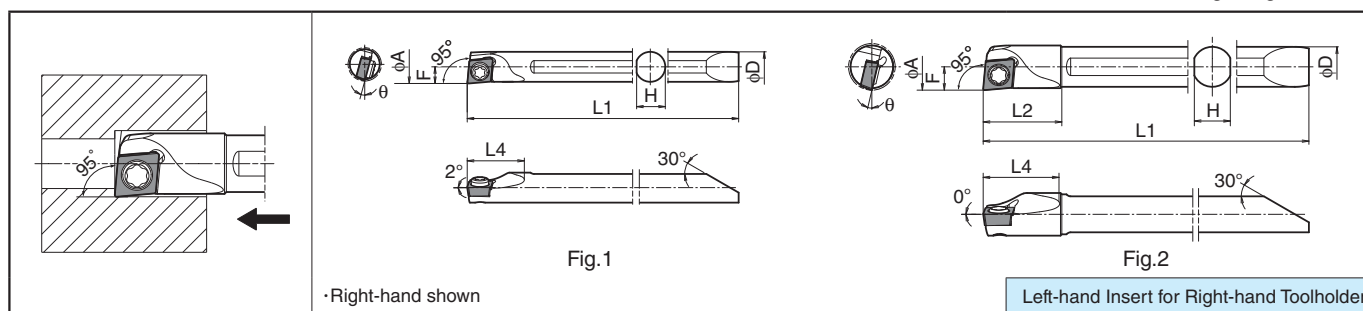
AD Bars

Negative

EZ Bar PLUS (Indexable boring bar)

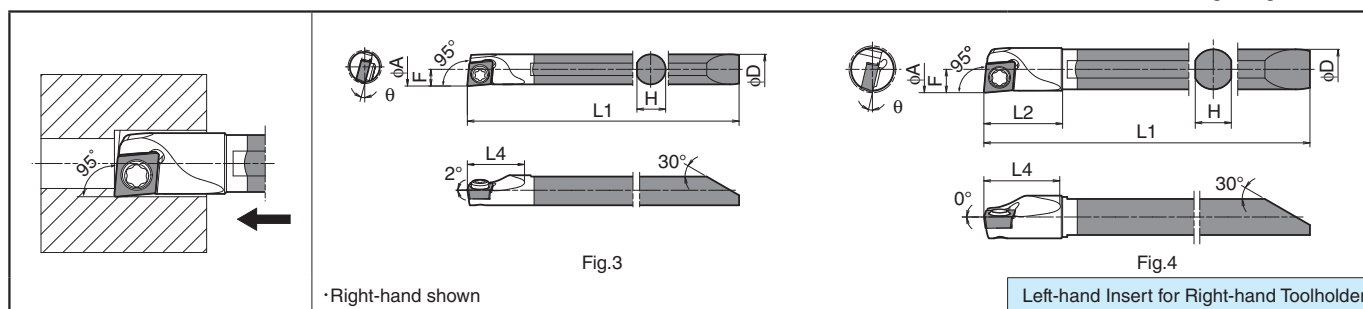
S-SCLC-EZ

Max. Overhang Length L/D≈3



C-SCLC-EZ

Max. Overhang Length L/D≈5



Toolholder Dimensions

Description	Std.	Min. Bore Dia.	Dimension (mm)							θ	Std. Corner-R(°)	Coolant Hole	Drawing	Spare Parts		Applicable Sleeves	
			R	φA	φD	H	L1	L2	L3					L4	F		Clamp Screw
Steel	S045X-SCLCR03-050EZ	●	5	4.5	4.3	42.4	-	-	8.5	2.5	15°	0.2	No	Fig.1	SB-1635TR	FT-6	EZH045...
	S060X-SCLCR04-070EZ	●	7	6	5.4	53.9	11.8	-	11.5	3.5	13°						
Carbide	C045X-SCLCR03-050EZ	●	5	4.5	4.3	51.4	-	-	8.5	2.5	15°						
	C060X-SCLCR04-070EZ	●	7	6	5.4	65.9	11.8	-	11.5	3.5	13°						

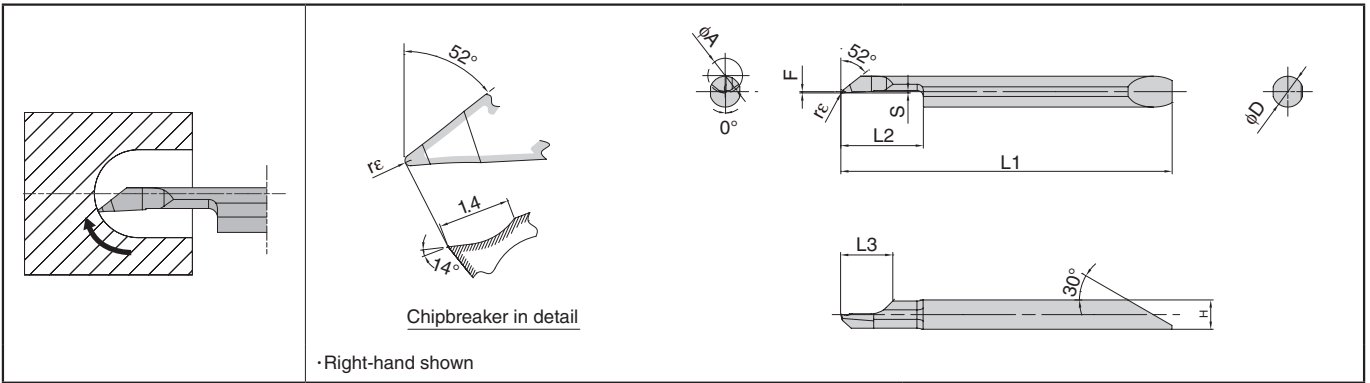
Applicable Inserts

Applications Ref. to Page	Minute ap B49	Finishing B52	Finishing / Precision B51	Non-ferrous Metals C24	Hard Materials C14
Insert	CF	L-F	L-FSF	PCD	CBN
Toolholder Description					
....SCLCR03....	CCGT0301..	CCGT0301..	CCET0301..	-	CCMW0301..
....SCLCR04....	CCGT0401..	CCGT0401..	CCET0401..	CCGW0401..	CCMW0401..

Recommended Cutting Conditions ● F93~F94

EZ Bars

EZVB (Boring / Internal Facing / Copying) NEW



F

● EZ Bars Dimensions

Description	Min. Bore Dia.	Dimension (mm)									Grades	Applicable Sleeves ● F23~F27
		φA	φD	H	L1	L2	L3	F	S	rε	MEGACOAT	
											PR1225	
EZVBR 035030-010	3.5	3	2.8	38	8	5.8	0.17	0.22	0.1±0.015	●	EZH030...	
045040-010	4.5	4	3.8	43	10	6.8	0.17	0.26	0.1±0.015	●	EZH040...	
055050-010	5.5	5	4.8	50.2	12	7.7	0.17	0.29	0.1±0.015	●	EZH050...	
065060-010	6.5	6	5.8	55.2	14	8.6	0.17	0.32	0.1±0.015	●	EZH060...	

Boring

Solid

Positive

AD Bars

Negative

◆ Recommended Cutting Conditions

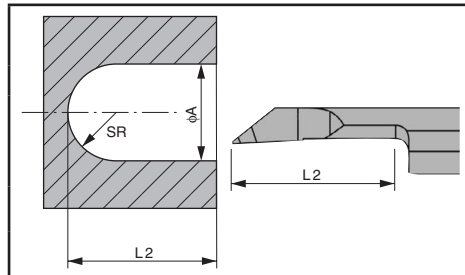
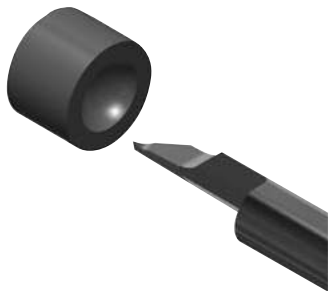
Workpiece Material	Insert Grades (Cutting Speed Vc: m/min)	EZVB035 type		EZVB045 type		EZVB055/065 type		Remarks
	MEGACOAT	ap (mm), f (mm/rev)						
	PR1225	ap	f	ap	f	ap	f	
Carbon Steel / Alloy Steel	30~100	~0.05	~0.04	~0.07	~0.07	~0.1	~0.07	Coolant
Stainless Steel	30~80	~0.03	~0.03	~0.05	~0.05	~0.07	~0.05	

EZ Bars are sold in 1 piece boxes

● : Std. Item

Application of EZVB

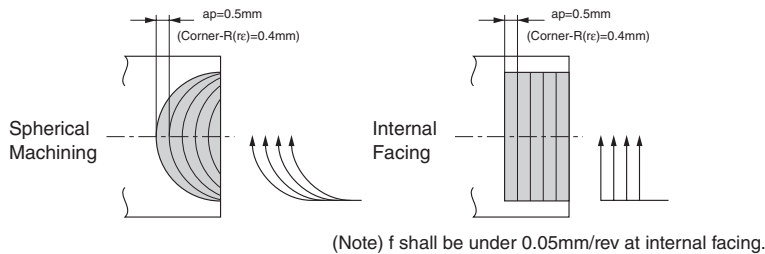
1. Application Range



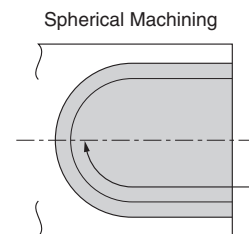
		(mm)		
Description	Min. Bore Dia.	SR	L2	
				φA
EZVBR	035030-010	3.5	1.75	8
	045040-010	4.5	2.25	10
	055050-010	5.5	2.75	12
	065060-010	6.5	3.25	14

2. Application

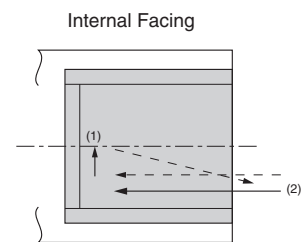
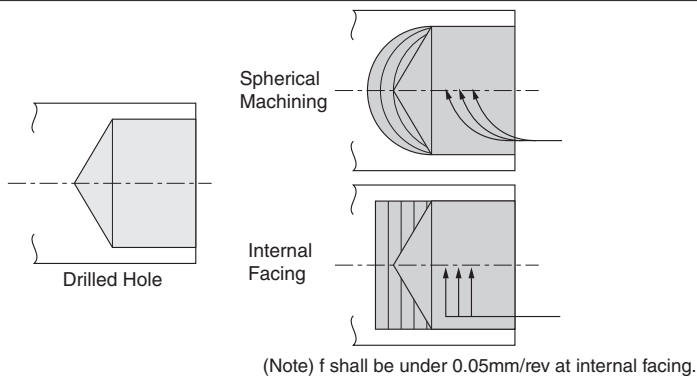
Case with No Existing Hole



Finishing

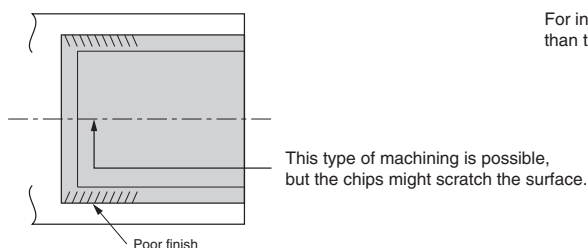
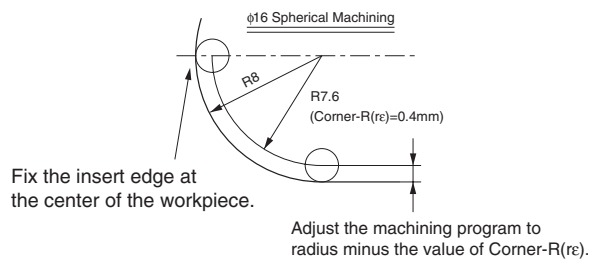
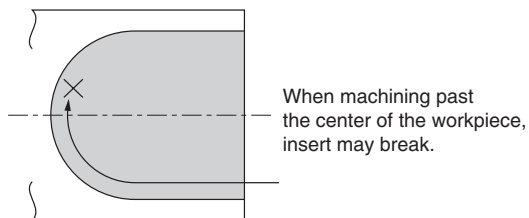


Case with Drilled Hole

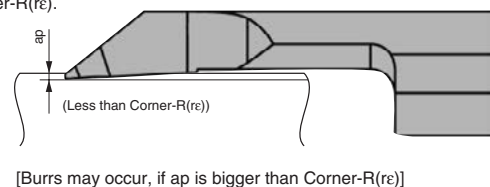


Machining Process
 (1) Finish the internal face first.
 (2) Next, finish the internal diameter.

3. Caution



For internal profiling, ap should be less than the value of Corner-R(re).



EZH-CT sleeve

Adjustable with Coolant Hole

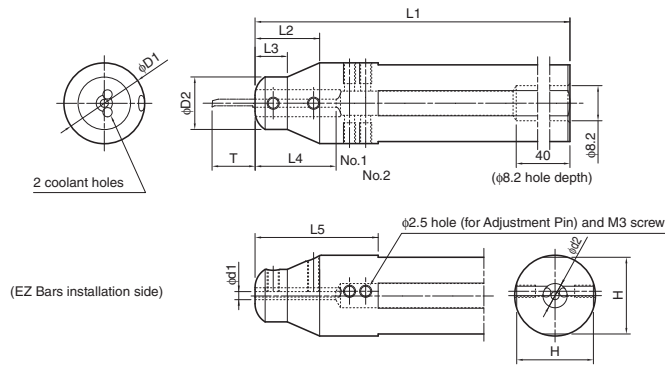


Fig.1

Sleeve Dimensions

Description	Std.	Dimension (mm)										Overhang Length of the Bar*2T (mm) Adjustment Pin Setting Position				Drawing	Applicable EZ Bars ● F14-F17 ● J24	
		φd1	φD1	φD2	φd2	H	L1	L2	L3	*1L4	L5	No.1	No.2	No.3	No.4			
EZH 01719CT-120 01720CT-120 01722CT-135 01725.0CT-135 01725.4CT-120	●	1.7	19.05	13	6	18	120	16	8	16	30.5	7.5	3.5	-	-	Fig.1	EZBR...017...	
	●		20			19	120											
	●		22			21	135											41.5
	●		25			24	135											30.5
	●		25.4			24.4	120											
EZH 02019CT-120 02020CT-120 02022CT-135 02025.0CT-135 02025.4CT-120	●	2	19.05	13	6	18	120	16	8	20	30.5	8.5	4.5	-	-	Fig.1	EZBR...020... *3 HPB [®] /L0202-...	
	●		20			19	120											
	●		22			21	135											41.5
	●		25			24	135											30.5
	●		25.4			24.4	120											
EZH 02519CT-120 02520CT-120 02522CT-135 02525.0CT-135 02525.4CT-120	●	2.5	19.05	13	6	18	120	16	8	20	30.5	11	7	-	-	Fig.1	EZBR...025... EZTR...025-...	
	●		20			19	120											
	●		22			21	135											41.5
	●		25			24	135											30.5
	●		25.4			24.4	120											

*1. L4 shows φd1 length.

*2. Dimension T shows Overhang length of the EZB Bar when attached to sleeve.

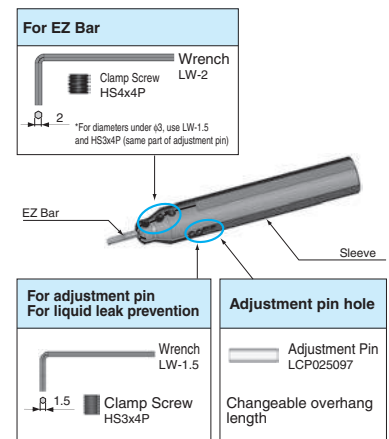
*3. Use them without Adjustment Pins. Overhang length of bar is not adjustable.

- Choose sleeves (φd1) to meet with φD dimension of bar.

- φ8.2 hole on the sleeve end is prepared hole for Rc1/8 threading. Please modify by additional processing if necessary. The body hardness is 42HRC.

Spare Parts Description (EZH-CTSleeves)

Description	Spare Parts				
	Adjustment Pin	Clamp Screw (for adjustment pin)	Wrench	Clamp Screw (for bar)	Wrench
EZH 017...CT-... 020...CT-... 025...CT-... 030...CT-...	LCP025097	HS3x4P (for adjustment pin and liquid leak prevention)	LW-1.5 Tightening Torque 1N·m	HS3x4P	LW-1.5 Tightening Torque 1N·m
EZH 035...CT-... 040...CT-... 050...CT-... 060...CT-... 070...CT-...	LCP025097	HS3x4P (for adjustment pin and liquid leak prevention)	LW-1.5 Tightening Torque 1N·m	HS4x4P (for bar)	LW-2 Tightening Torque 2N·m



1) If shank dia. is φ2.5mm or less, Use clamp screw (HS3x4P)
For adjustment pin 2 pcs
For liquid leak prevention 2 pcs
For EZ Bar 2 pcs

2) If shank dia. is φ3mm, Use clamp screw (HS3x4P)
For adjustment pin 2 pcs
For liquid leak prevention 4 pcs
For EZ Bar 3 pcs

● : Std. Item

F

Boring

Solid

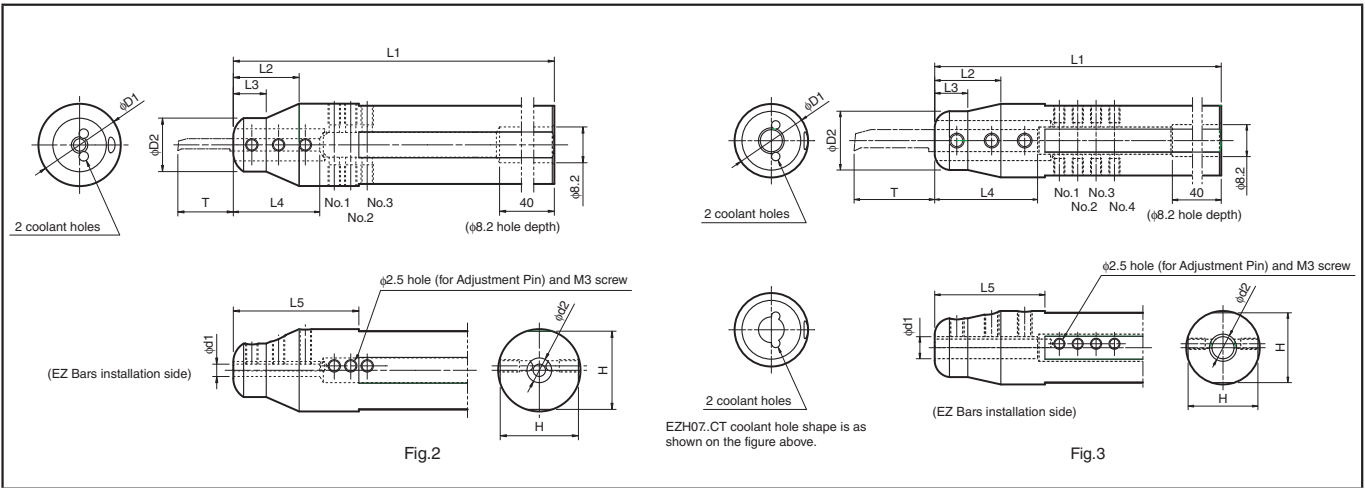
Positive

AD Bars

Negative

EZH-CT sleeve

Adjustable with Coolant Hole



Sleeve Dimensions

Description	Std.	Dimension (mm)										Overhang Length of the Bar*2T (mm) Adjustment Pin Setting Position				Drawing	Applicable EZ Bars / EZ Bar PLUS ● F14~F17 ● F19,F20 ● G43,G68 ● J24
		φd1	φD1	φD2	φd2	H	L1	L2	L3	L4	L5	No.1	No.2	No.3	No.4		
EZH 03019CT-120	●	3	19.05	13	6	18	120	16	8	21	30.5	13.5	9.5	5.5	-	Fig.2	EZBR...030... EZVBR035030-... EZGR...030-... EZTR...030-... *3HPB% 0303-...
03020CT-120	●		20			19	120				41.5						
03022CT-135	●		22			21	135				30.5						
03025.0CT-135	●		25			24	135										
03025.4CT-120	●		25.4			24.4	120										
EZH 03519CT-120	●	3.5	19.05	13	6	18	120	16	8	21	31.1	15.5	11.5	7.5	-	Fig.2	EZBR...035... EZTR...035-...
03520CT-120	●		20			19	120				41.5						
03522CT-135	●		22			21	135				31.1						
03525.0CT-135	●		25			24	135										
03525.4CT-120	●		25.4			24.4	120										
EZH 04019CT-120	●	4	19.05	13	6	18	120	16	8	22	32.7	20.5	16.5	12.5	8.5	Fig.3	EZBR...040... EZVBR045040-... EZGR...040-... EZFR...040-... EZTR...040-... *3HP...04-...
04020CT-120	●		20			19	120				41.5						
04022CT-135	●		22			21	135				32.7						
04025.0CT-135	●		25			24	135										
04025.4CT-120	●		25.4			24.4	120										
EZH 05019CT-120	●	5	19.05	16	6	18	120	18	9	26	30.0	25.5	20.5	15.5	10.5	Fig.3	EZBR...050... EZVBR055050-... EZGR...050-... EZFR...050-... EZTR...050-... *3HP...05-...
05020CT-120	●		20			19	120				44.0						
05022CT-135	●		22			21	135				30.0						
05025.0CT-135	●		25			24	135										
05025.4CT-120	●		25.4			24.4	120										
EZH 06019CT-120	●	6	19.05	16	7.4	18	120	18	9	28	30.0	30.5 (18.5)	25.5 (13.5)	20.5 (-)	15.5 (-)	Fig.3	EZBR...060... EZVBR065060-... EZGR...060-... EZTR...060-... _060X-...-070EZ *3HP...0606-...
06020CT-120	●		20			19	120				41.5						
06022CT-135	●		22			21	135				30.0						
06025.0CT-135	●		25			24	135										
06025.4CT-120	●		25.4			24.4	120										
EZH 07019CT-120	●	7	19.05	16	7.4	18	120	18	9	29	30.0	35.5	30.5	25.5	20.5	Fig.3	EZBR...070... EZGR...070-... EZFR...070-... EZTR...070-... *3HP...07-...
07020CT-120	●		20			19	120				44.0						
07022CT-135	●		22			21	135				30.0						
07025.0CT-135	●		25			24	135										
07025.4CT-120	●		25.4			24.4	120										

*1. L4 shows φd1 length.

*2. Dimension T shows Overhang length of the EZB Bar when attached to sleeve. () value indicates the overhang length when installed the steel boring bar (EZ Bar PLUS).

*3. Use them without Adjustment Pins. Overhang length of bar is not adjustable.

• Choose sleeves (φd1) to meet with φD dimension of bar.

• φ8.2 hole on the sleeve end is prepared hole for Rc1/8 threading. Please modify by additional processing if necessary. The body hardness is 42HRC.

For how to fix EZ Bars (EZH-CT sleeve), please refer to F13.

● : Std. Item

F

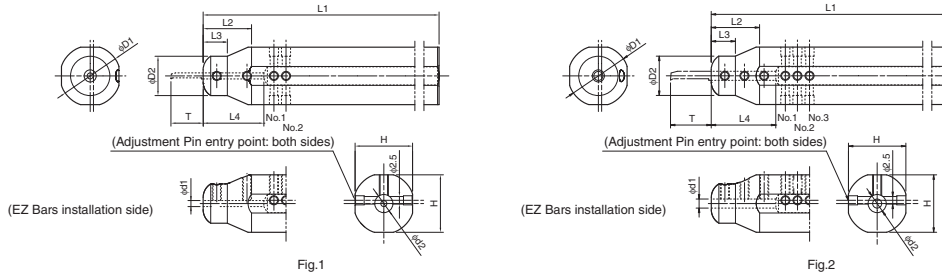


Boring



EZH-HP sleeve

Adjustable



- F
- Boring
- Solid
- Positive
- AD Bars
- Negative

Description	Std.	Dimension (mm)									Overhang Length of the Bar*2T (mm)				Drawing	Applicable EZ Bars ● F14~F17,F20 ● G43,G68 ● J24		
		φd1	φD1	φD2	φd2	H	L1	L2	L3	*1L4	No.1	No.2	No.3	No.4				
EZH 01716HP-100 01719HP-120 01720HP-120 01722HP-135 01725.0HP-135 01725.4HP-120	●	1.7	16	13	6	15	100	16	8	16	7.5	3.5	-	-	Fig.1	EZBR...017...		
	●					19.05	120										24	135
	●					20	120										21	135
	●					22	120										24	135
	●					25	120										24.4	120
	●					25.4	120											
EZH 02016HP-100 02019HP-120 02020HP-120 02022HP-135 02025.0HP-135 02025.4HP-120	●	2	16	13	6	15	100	16	8	20	8.5	4.5	-	-	Fig.1	EZBR...020... *3 HPB%0202-...		
	●					19.05	120										21	135
	●					20	120										24	135
	●					22	120										24.4	120
	●					25	120											
	●					25.4	120											
EZH 02516HP-100 02519HP-120 02520HP-120 02522HP-135 02525.0HP-135 02525.4HP-120	●	2.5	16	13	6	15	100	16	8	20	11	7	-	-	Fig.1	EZBR...025... EZTR...025-...		
	●					19.05	120										21	135
	●					20	120										24	135
	●					22	120										24.4	120
	●					25	120											
	●					25.4	120											
EZH 03016HP-100 03019HP-120 03020HP-120 03022HP-135 03025.0HP-135 03025.4HP-120	●	3	16	13	6	15	100	16	8	21	13.5	9.5	5.5	-	Fig.2	EZBR...030... EZVBR035030-... EZGR...030-... EZTR...030-... *3 HPB%0303-...		
	●					19.05	120										21	135
	●					20	120										24	135
	●					22	120										24.4	120
	●					25	120											
	●					25.4	120											
EZH 03516HP-100 03519HP-120 03520HP-120 03522HP-135 03525.0HP-135 03525.4HP-120	●	3.5	16	13	6	15	100	16	8	22	15.5	11.5	7.5	-	Fig.2	EZBR...035... EZTR...035-...		
	●					19.05	120										21	135
	●					20	120										24	135
	●					22	120										24.4	120
	●					25	120											
	●					25.4	120											
EZH 04016HP-100 04019HP-120 04020HP-120 04022HP-135 04025.0HP-135 04025.4HP-120	●	4	16	13	6	15	100	16	8	24	20.5	16.5	12.5	8.5	Fig.4	EZBR...040... EZVBR045040-... EZGR...040-... EZFGR...040-... EZTR...040-... *3 HP...04-...		
	●					19.05	120										21	135
	●					20	120										24	135
	●					22	120										24.4	120
	●					25	120											
	●					25.4	120											

*1. L4 shows φd1 length.
 *2. Dimension T shows Overhang length of the EZB Bar when attached to sleeve.
 *3. Use them without Adjustment Pins. Overhang length of bar is not adjustable.
 - Choose sleeves (φd1) to meet with φD dimension of bar.

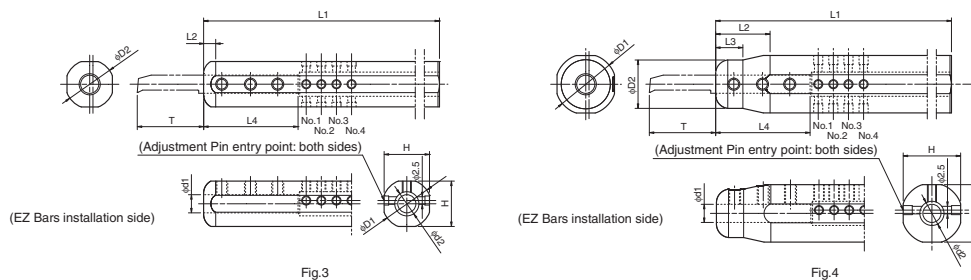
● Spare Parts Description (for EZH-HP Sleeves)

Description	Spare Parts					Applicable EZ Bars EZ Bar PLUS
	Adjustment Pin	Clamp Screw (for adjustment pin)	Wrench	Clamp Screw (for bar)	Wrench	
EZH 017...HP-... 020...HP-... 025...HP-... 030...HP-...	LCP025140	HS3x4P (for both Adjustment Pin and Bar)	LW-1.5 Tightening Torque 1N-m	HS3x4P	LW-1.5 Tightening Torque 1N-m	EZBR...017... EZBR...020... EZBR...025... EZ_R...025-... EZBR...030... EZ_R...030-... EZBR...035... EZ_R...035-... EZBR...040... EZ_R...040-... _045X-...-050EZ
EZH 035...HP-... 040...HP-... 045...HP-... 050...HP-... 060...HP-... 070...HP-...	LCP025140	HS3x4P	LW-1.5 Tightening Torque 1N-m	HS4x4P	LW-2 Tightening Torque 2N-m	EZBR...050... EZ_R...050-... EZBR...060... EZ_R...060-... _060X-...-070EZ EZBR...070... EZ_R...070-...

● : Std. Item

EZH-HP sleeve

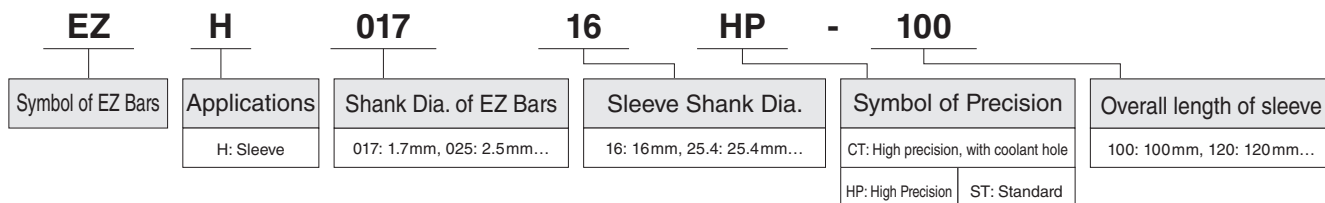
Adjustable



Description	Std.	Dimension (mm)											Overhang Length of the Bar*2T (mm)				Drawing	Applicable EZ Bars EZ Bar PLUS ● F14~F17 ● F19,F20 ● G43,G68 ● J24			
		φd1	φD1	φD2	φd2	H	L1	L2	L3	*L4	No.1	No.2	No.3	No.4							
EZH 04516HP-100 04519HP-120 04520HP-120 04522HP-135 04525.0HP-135 04525.4HP-120	●	4.5	16	16	6	15	100	4	-	25.3	23 (14)	18.5 (9.5)	14 (-)	9.5 (-)	Fig.3	_045X-...050EZ					
	●		19.05			18	120	18	9						29		25.5	20.5	15.5	10.5	Fig.4
	●		20			19	120														
	●		22			21	135														
	●		25			24	135														
●	25.4	24.4	120																		
EZH 05016HP-100 05019HP-120 05020HP-120 05022HP-135 05025.0HP-135 05025.4HP-120	●	5	16	16	6	15	100	4	-	31	30.5 (18.5)	25.5 (13.5)	20.5 (-)	15.5 (-)	Fig.3	EZBR...050... EZVBR055050-... EZGR...050-... EZFRGR...050-... EZTR...050-... *3HP...05-...					
	●		19.05			18	120														
	●		20			19	120														
	●		22			21	135														
	●		25			24	135														
●	25.4	24.4	120																		
EZH 06016HP-100 06019HP-120 06020HP-120 06022HP-135 06025.0HP-135 06025.4HP-120	●	6	16	16	8	15	100	4	-	33	35.5	30.5	25.5	20.5	Fig.3	EZBR...060... EZVBR065060-... EZGR...060-... EZTR...060-... _060X-...-070EZ *3HP...0606-...					
	●		19.05			18	120														
	●		20			19	120														
	●		22			21	135														
	●		25			24	135														
●	25.4	24.4	120																		
EZH 07016HP-100 07019HP-120 07020HP-120 07022HP-135 07025.0HP-135 07025.4HP-120	●	7	16	16	8	15	100	4	-	33	35.5	30.5	25.5	20.5	Fig.3	EZBR...070... EZGR...070-... EZFRGR...070-... EZTR...070-... *3HP...07-...					
	●		19.05			18	120														
	●		20			19	120														
	●		22			21	135														
	●		25			24	135														
●	25.4	24.4	120																		

*1. L4 shows φd1 length.
 *2. Dimension T shows Overhang length of the EZB Bar when attached to sleeve. () value indicates the overhang length when installed the steel boring bar (EZ Bar PLUS).
 *3. Use them without Adjustment Pins. Overhang length of bar is not adjustable.
 · Choose sleeves (φd1) to meet with φD dimension of bar.

Sleeve Identification System



How to fix EZ Bars

- How to use adjustment pin (Fig.5)
 - (1) Put the adjustment pin into the hole.
 - (2) Push it into the sleeve, using the wrench (LW-1.5).
 - (3) Tightening the clamp screw (HS3X4P) with wrench (LW-1.5) to fix the adjustment pin.
- How to fix bar (Fig.6)
 - (1) With the chip pocket upward, set the bar into the sleeve. Press the slant of the end of the bar with the adjustment pin. Make sure that the bar does not move (Fig.7)
 - (2) Tighten the clamp screw with wrench (LW-2) and fix the bar. (Use LW-1.5 if shank dia. is 3mm or less)

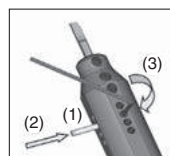


Fig.5 How to use adjustment pin

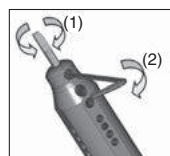


Fig.6 How to fix bar

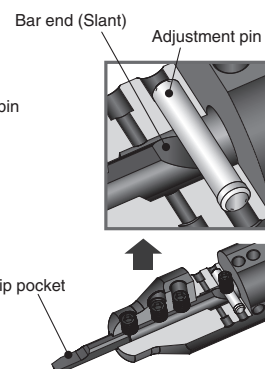


Fig.7: Fixed bar

● : Std. Item



Boring



EZH-ST sleeve

Not-adjustable

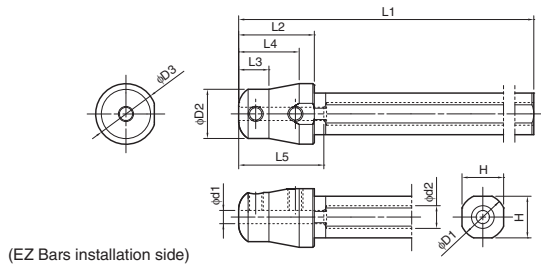


Fig.1

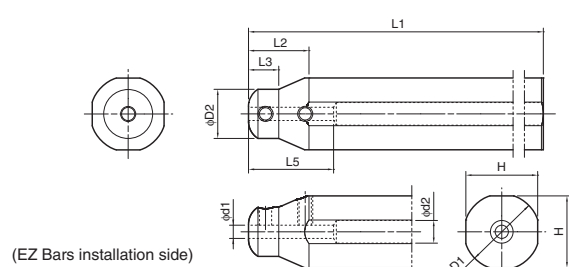


Fig.2

Description	Std.	Dimension (mm)											Drawing	Applicable Bars ● F14-F17,F20,F36 ● G43,G46,G68,G71 ● J24,J28	
		φd1	φD1	φD2	φD3	φd2	H	L1	L2	L3	L4	*L5			
EZH 01712ST-80 01716ST-100 01719ST-120 01720ST-120 01722ST-135 01725.0ST-135 01725.4ST-120	●	1.7	12	13	-	6	11	80	16	8	-	16	16	Fig.1	EZBR...017...
	●		16				15	100							
	●		19.05				18	120							
	●		20				19	120							
	●		22				21	135							
	●		25				24	135							
	●		25.4				24.4	120							
EZH 02012ST-80 02016ST-100 02019ST-120 02020ST-120 02022ST-135 02025.0ST-135 02025.4ST-120	●	2	12	13	-	6	11	80	16	8	-	20	16	Fig.1	EZBR...020... HPB%0202-...
	●		16				15	100							
	●		19.05				18	120							
	●		20				19	120							
	●		22				21	135							
	●		25				24	135							
	●		25.4				24.4	120							
EZH 02512ST-80 02516ST-100 02519ST-120 02520ST-120 02522ST-135 02525.0ST-135 02525.4ST-120	●	2.5	12	13	-	6	11	80	16	8	-	20	16	Fig.1	EZBR...025... EZTR...025-...
	●		16				15	100							
	●		19.05				18	120							
	●		20				19	120							
	●		22				21	135							
	●		25				24	135							
	●		25.4				24.4	120							
EZH 03012ST-80 03016ST-100 03019ST-120 03020ST-120 03022ST-135 03025.0ST-135 03025.4ST-120	●	3	12	13	-	6	11	80	16	8	-	21	16	Fig.1	EZBR...030... EZVBR035030-... EZGR...030-... EZTR...030-... HPB%0303-...
	●		16				15	100							
	●		19.05				18	120							
	●		20				19	120							
	●		22				21	135							
	●		25				24	135							
	●		25.4				24.4	120							
EZH 03512ST-80 03516ST-100 03519ST-120 03520ST-120 03522ST-135 03525.0ST-135 03525.4ST-120	●	3.5	12	13	-	6	11	80	16	8	-	22	16	Fig.1	EZBR...035... EZTR...035-...
	●		16				15	100							
	●		19.05				18	120							
	●		20				19	120							
	●		22				21	135							
	●		25				24	135							
	●		25.4				24.4	120							
EZH 04012ST-80 04016ST-100 04019ST-120 04020ST-120 04022ST-135 04025.0ST-135 04025.4ST-120	●	4	12	13	-	6	11	80	16	8	-	24	16	Fig.1	EZBR...040... EZVBR045040-... EZGR...040-... EZFG...040-... EZTR...040-... HP...04-...
	●		16				15	100							
	●		19.05				18	120							
	●		20				19	120							
	●		22				21	135							
	●		25				24	135							
	●		25.4				24.4	120							

*L5 shows φd1 length

· Choose sleeves (φd1) to meet with φD dimension of bar.

· Adjustment Pin cannot be installed to EZH-ST sleeves. To adjust overhang of the bar, please use EZH-CT / HP sleeves.

● : Std. Item

EZH-ST sleeve

Not-adjustable

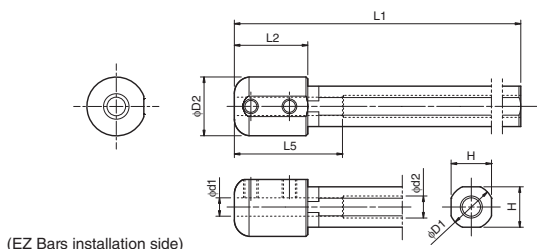


Fig.3

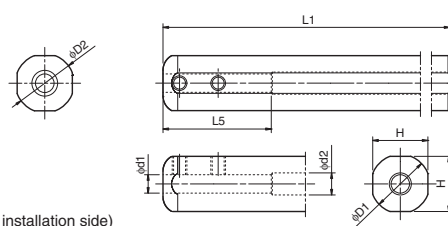


Fig.4

Description	Std.	Dimension (mm)										Drawing	Applicable Bars ● F14-F17,F19,F20,F36 ● G43,G46,G68,G71 ● J24,J28	
		φd1	φD1	φD2	φD3	φd2	H	L1	L2	L3	L4			*L5
EZH 05012ST-80	●	5	12	16	-	6	11	80	20	-	-	29	Fig.3	EZBR...050... EZVBR055050-... EZGR...050-... EZFR...050-... EZTR...050-... HP...05-...
05016ST-100	●						15	100	-	-	Fig.4			
05019ST-120	●						18	120	-	-	Fig.2			
05020ST-120	●						19	120	-	-	Fig.2			
05022ST-135	●						21	135	18	9	Fig.2			
05025.0ST-135	●						24	135	-	-	Fig.2			
05025.4ST-120	●						24.4	120	-	-	Fig.2			
EZH 06012ST-80	●	6	12	16	-	8	11	80	20	-	-	31	Fig.3	EZBR...060... EZVBR065060-... EZGR...060-... EZTR...060-... _060X-...-070EZ HP...0606-...
06016ST-100	●						15	100	-	-	Fig.4			
06019ST-120	●						18	120	-	-	Fig.2			
06020ST-120	●						19	120	-	-	Fig.2			
06022ST-135	●						21	135	18	9	Fig.2			
06025.0ST-135	●						24	135	-	-	Fig.2			
06025.4ST-120	●						24.4	120	-	-	Fig.2			
EZH 07012ST-80	●	7	12	16	-	8	11	80	20	-	-	33	Fig.3	EZBR...070... EZGR...070-... EZFR...070-... EZTR...070-... HP...07-...
07016ST-100	●						15	100	-	-	Fig.4			
07019ST-120	●						18	120	-	-	Fig.2			
07020ST-120	●						19	120	-	-	Fig.2			
07022ST-135	●						21	135	18	9	Fig.2			
07025.0ST-135	●						24	135	-	-	Fig.2			
07025.4ST-120	●						24.4	120	-	-	Fig.2			

- *L5 shows φd1 length
- Choose sleeves (φd1) to meet with φD dimension of bar.
- Adjustment Pin cannot be installed to EZH-ST sleeves. To adjust overhang of the bar, please use EZH-CT / HP sleeves.

Spare Parts Description (for EZH-ST Sleeves)

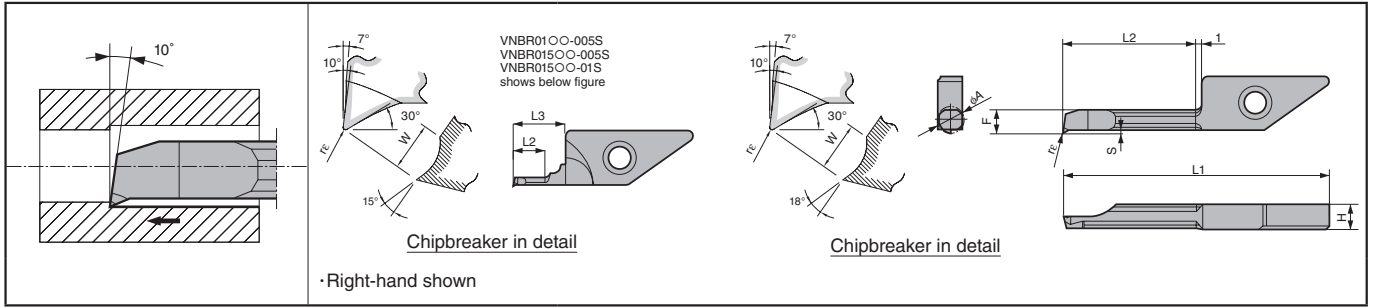
Description	Spare Parts		Applicable EZ Bars		EZ Bar PLUS	2-Edge Tip-Bars
	Clamp Screw	Wrench	EZB-HP EZB-HP-LT EZB-ST EZB-NB	EZG EZFG EZT EZVB	S-SCLC C-SCLC	HP
EZH 017...ST-..	HS3x4P	LW-1.5 Tightening Torque 1N·m	EZBR...017...	-	-	-
020...ST-..			EZBR...020...	-	-	HPB [®] /0202-...
025...ST-..			EZBR...025...	EZTR...025-...	-	-
030...ST-..			EZBR...030...	EZ_R...030-...	-	HPB [®] /0303-...
EZH 035...ST-..	HS4x4P	LW-2 Tightening Torque 2N·m	EZBR...035...	EZTR...035-...	-	-
040...ST-..			EZBR...040...	EZ_R...040-...	-	HP...04-...
050...ST-..			EZBR...050...	EZ_R...050-...	-	HP...05-...
060...ST-..			EZBR...060...	EZ_R...060-...	_060X-...-070EZ	HP...0606-...
070...ST-..			EZBR...070...	EZ_R...070-...	-	HP...07-...

● : Std. Item

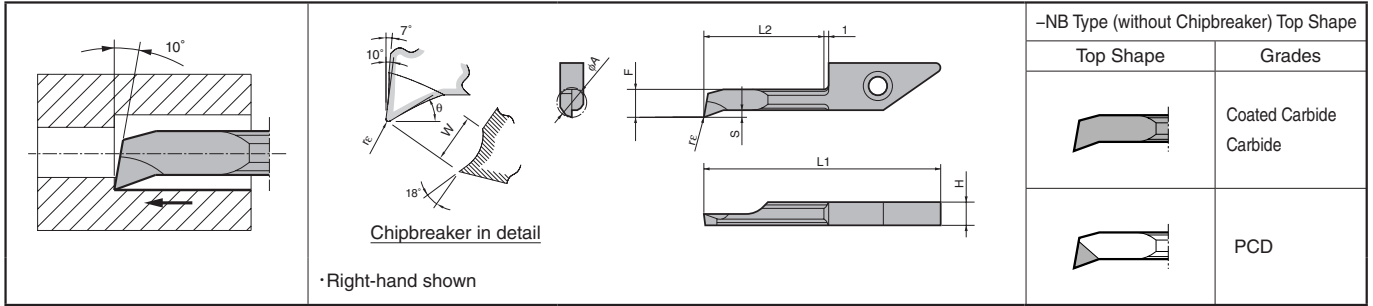


System Tip-Bars

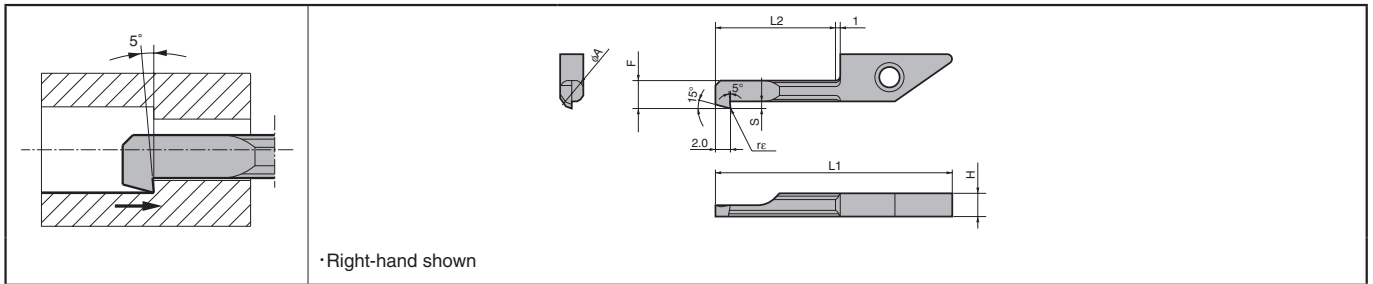
VNB-S (Boring) [Corner-R(r_{ϵ}) :Minus tolerance]



VNB (Boring)



VNBT (Back Boring)



Insert Dimensions (VNB-S)

Description	Min. Bore Dia. ϕA	Dimension (mm)								Grades				
		H	L1	L2	L3	F	S	r_{ϵ}	W	MEGA COAT	PVD Coated Carbide	Carbide	PCD	
										PR1225	PR930	KW10	KPD001	KPD010
VNB-R 0103-005S 0105-005S 01503-005S 01505-005S 0206-005S 025075-005S 0311-005S 03515-005S 0411-005S 0420-005S	1.0	3.9	26.5	3	7	0.85	0.2	$^{+0}_{-0.02}$	0.7	●	●			
				5						●	●			
				3						●	●			
	5		●	●										
	6		●	●										
	7.5		●	●										
	11	●	●											
	15	●	●											
	11	●	●											
11	●	●												
20	●	●												
VNB-R 01503-01S 01505-01S 0206-01S 025075-01S 0311-01S 03515-01S 0411-01S 0420-01S	1.5	3.9	26.5	3	7	1.3	0.2	$^{+0}_{-0.03}$	0.7	●	●			
				5						●	●			
				6						●	●			
	7.5		●	●										
	11		●	●										
	15		●	●										
	11	●	●											
	11	●	●											
	20	●	●											
VNB-R 0411-02S 0420-02S	4.0	3.9	39.8	11	-	3.5	0.5	$^{+0}_{-0.04}$	0.8	●	●			
				20						●	●			
				20						●	●			

Recommended Cutting Conditions **F92**

● Insert Dimensions (VNB / VNB-NB / VNBTR)

Description	Min. Bore Dia.	Dimension (mm)								Grades						
										MEGA COAT	PVD Coated Carbide	Carbide	PCD			
		φA	H	L1	L2	F	S	rε	W	θ	PR1225	PR930	KW10	KPD001	KPD010	
VNBR	0206-003	2	3.9	26.5	6	1.8	0.25	0.03	1.2	24°	●	●	●			
	0311-003	3		30.8	11	2.6	0.4		1.8		●	●	●			
	0411-003	4		39.8	20	3.5	0.5		2.7		●	●	●			
	0420-003	4		39.8	20	3.5	0.5		3.0	23°	●	●	●			
	0511-003	5		30.8	11	4.5	0.7				●	●	●			
	0520-003	5		39.8	20	5.3	1.0				●	●	●			
	0620-003	6		49.8	30	5.3	1.0		24°	●	●	●				
	0630-003	6		39.8	20	6.2	1.0			●	●	●				
	0720-003	7		49.8	30	6.2	1.0			●	●	●				
0730-003	7	49.8	30	6.2	1.0	●	●	●								
VNBR	0206-01	2	3.9	26.5	6	1.8	0.25	0.1	1.2	24°	●	●	●			
	0311-01	3		30.8	11	2.6	0.4		1.8		●	●	●			
	0411-01	4		39.8	20	3.5	0.5		2.7		●	●	●			
	0420-01	4		39.8	20	3.5	0.5		3.0	23°	●	●	●			
	0511-01	5		30.8	11	4.5	0.7				●	●	●			
	0520-01	5		39.8	20	5.3	1.0				●	●	●			
	0620-01	6		49.8	30	5.3	1.0		24°	●	●	●				
	0630-01	6		39.8	20	6.2	1.0			●	●	●				
	0720-01	7		49.8	30	6.2	1.0			●	●	●				
0730-01	7	49.8	30	6.2	1.0	●	●	●								
VNBR	0206-02	2	3.9	26.5	6	1.8	0.25	0.2	1.2	24°	●	●	●			
	0311-02	3		30.8	11	2.6	0.4		1.8		●	●	●			
	0411-02	4		39.8	20	3.5	0.5		2.7		●	●	●			
	0420-02	4		39.8	20	3.5	0.5		3.0	23°	●	●	●			
	0511-02	5		30.8	11	4.5	0.7				●	●	●			
	0520-02	5		39.8	20	5.3	1.0				●	●	●			
	0620-02	6		49.8	30	5.3	1.0		24°	●	●	●				
	0630-02	6		39.8	20	6.2	1.0			●	●	●				
	0720-02	7		49.8	30	6.2	1.0			●	●	●				
0730-02	7	49.8	30	6.2	1.0	●	●	●								
VNBR	0206-003NB	2	3.9	26.5	6	1.8	0.25	0.03	-	15°	●	●	●			
	0311-003NB	3		30.8	11	2.6	0.4		●		●	●				
	0411-003NB	4		39.8	20	3.5	0.5		●		●	●				
	0420-003NB	4		39.8	20	3.5	0.5		3.0		23°	●	●	●		
	0511-003NB	5		30.8	11	4.5	0.7					●	●	●		
	0520-003NB	5		39.8	20	5.3	1.0					●	●	●		
	0620-003NB	6		49.8	30	5.3	1.0		24°		●	●	●			
	0630-003NB	6		39.8	20	6.2	1.0				●	●	●			
	0720-003NB	7		49.8	30	6.2	1.0				●	●	●			
0730-003NB	7	49.8	30	6.2	1.0	●	●	●								
VNBR	0206-02NB	2	3.9	26.5	6	1.8	0.25	0.2	-	15°	●	●	●	●	●	
	0311-02NB	3		30.8	11	2.6	0.4		●		●	●	●	●		
	0411-02NB	4		39.8	20	3.5	0.5		●		●	●	●	●		
	0420-02NB	4		39.8	20	3.5	0.5		3.0		23°	●	●	●	●	●
	0511-02NB	5		30.8	11	4.5	0.7					●	●	●	●	●
	0520-02NB	5		39.8	20	5.3	1.0					●	●	●	●	●
	0620-02NB	6		49.8	30	5.3	1.0		24°		●	●	●	●	●	
	0630-02NB	6		39.8	20	6.2	1.0				●	●	●	●	●	
	0720-02NB	7		49.8	30	6.2	1.0				●	●	●	●	●	
0730-02NB	7	49.8	30	6.2	1.0	●	●	●	●	●						
VNBTR	0411-003	4	3.9	30.8	11	3.6	1.0	0.03	-	-	●	●	●			
	0420-003	4		39.8	20				●		●	●				
	0511-003	5		30.8	11	4.6	1.3		●		●	●				
	0520-003	5		39.8	20				●		●	●				
VNBTR	0411-01	4	3.9	30.8	11	3.6	1.0	0.1	-	-	●	●	●			
	0420-01	4		39.8	20				●		●	●				
	0511-01	5		30.8	11	4.6	1.3		●		●	●				
	0520-01	5		39.8	20				●		●	●				

Recommended Cutting Conditions F92



Boring

System Tip-Bars

SVN-N (without side stopper)

SVNS-N (without side stopper / without setscrew)

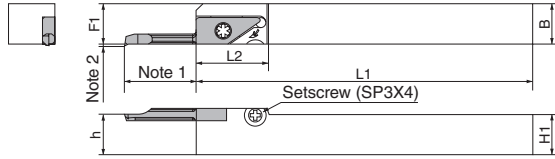


Fig.1 (SVN-N)

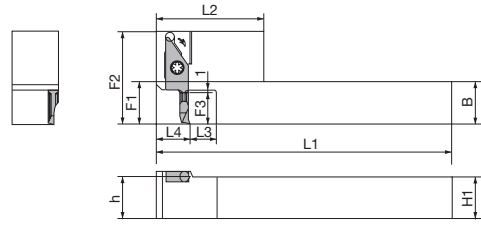


Fig.2 (SVNS-N)

·Right-hand shown

Right-hand Insert for Right-hand Toolholder.

Note 1 & Note 2: For insert dimensions, ref. to page **F28~F29**

Toolholder Dimensions

Description	Std.	Dimension (mm)										Drawing	Spare Parts			Applicable Inserts
		H1-h	B	L1	L2	L3	L4	F1	F2	F3	Clamp Screw		Wrench	Setscrew		
SVNR 1010H-12N	●	10	10	100	22	-	-	10	-	-	Fig.1	SB-3080TR	FT-10	SP3X4	● F28~F29 ● G45 ● G70 ● J30	
1212K-12N	●	12	12	12				16								
1616K-12N	●	16	16	125				16								
2020K-12N	●	20	20	20				20								
2525M-12N	●	25	25	150				25								
SVNSR 1010K-12-06N	●	10	10	125	45	10	12	10	29	6	Fig.2	SB-3080TR	LTW-10S	-	(VNBR..06-...)* (VNBR..11-...)* (VNBTR..11-...)* (VNGR....-11)* (VNTR...-11)* (VNBR..06-...)* (VNBR..11-...)* (VNBTR..11-...)* (VNGR....-11)* (VNTR...-11)* (VNBR..20-...)* (VNBTR..20-...)* (VNGR....-20)* (VNBR..06-...)* (VNBR..11-...)* (VNBTR..11-...)* (VNGR....-11)* (VNTR...-11)* (VNBR..20-...)* (VNBTR..20-...)* (VNGR....-20)*	
1010K-12-11N	●	10	10	125			10	12	10	33						11
1212M-12-06N	●	12	12	150			10	12	12	29						6
1212M-12-11N	●	12	12	150			10	12	12	33						11
1212M-12-20N	●	12	12	150			10	13	12	42						20
1616M-12-06N	●	16	16	150			16	12	16	29						6
1616M-12-11N	●	16	16	150			16	12	16	33						11
1616M-12-20N	●	16	16	150			16	13	16	42						20

1. SVN-N / S...SVN-N / S...SVN-SN (without side stopper) retains high index accuracy by easy restraint.

2. SVN-N (without side stopper) has a setscrew SP3X4. Changing the setscrew SP3X4 to a screw HS3X4 (sold separately) enables the toolholder to be used as a binding effect toolholder similar to the side stopper toolholder.

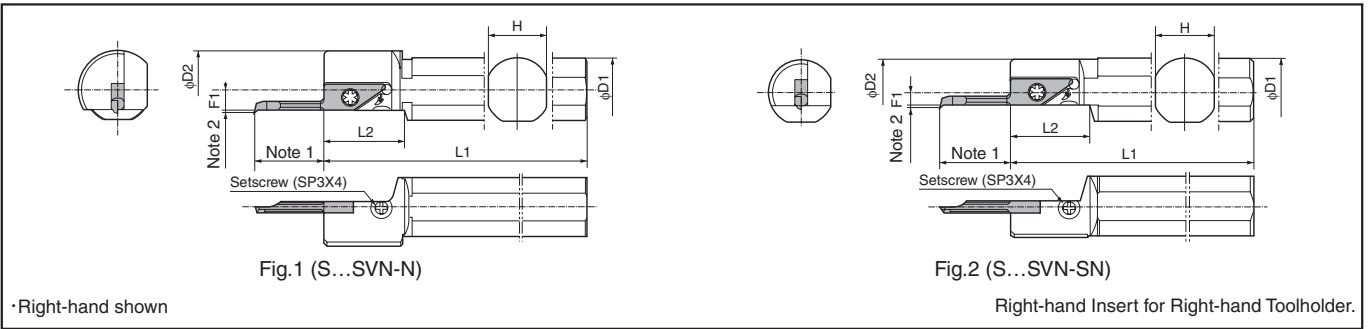
* All system Tip-Bars Inserts are used with a SVNSR-N Toolholders. However, when setting the cutting edge at the face level of the toolholder as shown in Fig. 2, use the insert shown in (). In these cases, the F3 dimension of the toolholders corresponds to the L2 dimension of the insert.

Spare Parts (Optional)

Screw side stopper	Wrench
HS3x4	LW-1.5

● : Std. Item

S...SVN-N Round Shank (Straight, without side stopper) **S...SVN-SN Round Shank (Straight, without side stopper)**



Note 1 & Note 2: For insert dimensions, ref. to page F28-F29

Toolholder Dimensions

Description	Std.	Dimension (mm)						Drawing	Spare Parts					Applicable Inserts
		φD1	φD2	H	L1	L2	F1		Clamp Screw	Wrench	Screw side stopper	Setscrew	Wrench	
S12F-SVNR12N	●	12	20	11	80	23	4	Fig.1	SB-3080TR	FT-10	-	SP3X4	-	● F28-F29 ● G45 ● G70 ● J30 ● VNBR.....-.. ● VNBTR.....-.. ● VNGR.....-.. ● VNFR.....-.. ● VNTR.....-..
S14G-SVNR12N	●	14	20	13	90									
S16H-SVNR12N	●	16	24	15	100									
S19H-SVNR12N	●	19.05	24	17	100									
S19N-SVNR12N	●			160										
S20H-SVNR12N	●	20	24	18	100	24	6							
S25H-SVNR12N	●	25.4	30	23	100									
S25Q-SVNR12N	●			180										
S19H-SVNR12SN	●	19.05	18.5	17	100	23	4	Fig.2	SB-3080TR	FT-10	-	SP3X4	-	
S20H-SVNR12SN	●	20	19.5	18										
S22K-SVNR12SN	●	22	21.5	20	125									
S25.0G-SVNR12SN	●	25	24.5	23	90									

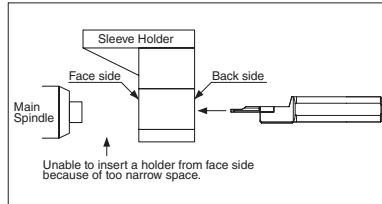


Selection of System Tip-Bars

Gang-Type (Horizontal)	Gang-Type	Gang-Type (Front Loading Sleeve Type)	Gang-Type (Back Loading Sleeve Type)
Square Shank (Straight)	Square Shank (L-shape)	Square Shank	Square Shank
Round Shank (Standard)		Round Shank (Standard)	Round Shank (Standard)
Round Shank (Straight)		Round Shank (Straight)	Round Shank (Straight)

Q: There are standard types (head dia. is larger than shank) and straight types for round shanks. What is each one used for?

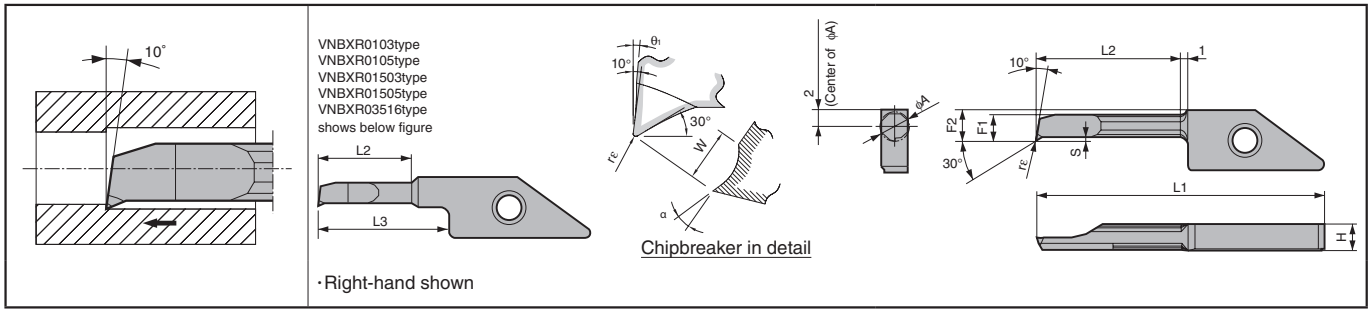
A: The straight type is used when it cannot be inserted from the face side of the sleeve holder and can be inserted only from the back side due to space limitation (Refer to Fig. below). On the other hand, the standard type should be installed when it can be inserted from the face side, and the head end is used for positioning as stopper.



● : Std. Item

System Tip-Bars

VNBX-S (Boring) [Corner-R(r_ϵ) : Minus tolerance]



Insert Dimensions (VNBX-S)

Description	Min. Bore Dia.	Dimension (mm)											Grades		
		ϕA	H	L1	L2	L3	F1	F2	S	r_ϵ	W	θ_1	α	PR930	
VNBXR 0103-005S 0105-005S 01503-005S 01505-005S 0206-005S 0311-005S 03511-005S 03516-005S 0411-005S 0420-005S	1.0	3.9	26.5	3	7	0.85	2.95	0.2	0.05	0.7	7°	15°	●		
				5									●		
				3									●		
	5		●												
	6		●												
	1.5		30.8	11	-	2.6	3.5	0.4		0.8	8°	18°	●		
	2.0	39.8	16	21	3.1	3.75	0.45	0.8	8°	18°	●				
	3.0	30.8	11	-	3.5	4	0.5	0.8	8°	18°	●				
	3.5	39.8	20	-	3.5	4	0.5	0.8	8°	18°	●				
4.0	39.8	20	-	3.5	4	0.5	0.8	8°	18°	●					
VNBXR 01503-01S 01505-01S 0206-01S 0311-01S 03511-01S 03516-01S 0411-01S 0420-01S	1.5	3.9	26.5	3	7	1.3	2.95	0.2	0.1	0.7	7°	15°	●		
				5									●		
				6									●		
	2.0		30.8	11	-	2.6	3.5	0.4		0.8	8°	18°	●		
	3.0		39.8	16	21	3.1	3.75	0.45		0.8	8°	18°	●		
	3.5		30.8	11	-	3.5	4	0.5		0.8	8°	18°	●		
	4.0	39.8	20	-	3.5	4	0.5	0.8	8°	18°	●				
VNBXR 0411-02S 0420-02S	4.0	3.9	30.8	11	-	3.5	4	0.5	0.2	0.8	8°	18°	●		
				20									●		

Recommended Cutting Conditions **F92**

Attachment toolholder for VNBX-S System Tip-Bars

- There are three different types of attachment toolholder for the VNBX-S System Tip-Bars (Ref. to Page F33).
 - SVNS-XN Type (without Side Stopper)
 - S...SVN-XN Type (without Side Stopper)
 - S...SVN-SXN Type (without Side Stopper)
- Above toolholders assure high index accuracy by easy restraint.
- Setscrews (SP3x4) are attached. Toolholders without Side Stopper can be used as a binding effect toolholder when removing the clamp screws and inserting screws (HS3x4: sold separately) with a wrench (LW-1.5: sold separately).

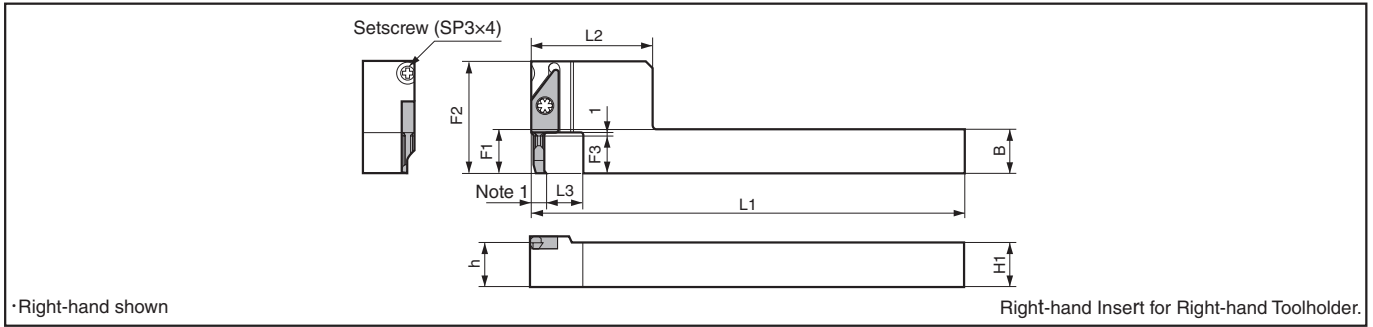
Spare Parts (Optional)

Screw (Side Stopper)	Wrench
HS3x4	LW-1.5

System Tip-Bars are sold in 5 piece boxes

● : Std. Item

SVNS-XN (Square Shank: L-shape)



Note 1: The dimension of Note 1 is same size as the applicable insert (VNBX) F2 dimension.

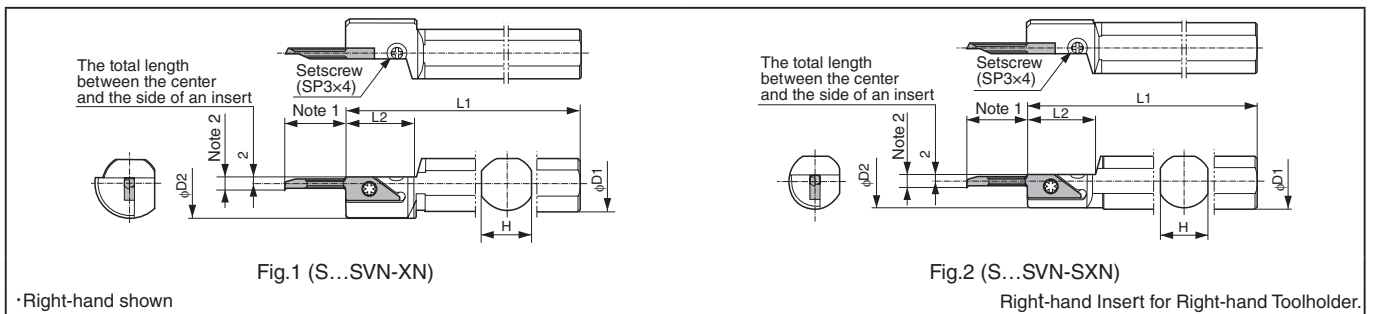
Toolholder Dimensions (L-shape square shank applicable to gang tool post)

Description	Std.	Dimension (mm)									Spare Parts			*Applicable Inserts ➔ F32
		H1=h	B	L1	L2	L3	F1	F2	F3	Clamp Screw	Wrench	Setscrew		
SVNSR 1010K-12-06XN	●	10	10	125	45	10	10	29	6	SB-3080TR	LTW-10S	SP3X4	(VNBXR02..)	
1010K-12-11XN	●							33	11				(VNBXR..11..)	
1212M-12-06XN	●	12	12	150	16	16	16	29	6	SB-3080TR	LTW-10S	SP3X4	(VNBXR02..)	
1212M-12-11XN	●							33	11				(VNBXR..11..)	
1212M-12-20XN	●	16	16	150	16	16	16	42	20	SB-3080TR	LTW-10S	SP3X4	(VNBXR0420..)	
1616M-12-06XN	●							29	6				(VNBXR02..)	
1616M-12-11XN	●							33	11				(VNBXR..11..)	
1616M-12-20XN	●							42	20				(VNBXR0420..)	

* All VNBXR Inserts can be attached to a SVNS-XN Toolholder. However, when setting the cutting edge at the face level of the toolholder as shown in Fig., use the insert shown in ().

S...SVN-XN (Round Shank: Standard type)

S...SVN-SXN (Round Shank: Straight type)



Right-hand shown

Note 1: The dimension of Note 1 shows the applicable insert (VNBX) L2 dimension +1 mm.
Note 2: The dimension of Note 1 is same size as the applicable insert (VNBX) F2 dimension.

Toolholder Dimensions (Holder center axis core and insert center are coaxial type)

Description	Std.	Dimension (mm)						Drawing	Spare Parts			Applicable Inserts ➔ F32
		φD1	φD2	H	L1	L2	Clamp Screw		Wrench	Setscrew		
S12F -SVNR12XN	●	12	20	11	80	23	Fig.1	SB-3080TR	FT-10	SP3X4	VNBXR...	
S14G -SVNR12XN	●	14		13	90							
S16H -SVNR12XN	●	16	15	100								
S19H -SVNR12XN	●	19.05	17	160								
S19N -SVNR12XN	●		18	100								
S20H -SVNR12XN	●	20	18	100								
S25H -SVNR12XN	●	25.4	23	180								
S25Q -SVNR12XN	●		30	23	90							
S19H -SVNR12SXN	●	19.05	18.5	17	100	23	Fig.2	SB-3080TR	FT-10	SP3X4	VNBXR...	
S20H -SVNR12SXN	●	20	19.5	18								
S22K -SVNR12SXN	●	22	21.5	20	125							
S25.0G -SVNR12SXN	●	25	24.5	23	90							

*Reminder of applicable insert.

● : Std. Item



Twin-Bars

TWB (Micro Boring: Horizontal type) [Corner-R(r_c) Tolerance: +0/-0.02mm, +0/-0.03mm]

	Description	Min. Bore Dia.	Dimension (mm)			Grades
		ϕA	F	S	r_c	PVD Coated Carbide
TWBR 01003-005 01503-005 02003-005 02503-005 03003-005		1.0	0.85	0.2	+0 -0.02	PR1025
		1.5	1.30			
		2.0	1.75			
		2.5	2.10			
		3.0	2.40			
TWBR 01503-010 02003-010 02503-010 03003-010		1.5	1.30	0.2	+0 -0.03	PR1025
		2.0	1.75			
		2.5	2.10			
		3.0	2.40			

·Right-hand shown

STW (Square Shank for Horizontal type insert)

(For Left-hand toolholders for grooving, please ref. to page G72.)

		Fig.1 ·Right-hand shown		Fig.2 Right-hand Insert for Right-hand Toolholder, (Left-hand Insert for Left-hand Toolholder.)
--	--	----------------------------	--	--

Toolholder Dimensions

Description	Std.	Dimension (mm)								Drawing	Spare Parts		Applicable Inserts
		H1=h	B	L1	L2	L3	F1	F2	T		Clamp Screw	Wrench	
STWR 1212F-15	●	12	12	85			12			Fig.1	SB-3080TR	LTW-10S	TWBR○○○○○-○○○
1212K-15	●	12	12				12						
1616K-15	●	16	16	125	-		16	-	3	Fig.2	SB-3080TR	LTW-10S	TWBR○○○○○-○○○
2020K-15	●	20	20			25	25						
2525M-15	●	25	25	150			32						

S.-STW (Round Shank for Horizontal type insert)

(For Left-hand toolholders for grooving, please ref. to page G72.)

		Fig.1 ·Right-hand shown Offset length from the center of toolholder to the tip of edge		Fig.2 Right-hand Insert for Right-hand Toolholder, (Left-hand Insert for Left-hand Toolholder.) Offset length from the center of toolholder to the tip of edge
--	--	--	--	--

Toolholder Dimensions

Description	Std.	Dimension (mm)							Drawing	Spare Parts		Applicable Inserts
		$\phi D1$	$\phi D2$	H	L1	L2	L3	T		Clamp Screw	Wrench	
S12F- STWR15	●	12	20	11	80	18	22	3	Fig.1	SB-3080TR	LTW-10S	TWBR○○○○○-○○○
S14H- STWR15	●	14		13	100							
S15F- STWR15	●	15.875		15	85							
S16F- STWR15	●	16				-	3	Fig.2	SB-3080TR	LTW-10S	TWBR○○○○○-○○○	
S19G- STWR15	●	19.05	18.5	17	90							
S19K- STWR15	●	19.05	18.5	17	120							
S20G- STWR15	●	20	19.5	18	90	22	-	3	Fig.2	SB-3080TR	LTW-10S	TWBR○○○○○-○○○
S20K- STWR15	●	20	19.5	18	120							
S22K- STWR15	●	22	21.5	20	125							
S25.0J- STWR15	●	25	24.5	23	110	22	-	-	-	-	-	-
S25K- STWR15	●	25.4	25	23	120							

● : Std. Item

TWBT (Micro Boring: Vertical type) [Corner-R(r_ϵ) Tolerance: +0/-0.02mm, +0/-0.03mm]

	·Right-hand shown	Description	Min. Bore Dia.	Dimension (mm)			Grades
			ϕA	F	S	r_ϵ	PVD Coated Carbide
							PR1025
TWBTR 01003-005			1.0	0.85	0.2	0.05	●
01503-005			1.5	1.30			●
02003-005			2.0	1.75			●
02503-005			2.5	2.10			●
03003-005			3.0	2.30	0.4	●	
TWBTR 01503-010			1.5	1.30	0.2	0.1	●
02003-010			2.0	1.75			●
02503-010			2.5	2.10			●
03003-010			3.0	2.30			0.4

STWS (Square shank for Vertical type insert: L-shape type)

·Right-hand shown	

Toolholder Dimensions

Description	Std.	Dimension (mm)								Drawing	Spare Parts		Applicable Inserts
		H1=h	B	L1	L2	L3	F1	F2	T		Clamp Screw	Wrench	
STWSR 1010JX-15T	●	10	10	120	16	-	10	9	3	-	SB-3080TR	LTW-10S	TWBTR○○○○○-○○○ TWFGTR○○○
1212JX-15T	●	12	12				12	7					
1616JX-15T	●	16	16				20	3					
STWSR 1010F-15T	●	10	10	85	16	-	10	9	-	-	-	-	-
1212F-15T	●	12	12				12	7					

Recommended Cutting Conditions (TWB / TWBT)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)	ap(mm), f(mm/rev)				Remarks
	PVD Coated Carbide	TWBR01003 type TWBR01503 type TWBR03003 type		TWBR02003 type TWBR02503 type TWBR03003 type		
	PR1025	ap	f	ap	f	
Carbon Steel	★ 30-100	~0.1	~0.01	~0.2	~0.03	Coolant
Alloy Steel						
Stainless Steel	★ 30-80	~0.1	~0.01	~0.2	~0.02	

★ :1st Recommendation

● : Std. Item

Twin-Bars are sold in 5 piece boxes

F35

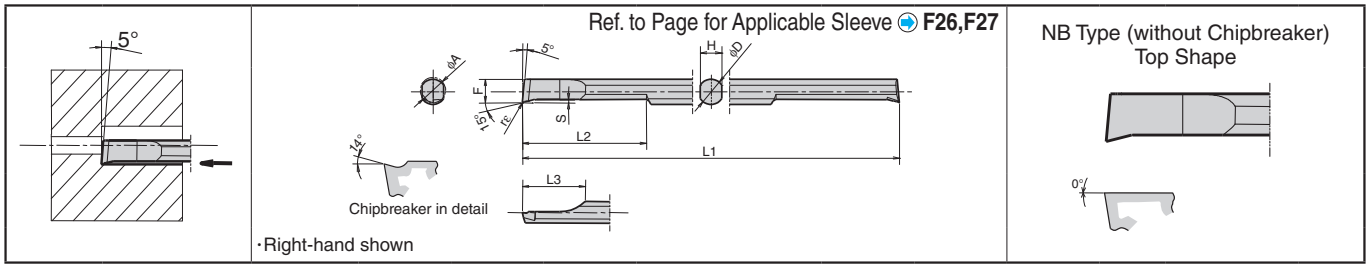
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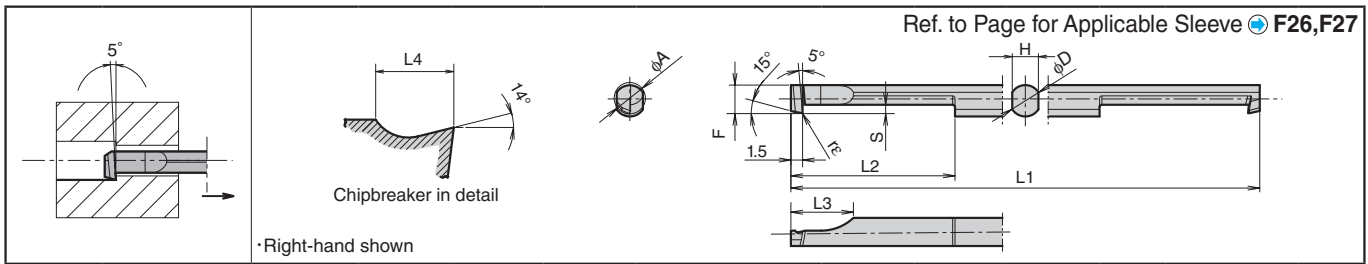
Boring

2-Edge Tip-Bars HPB / HPBT

HPB (Boring)



HPBT (Back Boring)



Tip-Bars Dimensions

Description	Min. Bore Dia.	Dimension (mm)								Grades				
		φA	φD	H	L1	L2	L3	F	S	rε	PVD Coated Carbide		Carbide	
											PR930		KW10	
HPB^{R/L}											R	L	R	L
0202-005	2	2	1.7	50	10	5	1.75	0.25	0.05	+0 -0.02	●	●	●	
0303-005	3	3	2.5		15	7	2.7	0.3			●	●	●	
0404-005	4	4	3.35	60	20	10	3.65				●	●	●	
0505-005	5	5	4.3	70			4.55				●	●	●	
0606-005	6	6	5.2		25	12	5.5				●	●	●	
0707-005	7	7	6.2	80			6.45				●	●	●	
HPBR														
0202-005NB	2	2	1.7	50	10	5	1.75	0.25	0.05	+0 -0.02	●		●	
0303-005NB	3	3	2.5		15	7	2.7	0.3			●		●	
0404-005NB	4	4	3.35	60	20	10	3.65				●		●	
0505-005NB	5	5	4.3	70			4.55				●		●	
0606-005NB	6	6	5.2		25	12	5.5				●		●	
0707-005NB	7	7	6.2	80			6.45				●		●	
HPBT^{R/L}														
0404-005	4	4	3.35	60	21	8	3.65	1.0	0.05	+0 -0.02	●	□	●	
0505-005	5	5	4.3	70	26		4.55	1.3			●	□	●	

Description Table for Tip-Bars and Applicable Sleeves

Tip-Bars Description	Applicable Sleeves F26, F27
HPB^{R/L}	EZH
0202-...	02...
0303-...	03...
0404-...	04...
0505-...	05...
0606-...	06...
0707-...	07...
HPBT^{R/L}	EZH
0404-...	04...
0505-...	05...

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)		HPB02 type		HPB03 type		HPB04 type HPBT04 type		HPB05/06/07 type HPBT05 type		Remarks
	PVD Coated Carbide	Carbide	ap(mm), f(mm/rev)								
	PR930	KW10	ap	f	ap	f	ap	f	ap	f	
Carbon Steel / Alloy Steel	★ 30-100	-	~0.3	~0.03	~0.4	~0.04	~0.45	~0.07	~0.5	~0.1	Coolant
Stainless Steel	★ 30-80	-	~0.3	~0.02	~0.4	~0.03	~0.45	~0.05	~0.5	~0.07	
Non-ferrous Metals	-	★ 30-100	~0.3	~0.05	~0.4	~0.06	~0.45	~0.1	~0.5	~0.15	

★ : 1st Recommendation

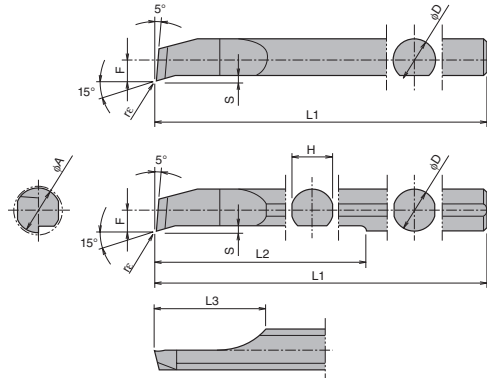
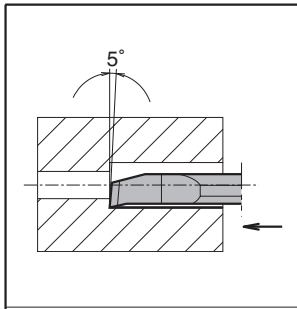
● : Std. Item. □ : Deleted from the next catalogue

Tip-Bars are sold in 1 piece boxes

Tip-Bars

PSB-S (Boring) <Adjustable Overhang Length>

This insert will be switched to **EZB** type (EZ Bars, ref. to page [F14](#)-)



Ref. to Page for Applicable Sleeve [F84](#)

PSB^{3/4}.0202 type
PSB^{3/4}.0303 type
shows left figure

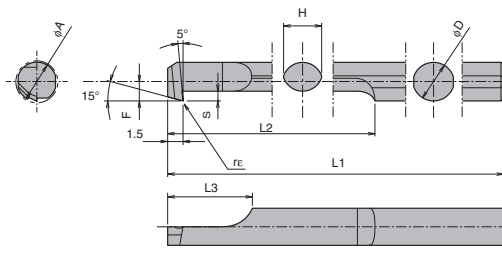
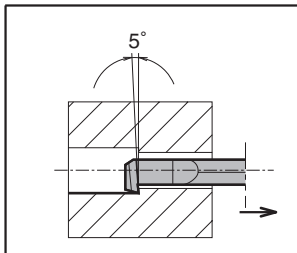
-NBS Type (without Chipbreaker) Top Shape

Top Shape	Grades
	Coated Carbide Carbide
	CBN PCD

• Right-hand shown

PSBT-S (Back Boring) <Adjustable Overhang Length>

This insert will be switched to **HPBT** type (2-Edge, ref. to page [F36](#))



Ref. to Page for Applicable Sleeve [F84](#)

• Right-hand shown

Tip-Bars Dimensions

Description	Min. Bore Dia.	Dimension (mm)									Grades											
		φA	φD	H	L1	L2	L3	F	S	rε	PVD Coated Carbide		Carbide		CBN		PCD					
											PR930		KW10		KBN510		KBN525		KPD001		KPD010	
											R	L	R	L	R	L	R	L	R	L	R	L
PSB ^{3/4} .0202-50S .0303-50S .0404-60S .0505-70S .0606-70S .0707-80S	2	1.8	-	50	-	5	0.9	0.25	0.05	○	○	○	□									
	3	2.8				7	1.4	0.3		○	○	○	○									
	4	3.8	3.6	60	30	10	1.9	0.5		○	○	○	○									
	5	4.8	4.4	70	40	12	2.4			○	○	○	○									
	6	5.8	5.2	80	50		2.9			○	○	○	○									
	7	6.8	6.2			3.4	○			○	○	○										
PSB ^{3/4} .0202-50NBS .0303-50NBS .0404-60NBS .0505-70NBS .0606-70NBS .0707-80NBS	2	1.8	-	50	-	5	0.9	0.25	0.05	○	○	○										
	3	2.8				7	1.4	0.3		○	○	○	○									
	4	3.8	3.6	60	30	10	1.9	0.5		○	○	○	○									
	5	4.8	4.4	70	40	12	2.4			○	○	○	○									
	6	5.8	5.2	80	50		2.9			○	○	○	○									
	7	6.8	6.2			3.4	○			○	○	○										
PSBT ^{3/4} .0415-60S .0515-70S	4	3.8	3.6	60	20	8	1.9	1.0	0.05	○	□	○										
	5	4.8	4.6	70			2.4	1.3		○	○	○										

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)						PSB02 type	PSB03 type	PSB04 PSBT04 type	PSB05 PSB06 PSB07 PSBT05 type	Remarks				
	PVD Coated Carbide		Carbide	CBN	PCD										
	PR915	PR930			KW10	KBN510 KBN525						KPD001	KPD010		
	ap(mm), f(mm/rev)														
ap		f		ap		f		ap		f					
Carbon Steel / Alloy Steel		★ 30-100					~0.3	~0.03	~0.4	~0.04	~0.45	~0.07	~0.5	~0.1	Coolant
Stainless Steel		★ 30-80					~0.3	~0.02	~0.4	~0.03	~0.45	~0.05	~0.5	~0.07	
Non-ferrous Metals			☆ ~100		★ ~300	☆ ~300	~.3	~0.05	~0.4	~0.06	~0.45	~0.1	~0.5	~0.15	
Hard Materials				★ ~100			-	-	~0.07	~0.03	~0.10	~0.05	~0.15	~0.07	

★ : 1st Recommendation ☆ : 2nd Recommendation

○ : Check Availability
□ : Deleted from the next catalogue

Tip-Bars are sold in 1 piece boxes

Dynamic Bar [CC □ □ Insert]

A / S-SCLC-AE Excellent Bar (Boring / Internal Facing)

Max. Overhang Length L/D~5.5

Shank Dia. φD	Straight hole Dia. φd
φ8	φ2.5
φ10	φ3
φ12	φ4
φ16	
φ20	φ5
φ25	

·Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

S-SCLC-A Steel Bar (Boring / Internal Facing)

Max. Overhang Length L/D~4

·Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

C / E-SCLC-A(N) Carbide Shank Bar (Boring / Internal Facing)

Max. Overhang Length L/D~7

Shank Dia. φD	Straight hole Dia. φd
φ8	φ3
φ10	
φ12	φ4
φ16	
φ20	φ6
φ25	


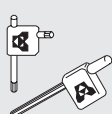
·Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

● Applicable Inserts

Applications Ref. to Page	Minute ap	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Medium	Finishing-Medium	Finishing	Finishing / Precision
Insert	B49	B49	B50	B50	B50	B50	B50,B51	B49,B50	B52	B51
Toolholder Description	CF	GF	WP(Wiper)	PP	GK	HQ	Standard	GQ	°/-F	°/-FSF
....SCLC [°] /L 03....	CCGT0301..	-	-	-	-	-	-	-	CCGT0301..	CCET0301..
....SCLC [°] /L 04....	CCGT0401..	-	-	-	-	-	-	-	CCGT0401..	CCET0401..
....SCLC [°] /L 06....	-	CCGT0602..	CCMT0602..	CCMT0602..	CCMT0602..	CCMT0602..	CCGT0602..	CCGT0602..	-	-
....SCLC [°] /L 09....	-	CCGT09T3..	CCMT09T3..	CCMT09T3..	CCMT09T3..	CCMT09T3..	CCGT09T3.. CCMT09T3..	CCGT09T3..	-	-
Applications Ref. to Page	Low Feed	Low Feed / Precision	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials		
Insert	B53,B54	B53	B51	B55	B55	B55	C24	C14		
Toolholder Description	(E/F)°/-U	F°/-USF	MQ	Without chipbreaker	AH	A3	PCD	CBN		
....SCLC [°] /L 03....	-	-	-	-	-	-	-	CCMW0301..		
....SCLC [°] /L 04....	-	-	-	-	-	-	CCGW0401..	CCMW0401..		
....SCLC [°] /L 06....	CCGT0602..	CCET0602..	-	CCGW0602..	-	-	CCMT0602.. CCGW0602..	CCMW0602..		
....SCLC [°] /L 09....	CCGT09T3..	CCET09T3..	CCMT09T3..	CCGW09T3..	CCGT09T3..	CCGT09T3..	CCMT09T3.. CCGW09T3..	CCMW09T3..		

Recommended Cutting Conditions ● F93~F94
Applicable Sleeves ● F83~F86

● Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)								θ	Std. Corner-R(°)	Coolant Hole	Drawing	Spare Parts					
	R	L	φA	φD	H	L1	L2	L3	L4	F	Clamp Screw					Wrench					
																					
Excellent Bar	S10H-SCLC ^φ _L 03-05AE	●	●	5	10	9	100	24	-	11	2.5	15°	0.2	No	Fig.1	SB-1635TR	FT-6				
	S10H-SCLC ^φ _L 03-06AE	●	●	6				28		13	3	13°									
	S10H-SCLC ^φ _L 04-07AE	●	●	7				32		15	3.5	11°									
	S10H-SCLC ^φ _L 04-08AE	●	●	8				37			4										
	A08X-SCLC ^φ _L 06-10AE	●	●	10	8	7	120	16	20	17	5	14°	0.4	Yes	Fig.2	SB-2545TR	FT-8				
	A10L-SCLC ^φ _L 06-12AE	●	●	12	10	9	140	20	25	21	6	12°									
	A12M-SCLC ^φ _L 06-14AE	●	●	14	12	11	150	24	30	25	7	10°									
	A16Q-SCLC ^φ _L 09-18AE	●	●	18	16	15	180	30	34	31	9	8°									
	A20R-SCLC ^φ _L 09-22AE	●	●	22	20	19	200	36	49	37	11	8°									
A25S-SCLC ^φ _L 09-27AE	●	●	27	25	24	250	46	55	46	13.5	6°										
S08X-SCLC ^φ _L 06-10A	●	●	10	8	7	120	16	20	17	5	14°	0.4						No	Fig.3	SB-2545TR	FT-8
S10L-SCLC ^φ _L 06-12A	●	●	12	10	9	140	20	25	21	6	12°										
S12M-SCLC ^φ _L 06-14A	●	●	14	12	11	150	24	30	25	7	10°										
S16Q-SCLC ^φ _L 09-18A	●	●	18	16	15	180	30	34	31	9	8°										
S20R-SCLC ^φ _L 09-22A	●	●	22	20	19	200	36	49	37	11	8°										
S25S-SCLC ^φ _L 09-27A	●	●	27	25	24	250	46	55	46	13.5	6°										
Carbide	C04G-SCLC ^φ _L 03-05AN	●	●	5	4	3.8	90	7	-	7	2.5	15°	0.2	No	Fig.4	SB-1635TR	FT-6				
	C05H-SCLC ^φ _L 03-06AN	●	●	6	5	4.4	100	9		10	3	13°									
	C06J-SCLC ^φ _L 04-07AN	●	●	7	6	5.4	110	10		11	3.5	11°									
	C07K-SCLC ^φ _L 04-08AN	●	●	8	7	6.4	125	11		12	4	11°									
	C04G-SCLC ^φ _L 03-05A	□	□	5	4	3.8	90	9	-	8	2.5	15°	0.2	No	Fig.4	SB-1635TR	FT-6				
	C05H-SCLC ^φ _L 03-06A	□	□	6	5	4.4	100	11		11	3	13°									
	C06J-SCLC ^φ _L 04-07A	□	□	7	6	5.4	110	12		12	3.5	11°									
	C07K-SCLC ^φ _L 04-08A	□	□	8	7	6.4	125	13		13	4	11°									
	E08L-SCLC ^φ _L 06-10AN	●	●	10	8	7	140	14	15	15	5	14°	0.4	Yes	Fig.6	SB-2545TR	FT-8				
	E08L-SCLCR06-10AN2/3	●					90														
	E10N-SCLC ^φ _L 06-12AN	●	●	12	10	9	160	18	19	19	6	12°									
	E10N-SCLCR06-12AN2/3	●					105														
	E08L-SCLC ^φ _L 06-10A	□	□	10	8	7	140	16	15	15	5	14°									
	E08L-SCLCR06-10A-2/3	□					90														
E10N-SCLC ^φ _L 06-12A	□	□	12	10	9	160	20	19	19	6	12°										
E10N-SCLCR06-12A-2/3	□					105															
E12Q-SCLC ^φ _L 06-14A	●	●	14	12	11	180	23	22	22	7	10°										
E12Q-SCLCR06-14A-2/3	●					120															
E16X-SCLC ^φ _L 09-18A	●	●	18	16	15	220	28	27	27	9	8°										
E16X-SCLCR09-18A-2/3	●					145															
E20S-SCLC ^φ _L 09-22A	●	●	22	20	19	250	32	31	31	11	8°										
E20S-SCLCR09-22A-2/3	●					165															
E25T-SCLC ^φ _L 09-27A	●	●	27	25	24	300	38	37	37	13.5	6°										
E25T-SCLCR09-27A-2/3	●					200															

● :Std. Item
□ :Deleted from the next catalogue



Dynamic Bar [CP Insert]

A-SCLP-AE Excellent Bar (Boring / Internal Facing)

Max. Overhang Length L/D \approx 5.5

Shank Dia. ϕD	Straight hole Dia. ϕd
$\phi 10$	$\phi 3$
$\phi 12$	$\phi 4$
$\phi 16$	$\phi 5$
$\phi 20$	
$\phi 25$	

Fig.1

Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

S-SCLP-A Steel Bar (Boring / Internal Facing)

Max. Overhang Length L/D \approx 4

Fig.2

Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

E-SCLP-A(N) Carbide Shank Bar (Boring / Internal Facing)

Max. Overhang Length L/D \approx 7

Shank Dia. ϕD	Straight hole Dia. ϕd
$\phi 10$	$\phi 3$
$\phi 12$	$\phi 4$
$\phi 16$	
$\phi 20$	
$\phi 25$	$\phi 6$

Fig.3

Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring



Solid

Positive

AD Bars











Negative

● Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)								θ	Std. Corner-R(°)	Coolant Hole	Drawing	Spare Parts	
	R	L	φA	φD	H	L1	L2	L3	L4	F	Clamp Screw					Wrench	
																	
Excellent Bar	●	●	12	10	9	140	20	25	20	6	5°	0.4	Yes	Fig.1	SB-3060TR	FT-10	
	●	●	14	12	11	150	24	29	24	7	4°						
	●	●	16					31		8							
	●	●	18	16	15	180	30	37	30	9	3.5°						
	●	●	22	20	19	200	36	47	37	11	2°						
	●	●	27	25	24	250	46	55	46	13.5	0°						
Steel	●	●	12	10	9	140	20	25	20	6	5°	0.4	No	Fig.2	SB-3060TR	FT-10	
	●	●	14	12	11	150	24	29	24	7	4°						
	●	●	16					31		8							
	●	●	18	16	15	180	30	37	30	9	3.5°						
	●	●	22	20	19	200	36	47	37	11	2°						
	●	●	27	25	24	250	46	55	46	13.5	0°						
Carbide	●	●	12	10	9	160	19	19	6	5°	0.4	Yes	Fig.3	SB-3060TR	FT-10		
	●					105										18	
	●					80											
	□	□				160											
	□	□				105										20	
	□	□				80											
	●	●	14	12	11	180	23	22	22	7						4°	
	●					120											
	●					90											
	●	●	16	12	11	180	23	22	22	8						5°	
	●					120											
	●					90											
	●	●	18	16	15	220	28	27	27	9						3.5°	
	●					145											
	●					110											
	●	●	22	20	19	250	32	31	31	11						2°	
	●					165											
	●					125											
●	●	27	25	24	300	38	37	37	13.5	0°							
●					200												



● Applicable Inserts

Applications	Finishing	Finishing	Finishing-Medium	Medium	Finishing-Medium	Soft Steel / Finishing	Soft Steel / Finishing-Medium	Cast Iron	Non-ferrous Metals	Hard Materials
Ref. to Page	B56	B56	B56	B56	B56	B56	B56	B56	C25	C14
Insert										
Toolholder Description	CPMT0802..	CPMT0802..	CPMH0802..	CPMH0802..	CPMH0802..	CPMT0802..	-	CPMB0802..	CPMH0802..	CPGB0802..
....SCLP ^{R/L} 08....	CPMT0903..	CPMT0903..	CPMH0903..	CPMH0903..	CPMH0903..	CPMT0903..	CPMT0903..	CPMB0903..	CPMH0903..	CPGB0903..
....SCLP ^{R/L} 09....										

Recommended Cutting Conditions ● F93-F94
Applicable Sleeves ● F84-F86

● : Std. Item
□ : Deleted from the next catalogue

A-SDUC-AE Excellent Bar (Copying)

Max. Overhang Length L/D≈5

inner hole dia. (φ2.5) for A16Q-SDUC%,07-14AE
inner hole dia. (φ3) for A20R-SDUC%,11-20AE

Outer hole dia. (φ5)

Straight hole (φd)

Shank Dia. φD	Straight hole Dia. φd
φ10	φ3
φ12	φ4
φ16	
φ20	φ5
φ25	

Fig.1 Fig.2

Right-hand shown Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

S-SDUC-A Steel Bar (Copying)

Max. Overhang Length L/D≈4

Fig.3 Fig.4

Right-hand shown Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

E-SDUC-A Carbide Shank Bar (Copying)

Max. Overhang Length L/D≈7

Fig.5

Right-hand shown Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Shank Dia. φD	Straight hole Dia. φd
φ10	φ3
φ12	φ4
φ16	
φ20	φ6
φ25	

WP Chipbreaker Edge Position Offset Adjustment

For D type and T type, cutting edge offsets are required.

	D type	T type
Z-direction Correction Amount(mm)	0.01	0.02

	D type	T type
X-direction Correction Amount(mm)	0.11	0.08

--- Standard Insert Edge Line

— Wiper Insert Edge Line



For D type and T type, program corrections are required for ramping and profiling.

Ramping Angle θ	0°	5°	10°	15°	20°	25°
Z-direction Correction Amount(mm) D type	0	-0.14	-0.15	-0.16	-0.16	-0.17

Profiling Angle θ	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
Z-direction Correction Amount(mm) D type	0.00	0.07	0.06	0.04	0.03	0.02	0.01	0.00	-	-	-
Z-direction Correction Amount(mm) T type	0.00	0.07	0.06	0.05	0.05	0.04	0.03	0.02	0.01	0.01	0.00





















Profiling Angle θ	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°
Z-direction Correction Amount(mm) D type	-0.01	-0.02	-0.03	-0.04	-0.05	-0.05	-0.04	-0.03	-0.02	-0.01	0.00
Z-direction Correction Amount(mm) T type	-	-	-	-0.01	-0.02	-0.03	-0.04	-0.03	-0.02	-0.01	0.00

● Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)									θ	Std. Corner-R(re)	Coolant Hole	Drawing	Spare Parts	
	R	L	φA	φD	H	L1	L2	L3	L4	F	S	Clamp Screw					Wrench	
																		
Excellent Bar	A10L-SDUC ^{φ/L} 07-14AE	●	●	14	10	9	140	19	-	20	8.7	3.3	5°	0.4	Yes	Fig.2	SB-2560TR	FT-8
	A16Q-SDUC ^{φ/L} 07-14AE	●	●		16	15	180	28		23	10.8	4.4						
	A12M-SDUC ^{φ/L} 07-16AE	●	●	20	12	11	150	21		24	9.7	3.3						
	A16Q-SDUC ^{φ/L} 07-20AE	●	●		16	15	180			26	11.7							
	A20R-SDUC ^{φ/L} 11-20AE	●	●	23	20	19	200	48		30	15.6	6.1						
	A16Q-SDUC ^{φ/L} 11-23AE	●	●		16	15	180			21	31							
	A20R-SDUC ^{φ/L} 11-27AE	●	●	32	27	20	19	23		36	16.5	6.1						
A25S-SDUC ^{φ/L} 11-32AE	●	●	20		19	200	23		39	19								
Steel	S10L-SDUC ^{φ/L} 07-14A	●	●	14	10	9	140	19	-	20	8.7	3.3	5°	0.4	No	Fig.4	SB-2560TR	FT-8
	S16Q-SDUC ^{φ/L} 07-14A	●	●		16	15	180	28		23	10.8	4.4						
	S12M-SDUC ^{φ/L} 07-16A	●	●	20	12	11	150	21		24	9.7	3.3						
	S16Q-SDUC ^{φ/L} 07-20A	●	●		16	15	180			26	11.7							
	S20R-SDUC ^{φ/L} 11-20A	●	●	23	20	19	200	48		30	15.6	6.1						
	S16Q-SDUC ^{φ/L} 11-23A	●	●		16	15	180			21	31							
	S20R-SDUC ^{φ/L} 11-27A	●	●	32	27	20	19	23		36	16.5	6.1						
	S25S-SDUC ^{φ/L} 11-32A	●	●		20	19	200			23	39							
Carbide	E10N-SDUC ^{φ/L} 07-14A	●	●	14	10	9	160	20	19	8.7	3.3	5°	0.4	Yes	Fig.5	SB-2560TR	FT-8	
	E10N-SDUCR 07-14A-2/3	●	●		105													
	E12Q-SDUC ^{φ/L} 07-16A	●	●	16	12	11	180	23	22	9.7	3.3							
	E12Q-SDUCR 07-16A-2/3	●	●		120													
	E16X-SDUC ^{φ/L} 07-20A	●	●	20	16	15	220	28	26	11.7	6.1							
	E16X-SDUCR 07-20A-2/3	●	●				145											
	E16X-SDUC ^{φ/L} 11-23A	●	●	23	20	19	220	32	27	14.5	6.1							
	E16X-SDUCR 11-23A-2/3	●	●				145											
	E20S-SDUC ^{φ/L} 11-27A	●	●	27	20	19	250	38	31	16.5	6.1							
	E20S-SDUCR 11-27A-2/3	●	●				165											
	E25T-SDUC ^{φ/L} 11-32A	●	●	32	25	24	300	38	37	19	6.1							
E25T-SDUCR 11-32A-2/3	●	●	200															



● Applicable Inserts

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Medium-Roughing	Finishing	Finishing / Precision	Low Feed
Ref. to Page	B57	B57,B58	B58	B58	B58	B59	B59	B61	B60	B62,B63
Insert	CF	CK	WP(Wiper)	PP	GK	HQ	Standard	φ/-F	φ/-FSF	(E/F)φ/-U
Toolholder Description										
....SDUC ^{φ/L} 07....	DCGT0702..	DCGT0702..	DCMX0702..	DCMT0702..	DCMT0702..	DCMT0702..	DCGT0702..	DCGT0702..	DCET0702..	DCGT0702..
....SDQC ^{φ/L} 07....										
....SDZC ^{φ/L} 07....										
....SDUC ^{φ/L} 11....	DCGT11T3..	DCGT11T3..	DCMX11T3..	DCMT11T3..	DCMT11T3..	DCMT11T3..	DCMT11T3.. DCGT11T3..	DCGT11T3..	DCET11T3..	DCGT11T3..
....SDQC ^{φ/L} 11....										
....SDZC ^{φ/L} 11....										
Applications	Low Feed / Precision	Low Feed	Soft Steel / Finishing	Soft Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B62	B64,B65	B59	B59	B60	B65	B65	B65	C25	C15
Insert	Fφ/-USF	(E/F)φ/-J	XP	XQ	MQ	Without chipbreaker	AH	φ/-A3	PCD	CBN
Toolholder Description										
....SDUC ^{φ/L} 07....										
....SDQC ^{φ/L} 07....	DCET0702..	DCET0702..	DCMT0702..	-	DCMT0702..	DCGW0702..	-	-	DCMT0702..	DCMW0702..
....SDZC ^{φ/L} 07....										
....SDUC ^{φ/L} 11....										
....SDQC ^{φ/L} 11....	DCET11T3..	DC_T11T3..	DCMT11T3..	DCMT11T3..	DCMT11T3..	DCGW11T3..	DCGT11T3..	DCGT11T3..	DCMT11T3..	DCMW11T3..
....SDZC ^{φ/L} 11....										

* For WP chipbreaker, cutting edge offsets or program corrections are required. ● F42

Recommended Cutting Conditions ● F93~F94
Applicable Sleeves ● F84~F86

Dynamic Bar [DC Insert]

A-SDQC-AE Excellent Bar (Copying)

Max. Overhang Length L/D≈~5.5

Shank Dia. ϕD	Straight hole Dia. ϕd
$\phi 10$	$\phi 3$
$\phi 12$	$\phi 4$
$\phi 16$	$\phi 5$
$\phi 20$	
$\phi 25$	

Fig.1

•Right-hand shown

Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

S-SDQC-A Steel Bar (Copying)

Max. Overhang Length L/D≈~4

Fig.2

•Right-hand shown

Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

E-SDQC-A Carbide Shank Bar (Copying)

Max. Overhang Length L/D≈~7

Shank Dia. ϕD	Straight hole Dia. ϕd
$\phi 10$	$\phi 3$
$\phi 12$	$\phi 4$
$\phi 16$	$\phi 6$
$\phi 20$	
$\phi 25$	

Fig.3

•Right-hand shown

Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)									θ	Std. Corner-R(°)	Coolant Hole	Drawing	Spare Parts	
	R	L		ϕA	ϕD	H	L1	L2	L3	L4	F	S					Clamp Screw	Wrench
	Excellent Bar	●	●	13	10	9	140	19			21	7.5	2.1	10°	0.4	Yes	Fig.1	SB-2560TR
A10L-SDQC ^{R/L} 07-13AE	●	●	16	12	11	150	22			25	9.25	2.6	8°					
A12M-SDQC ^{R/L} 07-16AE	●	●	20	16	15	180	25	-		32	11.3		6°					
A16Q-SDQC ^{R/L} 07-20AE	●	●	25	20	19	200	31			37	14.4	3.7	5°					
A20R-SDQC ^{R/L} 11-25AE	●	●	30	25	24	250	38			45	16.9		4°					
A25S-SDQC ^{R/L} 11-30AE	●	●	13	10	9	140	19			21	7.5	2.1	10°	0.4	No	Fig.2	SB-2560TR	FT-8
S10L-SDQC ^{R/L} 07-13A	●	●	16	12	11	150	22			25	9.25	2.6	8°					
S12M-SDQC ^{R/L} 07-16A	●	●	20	16	15	180	25	-		32	11.3		6°					
S16Q-SDQC ^{R/L} 07-20A	●	●	25	20	19	200	31			37	14.4	3.7	5°					
S20R-SDQC ^{R/L} 11-25A	●	●	30	25	24	250	38			45	16.9		4°					
S25S-SDQC ^{R/L} 11-30A	●	●	13	10	9	160	20	-	19	7.5	2.1	10°	0.4	Yes	Fig.3	SB-2560TR	FT-8	
E10N-SDQC ^{R/L} 07-13A	●	●	16	12	11	180	23	-	22	9.25	2.6	8°						
E10N-SDQCR 07-13A-2/3	●	●	20	16	15	220	28	-	27	11.3	2.6	6°						
E12Q-SDQC ^{R/L} 07-16A	●	●	25	20	19	250	32	-	31	14.4	3.7	5°						
E12Q-SDQCR 07-16A-2/3	●	●	30	25	24	300	38	-	37	16.9	3.7	4°						
E16X-SDQC ^{R/L} 07-20A	●	●	105	105	105	105	105			105	105	105						10°
E16X-SDQCR 07-20A-2/3	●	●	120	120	120	120	120			120	120	120						10°
E20S-SDQC ^{R/L} 11-25A	●	●	120	120	120	120	120			120	120	120						10°
E20S-SDQCR 11-25A-2/3	●	●	165	165	165	165	165			165	165	165						10°
E25T-SDQC ^{R/L} 11-30A	●	●	200	200	200	200	200			200	200	200						10°
E25T-SDQCR 11-30A-2/3	●	●	200	200	200	200	200			200	200	200	10°					

* WP chipbreaker (DCMX-WP : Wiper insert) is not applicable to A-SDQC-AE type, S-SDQC-A type and E-SDQC-A type Toolholders.

● : Std. Item

F

Boring

Solid

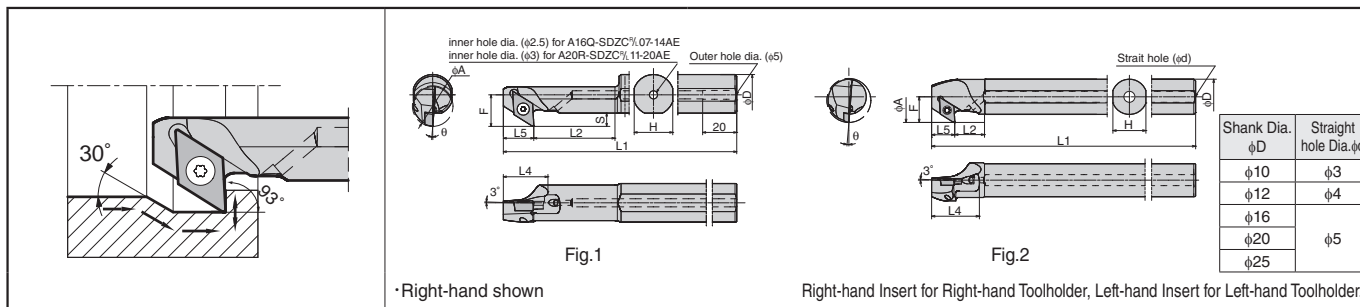
Positive

AD Bars

Negative

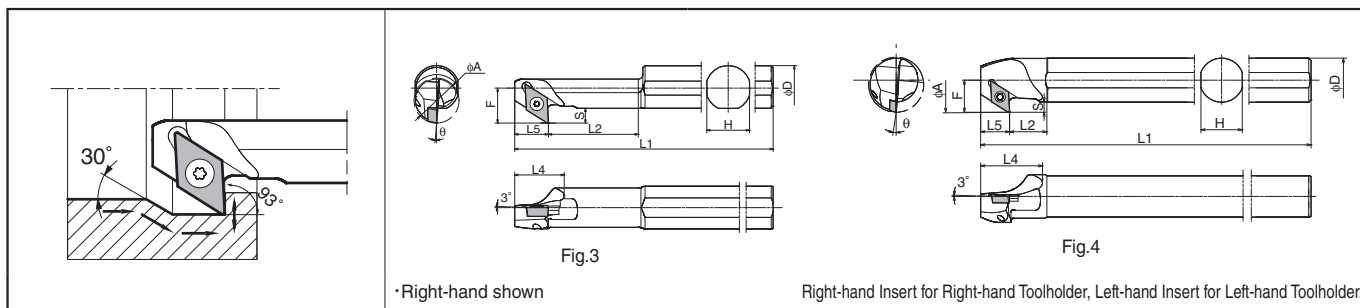
A-SDZC-AE Excellent Bar (Back Boring)

Max. Overhang Length L/D=~5.5



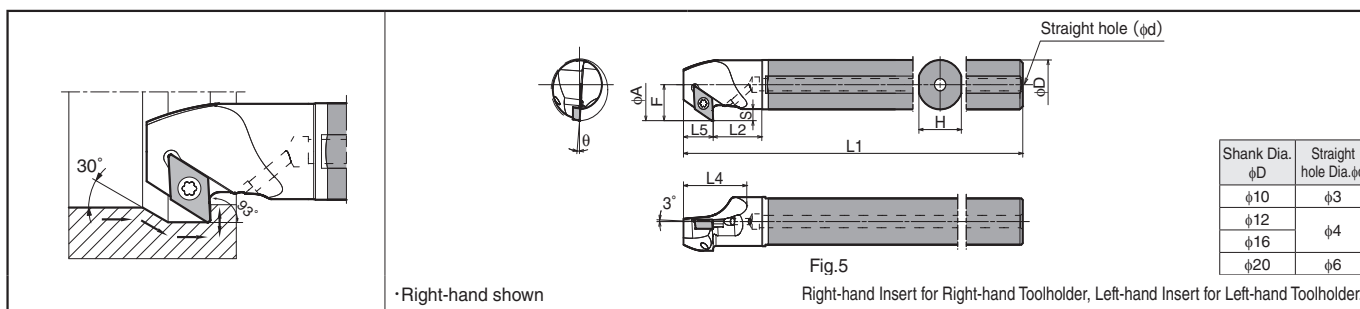
S-SDZC-A Steel Bar (Back Boring)

Max. Overhang Length L/D=~4



E-SDZC-A Carbide Shank Bar (Back Boring)

Max. Overhang Length L/D=~7



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)									θ	Std. Corner-R(°)	Coolant Hole	Drawing	Spare Parts	
	R	L		φA	φD	H	L1	L2	L4	L5	F	S					Clamp Screw	Wrench
Excellent Bar	●	●	14	10	9	140	14	16	9.5	8.7	3.3	5°	0.4	Yes	Fig.2	SB-2545TR	FT-8	
	●	●		16	15	180	30	17	10	10.8	4.4							
	●	●	16	12	11	150	14	20	10.5	9.7	3.3				Fig.2	SB-2560TR		
	●	●		16	15	180	22	11.7										
	●	●	20	20	19	200	40	24	15	15.6	6.1				Fig.1	SB-4065TR		FT-15
	●	●		20	19	200	15	25		16.5								
	●	●	23	16	15	180	22	15	15	14.5	6.1				Fig.2	SB-4065TR		FT-15
●	●	27		20	19	200				16.5								
●	●	32	25	24	250	26	19	19	19	19	19	19	19	19	19	19	19	
Steel	●	●	14	10	9	140	14	16	9.5	8.7	3.3	5°	0.4	No	Fig.4	SB-2545TR	FT-8	
	●	●		16	15	180	30	17	10	10.8	4.4							
	●	●	16	12	11	150	14	20	10.5	9.7	3.3				Fig.4	SB-2560TR		
	●	●		16	15	180	22	11.7										
	●	●	20	20	19	200	40	24	15	15.6	6.1				Fig.3	SB-4065TR		FT-15
	●	●		20	19	200	15	25		16.5								
	●	●	23	16	15	180	22	15	15	14.5	6.1				Fig.4	SB-4065TR		FT-15
●	●	27		20	19	200				16.5								
●	●	32	25	24	250	26	19	19	19	19	19	19	19	19	19	19		
Carbide	●	●	14	10	9	160	10.5	16	9.5	8.7	3.3	5°	0.4	Yes	Fig.5	SB-2545TR	FT-8	
	●	●	16	12	11	180	12.5	20	10.5	9.7	3.3							SB-2560TR
	●	●	20	16	15	220	17.5	22		15					11.7	6.1		
	●	●		20	16	15	220	13	22		14.5							
	●	●	27	20	19	250	17	25	15	16.5	16.5				16.5	16.5		16.5

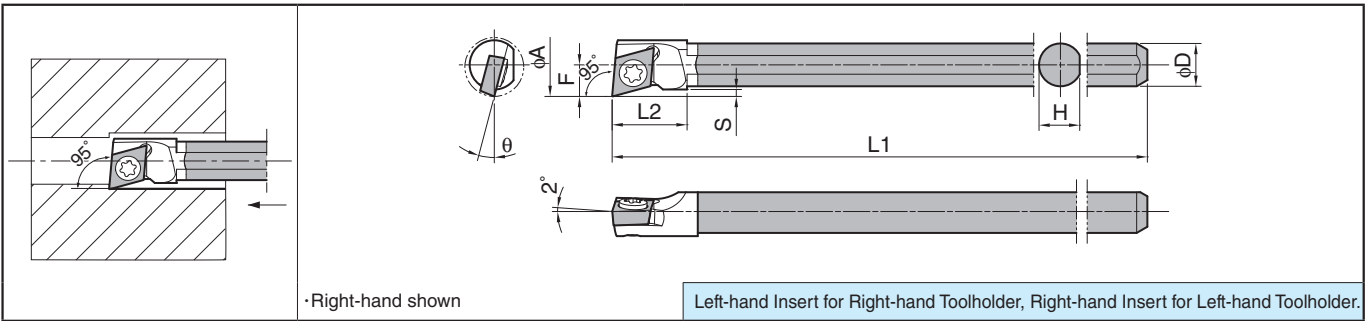
* For WP chipbreaker, cutting edge offsets or program corrections are required. F42

● : Std. Item



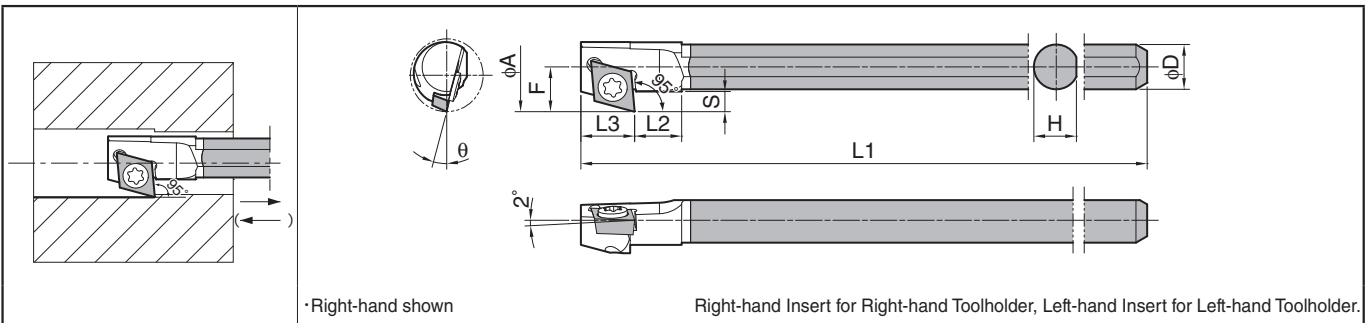
C...SJLC Carbide Shank Bar (Boring / Internal Facing)

Max. Overhang Length L/D≈~7



C...SJZC Carbide Shank Bar (Back Boring)

Max. Overhang Length L/D≈~7



* When using Right-hand Toolholder, use Right-hand insert if machining from back to front in this direction (→).
Use Left-hand insert if machining from front to back in this direction (←).

● Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)							θ	Std. Corner-R(°)	Spare Parts	
	R	L		φA	φD	H	L1	L2	L3	F			S	Clamp Screw
	C04X-SJLC ^{R/L} 03-055	●	●	5.5	4	3.8	91	7	-	2.95	0.65	15°	0.03	
C04X-SJZC ^{R/L} 03-065	●	●	6.5	4	3.8	93	4	4.8	4.0	1.8				

● Applicable Inserts

Applications	Finishing	Finishing / Precision												
Ref. to Page	B67	B67												
Insert	^{R/L} -F	^{R/L} -FSF												
Toolholder Description														
----SJLC ^{R/L} 03----	JCGT0301..	JCET0301..												
----SJZC ^{R/L} 03----	JCGT0301..	JCET0301..												

Recommended Cutting Conditions **F93~F94**
Applicable Sleeves **F83,F85,F86**

● Features of C...SJLC

1. Specially designed for minimized bore dia.
2. A relief angle of 15° ensures high flexibility of the tool pass during necking.
3. Retaining front relief angle 5° and good surface roughness during internal facing.

● Features of C...SJZC

1. Back boring bars for workpiece that require high concentric circle accuracy and when a change of chuck is not possible.
2. Available for back boring and necking.
3. Despite the small size of minimum boring dia. as φ6.5, the edge gap is retained as large as 1.8 mm.

A-STLC-AE Excellent Bar (Boring / Internal Facing)

Max. Overhang Length L/D~5.5

Shank Dia. φD	Straight hole Dia. φd
φ8	φ2.5
φ10	φ3
φ12	φ4
φ16	φ5
φ20	φ5

Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

S-STLC-A Steel Bar (Boring / Internal Facing)

Max. Overhang Length L/D~4

Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)									θ	Std. Corner-R(r _c)	Coolant Hole	Drawing	Spare Parts	
	R	L		φA	φD	H	L1	L2	L3	L4	F	S					Clamp Screw	Wrench
Excellent Bar	●	●	10	8	7	120	16	22	16	5	0.5	14°	0.4	Yes	Fig.1	SB-2250TR	FT-7	
	●	●	12	10	9	140	20	26	20	6.2	0.9	12°						
	●	●	14	12	11	150	24	30	25	7.2	0.7	10°						
	●	●	18	16	15	180	30	39	31	9.2	0.7	8°				SB-2560TR	FT-8	
	●	●	22	20	19	200	36	44	36	11.2	0.7	6°						
	●	●	10	8	7	120	16	22	16	5	0.5	14°						0.4
●	●	12	10	9	140	20	26	20	6.2	0.9	12°							
●	●	14	12	11	150	24	30	25	7.2	0.7	10°							
●	●	18	16	15	180	30	39	31	9.2	0.7	8°	SB-2560TR	FT-8					
●	●	22	20	19	200	36	44	36	11.2	0.7	6°							
●	●	10	8	7	120	16	22	16	5	0.5	14°							

Applicable Inserts

Applications	*Finishing	Finishing-Medium															
Ref. to Page	B71	B71															
Insert	WP(Wiper)	HQ															
Toolholder Description																	
...-STLC ^R /L 09-...	TCMX0902..	TCMT0902..															
...-STLC ^R /L 11-...	TCMX1102..	TCMT1102..															

* For WP chipbreaker, cutting edge offsets or program corrections are required. ● F42

Recommended Cutting Conditions ● F93~F94
Applicable Sleeves ● F84~F86



A / S-STLB(P)-AE Excellent Bar (Boring / Internal Facing)

Max. Overhang Length L/D≈~5.5

Shank Dia. φD	Straight hole Dia. φd
φ8	φ2.5
φ10	φ3
φ12	φ4
φ16	φ4
φ20	φ5
φ25	φ5

Right-hand shown / Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

S-STLB(P)-A Steel Bar (Boring / Internal Facing)

Max. Overhang Length L/D≈~4

Right-hand shown / Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

E(C)-STLB(P)-A(N) Carbide Shank Bar (Boring / Internal Facing)

Max. Overhang Length L/D≈~7

Shank Dia. φD	Straight hole Dia. φd
φ8	φ3
φ10	φ3
φ12	φ4
φ16	φ4
φ20	φ6
φ25	φ6

Right-hand shown / Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Applicable Inserts

Applications	Minute ap	*Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Medium	Low Feed / Precision
Ref. to Page	B70,B74	B74	B74	B74	B70	B75	B70,B75,B76	B78	B77	B78
Insert	CF	WP(Wiper)	PP	GP	DP	HQ	F/L	F/L-FSF	F/L-H	F ² /L-USF
Toolholder Description										
...	---STLB ^{F/L} 06---	TBGT0601..	-	-	-	TBMT0601..	-	TBGT0601..	-	-
...	---STLP ^{F/L} 08---	TPGT0802..	-	-	-	-	-	TPGH0802..	TPET0802..	-
...	---STLP ^{F/L} 09---	TPGT0902..	TPMX0902..	TPMT0902..	TPMT0902..	-	TPMT0902..	TPGH0902..	-	TPGH0902..
...	---STLP ^{F/L} 11---	-	TPMX1103..	TPMT1103..	TPMT1103..	-	TPMT1103..	TPGH1103..	TPET1103..	TPGH1103..
...	---STLP ^{F/L} 16---	-	-	-	TPMT1603..	-	TPMT1603..	TPGH1603..	-	TPGH1603..
Applications	Soft Steel / Finishing	Soft Steel / Finishing-Medium	Cast Iron	Non-ferrous Metals	Hard Materials					
Ref. to Page	B75	B75	B70,B79	C26-C28	C16					
Insert	XP	XQ	Without chipbreaker	PCD	CBN					
Toolholder Description										
...	---STLB ^{F/L} 06---	-	-	TBGW0601..	TBMT0601.. TBGW0601..	-				
...	---STLP ^{F/L} 08---	-	-	TPGB0802..	TPMH0802.. TPGB0802..	TPGB0802..				
...	---STLP ^{F/L} 09---	TPMT0902..	-	TPGB0902..	TPMH0902.. TPGB0902..	TPGB0902..				
...	---STLP ^{F/L} 11---	TPMT1103..	TPMT1103..	TPGB1103..	TPMH1103.. TPGB1103..	TPGB1103..				
...	---STLP ^{F/L} 16---	TPMT1603..	TPMT1603..	TPGB1603..	TPMH1603.. TPGB1603..	TPGB1603..				

* For WP chipbreaker, cutting edge offsets or program corrections are required. F42

F

Boring

Solid

Positive

AD Bars

Negative

● Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)										θ	Std. Corner-R(ε)	Coolant Hole	Drawing	Spare Parts	
	R	L		φA	φD	H	L1	L2	L3	L4	F	S	Clamp Screw					Wrench	
Excellent Bar	●	●	8	6	5	100	12	-	12	3.8	0.5	12°	0.2	No	Fig.1	SB-2035TR	FT-6		
	●	●	10	8	7	120	16	22	16	5	0.5	10°				SB-1TR			
	●	●	12	10	9	140	20	25	20	6.2	0.9	8°				SB-2545TR			
	●	●	14	12	11	150	24	30	24	6	0.7	10°				SB-3060TR			
	●	●	16	12	11	150	24	30	24	7.2	0.8	7°				SB-2545TR			
	●	●	18	16	15	180	30	36	30	8	0.6	5°				SB-2545TR			
	●	●	22	20	19	200	36	46	37	9.2		3.5°				SB-3060TR			
	●	●	25	20	19	200	36	46	37	11.2	0.7	2°				SB-3060TR			
	●	●	27	25	24	250	46	55	46	13		0°				SB-4065TR			
	●	●	27	25	24	250	46	55	46	13.7		0°				SB-4065TR			
Steel	●	●	8	6	5	100	12	-	12	3.8	0.5	12°	0.4	No	Fig.3	SB-2035TR	FT-6		
	●	●	10	8	7	120	16	22	16	5	0.5	10°				SB-1TR			
	●	●	12	10	9	140	20	25	20	6.2	0.9	8°				SB-2545TR			
	●	●	14	12	11	150	24	30	24	6	0.7	10°				SB-3060TR			
	●	●	16	12	11	150	24	30	24	7.2	0.8	7°				SB-2545TR			
	●	●	18	16	15	180	30	36	30	8	0.6	5°				SB-2545TR			
	●	●	22	20	19	200	36	46	37	9.2		3.5°				SB-3060TR			
	●	●	22	20	19	200	36	46	37	11.2	0.7	2°				SB-3060TR			
	●	●	27	25	24	250	46	55	46	13.7		0°				SB-4065TR			
	●	●	27	25	24	250	46	55	46	13.7		0°				SB-4065TR			
Carbide	●	●	8	6	5.4	110	10	-	11	3.8	0.5	12°	0.4	Yes	Fig.6	SB-2035TR	FT-6		
	□	□	10	8	7	140	14	15	15	5	0.5	10°				SB-1TR			
	●	●	12	10	9	160	18	19	19	6.2	0.9	8°				SB-2545TR			
	●	●	12	10	9	105													
	●	●	12	10	9	80													
	●	●	12	10	9	160	18	19	19	6	0.7	10°				SB-3060TR			
	●	●	12	10	9	105													
	●	●	12	10	9	80													
	□	□	10	8	7	140	16	15	15	5	0.5	10°				SB-1TR			
	□	□	12	10	9	160													
	□	□	12	10	9	105													
	□	□	12	10	9	80													
	●	●	14	12	11	180				7.2	0.8	7°				SB-3060TR			
	●	●	14	12	11	120													
	●	●	14	12	11	90													
	●	●	16	12	11	180	23	22	22	8	0.6	5°				SB-2545TR			
	●	●	16	12	11	120													
	●	●	16	12	11	90													
	●	●	18	16	15	220				9.2		3.5°				SB-3060TR			
	●	●	18	16	15	145	28	27	27										
●	●	18	16	15	110														
●	●	22	20	19	250														
●	●	22	20	19	165				11.2		2°	SB-2545TR							
●	●	22	20	19	125														
●	●	25	20	19	250	32	31	31	13										
●	●	25	20	19	165														
●	●	25	20	19	125														
●	●	27	25	24	300	38	37	37	13.7			SB-4065TR							
●	●	27	25	24	200							FT-15							

● : Std. Item
□ : Deleted from the next catalogue



Boring



S...STWP-E Excellent Bar (Copying)

Max. Overhang Length L/D≈~5

Right-hand shown

Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

(J31) This toolholder is also available for threading.

S...STWP Steel Bar (Copying)

Max. Overhang Length L/D≈~3

Right-hand shown

Left-hand Insert for Right-hand Toolholder.

(J31) This toolholder is also available for threading.

Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)							θ	Std. Corner-R (r _c)	Spare Parts			
	R	L		φA	φD	H	L1	L2	L3	F			S	Clamp Screw	Wrench	
S10M-STWP ^{R/L} 11-12E	●	●	12	10	9.2	150	23	5.5	6	1.0	0°	0.1	SB-3STR	FT-10		
S12M-STWP ^{R/L} 11-16E	●	●	16	12	11		30			8					1.5	
S16R-STWP ^{R/L} 11-20E	●	●	20	16	15	200	35			10					2.0	
S20X-STWP ^{R/L} 11-25E	●	●	25	20	19	220	40	7.7	14	4.0	0°	0.8	SB-4TR	FT-15		
S20X-STWP ^{R/L} 16-25E	●	●	25	20	19	220	40								16.5	
S25X-STWP ^{R/L} 16-32E	●	●	32	25	23	270	42	5.5	6	1.0	0°	0.1	SB-3STR	FT-10		
S10M-STWPR11-12	●		12	10	9.2	150	23								8	1.5
S12M-STWPR11-16	●		16	12	11	200	35								10	2.0
S16Q-STWPR11-20	●		20	16	15	180	35								12.5	2.5
S20R-STWPR11-25	●		25	20	19	200	40									

Applicable Inserts

Applications Ref. to Page	Finishing B74	Finishing B74	Finishing-Medium B75	Finishing B75,B76	Finishing / Precision B78	Medium B77	Low Feed / Precision B78	Soft Steel / Finishing B75	Soft Steel / Finishing-Medium B75
Insert	PP	GP	HQ	W	W-FSF	W-H	F ^{R/L} -USF	XP	XQ
Toolholder Description									
S10M-STWP ^{R/L} 11-12(E)	-	-	-	TPGH1102..	-	-	-	-	-
...STWP ^{R/L} 11-16~25(E)	TPMT1103..	TPMT1103..	TPMT1103..	TPGH1103..	TPET1103..	TPGH1103..	TPET1103..	TPMT1103..	TPMT1103..
...STWP ^{R/L} 16-...	-	TPMT1603..	TPMT1603..	TPGH1603..	-	TPGH1603..	-	TPMT1603..	TPMT1603..
Applications Ref. to Page	Cast Iron B79	Non-ferrous Metals C26~C28	Hard Materials C16						
Insert	Without chipbreaker	PCD	CBN						
Toolholder Description									
S10M-STWP ^{R/L} 11-12(E)	TPGB1102..	-	-						
...STWP ^{R/L} 11-16~25(E)	TPGB1103..	TPMH1103.. TPGB1103..	TPGB1103..						
...STWP ^{R/L} 16-...	TPGB1603..	TPMH1603.. TPGB1603..	TPGB1603..						

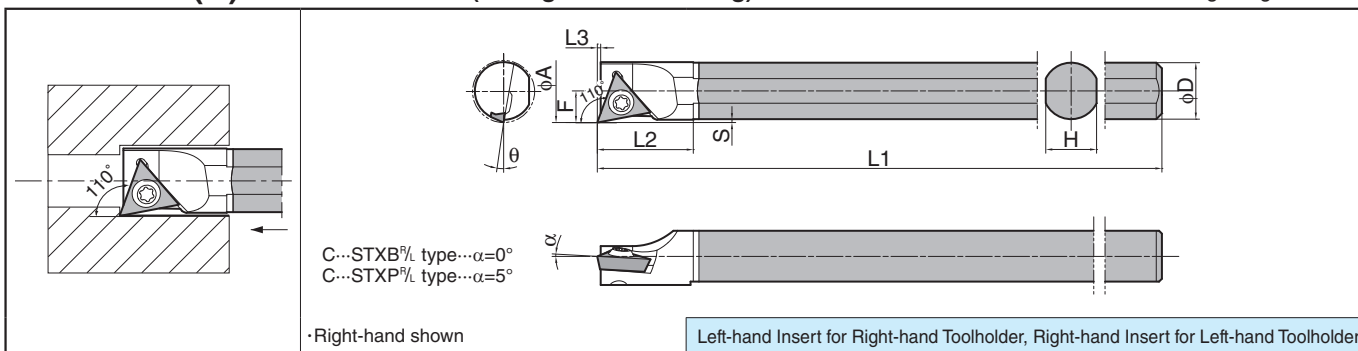
*WP chipbreaker (TPMX-WP : Wiper insert) is not applicable to S-STWP-E type and S-STWP type Toolholders.

Recommended Cutting Conditions (F93~F94)
Applicable Sleeves (F84~F86)

● : Std. Item

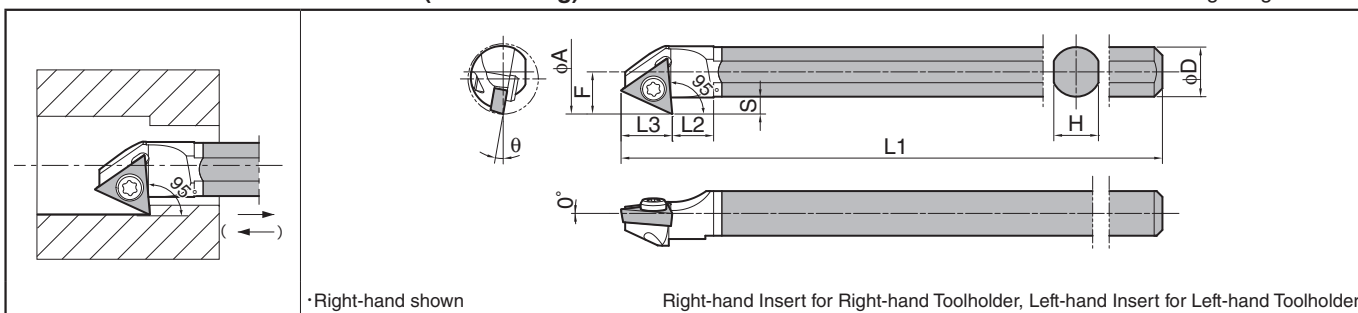
C...STXP(B) Carbide Shank Bar (Boring / Internal Facing)

Max. Overhang Length L/D≈~7



C...STZB Carbide Shank Bar (Back Boring)

Max. Overhang Length L/D≈~7



* When using Right-hand Toolholder, use Right-hand insert if machining from back to front in this direction (→).
Use Left-hand insert if machining from front to back in this direction (←).

● Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)							θ	Std. Corner-R (r)	Spare Parts	
	R	L		φA	φD	H	L1	L2	L3	F			S	Clamp Screw
C06J -STXB^{R/L} 06-075	●	●	7.5	6	5.4	110	11	0.5	3.75	0.5	10°	0.03	SB-1STR	FT-6
C08X -STXB^{R/L} 08-09	●	●	9.0	8	7.0	143	14	0.6	4.6					
C10X -STXB^{R/L} 09-11	●	●	11.0	10	9.0	164	17	0.6	5.6					
C06J -STZB^{R/L} 06-085	●	●	8.5	6	5.4	110	5	5.7	5.1	2.0			SB-1STR	FT-6

● Applicable Inserts

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Low Feed / Precision	Soft Steel / Finishing	Cast Iron
Ref. to Page	B70,B74	B74	B74	B70	B75	B70,B75,B76	B78	B78	B75	B70,B79
Insert	CF	PP	GP	DP	HQ	^{R/L}	^{R/L} -FSF	^F / _L -USF	XP	Without chipbreaker
Toolholder Description										
...	TBGT0601..	-	-	TBMT0601..	-	TBGT0601..	-	-	-	TBGW0601..
...	TPGT0802..	-	-	-	-	TPGH0802..	TPET0802..	TPET0802..	-	TPGB0802..
...	TPGT0902..	TPMT0902..	TPMT0902..	-	TPMT0902..	TPGH0902..	-	-	TPMT0902..	TPGB0902..
...	TBGT0601..	-	-	TBMT0601..	-	TBGT0601..	-	-	-	TBGW0601..
Applications	Non-ferrous Metals	Hard Materials								
Ref. to Page	C26,C27	C16								
Insert	PCD	CBN								
Toolholder Description										
...	TBMT0601..	-								
...	TPMH0802.. TPGB0802..	TPGB0802..								
...	TPMH0902.. TPGB0902..	TPGB0902..								
...	TBMT0601..	-								

*WP chipbreaker (TPMX-WP : Wiper insert) is not applicable to C-STXP type Toolholders.

Recommended Cutting Conditions **F93~F94**

Applicable Sleeves **F83~F86**

● C...STXP(B) Type Boring Bar Cutting Conditions

Toolholder Description	Insert Description (Grades)	Vc (m/min)	ap (mm)	f (mm/rev)	Coolant
C06J-STXB^{R/L} 06-075	TBGT0601003^{L/R}(PR930)	30~100	0.02~0.1	0.02~0.04	Yes
C08X-STXP^{R/L} 08-09	TPGH080201^{L/R}(PR930)	30~100	0.05~0.15	0.03~0.08	Yes
C10X-STXP^{R/L} 09-11	TPGH090201^{L/R}(PR930)	30~100	0.05~0.15	0.03~0.08	Yes

(Workpiece Material: Alloy Steel)

● : Std. Item



A-SVJP(C)(B)-AE Excellent Bar (Internal Spherical Machining / Internal Facing / Copying)

Max. Overhang Length L/D≈~5.5

For applications, ref. to page **F53**

·Right-hand shown

Fig.1 Fig.2

Shank Dia. φD	Straight hole Dia.φd
φ12	φ4
φ16	φ5
φ20	φ5
φ25	φ7
φ32	φ7
φ40	φ9

* No shim for SVJP(C)φ.08 / SVJBφ.11.

Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

S-SVJP(C)(B)-A Steel Bar (Internal Spherical Machining / Internal Facing / Copying)

Max. Overhang Length L/D≈~4

For applications, ref. to page **F53**

·Right-hand shown

Fig.3 Fig.4

* No shim for SVJP(C)φ.08 / SVJBφ.11.

Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)								θ	Std. CornerR(re)	Coolant Hole	Drawing	Spare Parts	
	R	L		φA	φD	H	L1	L2	L3	L4	F					S	Clamp Screw
Excellent Bar	●	●	16	12	11	150	26	33	21	2	-	0.2	Yes	Fig.1	SB-2050TR	FT-6	
	●	●	20	16	15	180	36	43	22								
	●	●	25	20	19	200	37.5	48	30	3.5		8°		Fig.2	SB-40125TRN	FT-15	
	●	●	30	25	24	250	45	58	33								
	●	●	40	32	31	250	60	74	45	4.5		7°		Fig.3	SB-2050TR	FT-6	
	●	●	50	40	39	300	75	91	49								
Steel	●	●	16	12	11	150	26	33	21	2	-	0.2	No	Fig.3	SB-2050TR	FT-6	
	●	●	20	16	15	180	36	43	22								
	●	●	25	20	19	200	37.5	48	30	3.5		8°		Fig.4	SB-2570TR	FT-8	
	●	●	30	25	24	250	45	58	33								
	●	●	40	32	31	250	60	74	45	4.5		7°		Fig.4	SB-40125TRN	FT-15	
	●	●	50	40	39	300	75	91	49								

Applicable Inserts

Applications Ref. to Page	Finishing B86	Finishing B82,B85	Finishing B82,B85	Finishing B82	Finishing-Medium B82,B85	Finishing B83	Finishing / Precision B82,B87	Low Feed / Precision B88	Non-ferrous Metals B85	Non-ferrous Metals B85
Insert	CK	VF	PP	GP	HQ	φ/L-F	φ/L-FSF	Fφ/L-USF	AH	φ/L-A3
Toolholder Description										
...	VPGT0802..	-	-	-	-	-	VPET0802..	VPET0802..	-	-
...	-	VCMT0802..	VCMT0802..	-	VCMT0802..	-	-	-	-	-
...	-	VBMT1103..	VBMT1103..	VBMT1103..	VBMT1103..	VBGT1103..	VBET1103..	-	-	-
...	-	VBMT1604..	VBMT1604..	VBMT1604..	VBMT1604..	-	-	-	VCGT1604..	VCGT1604..
Applications Ref. to Page	Non-ferrous Metals C28	Hard Materials C17								
Insert	PCD	CBN								
Toolholder Description										
...	-	-								
...	VCMT0802..	VCGW0802..								
...	VBMT1103..	VBGW1103..								
...	VBMT1604..	VBGW1604..								

* Use of VBGT1103..-Y / VBGT1604..-Y with A-SVJB-AE / S-SVJB-A is not recommended.

Spare Parts (See P24 for spare parts of old products.)

Description	Spare Parts		
	Shim	Shim Screw	Wrench (for Shim Screw)
□32S-SVJBφ.16-40A□ □40T-SVJBφ.16-50A□			
	SVN-32N *(SVN-32S)	SS-4N	LW-4

·For insert with corner-R(rc) 0.2 or 0.4, shim of marked * is recommended (sold separately).

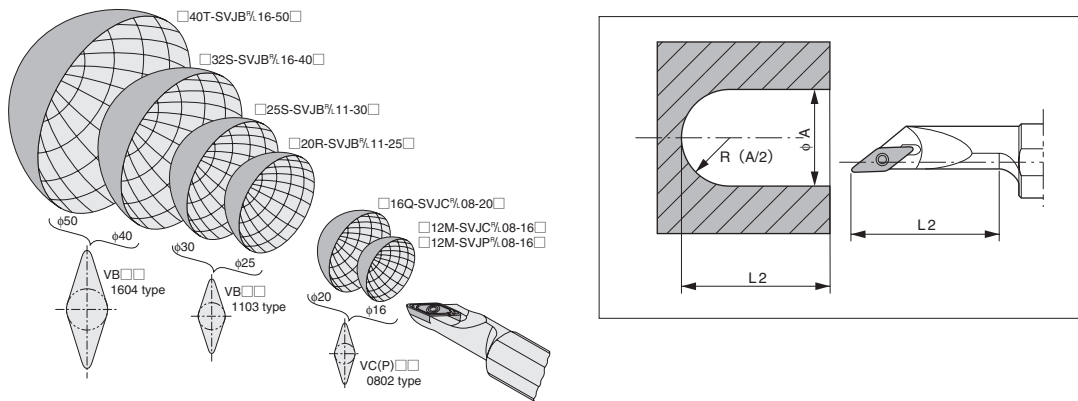
Recommended Cutting Conditions ● **F93~F94**
Applicable Sleeves ● **F84~F86**

●: Std. Item

Application of □...SVJB(C)-□, S...SVJP-□

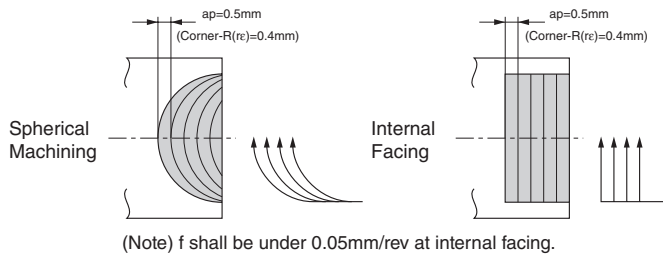
Ref. to Page for Toolholders **F52**

1. Application Range

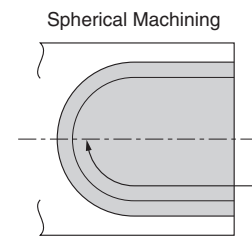


2. Application

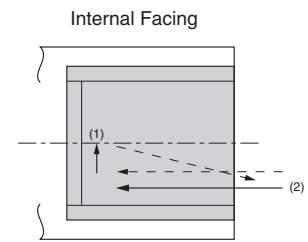
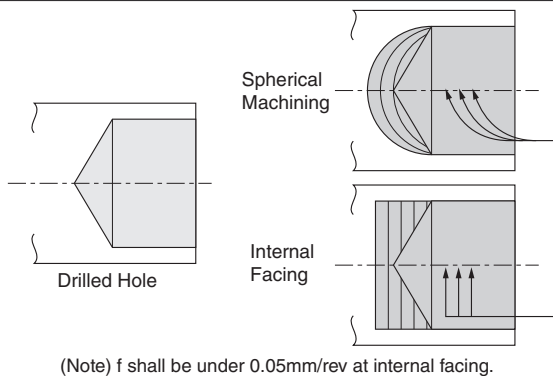
Case with No Existing Hole



Finishing

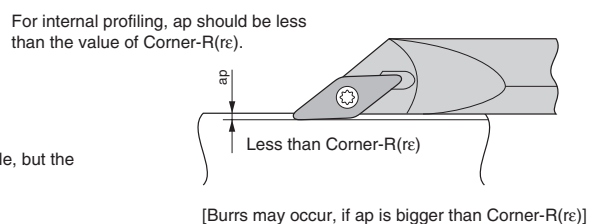
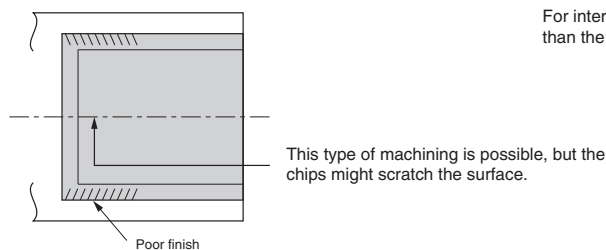
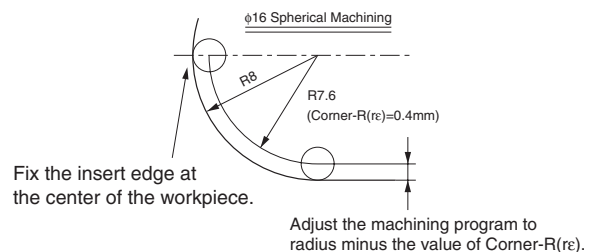
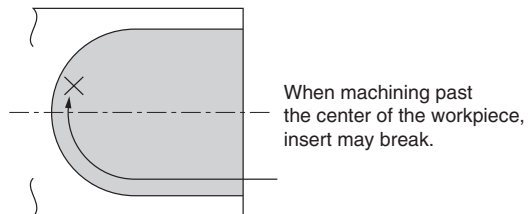


Case with Drilled Hole



Machining Process
 (1) Finish the internal face first.
 (2) Next, finish the internal diameter.

3. Caution



A-SVPC(B)-AE Excellent Bar (Copying / Undercutting)

Max. Overhang Length L/D≈~5.5

Fig.1 Fig.2

* No shim for SVPC[®]/08 / SVPB[®]/11.

Shank Dia. φD	Straight hole Dia. φd
φ10	φ3
φ12	φ4
φ16	φ5
φ20	
φ25	
φ32	

·Right-hand shown Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

S-SVPC(B)-A Steel Bar (Copying / Undercutting)

Max. Overhang Length L/D≈~4

Fig.3 Fig.4

* No shim for SVPC[®]/08 / SVPB[®]/11.

Shank Dia. φD	Straight hole Dia. φd
φ10	φ3
φ12	φ4
φ16	φ6
φ20	
φ25	

·Right-hand shown Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

E-SVPC(B)-A Carbide Shank Bar (Copying / Undercutting)

Max. Overhang Length L/D≈~7

Fig.5 Fig.6

* No shim for SVPC[®]/08 / SVPB[®]/11.

Shank Dia. φD	Straight hole Dia. φd
φ10	φ3
φ12	φ4
φ16	φ6
φ20	
φ25	

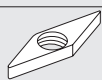


·Right-hand shown Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)								θ	Std. Corner R(re)	Coolant Hole	Drawing	Spare Parts							
	R	L		φA	φD	H	L1	L2	L3	L4	F					S	Clamp Screw	Wrench					
Excellent Bar	●	●	14	10	9	140	24	-	21	8.5	3	8°	0.4	Yes	Fig.1	SB-2050TR	FT-6						
	●	●	18	12	11	150	29	-	26	11	4.5												
	●	●	22	16	15	180	35	-	33	13.5	5	5°				0.4	No	Fig.3	SB-2570TR	FT-8			
	●	●	26	20	19	200	41	-	39	15.5	5												
	●	●	31	25	24	250	51	-	49	18	13°	13°							0.4	Yes	Fig.5	SB-40125TRN	FT-15
	●	●	40	32	31		54	53	23	6.5	9°												
Steel	●	●	14	10	9	140	24	-	21	8.5	3	8°	0.4	No	Fig.3							SB-2050TR	FT-6
	●	●	18	12	11	150	29	-	26	11	4.5												
	●	●	22	16	15	180	35	-	33	13.5	5	5°				0.4	Yes	Fig.5				SB-2570TR	FT-8
	●	●	26	20	19	200	41	-	39	15.5	5												
	●	●	31	25	24	250	51	-	49	18	13°	13°							0.4	Yes	Fig.6	SB-40125TRN	FT-15
	●	●	40	32	31		54	53	23	6.5	9°												
Carbide	●	●	14	10	9	160	20	-	18.5	8.5	3	8°	0.4	Yes	Fig.5							SB-2050TR	FT-6
	●	●	18	12	11	180	23	-	22	11	4.5												
	●	●	22	16	15	220	28	-	27	13.5	5	5°				0.4	Yes	Fig.6				SB-2570TR	FT-8
	●	●	26	20	19	250	32	-	31	15.5	5												
	●	●	31	25	24	300	38	-	37	18	13°	13°							0.4	Yes	Fig.6	SB-40125TRN	FT-15














●: Std. Item

● **Spare Parts** (See P24 for spare parts of old products.)

Description	Spare Parts		
	Shim	Shim Screw	Wrench (for Shim Screw)
			
<input type="checkbox"/> 25 <input type="checkbox"/> -SVPB^{R/L} 16-31A <input type="checkbox"/> <input type="checkbox"/> 32S-SVPB^{R/L} 16-40A <input type="checkbox"/>	SVN-32N *(SVN-32S)	SS-4N	LW-4

-For insert with corner-R(r_c) 0.2 or 0.4, shim of marked * is recommended (sold separately).

● **Applicable Inserts**

Applications	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Low Feed / Precision	Non-ferrous Metals
Ref. to Page	-	B82,B85	B82,B85	B82	B82,B85	B83	B82	B84	-	B85
Insert	CK	VF	PP	GP	HQ	^{R/L}-F	^{R/L}-FSF	^{R/L}-Y	^F/_L-USF	AH
Toolholder Description										
...
...
...
Applications	Non-ferrous Metals	Non-ferrous Metals	Hard Materials							
Ref. to Page	B85	C28	C17							
Insert	^{R/L}-A3	PCD	CBN							
Toolholder Description										
...
...
...

Recommended Cutting Conditions ● **F93-F94**
 Applicable Sleeves ● **F84-F86**



A-SVUC(B)-AE Excellent Bar (Copying)

Max. Overhang Length L/D≈5.5

Inner hole dia. (φ3) of A12M-SVUC%08-16AE
 Inner hole dia. (φ3) of A16G-SVUB%11-20AE
 Inner hole dia. (φ3) for A20R-SVUB%11-25AE
 Straight hole dia. (φ5) of A32S-SVUB%16-40AE

Outer hole dia. φD
 Straight hole (φd)

Shank Dia. φD	Outer hole dia.	Straight hole Dia. φd
φ12	φ4	-
φ16	φ5	-
φ20		
φ25	-	φ5
φ32		

* No shim for SVUC%08 / SVUB%11.
 Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

S-SVUC(B)-A Steel Bar (Copying)

Max. Overhang Length L/D≈4

* No shim for SVUC%08 / SVUB%11.
 Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

E-SVUC(B)-A Carbide Shank Bar (Copying)

Max. Overhang Length L/D≈7

Straight hole (φd)

Shank Dia. φD	Straight hole Dia. φd
φ12	φ4
φ16	
φ20	φ6
φ25	

* Shim is attached only for SVUBR16
 Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

A-SVZC(B)-AE Excellent Bar (Back Boring)

Max. Overhang Length L/D≈5.5

Inner hole dia. (φ3) of A12M-SVUC%08-16AE
 Inner hole dia. (φ3) of A16G-SVUB%11-20AE
 Inner hole dia. (φ3) for A20R-SVUB%11-25AE
 Straight hole dia. (φ5) of A32S-SVUB%16-40AE

Outer hole dia. φD
 Straight hole (φd)

Shank Dia. φD	Outer hole dia.	Straight hole Dia. φd
φ12	φ4	-
φ16	φ5	-
φ20		
φ25	-	φ5
φ32		

* No shim for SVZC%08 / SVZB%11.
 Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

S-SVZC(B)-A Steel Bar (Back Boring)

Max. Overhang Length L/D≈4

* No shim for SVZC%08 / SVZB%11.
 Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

F

Boring

Solid

Positive

AD Bars

Negative

● Toolholder Dimensions

Description	Std.	Min. Bore Dia.	Dimension (mm)											θ	Std. Corner-R(r _c)	Coolant Hole	Drawing	Spare Parts	
			R		φA	φD	H	L1	L2	L4	L5	F	S					Clamp Screw	Wrench
			R	L															
Excellent Bar	A12M-SVUC ^{R/L} 08-16AE	●	●	16	12	11	150	25.5	23	-	11.5	5.5	8°	0.4	Yes	Fig.1	SB-2050TR	FT-6	
	A16Q-SVUB ^{R/L} 11-20AE	●	●	20	16	15	180	32.5	27	-	16	8	7°				SB-2570TR	FT-8	
	A20R-SVUB ^{R/L} 11-25AE	●	●	25	20	19	200	40.5	31	-	18	8	7°				SB-40125TRN	FT-15	
	A25S-SVUB ^{R/L} 16-34AE	●	●	34	25	24	250	40	37	-	20.5	8.5	13°				SB-40125TRN	FT-15	
	A32S-SVUB ^{R/L} 16-40AE	●	●	40	32	31		84	47	-	28	12	9°				SB-40125TRN	FT-15	
Steel	S12M-SVUC ^{R/L} 08-16A	●	●	16	12	11	150	25.5	23	-	11.5	5.5	8°	0.4	No	Fig.3	SB-2050TR	FT-6	
	S16Q-SVUB ^{R/L} 11-20A	●	●	20	16	15	180	32.5	27	-	16	8	7°				SB-2570TR	FT-8	
	S20R-SVUB ^{R/L} 11-25A	●	●	25	20	19	200	40.5	31	-	18	8	7°				SB-40125TRN	FT-15	
	S25S-SVUB ^{R/L} 16-34A	●	●	34	25	24	250	40	37	-	20.5	8.5	13°				SB-40125TRN	FT-15	
	S32S-SVUB ^{R/L} 16-40A	●	●	40	32	31		84	47	-	28	12	9°				SB-40125TRN	FT-15	
Carbide	E12Q-SVUCR08-18A	●		18	12	11	180	23	22	-	11.5	5.5	8°	0.4	Yes	Fig.5	SB-2050TR	FT-6	
	E16X-SVUBR11-25A	●		25	16	15	220	28	27	-	16	8	7°				SB-2570TR	FT-8	
	E20S-SVUBR11-29A	●		29	20	19	250	32	30	-	18	8	7°				SB-40125TRN	FT-15	
	E25T-SVUBR16-34A	●		34	25	24	300	38	37	-	21	8.5	13°				SB-40125TRN	FT-15	
Excellent Bar	A12M-SVZC ^{R/L} 08-16AE	●	●	16	12	11	150	25.5	14	7.5	11.5	5.5	8°	0.4	Yes	Fig.6	SB-2050TR	FT-6	
	A16Q-SVZB ^{R/L} 11-20AE	●	●	20	16	15	180	32.5	20	10	16	8	7°				SB-2570TR	FT-8	
	A20R-SVZB ^{R/L} 11-25AE	●	●	25	20	19	200	40.5	23	10	18	8	7°				SB-40125TRN	FT-15	
	A25S-SVZB ^{R/L} 16-34AE	●	●	34	25	24	250	30	34	17.5	20.5	8.5	13°				SB-40125TRN	FT-15	
	A32S-SVZB ^{R/L} 16-40AE	●	●	40	32	31		72.5	36	17.5	28	12	9°				SB-40125TRN	FT-15	
Steel	S12M-SVZC ^{R/L} 08-16A	●	●	16	12	11	150	25.5	14	7.5	11.5	5.5	8°	0.4	No	Fig.8	SB-2050TR	FT-6	
	S16Q-SVZB ^{R/L} 11-20A	●	●	20	16	15	180	32.5	20	10	16	8	7°				SB-2570TR	FT-8	
	S20R-SVZB ^{R/L} 11-25A	●	●	25	20	19	200	40.5	23	10	18	8	7°				SB-40125TRN	FT-15	
	S25S-SVZB ^{R/L} 16-34A	●	●	34	25	24	250	30	34	17.5	20.5	8.5	13°				SB-40125TRN	FT-15	
	S32S-SVZB ^{R/L} 16-40A	●	●	40	32	31		72.5	36	17.5	28	12	9°				SB-40125TRN	FT-15	



Boring

● Spare Parts (See P24 for spare parts of old products.)

Description	Spare Parts		
	Shim	Shim Screw	Wrench (for Shim Screw)
<input type="checkbox"/> 25□-SVUB ^{R/L} 16-34A□ <input type="checkbox"/> 32S-SVUB ^{R/L} 16-40A□ <input type="checkbox"/> 25S-SVZB ^{R/L} 16-34A□ <input type="checkbox"/> 32S-SVZB ^{R/L} 16-40A□	SVN-32N *(SVN-32S)	SS-4N	LW-4

·For insert with corner-R(r_c) 0.2 or 0.4, shim of marked * is recommended (sold separately).

● Applicable Inserts

Applications	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Low Feed / Precision	Non-ferrous Metals
Ref. to Page	-	B82,B85	B82,B85	B82	B82,B85	B83	B82	B84	-	B85
Insert	CK	VF	PP	GP	HQ	1/2-F	1/2-FSF	1/2-Y	F1/2-USF	AH
Toolholder Description										
...	-	VCMT0802..	VCMT0802..	-	VCMT0802..	-	-	-	-	-
...	-	VBMT1103..	VBMT1103..	VBMT1103..	VBMT1103..	VBGT1103..	VBET1103..	VBGT1103..	-	-
...	-	VBMT1604..	VBMT1604..	VBMT1604..	VBMT1604..	-	-	VBGT1604..	-	VCGT1604..
...	-	VCMT0802..	VCMT0802..	-	VCMT0802..	-	-	-	-	-
...	-	VBMT1103..	VBMT1103..	VBMT1103..	VBMT1103..	VBGT1103..	VBET1103..	VBGT1103..	-	-
...	-	VBMT1604..	VBMT1604..	VBMT1604..	VBMT1604..	-	-	VBGT1604..	-	VCGT1604..
Applications	Non-ferrous Metals	Non-ferrous Metals	Hard Materials							
Ref. to Page	B85	C28	C17							
Insert	1/2-A3	PCD	CBN							
Toolholder Description										
...	-	VCMT0802..	VCGW0802..							
...	-	VBMT1103..	VBGW1103..							
...	VCGT1604..	VBMT1604..	VBGW1604..							
...	-	VCMT0802..	VCGW0802..							
...	-	VBMT1103..	VBGW1103..							
...	VCGT1604..	VBMT1604..	VBGW1604..							

Recommended Cutting Conditions ● F93-F94
Applicable Sleeves ● F84-F86

● : Std. Item

S / A-SWUB(P)-AE Excellent Bar (Boring)

Max. Overhang Length L/D≈~5.5

Shank Dia. φD	Straight hole Dia. φd
φ8	φ2.5
φ10	φ3
φ12	φ4
φ16	φ5
φ20	φ5

0° for A08X-SWUB%08-10AE, A10L-SWUB%08-12AE

·Right-hand shown Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

S-SWUB(P)-A Steel Bar (Boring)

Max. Overhang Length L/D≈~4

0° for S08X-SWUB%08-10A, S10L-SWUB%08-12A

·Right-hand shown Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

E(C)-SWUB(P)-A(N) Carbide Shank Bar (Boring)

Max. Overhang Length L/D≈~7

Shank Dia. φD	Straight hole Dia. φd
φ5	-
φ6	-
φ7	-
φ8	φ3
φ10	φ3
φ12	φ4
φ16	φ4
φ20	φ6

0° for E08L-SWUB%08-10A, E10N-SWUB%08-12A, E10N-SWUB%08-12A-2/3, E10N-SWUB%08-12A-1/2



·Right-hand shown Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

● Applicable Inserts

Applications Ref. to Page	Minute ap	Finishing B91	Finishing B89	Finishing-Medium B91	Finishing B89,B90	Finishing-Medium B91	Cast Iron B90,B91	Non-ferrous Metals C28,C29	Hard Materials C18
Insert	CF	GP	¾-L-DP	HQ	¾-L-F	¾-L-Y	Without Chipbreaker	PCD	CBN
Toolholder Description									
...-SWUB ^¾ /L06-...	WBGW0601..	-	WBMT0601..	-	WBGW0601..	-	WBGW0601..	WBMT0601..	WBGW0601..
...-SWUB ^¾ /L08-...	-	-	WBMT0802..	-	WBGW0802..	-	WBGW0802..	WBMT0802..	WBGW0802..
...-SWUP ^¾ /L11-...	-	WPMT1102..	-	WPMT1102..	-	WPGT1102..	WPGW1102..	WPMT1102..	-
...-SWUP ^¾ /L16-...	-	WPMT1603..	-	WPMT1603..	-	WPGT1603..	WPGW1603..	-	-

Recommended Cutting Conditions ● F93~F94
Applicable Sleeves ● F83~F86

● Toolholder Dimensions

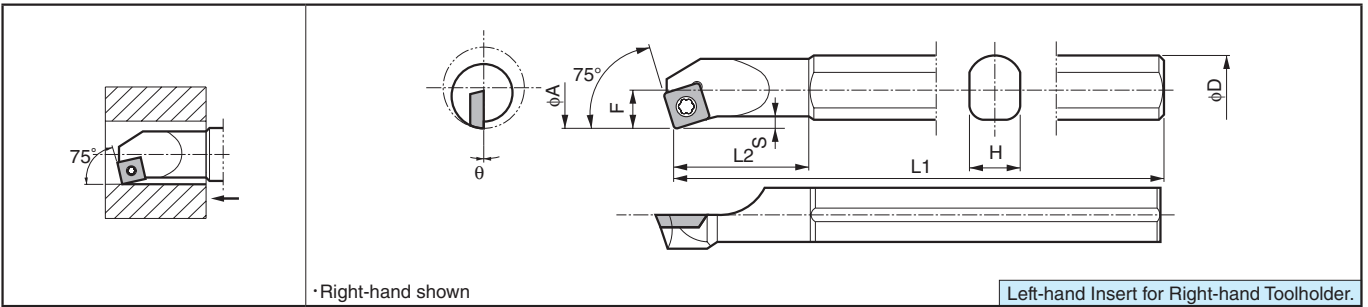
Description	Std.		Min. Bore Dia. φA	Dimension (mm)									θ	Std. Corner-R(°)	Coolant Hole	Drawing	Spare Parts		
	R	L		φD	H	L1	L2	L3	L4	F	S	Clamp Screw					Wrench		
														15°	No	Fig.1			
Excellent Bar	●	●	6				21		13	3		15°	0.2	No	Fig.1	SB-2035TR	FT-6		
	●	●	7	10	9	100	25	-	15	3.5	13°								
	●	●	8				28			4	15°								
	●	●	10	8	7	120	16	21	16	5	13°	0.4				Yes		Fig.2	SB-2050TR
	●	●	12	10	9	140	20	25	20	6	10°								
	●	●	14	12	11	150	24	30	24	7	4°								
	●	●	18	16	15	180	30	37	30	9	1°								
	●	●	22	20	19	200	36	46	37	11	3.5°								
	●	●									2°								
Steel	●	●	6				21		13	3	15°	0.2	No	Fig.3	SB-2035TR	FT-6			
	●	●	7	10	9	100	25	-	15	3.5	13°								
	●	●	8				28			4	15°								
	●	●	10	8	7	120	16	21	16	5	13°				0.4		Yes	Fig.4	SB-2050TR
	●	●	12	10	9	140	20	25	20	6	10°								
	●	●	14	12	11	150	24	30	24	7	4°								
	●	●	18	16	15	180	30	37	30	9	1°								
	●	●	22	20	19	200	36	46	37	11	3.5°								
	●	●									2°								
Carbide	●	●	6	5	4.4	100	9		10	3	15°	0.2	No	Fig.5	SB-2035TR	FT-6			
	●	●	7	6	5.4	110	10	-	11	3.5	13°								
	●	●	8	7	6.4	125	11		12	4	15°								
	□	□	6	5	4.4	100	11		11	3	15°								
	□	□	7	6	5.4	110	12	-	12	3.5	13°								
	□	□	8	7	6.4	125	13		13	4	15°								
	●	●	10	8	7	140	14	15	15	5	13°								
	●	●					160												
	●		12	10	9		105	18	19	19	6						10°		
	●						80												
	□	□	10	8	7	140	16	15	15	5	13°								
	□	□					160												
	□		12	10	9		105	20	19	19	6				10°				
	□						80												
	●	●					180												
	●		14	12	11		120	23	22	22	7				4°				
	●						90												
	●	●					220												
	●						145												
	●						110												
●	●	18	16	15		220	28	27	27	9	3.5°								
●						145													
●						110													
●	●					250													
●		22	20	19		165	32	31	31	11	2°								
●						125													

● : Std. Item
□ : Deleted from the next catalogue



S-SSKP (Boring)

Max. Overhang Length L/D≈3



Toolholder Dimensions

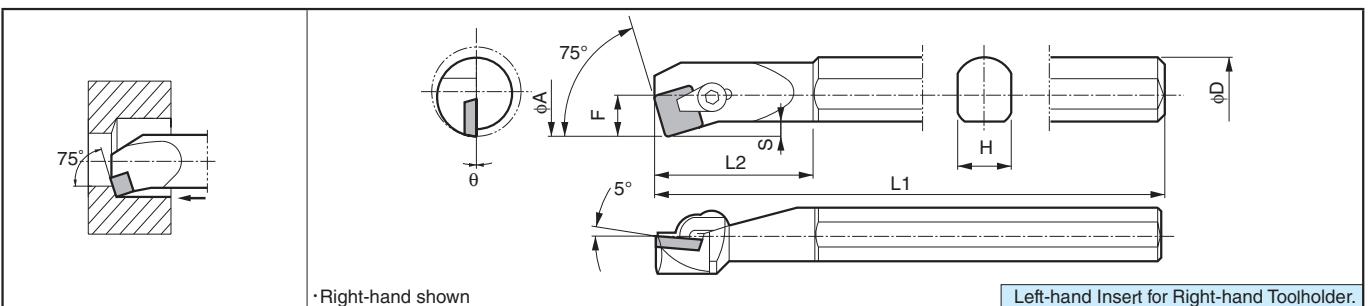
Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(°)	Spare Parts	
	R	L		φA	φD	H	L1	L2	F			S	Clamp Screw
	S16Q-SSKPR09-20	●		20	16	14	180	30	10	2.0	-3°	0.8	SB-4TR
S20R-SSKPR09-25	●		25	20	18	200	35	12.5	2.5	0°			

Applicable Inserts

Applications	Finishing												
Ref. to Page	B69												
Insert													
Toolholder Description	SPGH0903..												

S-CSKP (Boring)

Max. Overhang Length L/D≈3



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(°)	Spare Parts				
	R	L		φA	φD	H	L1	L2	F			S	Clamp Set	Wrench	Shim	Shim Screw
	S16N-CSKPR09-20	●		20	16	14	160	40	10	2.0	0°	0.8	CPS-2	FH-2.5	-	-
S20Q-CSKPR09-27	●		27	20	18	180	45	13.5	3.5							
S25X-CSKPR12-34	●		34	25	23	220	60	17	4.5	0°	0.8	CPS-3	-	LW-3	-	-
S32S-CSKPR12-43	●		43	32	30	250	75	21.5	5.5							

Applicable Inserts

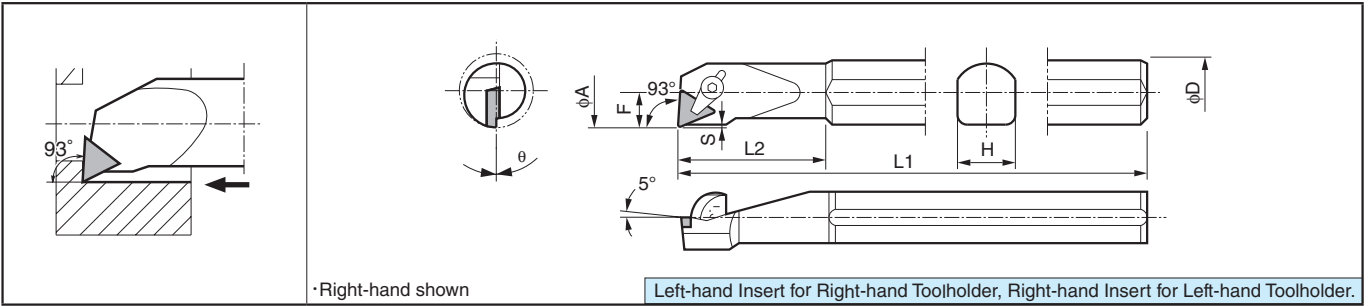
Applications	Medium	Medium	Finishing-Medium	Cast Iron	Cast Iron	Non-ferrous Metals							
Ref. to Page	B69	B69	B69	B69	B105	C29							
Insert													
Toolholder Description	SPMR0903..	SPMR0903..	SPGR0903..	SPMN0903.. SPGN0903..	SPGN0903..	-							
....CSKPR09...	SPMR1203..	SPMR1203..	SPGR1203..	SPMN1203.. SPGN1203..	SPGN1203..	SPGN1203..							

Recommended Cutting Conditions **F93~F94**
Applicable Sleeves **F85~F86**

●: Std. Item

S-CTUP (Boring)

Max. Overhang Length L/D≈3



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(°)	Spare Parts					
	R	L		φA	φD	H	L1	L2	F			S	Clamp Set		Wrench	Shim	Shim Screw
S12L-CTUPR 09-16	●		16	12	11	140	32	8	0.5	0°	0.4	CPS-1	-	FH-2	-	-	-
S16N-CTUP^{R/L} 11-20	●	●	20	16	14	160	30	10	0.5	0°	0.4	-	CPS-2	FH-2.5	-	-	-
S20Q-CTUP^{R/L} 11-27	●	●	27	20	18	180	40	13.5	1.3			-	-	-	-	-	-
S25X-CTUP^{R/L} 16-34	●	●	34	25	23	220	60	17	1.0	0°	0.8	-	CPS-3	-	LW-3	-	-
S32S-CTUP^{R/L} 16-43	●	●	43	32	30	250	70	21.5				KPT-32	SP3X10				
S40X-CTUP^{R/L} 16-50	●	●	50	40	37	315	80	25									

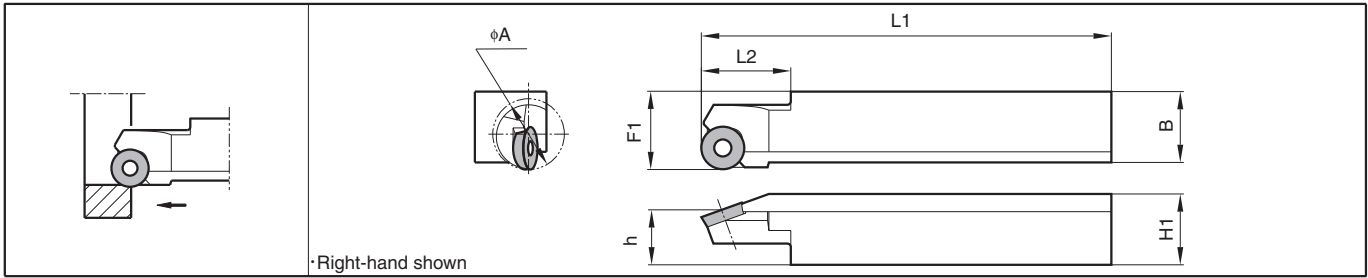
Applicable Inserts

Applications	Finishing	Finishing-Medium	Medium	Medium	Finishing	Finishing-Medium	Cast Iron	Cast Iron	Non-ferrous Metals	Hard Materials
Ref. to Page	B80	B80	B80	B80	B80	B81	B81	B105	C29	C18
Insert	GP	HQ	G	Standard	^{R/L} -F	^{R/L} -□	Without Chipbreaker	Ceramic	PCD	CBN
Toolholder Description										
---CTUPR09---	-	-	TPMR0902..	-	TPGR0902..	-	TPGN0902..	-	-	-
---CTUP^{R/L} 11---	TPMR1103..	TPMR1103..	TPMR1103..	TPMR1103..	-	TPGR1103..	TPMN1103.. TPGN1103..	TPGN1103..	TPGN1103..	TPGN1103..
---CTUP^{R/L} 16---	TPMR1603..	TPMR1603..	TPMR1603..	TPMR1603..	-	TPGR1603..	TPMN1603.. TPGN1603..	TPGN1603..	TPGN1603..	TPGN1603..

Recommended Cutting Conditions ● **F93-F94**
Applicable Sleeves ● **F84-F86**



SRCP-B (Boring)



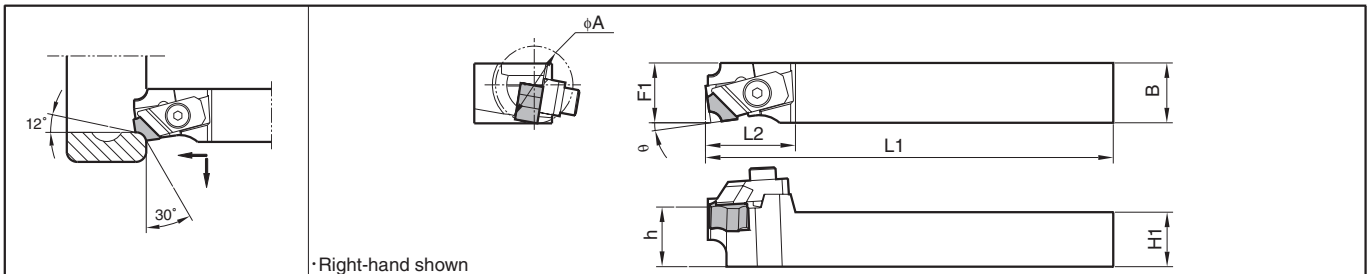
Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						Spare Parts			Applicable Inserts ● B95	
	R	L		ϕA	H1	h	B	L1	L2	F1	Clamp Screw	Wrench		
SRCP ^{R/L}	●	●	20	20	15.5	20	125	25	22			FT-15	-	RPMT1203M0-BB
	●	●	32	25	20	25	150	31	27		SB-5090TR	-	LTW-20	RPMT1604M0-BB

Applicable Inserts

Insert	Description	Dimension (mm)			Angle
		A	T	ϕd	α
	RPMT 1203M0-BB	12.0	3.18	4.4	11°
	1604M0-BB	16.0	4.76	5.5	11°

CBSN-B (Internal Round Chamfering)



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Spare Parts		Applicable Inserts ● B95
	R	L		ϕA	H1	h	B	L1	L2		F1	Clamp Set	
CBSN ^{R/L}	●	●	20	20	21	20	125	32	20	9°		LW-5	SNMF1204○-21
	●	●		25	26	25	150		25				

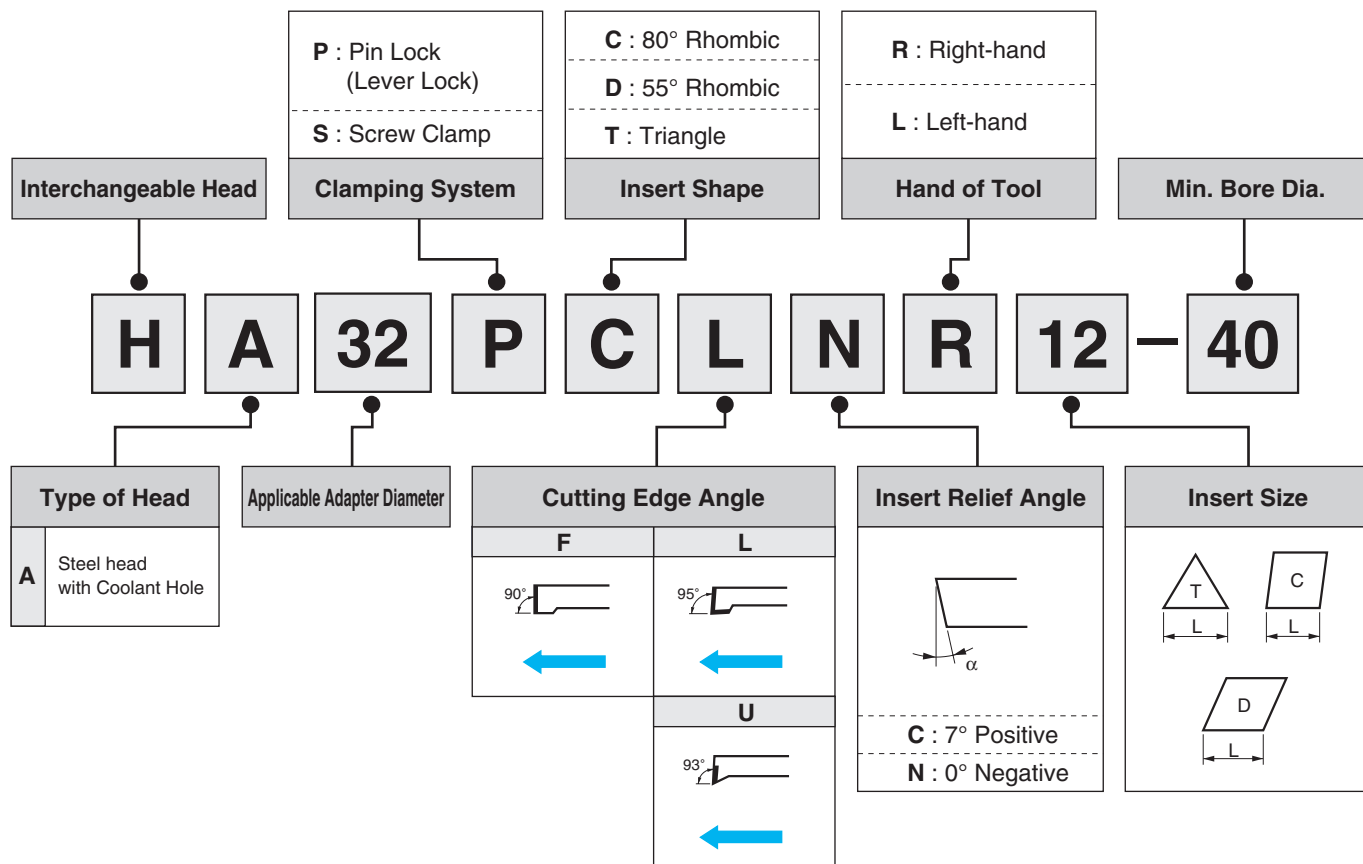
Clamp Set: CP-RCR for Right-hand Toolholder, and CP-RCL for Left-hand Toolholder.

Applicable Inserts

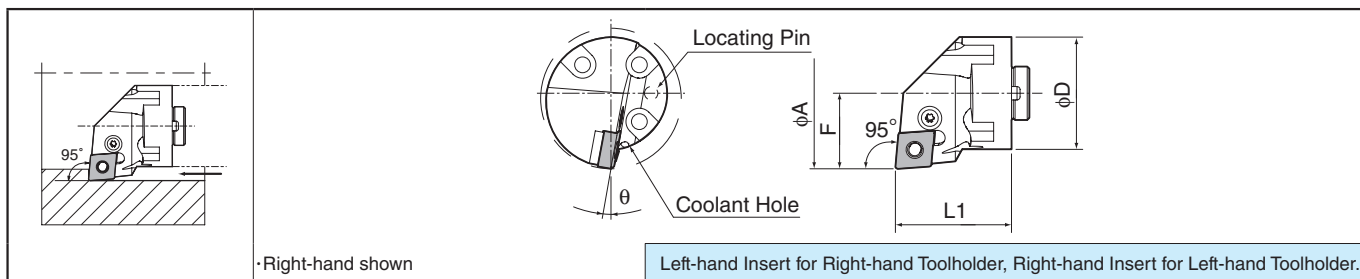
Insert	Description	Dimension (mm)				Angle
		A	T	B	r_E	θ
	SNMF 120406-21	12.70	4.76	1.5	0.6	21°
	120410-21			3.0	1.0	
	120416-21			3.1	1.6	
	120421-21			3.2	2.1	
	120426-21			3.3	2.6	

AD Bars Interchangeable Head Boring Bars with Anti-vibration Dampener System

Identification System for Interchangeable Heads



HA...PCLN12 (Boring / Internal Facing, with Coolant Hole)



Toolholder Dimensions

Description	Std.		Mi. Bore Dia.	Dimension (mm)				θ	Std. Corner-R(re)	Spare Parts						Applicable Boring Adapter F66
	R	L		φA	φD	L1	F			Lever	Lock Screw	Shim	Shim Pin	*Punch	Wrench	
HA32PCLN ¹² /L 12-40	●	●	40	32	41	22	10°	0.8	LL-2K	LS-2P	LC-4K	LSP-3K	*PC-2K	LTP-15	AD32U	
HA40PCLN ¹² /L 12-50	●	●	50	40		27									AD40V	
HA50PCLN ¹² /L 12-63	●	●	63	50		35									AD50W	

* Punch (*PC-2K): Not included. Purchase separately.

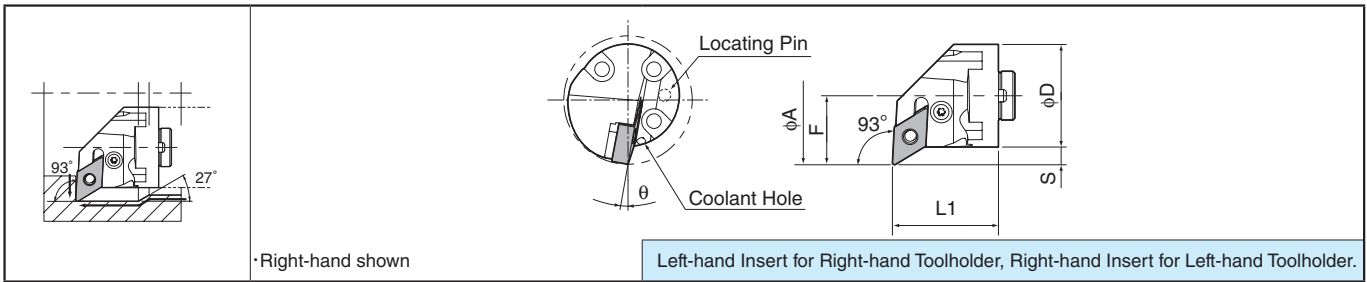
Applicable Inserts

Toolholder Description	Insert Description	1204..	Ref. to Page			
			Cermet / Coated Carbide / Carbide	Ceramic	PCD	CBN
HA32PCLN ¹² /L 12-40	CN□A	1204..	B14-B20	B98	C23	C6,C7
HA40PCLN ¹² /L 12-50	CN□G					
HA50PCLN ¹² /L 12-63	CN□M					

Recommended Cutting Conditions F93-F94

AD Bars Interchangeable Head Boring Bars with Anti-vibration Dampener System

HA...PDUN15 (Copying, with Coolant Hole)



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)				θ	Std. Corner-R(ϵ)	Spare Parts						Applicable Boring Adapter F66
	R	L		ϕA	ϕD	L1	F			S	Lever	Lock Screw	Shim	Shim Pin	*Punch	
HA32PDUN ^{F/L} 15-43	●	●	43	32		25	9	12°	0.8	LL-3K	LS-3P	LD-4K43 (LD-4K)	LSP-3K	*PC-2K	LTP-15	AD32U
HA40PDUN ^{F/L} 15-50	●	●	50	40	41	27	7	10°								AD40V
HA50PDUN ^{F/L} 15-63	●	●	63	50		35	10	10°								AD50W

* Punch (*PC-2K): Not included. Purchase separately.

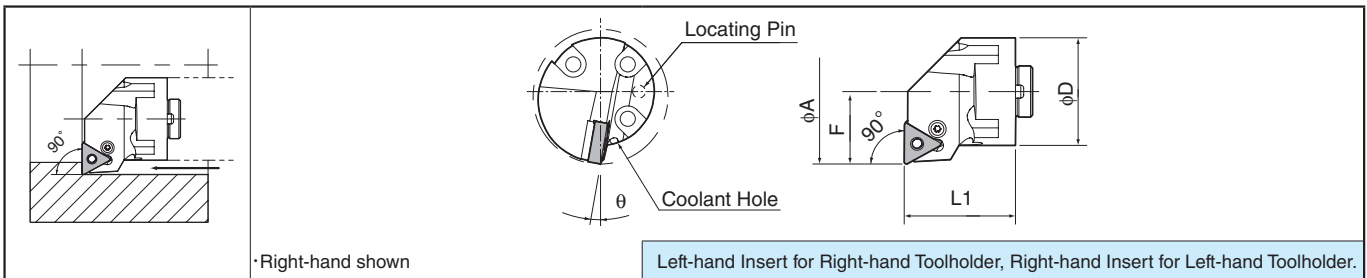
* Shim: LD-4K43 is attached to Toolholder. When using DN□□ 1506 Insert, purchase LD-4K separately.

Applicable Inserts

Toolholder Description	Insert Description				Ref. to Page				
	Shim:LD-4K43		Shim:LD-4K		Cermet / Coated Carbide / Carbide		Ceramic	PCD	CBN
HA32PDUN ^{F/L} 15-43	DN□A		DN□A	1506..	B21~B27		B99	C23	C8,C9
HA40PDUN ^{F/L} 15-50	DN□G	1504..	DN□G	1506..					
HA50PDUN ^{F/L} 15-63	DN□M		DN□M						

Recommended Cutting Conditions F93~F94

HA...PTFN16 (Boring, with Coolant Hole)



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)				θ	Std. Corner-R(ϵ)	Spare Parts						Applicable Boring Adapter F66
	R	L		ϕA	ϕD	L1	F			Lever	Lock Screw	Shim	Shim Pin	*Punch	Wrench	
HA32PTFN ^{F/L} 16-40	●	●	40	32		22		10°	0.8	LL-1K	LS-1P	LT-3K	LSP-2K	*PC-2K	LTP-10	AD32U
HA40PTFN ^{F/L} 16-50	●	●	50	40	41	27		10°								AD40V
HA50PTFN ^{F/L} 16-63	●	●	63	50		35		8°								AD50W

* Punch (*PC-2K): Not included. Purchase separately.

Applicable Inserts

Toolholder Description	Insert Description		Ref. to Page				
			Cermet / Coated Carbide / Carbide		Ceramic	PCD	CBN
HA32PTFN ^{F/L} 16-40	TN□A		B33~B39		B103	C23	C10,C11
HA40PTFN ^{F/L} 16-50	TN□G	1604..					
HA50PTFN ^{F/L} 16-63	TN□M						

Recommended Cutting Conditions F93~F94

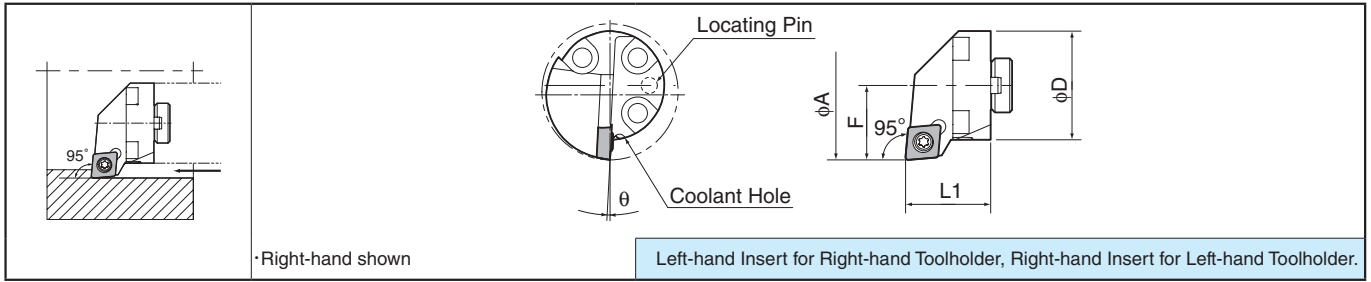
Reference

Wrenches (LTP-10, LTP-15) are Torx Plus.
The size of Torx Plus is engraved on the long shaft.

Wrench Description	LTP-10	LTP-15
Engraved Size	10IP	15IP

●: Std. Item

HA...SCLC09 (Boring / Internal Facing, with Coolant Hole)



Toolholder Dimensions

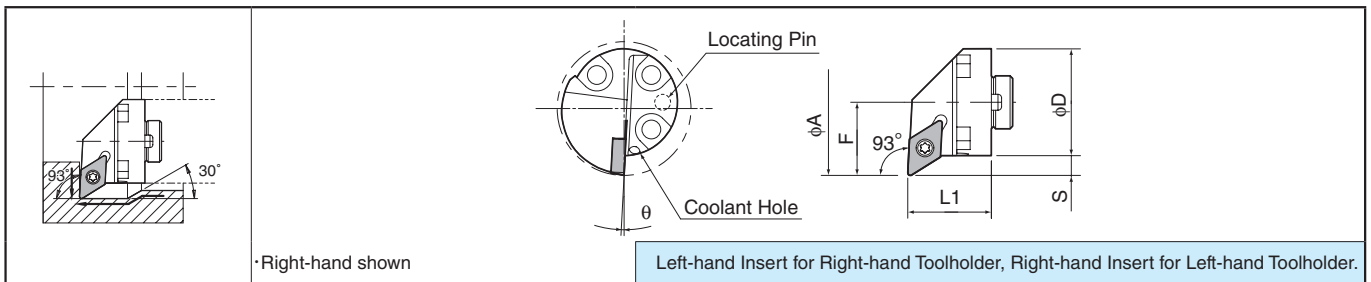
Description	Std.		Min. Bore Dia.	Dimension (mm)				θ	Std. Corner-R (rε)	Spare Parts		Applicable Boring Adapter ● F66	Applicable Inserts
	R	L		φA	φD	L1	F			S	Clamp Screw		
	HA32SCLC ^{R/L} 09-40	●	●	40	32	25	22	-	3°	0.8			AD32U

Applicable Inserts

Insert Description	Ref. to Page		
	Cermet / Coated Carbide / Carbide	PCD	CBN
CC..09T3..	B49~B55	C24	C14

Recommended Cutting Conditions ● F93~F94

HA...SDUC11 (Copying, with Coolant Hole)



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)				θ	Std. Corner-R (rε)	Spare Parts		Applicable Boring Adapter ● F66	Applicable Inserts
	R	L		φA	φD	L1	F			S	Clamp Screw		
	HA32SDUC ^{R/L} 11-40	●	●	40	32	25	22	6	3°	0.8			AD32U

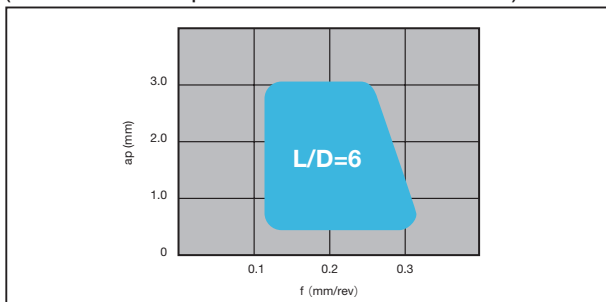
Applicable Inserts

Insert Description	Ref. to Page		
	Cermet / Coated Carbide / Carbide	PCD	CBN
DC..11T3..	B57~B65	C25	C15

Recommended Cutting Conditions ● F93~F94

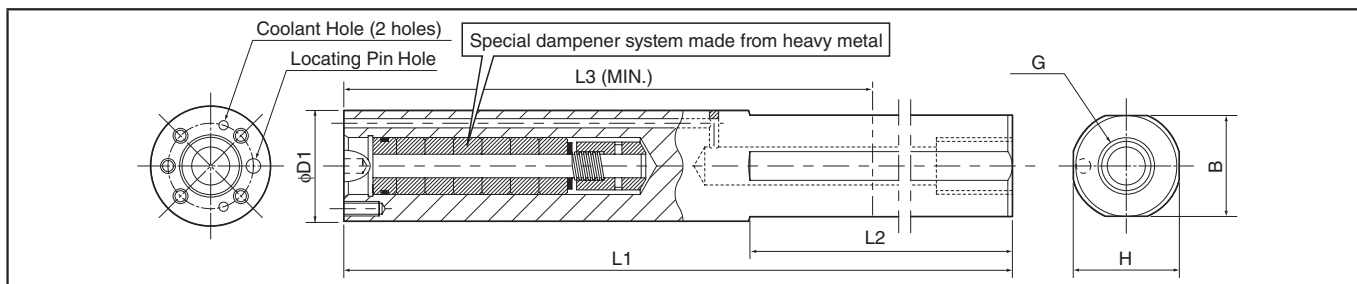
Possible machining area (Guide-Line for Overhang Length of AD Bars)

(SCM435 Vc=150m/min ap=0.5~3mm f=0.1~0.3mm/rev TNMG160408)





AD Bars Interchangeable Head Boring Bars with Anti-vibration Dampener System

Boring Adapter (with Coolant Hole / Anti-vibration Dampener System)



Dimensions

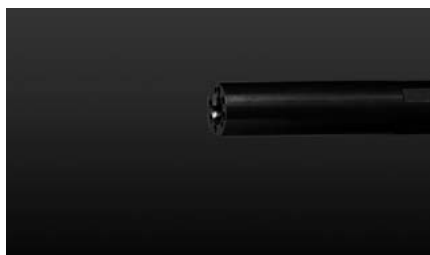
Description	Std.	Dimension (mm)							Spare Parts		
		φD1	H	B	L1	L2	L3 (MIN.)	G	Clamp Bolt	Wrench (sold separately)	
AD32U	●	32	31	29	310	200	200	Rp3/8	 HH5X20 (3 pcs)	 HH5X30 (1 pcs)	LW-4
AD40V	●	40	39	37	360	248	228				
AD50W	●	50	47	47	410	280	276				

Note) L3 (MIN.) dimension indicates the minimum length in case of the back end of boring adapter is cut for use.
Do not shorten it to less than L3 (MIN.).

Combination of Boring Adapter and Interchangeable Head

Interchangeable Head Description	Boring Adapter			
	Base Description	Clamp Bolt		Wrench
HA32 PCLN [®] /L 12-40 PDUN [®] /L 15-43 PTFN [®] /L 16-40 SCLC [®] /L 09-40 SDUC [®] /L 11-40	AD32U	HH5X20	HH5X30	LW-4
		HH5x20		
		HH5X20	HH5X30	
		HH5X20	HH5X30	
		HH6X20	HH6X30	
HA40 PCLN [®] /L 12-50 PDUN [®] /L 15-50 PTFN [®] /L 16-50	AD40V	HH5X20	HH5X30	
		HH6X20	HH6X30	
		HH6X20	HH6X30	
HA50 PCLN [®] /L 12-63 PDUN [®] /L 15-63 PTFN [®] /L 16-63	AD50W	HH6X20	HH6X30	LW-5
		HH6X20	HH6X30	
		HH6X20	HH6X30	

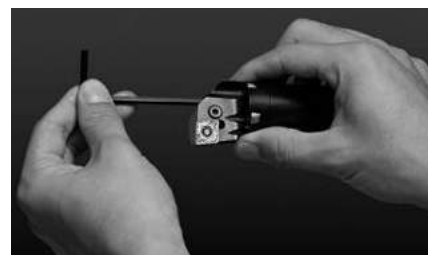
How to exchange heads



1. No head attached



2. Align hole positions



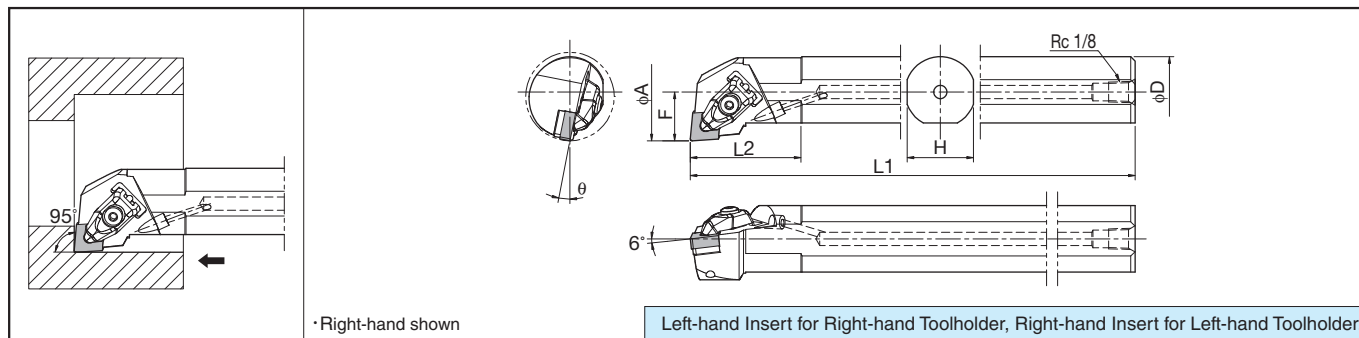
3. Tighten 3 bolts to attach the head

For lever lock type Interchangeable head, use 2 short bolts for upper side and 1 long bolt for lower side.
HA32 SCLC[®]/L 09-40 and
HA32 SDUC[®]/L 11-40
 use HH5 X 20 for all 3 bolts.

●: Std. Item

A-DCLN (Boring / Internal Facing)

Max. Overhang Length L/D≈~3



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)					θ	Std. Corner-R(°)	Spare Parts																
	R	L		ΦA	ΦD	H	L1	L2			F	S	Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench for Clamp	Wrench (sold separately) for Shim							
A25R-DCLN ^F /L 12-32	●	●	32	25	23	200	42	17	-	11°	0.8																
A32S-DCLN ^F /L 12-40	●	●	40	32	30	250	50	22	-	11°										CP-3D	CS-3D	SP-3D	DC-42	SB-4085TR	DN10	LW-3	FT-15
A40T-DCLN ^F /L 12-50	●	●	50	40	37	300	60	27	-	14°										DN20							

*Not applicable to high-pressure coolant.

Applicable Inserts

Applications	Finishing	Finishing-Medium	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing
Ref. to Page	B14	B14	B14	B14	B14	B14	B14	B14	B14	B15	B15
Insert	WP (Wiper)	WQ (Wiper)	PP	GP	PQ	HQ	CQ	CJ	GS	PG	
Toolholder Description											
Applications	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing	Single Side / Roughing / High Feed Rate	Medium	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	
Ref. to Page	B15	B15	B16	B16	B20	B17	B17	B17	B18	B18	
Insert	PS	PT	Standard	PX	^F /L	XP	XQ	XS	MQ	MS	
Toolholder Description											
Applications	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B18	B19	B19	B19	B19	B98	B19	B19	C23	C6,C7	
Insert	MU	C	ZS	GC	Without Chipbreaker	Ceramic	AH	^F /L-A3	PCD	CBN	
Toolholder Description											
Applications	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B18	B19	B19	B19	B19	B98	B19	B19	C23	C6,C7	
Insert	MU	C	ZS	GC	Without Chipbreaker	Ceramic	AH	^F /L-A3	PCD	CBN	
Toolholder Description											
Applications	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B18	B19	B19	B19	B19	B98	B19	B19	C23	C6,C7	
Insert	MU	C	ZS	GC	Without Chipbreaker	Ceramic	AH	^F /L-A3	PCD	CBN	
Toolholder Description											
Applications	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B18	B19	B19	B19	B19	B98	B19	B19	C23	C6,C7	
Insert	MU	C	ZS	GC	Without Chipbreaker	Ceramic	AH	^F /L-A3	PCD	CBN	
Toolholder Description											

Recommended Cutting Conditions ● F93~F94

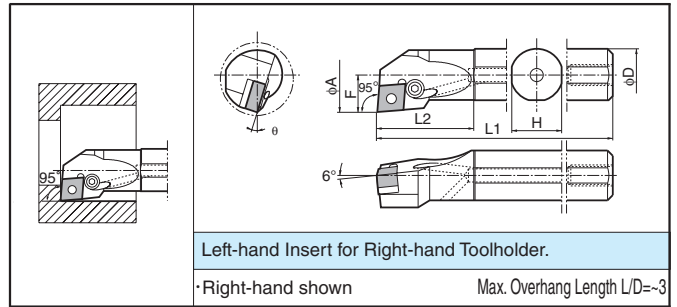
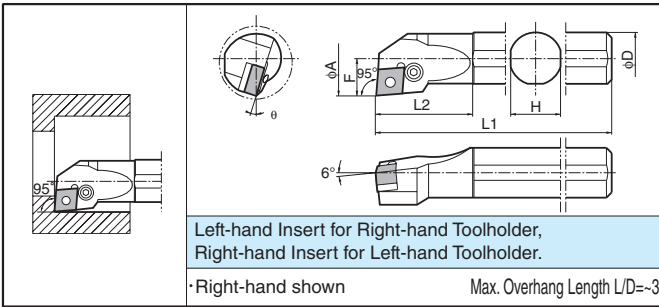
Boring Bar [CN□□ Negative Insert]

Lever Lock

(Boring / Internal Facing, with Coolant Hole)
Twin-Hole Bar

S-PCLN○○ (Boring / Internal Facing)

A-PCLN09



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)					θ	Std. Corner-R (r)	Spare Parts					
	R	L		φA	φD	H	L1	L2			F	Lever	Lock Screw	Shim	Shim Pin	Punch
S16M -PCLN ^φ L 09-20	●	●	20	16	15	150	34	11	16°	0.8	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5
S20Q -PCLN ^φ L 09-27	●	●	27	20	19	180	37	14.2	17°		LL-1N	LS-1SN	LC-32N	LSP-1	PC-1	
S25R -PCLN ^φ L 09-32	●	●	32	25	24	200	42	15.7	15°							
S25R -PCLN ^φ L 12-32	●	●	32	25	24	200	42	16.3	16°	0.8	LL-2N	LS-2N	LC-42N ^φ L	LSP-2	PC-2	LW-3
S32S -PCLN ^φ L 12-40	●	●	40	32	30	250	50	21	10°							
S40T -PCLN ^φ L 12-50	●	●	50	40	37	300	60	25								
A16M -PCLNR09-20	●		20	16	15	150	34	11	16°	0.8	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5
A20Q -PCLNR09-27	●		27	20	19	180	37	14.2	17°		LL-1N	LS-1SN	LC-32N	LSP-1	PC-1	
A25R -PCLNR09-32	●		32	25	24	200	42	15.7	15°							

LC-42NR for Right-hand Toolholder, LC-42NL for Left-hand Toolholder.

Applicable Inserts

Applications	Finishing	Finishing-Medium	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing
Ref. to Page	B14	B14	B14	B14	B14	B14	B14	B14	B14	B15	B15
Insert	WP (Wiper)	WQ (Wiper)	PP	GP	PQ	HQ	CQ	CJ	GS	PG	
Toolholder Description											
...-PCLN ^φ L 09-...	-	-	-	CNMG0904..	-	CNMG0904..	-	-	CNMG0904..	-	-
...-PCLN ^φ L 12-...	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..
Applications	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing	Single Sided / Roughing / High Feed Rate	Finishing	Medium	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	
Ref. to Page	B15	B15	B15	B16	B16	B20	B20	B17	B17	B17	
Insert	PS	HS	PT	Standard	PX	^φ L-S	^φ L	XP	XQ	XS	
Toolholder Description											
...-PCLN ^φ L 09-...	-	-	-	-	-	CNGG0904..	CNGG0904..	-	-	-	
...-PCLN ^φ L 12-...	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMM1204..	-	CNGG1204..	CNMG1204..	CNMG1204..	CNMG1204..	
Applications	Stainless Steel Finishing	Stainless Steel Medium-Roughing	Stainless Steel Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals
Ref. to Page	B18	B18	B18	B19	B19	B19	B19	B98	B19	B19	
Insert	MQ	MS	MU	C	ZS	GC	Without Chipbreaker	Ceramic	AH	^φ L-A3	
Toolholder Description											
...-PCLN ^φ L 09-...	-	-	-	-	-	-	-	-	-	-	
...-PCLN ^φ L 12-...	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMA1204.. CNGA1204..	CNMA1204.. CNGA1204..	CN_G1204..	CNGG1204..	
Applications	Non-ferrous Metals	Hard Materials									
Ref. to Page	C23	C6,C7									
Insert	PCD	CBN									
Toolholder Description											
...-PCLN ^φ L 09-...	-	-									
...-PCLN ^φ L 12-...	CNMM1204..	CNGA1204..									

Recommended Cutting Conditions ● F93-F94

Applicable Coolant Sleeve / Joint

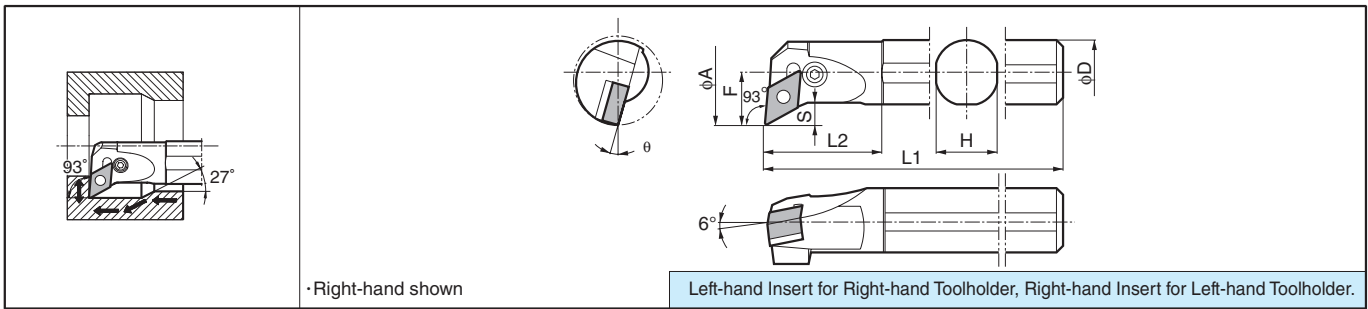
Toolholder Description	Applicable Coolant Sleeve	Applicable Coolant Joint
A16M-PCLN ^φ L 09-20	SHC1640-70,SHC1650-95	SJS-8
A20Q-PCLN ^φ L 09-27	SHC2040-70,SHC2050-95	
A25R-PCLN ^φ L 09-32	SHC2540-70,SHC2550-95	

For Coolant Sleeve, Coolant Joint, ref. to page ● F85-F86.

●: Std. Item

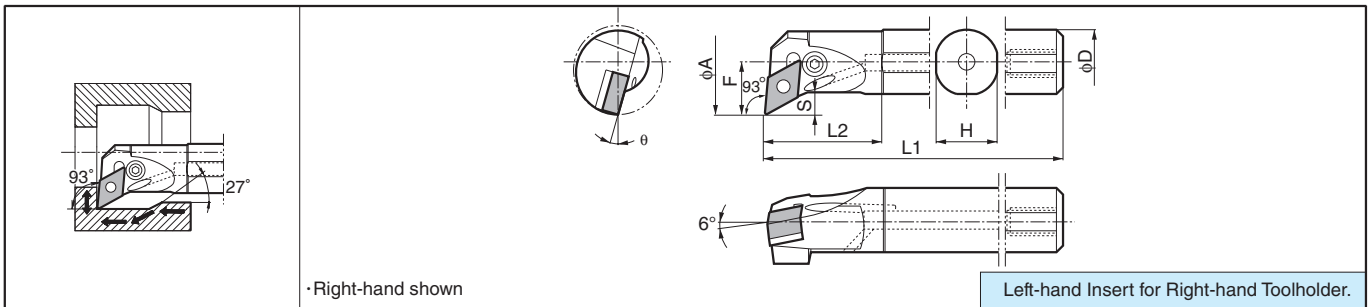
S-PDUN11 (Copying)

Max. Overhang Length L/D≈3



A-PDUN11 Twin-Hole Bar (Copying, with Coolant Hole)

Max. Overhang Length L/D≈3



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(°)	Spare Parts					
	R	L		φA	φD	H	L1	L2	F			S	Lever	Lock Screw	Shim	Shim Pin	Punch
	S20Q -PDUN^{φ/L} 11-27	●	●	27	20	19	180	35	16	7.6	17°	0.4	LL-1DN	LS-1SN	LD-32N	LSP-1	PC-1
S25R -PDUN^{φ/L} 11-32	●	●	32	25	24	200	40	17	7.6	15°							
S32S -PDUN^{φ/L} 11-40	●	●	40	32	31	250	45	22	8.5	12°							
A20Q -PDUNR11-27	●		27	20	19	180	35	16	7.6	17°							
A25R -PDUNR11-32	●		32	25	24	200	40	17	7.6	15°							
A32S -PDUNR11-40	●		40	32	31	250	45	22	8.5	12°							

Applicable Inserts

Applications	Finishing	Finishing-Medium	Medium-Roughing	Finishing	Medium						
Ref. to Page	B21	B21	B22	B27	B27						
Insert	GP	HQ	GS	^{φ/L} -S	^{φ/L}						
ToolholderDescription	DNMG1104..	DNMG1104..	DNMG1104..	DNGG1104..	DNGG1104..						
....PDUN^{φ/L} 11-....	DNMG1104..	DNMG1104..	DNMG1104..	DNGG1104..	DNGG1104..						

Recommended Cutting Conditions F93~F94

Applicable Coolant Sleeve / Joint

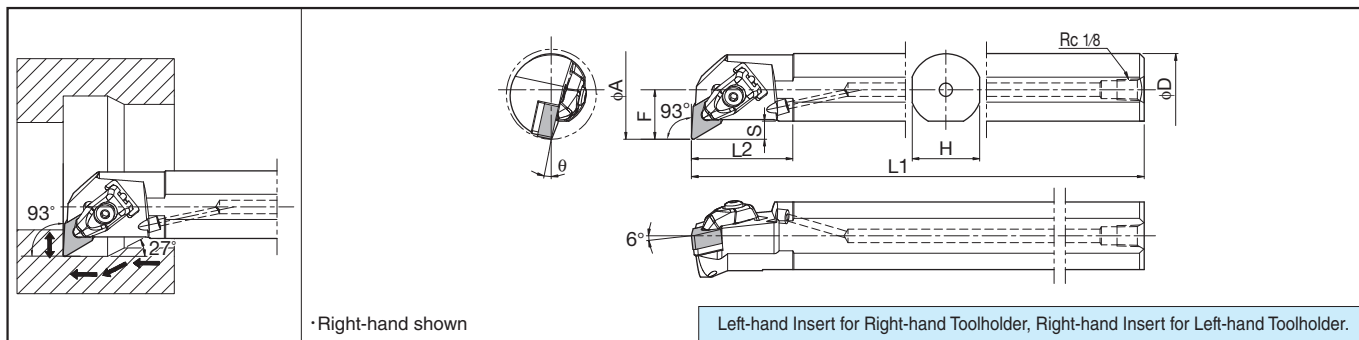
Toolholder Description	Applicable Coolant Sleeve	Applicable Coolant Joint
A20Q -PDUNR11-27	SHC2040-70,SHC2050-95	SJS-8
A25R -PDUNR11-32	SHC2540-70,SHC2550-95	
A32S -PDUNR11-40	-	

For Coolant Sleeve, Coolant Joint, ref. to page F85~F86.

Boring Bar [DN15 Negative Insert]

A-DDUN (Boring / Copying)

Max. Overhang Length L/D₂~3



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)					θ	Std. Corner-R(r _c)	Spare Parts																
	R	L		φA	φD	H	L1	L2			F	S	Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench for Clamp	Wrench (sold separately) for Shim							
A32S-DDUN^β/L 15-40	●	●	40	32	30	250	45	22	8	12°	0.8																
A40T-DDUN^β/L 15-50	●	●	50	40	37	300	55	27	8.5											CP-3D	CS-3D	SP-3D	DD-42 *DD-42-16	SB-4085TR	DN10	LW-3	FT-15
A50U-DDUN^β/L 15-63	●	●	63	50	47	350	65	35	10.5											DN20							

When using inserts whose corner-R(r_c) is greater than 1.6mm, please purchase a shim (DD-42-16) with * mark and use it in order to prevent workpiece and shim from interfering each other.
*Not applicable to high-pressure coolant.

Applicable Inserts

Applications	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing
Ref. to Page	B21	B21	B22	B22	B22	B22	B23	B23	B23
Insert	PP	PQ	CQ	CJ	GS	PG	PS	PT	Standard
Toolholder Description									
.....DDUN ^β /L 15.....	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..
Applications	Roughing	Single Sided / Roughing / High Feed Rate	Medium	Soft Steel / Medium	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing
Ref. to Page	B24	B24	B27	B24	B24	B24	B25	B25	B25
Insert	PH	PX	^β /L	XP	XQ	XS	MQ	MS	MU
Toolholder Description									
.....DDUN ^β /L 15.....	DNMG1504..	DNMM1504..	DNGG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..
Applications	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B25	B26	B26	B26	B99	B27	B27	C23	C8,C9
Insert	TK	C	ZS	GC	Ceramic	AH	^β /L-A3	PCD	CBN
Toolholder Description									
.....DDUN ^β /L 15.....	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNGA1504..	DN_G1504..	DNGG1504..	DNMM1504..	DNGA1504..

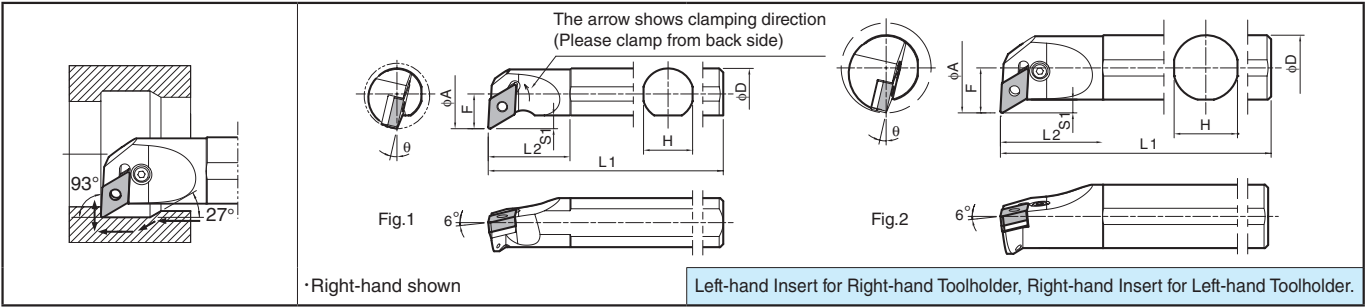
Recommended Cutting Conditions ● F93~F94

●: Std. Item

Boring Bar [DN15 Negative Insert]

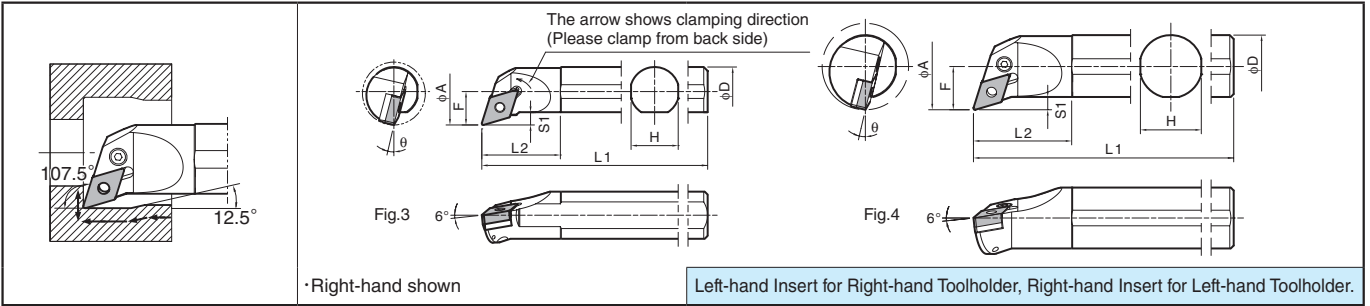
S-PDUN15 (Copying)

Max. Overhang Length L/D≈3



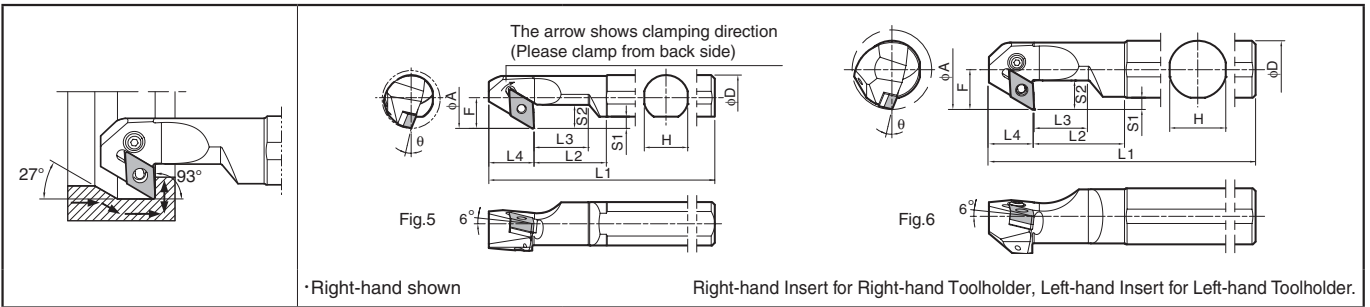
S-PDQN15 (Copying)

Max. Overhang Length L/D≈3



S-PDZN15 (Back Boring)

Max. Overhang Length L/D≈3



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)									θ	Std. Corner-R(r)	Drawing	Applicable Inserts	
	R	L		φA	φD	H	L1	L2	L3	L4	F	S1					
S25R -PDUN ^φ L 15-32	●	●	32	25	24	200	40			17	6.5		13°	0.8	Fig.1	DN□A	1504..
S32S -PDUN ^φ L 15-44	●	●	44	32	31	250	50	-	-	22			12°			Fig.2	
S40T -PDUN ^φ L 15-54	●	●	54	40	39	300	65			27	7.5				Fig.2	DN□M	
S25R -PDQN ^φ L 15-32	●	●	32	25	24	200	40			17	6.5		13°	0.8	Fig.3	DN□A	1504..
S32S -PDQN ^φ L 15-44	●	●	44	32	31	250	50	-	-	22			12°			Fig.4	
S40T -PDQN ^φ L 15-54	●	●	54	40	39	300	65			27	7.5				Fig.4	DN□M	
S25R -PDZN ^φ L 15-32	●	●	32	25	24	225	40	30		17	6.5	13	13°	0.8	Fig.5	DN□A	1504..
S32S -PDZN ^φ L 15-44	●	●	44	32	31	275	50	25		22		16	12°			Fig.6	
S40T -PDZN ^φ L 15-54	●	●	54	40	39	325	65	50		27	7.5				Fig.6	DN□M	

●: Std. Item



Boring Bar [DN15 Negative Insert]

● Spare Parts (Common)

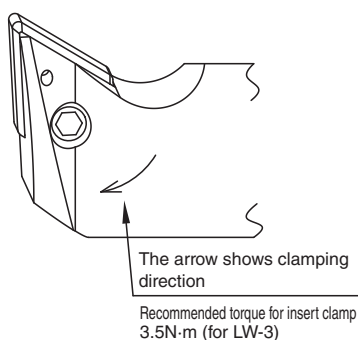
Toolholder Description	Spare Parts									
	Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench	Lock Pin	Shim	Shim Screw	Wrench (for Shim Screw)
S25R-PD□N ^{1/2} L15-32	-	-	-	-	-	-	PP-4	PD-42	SB-2050TR	FT-6
S32S-PD□N ^{1/2} L15-44	LL-3N	LS-2N	LD-42 *LD-42-20	LSP-2	PC-2	LW-3	-	-	-	-
S40T-PD□N ^{1/2} L15-54							-	-	-	-

· Shim When using inserts whose corner-R(r_c) is greater than 1.6mm for S25R-PD□N^{1/2}L15-32, use shim modified by additional processing in order to prevent workpiece and shim from interfering each other.
 When using inserts whose corner-R(r_c) is greater than 1.6mm for S32S-PD□N^{1/2}L15-44 and S40T-PD□N^{1/2}L15-54, please purchase a shim with * mark and use it in order to prevent workpiece and shim from interfering each other.

F

● How to change S25R-PD□N^{1/2}L15-32 inserts

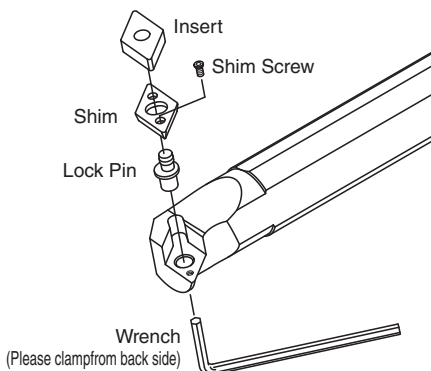
· Please replace S25R-PD□N^{1/2}L15-32 insert from the back side



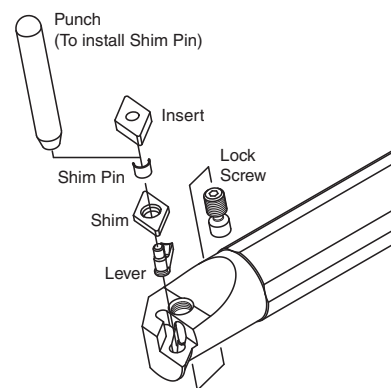
Back side of toolholder

● How to assemble spare parts

· S25R-PD□N^{1/2}L15-32 (Pin Lock)



· S32S-PD□N^{1/2}L15-44 (Lever Lock)
 · S40T-PD□N^{1/2}L15-54 (Lever Lock)



● Applicable Inserts

Applications	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing
Ref. to Page	B21	B21	B22	B22	B22	B22	B23	B23	B23
Insert	PP	PQ	CQ	CJ	GS	PG	PS	PT	Standard
Toolholder Description									
.....PD□N ^{1/2} L15.....	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..
Applications	Roughing	Single Sided / Roughing / High Feed Rate	Medium	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel Finishing	Stainless Steel Medium-Roughing	Stainless Steel Medium-Roughing
Ref. to Page	B24	B24	B27	B24	B24	B24	B25	B25	B25
Insert	PH	PX	^{1/2} L	XP	XQ	XS	MQ	MS	MU
Toolholder Description									
.....PD□N ^{1/2} L15.....	DNMG1504..	DNMM1504..	DNGG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..
Applications	Stainless Steel Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B25	B26	B26	B26	B99	B27	B27	C23	C8,C9
Insert	TK	C	ZS	GC	Ceramic	AH	^{1/2} L-A3	PCD	CBN
Toolholder Description									
.....PD□N ^{1/2} L15.....	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNGA1504..	DN_G1504..	DNGG1504..	DNMM1504..	DNGA1504..

Recommended Cutting Conditions ● F93~F94

Boring

Solid

Positive

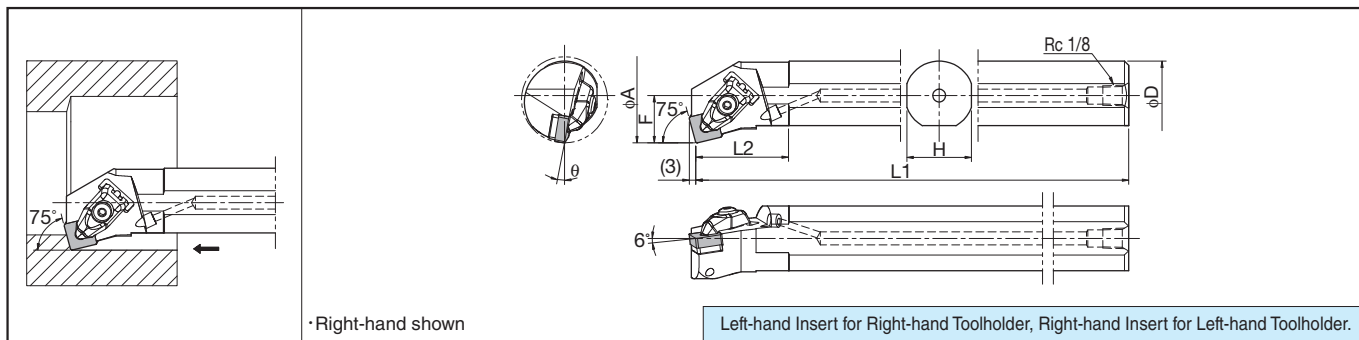
AD Bars

Negative

Boring Bar [SN12 Negative Insert]

A-DSKN (Boring)

Max. Overhang Length L/D≈~3



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(°)	Spare Parts							
	R	L		φA	φD	H	L1	L2	F			S	Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench for Clamp
A25R-DSKN^F/L 12-32	●	●	32	25	23	200	43	17	-	11°	0.8	CP-3D	CS-3D	SP-3D	DS-42	SB-4085TR	DN10 DN20	LW-3	FT-15
A32S-DSKN^F/L 12-40	●	●	40	32	30	250	43	22	-	11°									
A40T-DSKN^F/L 12-50	●	●	50	40	37	300	53	27	-	11°									

*Not applicable to high-pressure coolant.

Applicable Inserts

Applications	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing	Roughing	Single Sided / Roughing / High Feed Rate
Ref. to Page	B29	B29	B29	B29	B29	B29	B30	B30
Insert	PQ	PG	PS	HS	PT	Standard	PH	PX
Toolholder Description								
Applications	Finishing-Roughing	Medium-Roughing / Low Cutting Force	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel Finishing	Stainless Steel Medium-Roughing	Cast Iron
Ref. to Page	B32	B32	B30	B30	B30	B31	B31	B31
Insert	^F /L-□	^F /L-25R	XP	XQ	XS	MQ	MS	C
Toolholder Description								
Applications	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Hard Materials			
Ref. to Page	B31	B31	B31	B101	C10			
Insert	ZS	GC	Without Chipbreaker	Ceramic	CBN			
Toolholder Description								
Applications	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Hard Materials			
Ref. to Page	B31	B31	B31	B101	C10			
Insert	ZS	GC	Without Chipbreaker	Ceramic	CBN			
Toolholder Description								

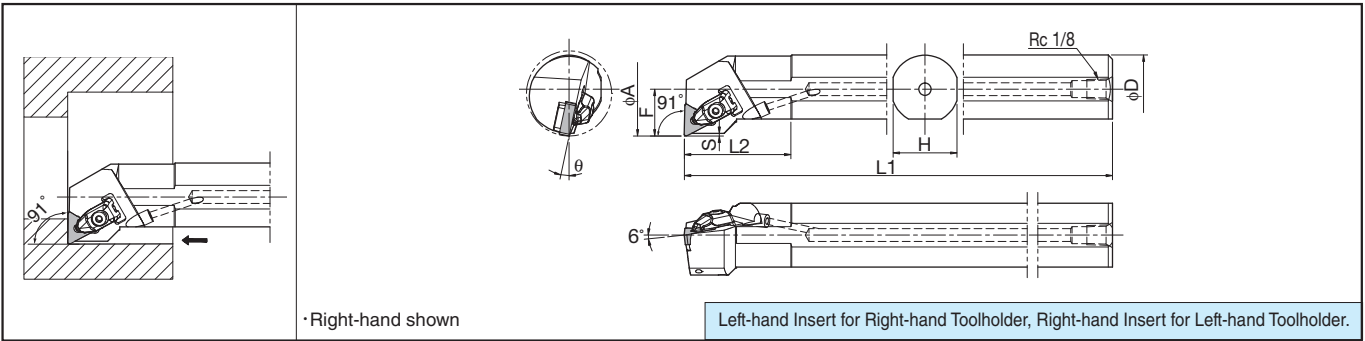
Recommended Cutting Conditions ● **F93-F94**



Boring Bar [TN□□ Negative Insert]

A-DTFN (Boring)

Max. Overhang Length L/D≈3



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(°)	Spare Parts							
	R	L		φA	φD	H	L1	L2	F			S	Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench for Clamp
A25R-DTFN^{R/L} 16-32	●	●	32	25	23	200	42	17	0.8	12°	0.8	CP-2D	CS-2D	SP-3D	DT-32	SB-3080TR	DN10	LW-2.5	FT-10
A32S-DTFN^{R/L} 16-40	●	●	40	32	30	250	50	22	1.2	12°		CP-3D	CS-3D	SP-3D	DT-42	SB-4085TR	DN20	LW-3	FT-15
A40T-DTFN^{R/L} 22-50	●	●	50	40	37	300	60	27	1.5	12°		CP-3D	CS-3D	SP-3D	DT-42	SB-4085TR	DN20	LW-3	FT-15

*Not applicable to high-pressure coolant.

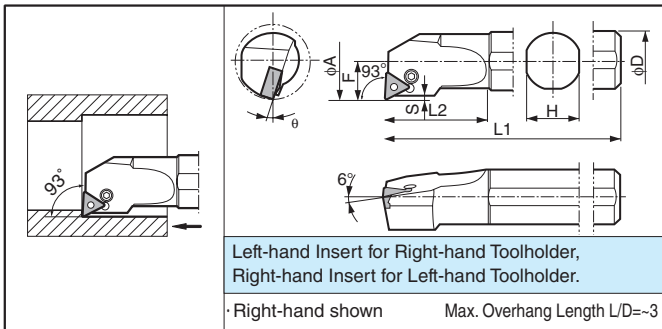
Applicable Inserts

Applications	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate
Ref. to Page	B33	B33	B33	B33	B33	B33	B33	B33	B33	B34
Insert										
Toolholder Description	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..
Applications	Medium-Roughing / High Feed Rate	Roughing	Finishing	Medium-Roughing	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel Finishing	Stainless Steel Medium-Roughing	Stainless Steel Medium-Roughing
Ref. to Page	B34	B34	B38	B38,B39	B35	B35	B35	B36	B36	B36
Insert										
Toolholder Description	TNMG1604..	TNMG1604..	TNGG1604..	TNGG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..
Applications	Stainless Steel Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B36	B37	B37	B37	B37	B103	B37	B37	C23	C10,C11
Insert										
Toolholder Description	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMA1604.. TNGA1604..	TNGA1604..	TN_G1604..	TNGG1604..	TNMM1604..	TNGA1604..
Applications	Stainless Steel Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B36	B37	B37	B37	B37	B103	B37	B37	C23	C10,C11
Insert										
Toolholder Description	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMA1604.. TNGA1604..	TNGA1604..	TN_G1604..	TNGG1604..	TNMM1604..	TNGA1604..

Recommended Cutting Conditions ● F93-F94

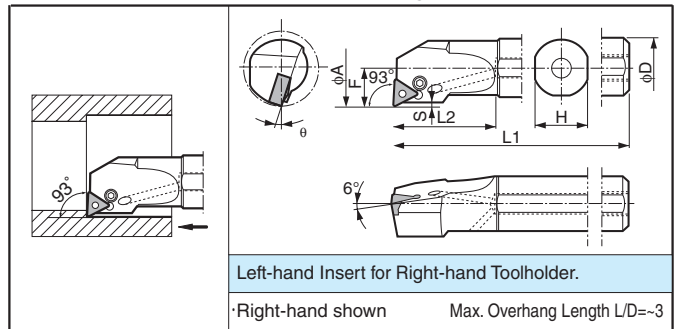
●: Std. Item

S-PTUN○○ (Boring)



A-PTUN11

Twin-Hole Bar (Boring, with Coolant Hole)



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(ε)	Spare Parts					
	R	L		φA	φD	H	L1	L2	F			S	Lever	Lock Screw	Shim	Shim Pin LSP	Punch
	● ●	20	16	15	150	34	11	0.3	18°	0.8		LL-03TN	LS-03SN	-	P-03S	-	FH-2.5
● ●	25	20	19	180	37	13.2	0.2	17°									
● ●	32	25	24	200	42	15.7	0.3	16°	0.8	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5		
● ●	20	16	15	150	34	11	1.3	18°									
● ●	25	20	19	180	37	13.2	1.3	17°	0.8	LL-1N	LS-1N	LT-32N *LT-32N-20	LSP-1	PC-1	FH-2.5		
● ●	30	25	24	200	42	15.5	1.3	13°									
● ●	40	32	30	250	50	22	0.7	13°	0.8	LL-03TN	LS-03SN	-	P-03S	-	FH-2.5		
● ●	50	40	37	300	60	27	0.6	11°									
● ●	20	16	15	150	34	11	0.3	18°	0.8	LL-03TN	LS-03SN	-	P-03S	-	FH-2.5		
● ●	25	20	19	180	37	13.2	0.2	17°									
● ●	32	25	24	200	42	15.7	0.3	16°									

When using inserts whose corner-R(ε) is greater than 1.6mm, please purchase a shim with * mark and use it in order to prevent workpiece and shim from interfering each other.

Applicable Inserts

Applications	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate
Ref. to Page	B33	B33	B33	B33	B33	B33	B33	B33	B34	B34
Insert	PP	GP	PQ	HQ	CQ	GS	PG	PS	HS	PT
Toolholder Description										
.....PTUN ^φ /L 11.....	-	TNMG1104..	-	TNMG1104..	-	TNMG1104..	-	-	-	-
.....PTUN ^φ /L 16.....	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..
Applications	Medium-Roughing / High Feed Rate	Roughing	Finishing	Medium-Roughing	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel Finishing	Stainless Steel Medium-Roughing	Stainless Steel Medium-Roughing
Ref. to Page	B34	B34	B38	B38,B39	B35	B35	B35	B36	B36	B36
Insert	GT	Standard	^φ /L-S	^φ /L-□	XP	XQ	XS	MQ	MS	MU
Toolholder Description										
.....PTUN ^φ /L 11.....	-	-	TNGG1104..	TNGG1104..	-	-	-	-	-	-
.....PTUN ^φ /L 16.....	TNMG1604..	TNMG1604..	TNGG1604..	TNGG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..
Applications	Stainless Steel Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B36	B37	B37	B37	B37	B103	B37	B37	C23	C10,C11
Insert	^φ /L-ST	C	ZS	GC	Without Chipbreaker	Ceramic	AH	^φ /L-A3	PCD	CBN
Toolholder Description										
.....PTUN ^φ /L 11.....	-	-	-	-	-	-	-	-	-	-
.....PTUN ^φ /L 16.....	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMA1604.. TNGA1604..	TNGA1604..	TN_G1604..	TNGG1604..	TNMM1604..	TNGA1604..

Recommended Cutting Conditions ● F93~F94

Applicable Coolant Sleeve / Joint

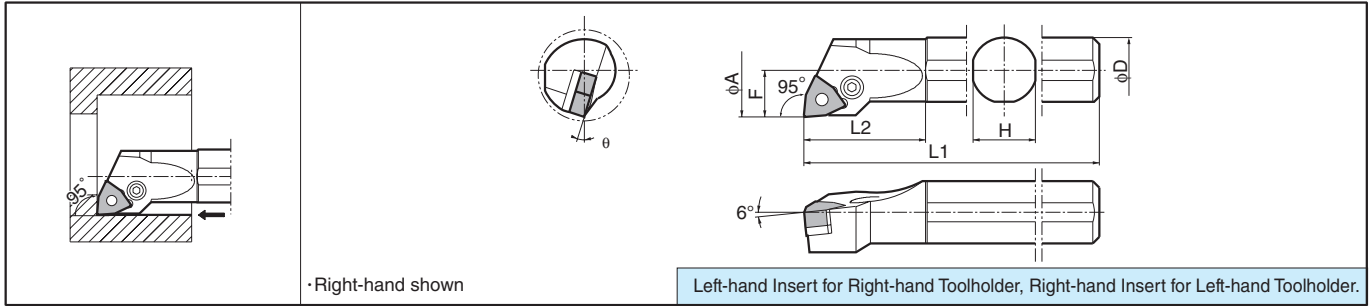
Toolholder Description	Applicable Coolant Sleeve	Applicable Coolant Joint
A16M-PTUN ^φ /L 11-20	SHC1640-70,SHC1650-95	SJS-8
A20Q-PTUN ^φ /L 11-25	SHC2040-70,SHC2050-95	
A25R-PTUN ^φ /L 11-32	SHC2540-70,SHC2550-95	

For Coolant Sleeve, Coolant Joint, ref. to page ● F85~F86.

● : Std. Item

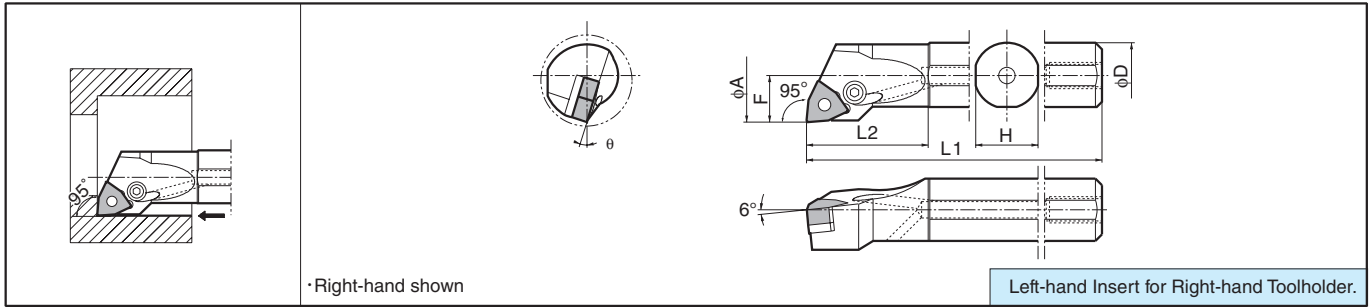
S-PWLN06 (Boring / Internal Facing)

Max. Overhang Length L/D≈~3



A-PWLN06 Twin-Hole Bar (Boring / Internal Facing, with Coolant Hole)

Max. Overhang Length L/D≈~3



F

Boring

- Solid
- Positive
- AD Bars
- Negative

Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R (re)	Spare Parts					
	R	L		φA	φD	H	L1	L2	F			Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
	S16M -PWLN ^{F/L} 06 -20	●	●	20	16	15	150	34	11	16°	0.8			-		-	
S20Q -PWLN ^{F/L} 06 -27	●	●	27	20	19	180	37	14.2	17°				LW-32N	LSP-1	PC-1	FH-2.5	
S25R -PWLN ^{F/L} 06 -32	●	●	32	25	24	200	42	15.7	15°	0.8			-		-		
A16M -PWLNR06 -20	●		20	16	15	150	34	11	16°				-		-		
A20Q -PWLNR06 -27	●		27	20	19	180	37	14.2	17°	0.8			LW-32N	LSP-1	PC-1	FH-2.5	
A25R -PWLNR06 -32	●		32	25	24	200	42	15.7	15°				-		-		

Applicable Inserts

Applications	Finishing	Finishing-Medium	Medium-Roughing	Finishing	Medium						
Ref. to Page	B42	B42	B43	B45	B45						
Insert	GP	HQ	GS	^{F/L} -S	^{F/L}						
Toolholder Description	WNUMG0604..	WNUMG0604..	WNUMG0604..	WNGG0604..	WNGG0604..						

Recommended Cutting Conditions ➔ F93~F94

Applicable Coolant Sleeve / Joint

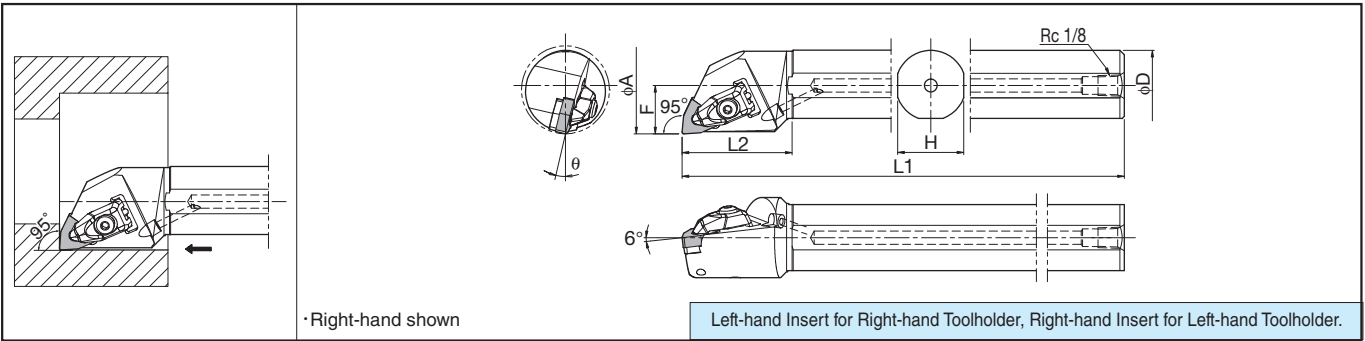
Toolholder Description	Applicable Coolant Sleeve	Applicable Coolant Joint
A16M-PWLNR06-20	SHC1640-70,SHC1650-95	SJS-8
A20M-PWLNR06-27	SHC2040-70,SHC2050-95	
A25R-PWLNR06-32	SHC2540-70,SHC2550-95	

For Coolant Sleeve, Coolant Joint, ref. to page ➔ F85~F86.

●: Std. Item

A-DWLN (Boring / Internal Facing)

Max. Overhang Length L/D≈~3



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(°)	Spare Parts															
	R	L		φA	φD	H	L1	L2	F			S	Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench for Clamp	Wrench for Shim (sold separately)							
A25R-DWLN^φL08-32	●	●	32	25	23	200	50	17	-	13°	0.8																
A32S-DWLN^φL08-40	●	●	40	32	30	250	50	22	-	13°										CP-3D	CS-3D	SP-3D	DW-42	SB-4085TR	DN10	LW-3	FT-15
A40T-DWLN^φL08-50	●	●	50	40	37	300	60	27	-	13°										DN20							

*Not applicable to high-pressure coolant.

Applicable Inserts

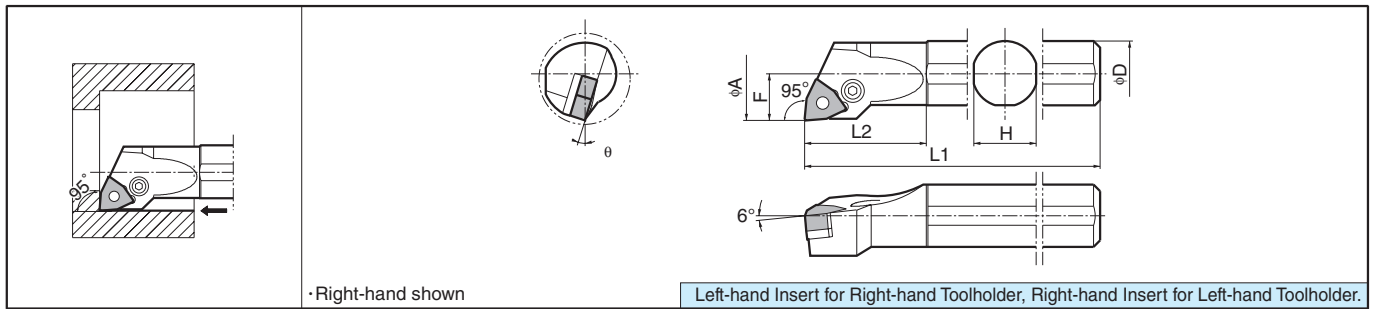
Applications	Finishing	Finishing-Medium	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing
Ref. to Page	B42	B42	B42	B42	B42	B42	B42	B43	B43	B43	B43
Insert	WP (Wiper)	WQ (Wiper)	PP	PQ	CQ	CJ	GS	PG	PS	PT	Standard
Toolholder Description											
...	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..
Applications	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel Finishing	Stainless Steel Medium-Roughing	Stainless Steel Medium-Roughing	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B44	B44	B44	B44	B44	B44	B45	B45	B45	C23	C13
Insert	XP	XQ	XS	MQ	MS	MU	C(GC)	ZS	AH	PCD	CBN
Toolholder Description											
...	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNGG0804..	WNMM0804..	WNGA0804..

Recommended Cutting Conditions **F93-F94**



S-PWLN08 (Boring / Internal Facing)

Max. Overhang Length L/D≈3



·Right-hand shown

Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

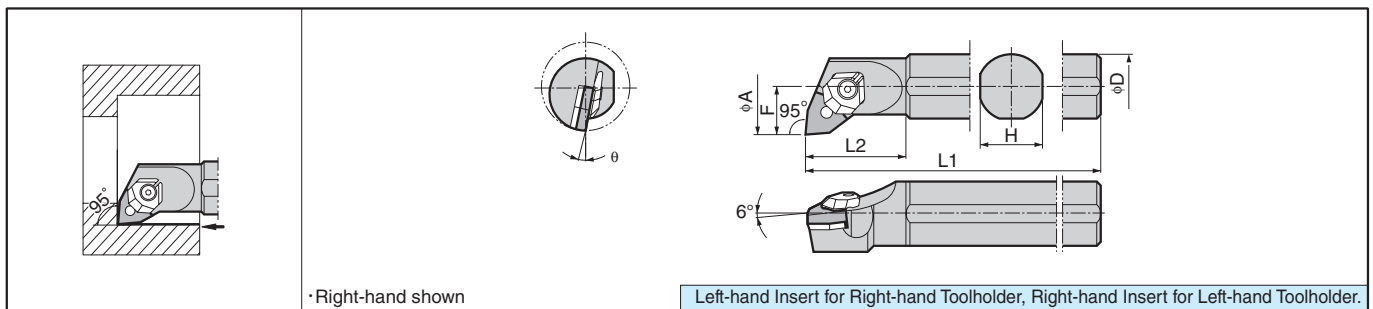
Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)					θ	Std. Corner-R(°)	Spare Parts					
	R	L		φA	φD	H	L1	L2			F	Lever	Lock Screw	Shim	Shim Pin	Punch
S32S -PWLN^{R/L}08-40	●	●	40	32	30	250	50	22	10°	0.8						
S40T -PWLN^{R/L}08-50	●	●	50	40	37	300	60	27			LL-2N	LS-2N	LW-42N ^{R/L}	LSP-2	PC-2	LW-3

· Shim: LW-42NR for Right-hand Toolholder, LW-42NL for Left-hand Toolholder.

S-WWLN08-E Excellent Bar (Boring / Internal Facing)

Max. Overhang Length L/D≈5



·Right-hand shown

Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)					θ	Std. Corner-R(°)	Spare Parts				
	R	L		φA	φD	H	L1	L2			F	Clamp Set	Wrench	Shim	Shim Pin
S25S -WWLN^{R/L}08-28E	●	●	28	25	24	250	36	14	13°	1.2					
S25S -WWLN^{R/L}08-34E	●	●	34	25	24		40	17	11°		WCS-8	LW-3	WWP-42	WP5X11	LW-2
S32S -WWLN^{R/L}08-40E	●	●	40	32	30		50	20	10°		WWP-42-16				

· When using inserts whose corner-R(°) is greater than 1.6mm, please purchase a shim with * mark and use it in order to prevent workpiece and shim from interfering each other.

Applicable Inserts

Applications	Finishing	Finishing-Medium	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing
Ref. to Page	B42	B42	B42	B42	B42	B42	B43	B43	B43	B43	B43
Insert	WP(Wiper)	WQ(Wiper)	PP	PQ	CQ	CJ	GS	PG	PS	PT	Standard
Toolholder Description											
Applications	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel Finishing	Stainless Steel Medium-Roughing	Stainless Steel Medium-Roughing	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B44	B44	B44	B44	B44	B44	B45	B45	B45	C23	C13
Insert	XP	XQ	XS	MQ	MS	MU	C(GC)	ZS	AH	PCD	CBN
Toolholder Description											
Applications	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel Finishing	Stainless Steel Medium-Roughing	Stainless Steel Medium-Roughing	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B44	B44	B44	B44	B44	B44	B45	B45	B45	C23	C13
Insert	XP	XQ	XS	MQ	MS	MU	C(GC)	ZS	AH	PCD	CBN
Toolholder Description											
Applications	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel Finishing	Stainless Steel Medium-Roughing	Stainless Steel Medium-Roughing	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B44	B44	B44	B44	B44	B44	B45	B45	B45	C23	C13
Insert	XP	XQ	XS	MQ	MS	MU	C(GC)	ZS	AH	PCD	CBN
Toolholder Description											

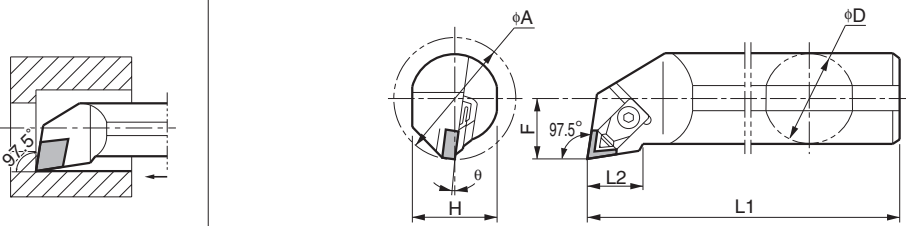
· In wedge lock, use of ceramic insert other than silicon nitride insert is not recommended due to strong restrain force.

Recommended Cutting Conditions **F93~F94**

●: Std. Item


S-CELN (Boring / Internal Facing)

Max. Overhang Length L/D≈-3







Right-hand shown

Applicable Inserts

Cast Iron / Hard Materials
B99
Ceramic

ENGN1307..

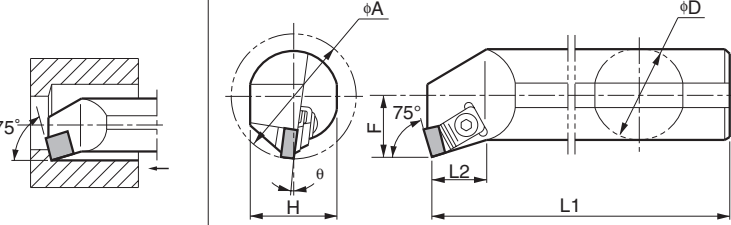
Recommended Cutting Conditions **F93-F94**

Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)					θ	Std. Corner-R(°)	Spare Parts				
	R	L		φA	φD	H	L1	L2			F	Chipbreaker	Clamp Set	Wrench	Shim
	S40T-CELNR13-50	●		50	40	37	300	32	27	12°	0.8				




S-CSKN (Boring)

Max. Overhang Length L/D≈-3







Right-hand shown

Applicable Inserts

Cast Iron / Hard Materials	Cast Iron	Hard Materials / Cast Iron
B101	B31	C19
Ceramic	Coated Carbide	CBN(KBN900)
		
SNGN1207..(1204..) SNMN1207..	(SNMN1204..)	(SNMN1204..)

Recommended Cutting Conditions **F93-F94**

Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)					θ	Std. Corner-R(°)	Spare Parts				
	R	L		φA	φD	H	L1	L2			F	Chipbreaker	Clamp Set	Wrench	Shim
	S40T-CSKN^{R/L}12-50	●	●	50	40	37	300	26	27	10.5°	0.8				

· Chipbreaker: CB-13 for Right-hand Toolholder, CB-12 for Left-hand Toolholder.

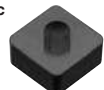
· Shim & Shim Screw : When using SN□□1204 Insert, purchase spare parts in () separately.

S-CCLN-GX (Boring / Internal Facing)





Max. Overhang Length L/D≈3

• Right-hand shown

● **Applicable Inserts**

Cast Iron	● B98
Ceramic	
CNGX1207..	

● **Toolholder Dimensions**

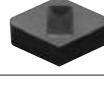
Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(°)	Spare Parts				Recommended Cutting Conditions
	R	L		φA	φD	H	L1	L2	F			Clamp Set	Wrench	Shim	Shim Screw	
	S32S- CCLN[®]/L 12-40GX	●	●	40	32	30	250	32	22			14°	1.2			
S40T- CCLN[®]/L 12-50GX	●	●	50	40	37	300	32	27	12°	1.2			SP-441P	M3X8		

S-CDUN-GX (Boring / Copying)





Max. Overhang Length L/D≈3

• Right-hand shown

● **Applicable Inserts**

Cast Iron	● B99
Ceramic	
DNGX1207..	

● **Toolholder Dimensions**


Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(°)	Spare Parts				Recommended Cutting Conditions
	R	L		φA	φD	H	L1	S	F			Clamp Set	Wrench	Shim	Shim Screw	
	S32S- CDUN[®]/L 12-40GX	●	●	40	32	30	250	7.5	22			14°	1.2			
S40T- CDUN[®]/L 12-50GX	●	●	50	40	37	300	7.5	27	12°	1.2			SP-521P	M3X8		

S-CSKN-GX (Boring)





Max. Overhang Length L/D≈3

• Right-hand shown

● **Applicable Inserts**

Cast Iron	● B102
Ceramic	
SNGX1207..	

● **Toolholder Dimensions**

Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(°)	Spare Parts				Recommended Cutting Conditions
	R	L		φA	φD	H	L1	L2	F			Clamp Set	Wrench	Shim	Shim Screw	
	S32S- CSKN[®]/L 12-40GX	●	●	40	32	30	250	22.5	22			14°	1.2			
S40T- CSKN[®]/L 12-50GX	●	●	50	40	37	300	22.5	27	12°	1.2			SP-141P	M3X8		

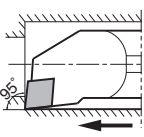
● : Std. Item

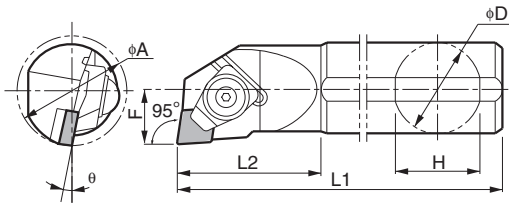
F

Boring


- Solid
- Positive
- AD Bars
- Negative

S-CCLN-A (Boring / Internal Facing)









● **Applicable Inserts**

Hard Materials / Cast Iron
● C19
CBN (KBN900)

CNMN0903..

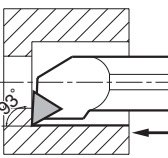
·Right-hand shown

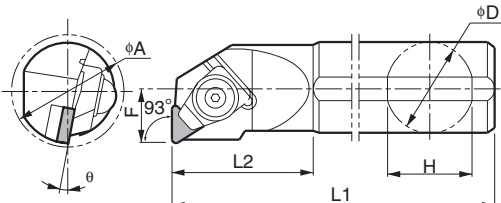
Recommended Cutting Conditions ● F93~F94

● Toolholder Dimensions



Description	Std.		Min. Bore Dia.	Dimension (mm)					θ	Std. Corner-R(ε)	Spare Parts				
	R	L		φA	φD	H	L1	L2			F	Clamp Set	Wrench	Shim	Shim Screw
	S32S-CCLN^R/09-40A	●	●	40	32	30	250	50	22	8°	0.8				

S-CTUN-A (Boring)









● **Applicable Inserts**

Hard Materials / Cast Iron	Cast Iron / Hard Materials
● C19	● B103
CBN (KBN900)	Ceramic
	
TNMN1103..	TNGN1103..

·Right-hand shown

Recommended Cutting Conditions ● F93~F94

● Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)					θ	Std. Corner-R(ε)	Spare Parts				
	R	L		φA	φD	H	L1	L2			F	Clamp Set	Wrench	Shim	Shim Screw
	S25X-CTUNR11-30A	●		30	25	24	220	40	15	10°	0.8				

Sleeves for Boring Bars

EZH Sleeves

Sleeve Description			Sleeve Shank Dia. φD1 (mm)	Applicable Inserts				Shank Dia. φD (mm)	Applicable Machine Manufacturer	
EZH-CT (Adjustable overhang length with coolant hole)	EZH-HP (Adjustable overhang length)	EZH-ST		EZB	EZG EZFG EZT EZVB	EZ Bar PLUS	HP			
-	-	EZH 01712ST-80	12	EZBR ...017...	-	-	-	1.7	(General purpose)	
		02012ST-80		EZBR ...020...	-	-	HPB% 0202-...	2		
		02512ST-80		EZBR ...025...	EZ ...025...	-	-	2.5		
		03012ST-80		EZBR ...030...	EZ ...030...	-	-	3		
		03512ST-80		EZBR ...035...	EZ ...035...	-	-	3.5		
		04012ST-80		EZBR ...040...	EZ ...040...	-	-	4		
		05012ST-80		EZBR ...050...	EZ ...050...	-	-	5		
		06012ST-80		EZBR ...060...	EZ ...060...	-	-	6		
		07012ST-80		EZBR ...070...	EZ ...070...	-	-	7		
-	EZH 01716HP-100	EZH 01716ST-100	16	EZBR ...017...	-	-	-	1.7	(General purpose)	
	02016HP-100	02016ST-100		EZBR ...020...	-	-	HPB% 0202-...	2		
	02516HP-100	02516ST-100		EZBR ...025...	EZ ...025...	-	-	2.5		
	03016HP-100	03016ST-100		EZBR ...030...	EZ ...030...	-	-	3		
	03516HP-100	03516ST-100		EZBR ...035...	EZ ...035...	-	-	3.5		
	04016HP-100	04016ST-100		EZBR ...040...	EZ ...040...	-	-	4		
	04516HP-100	-		-	-	-	045X- ...050EZ	4.5		
	05016HP-100	05016ST-100		EZBR ...050...	EZ ...050...	-	-	5		
	06016HP-100	06016ST-100		EZBR ...060...	EZ ...060...	060X- ...070EZ	HP ...0606-...	6		
	07016HP-100	07016ST-100		EZBR ...070...	EZ ...070...	-	HP ...0707-...	7		
	EZH 01719CT-120	EZH 01719HP-120		EZH 01719ST-120	19.05	EZBR ...017...	-	-		-
02019CT-120		02019HP-120	02019ST-120	EZBR ...020...		-	-	HPB% 0202-...	2	
02519CT-120		02519HP-120	02519ST-120	EZBR ...025...		EZ ...025...	-	-	2.5	
03019CT-120		03019HP-120	03019ST-120	EZBR ...030...		EZ ...030...	-	-	3	
03519CT-120		03519HP-120	03519ST-120	EZBR ...035...		EZ ...035...	-	-	3.5	
04019CT-120		04019HP-120	04019ST-120	EZBR ...040...		EZ ...040...	-	-	4	
-		04519HP-120	-	-		-	045X- ...050EZ	4.5		
05019CT-120		05019HP-120	05019ST-120	EZBR ...050...		EZ ...050...	-	-	5	
06019CT-120		06019HP-120	06019ST-120	EZBR ...060...		EZ ...060...	060X- ...070EZ	HP ...0606-...	6	
07019CT-120		07019HP-120	07019ST-120	EZBR ...070...		EZ ...070...	-	HP ...0707-...	7	
EZH 01720CT-120		EZH 01720HP-120	EZH 01720ST-120	20		EZBR ...017...	-	-	-	1.7
	02020CT-120	02020HP-120	02020ST-120		EZBR ...020...	-	-	HPB% 0202-...	2	
	02520CT-120	02520HP-120	02520ST-120		EZBR ...025...	EZ ...025...	-	-	2.5	
	03020CT-120	03020HP-120	03020ST-120		EZBR ...030...	EZ ...030...	-	-	3	
	03520CT-120	03520HP-120	03520ST-120		EZBR ...035...	EZ ...035...	-	-	3.5	
	04020CT-120	04020HP-120	04020ST-120		EZBR ...040...	EZ ...040...	-	-	4	
	-	04520HP-120	-		-	-	045X- ...050EZ	4.5		
	05020CT-120	05020HP-120	05020ST-120		EZBR ...050...	EZ ...050...	-	-	5	
	06020CT-120	06020HP-120	06020ST-120		EZBR ...060...	EZ ...060...	060X- ...070EZ	HP ...0606-...	6	
	07020CT-120	07020HP-120	07020ST-120		EZBR ...070...	EZ ...070...	-	HP ...0707-...	7	
	EZH 01722CT-135	EZH 01722HP-135	EZH 01722ST-135		22	EZBR ...017...	-	-	-	1.7
02022CT-135		02022HP-135	02022ST-135	EZBR ...020...		-	-	HPB% 0202-...	2	
02522CT-135		02522HP-135	02522ST-135	EZBR ...025...		EZ ...025...	-	-	2.5	
03022CT-135		03022HP-135	03022ST-135	EZBR ...030...		EZ ...030...	-	-	3	
03522CT-135		03522HP-135	03522ST-135	EZBR ...035...		EZ ...035...	-	-	3.5	
04022CT-135		04022HP-135	04022ST-135	EZBR ...040...		EZ ...040...	-	-	4	
-		04522HP-135	-	-		-	045X- ...050EZ	4.5		
05022CT-135		05022HP-135	05022ST-135	EZBR ...050...		EZ ...050...	-	-	5	
06022CT-135		06022HP-135	06022ST-135	EZBR ...060...		EZ ...060...	060X- ...070EZ	HP ...0606-...	6	
07022CT-135		07022HP-135	07022ST-135	EZBR ...070...		EZ ...070...	-	HP ...0707-...	7	
EZH 01725.0CT-135		EZH 01725.0HP-135	EZH 01725.0ST-135	25		EZBR ...017...	-	-	-	1.7
	02025.0CT-135	02025.0HP-135	02025.0ST-135		EZBR ...020...	-	-	HPB% 0202-...	2	
	02525.0CT-135	02525.0HP-135	02525.0ST-135		EZBR ...025...	EZ ...025...	-	-	2.5	
	03025.0CT-135	03025.0HP-135	03025.0ST-135		EZBR ...030...	EZ ...030...	-	-	3	
	03525.0CT-135	03525.0HP-135	03525.0ST-135		EZBR ...035...	EZ ...035...	-	-	3.5	
	04025.0CT-135	04025.0HP-135	04025.0ST-135		EZBR ...040...	EZ ...040...	-	-	4	
	-	04525.0HP-135	-		-	-	045X- ...050EZ	4.5		
	05025.0CT-135	05025.0HP-135	05025.0ST-135		EZBR ...050...	EZ ...050...	-	-	5	
	06025.0CT-135	06025.0HP-135	06025.0ST-135		EZBR ...060...	EZ ...060...	060X- ...070EZ	HP ...0606-...	6	
	07025.0CT-135	07025.0HP-135	07025.0ST-135		EZBR ...070...	EZ ...070...	-	HP ...0707-...	7	
	EZH 01725.4CT-120	EZH 01725.4HP-120	EZH 01725.4ST-120		25.4	EZBR ...017...	-	-	-	1.7
02025.4CT-120		02025.4HP-120	02025.4ST-120	EZBR ...020...		-	-	HPB% 0202-...	2	
02525.4CT-120		02525.4HP-120	02525.4ST-120	EZBR ...025...		EZ ...025...	-	-	2.5	
03025.4CT-120		03025.4HP-120	03025.4ST-120	EZBR ...030...		EZ ...030...	-	-	3	
03525.4CT-120		03525.4HP-120	03525.4ST-120	EZBR ...035...		EZ ...035...	-	-	3.5	
04025.4CT-120		04025.4HP-120	04025.4ST-120	EZBR ...040...		EZ ...040...	-	-	4	
-		04525.4HP-120	-	-		-	045X- ...050EZ	4.5		
05025.4CT-120		05025.4HP-120	05025.4ST-120	EZBR ...050...		EZ ...050...	-	-	5	
06025.4CT-120		06025.4HP-120	06025.4ST-120	EZBR ...060...		EZ ...060...	060X- ...070EZ	HP ...0606-...	6	
07025.4CT-120		07025.4HP-120	07025.4ST-120	EZBR ...070...		EZ ...070...	-	HP ...0707-...	7	

· Choose sleeves (φd1) to meet with φD dimension of bar.
 · Adjustment Pin cannot be installed to EZH-ST sleeves. To adjust overhang of the bar, please use EZH-CT/HP sleeves.
 · Machine manufacturers in random order.

EZH Sleeves and Applicable Inserts / Toolholders

Shank Size (Hole Dia.: mm)		017 (1.7mm)	020 (2mm)	025 (2.5mm)	03 (3mm)	035 (3.5mm)
EZH-CT sleeve (Internal coolant) EZH-HP sleeve description (Adjustable overhang length)		EZH 01716HP-100	EZH 02016HP-100	EZH 02516HP-100	EZH 03016HP-100	EZH 03516HP-100
		01719CT/HP-120	02019CT/HP-120	02519CT/HP-120	03019CT/HP-120	03519CT/HP-120
		01720CT/HP-120	02020CT/HP-120	02520CT/HP-120	03020CT/HP-120	03520CT/HP-120
		01722CT/HP-135	02022CT/HP-135	02522CT/HP-135	03022CT/HP-135	03522CT/HP-135
		01725.0CT/HP-135	02025.0CT/HP-135	02525.0CT/HP-135	03025.0CT/HP-135	03525.0CT/HP-135
	01725.4CT/HP-120	02025.4CT/HP-120	02525.4CT/HP-120	03025.4CT/HP-120	03525.4CT/HP-120	
EZH-ST sleeve description		EZH 01712ST-80	EZH 02012ST-80	EZH 02512ST-80	EZH 03012ST-80	EZH 03512ST-80
		01716ST-100	02016ST-100	02516ST-100	03016ST-100	03516ST-100
		01719ST-120	02019ST-120	02519ST-120	03019ST-120	03519ST-120
		01720ST-120	02020ST-120	02520ST-120	03020ST-120	03520ST-120
		01722ST-135	02022ST-135	02522ST-135	03022ST-135	03522ST-135
		01725.0ST-135	02025.0ST-135	02525.0ST-135	03025.0ST-135	03525.0ST-135
		01725.4ST-120	02025.4ST-120	02525.4ST-120	03025.4ST-120	03525.4ST-120
EZ Bars	Boring	EZBR 020017ST-	EZBR 020020HP-	EZBR 025025HP-	EZBR 030030HP-	EZBR 035035HP-
		EZBR 020017-...NB	EZBR 025020-...NB	EZBR 030025-...NB	EZBR ...030-...NB	EZBR 040035-...NB
	Internal Grooving			EZVBR035030-		
	Face Grooving			EZGR 030030-		
	Internal Threading			EZTR 030025-	EZTR 035030-	EZTR 040035-
EZ Bars PLUS						
2-Edge Tip-Bars	Boring		HPB [®] /L.0202-		HPB [®] /L.0303-	
	Internal Grooving					
	Face Grooving					
	Internal Threading					
Boring Bars						

F



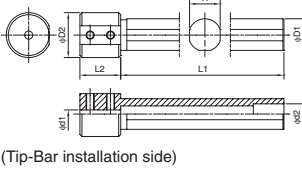
Boring

Shank Size (Hole Dia.: mm)		04 (4mm)	045 (4.5mm)	05 (5mm)	06 (6mm)	07 (7mm)
EZH-CT sleeve (Internal coolant) EZH-HP sleeve description (Adjustable overhang length)		EZH 04016HP-100	EZH 04516HP-100	EZH 05016HP-100	EZH 06016HP-100	EZH 07016HP-100
		04019CT/HP-120	04519HP-120	05019CT/HP-120	06019CT/HP-120	07019CT/HP-120
		04020CT/HP-120	04520HP-120	05020CT/HP-120	06020CT/HP-120	07020CT/HP-120
		04022CT/HP-135	04522HP-135	05022CT/HP-135	06022CT/HP-135	07022CT/HP-135
		04025.0CT/HP-135	04525.0HP-135	05025.0CT/HP-135	06025.0CT/HP-135	07025.0CT/HP-135
	04025.4CT/HP-120	04525.4HP-120	05025.4CT/HP-120	06025.4CT/HP-120	07025.4CT/HP-120	
EZH-ST sleeve description		EZH 04012ST-80		EZH 05012ST-80	EZH 06012ST-80	EZH 07012ST-80
		04016ST-100		05016ST-100	06016ST-100	07016ST-100
		04019ST-120		05019ST-120	06019ST-120	07019ST-120
		04020ST-120		05020ST-120	06020ST-120	07020ST-120
		04022ST-135		05022ST-135	06022ST-135	07022ST-135
		04025.0ST-135		05025.0ST-135	06025.0ST-135	07025.0ST-135
		04025.4ST-120		05025.4ST-120	06025.4ST-120	07025.4ST-120
EZ Bars	Boring	EZBR 040040HP-		EZBR 050050HP-	EZBR 060060HP-	
		EZBR 045040ST-		EZBR 055050ST-	EZBR 065060ST-	EZBR 075070ST-
		EZBR ...040-...NB		EZBR ...050-...NB	EZBR ...060-...NB	EZBR ...070-...NB
	Internal Grooving	EZVBR045040-		EZVBR055050-	EZVBR065060-	
	Face Grooving	EZGR 040040-		EZGR 050050-	EZGR 060060-	EZGR ...070-...
Internal Threading	EZFR050040-		EZFR060050-	EZFR070060-	EZFR080070-	
EZ Bars PLUS						
2-Edge Tip-Bars	Boring	HPB [®] /L.0404-		HPB [®] /L.0505-	HPB [®] /L.0606-	HPB [®] /L.0707-
	Internal Grooving	HPBT [®] /L.0404-		HPBT [®] /L.0505-	HPGT [®] /L.0606-	HPGT [®] /L.0707-
	Face Grooving	HPG [®] /L.0404-		HPG [®] /L.0505-	HPG [®] /L.0606-	HPG [®] /L.0707-
	Internal Threading	HPT [®] /L.04504-		HPT [®] /L.06005-		HPT [®] /L.07507-
Boring Bars						
		C04-... ..		C05-... ..	C06-... ..	C07-... ..
				S06-... ..		

Note 1) When attaching 2-Edge Tip-Bars to EZH-CT/HP Sleeve (Adjustable overhang length), detach Adjustable Pin.
Overhang length of bar is not adjustable.

Sleeves for Boring Bars

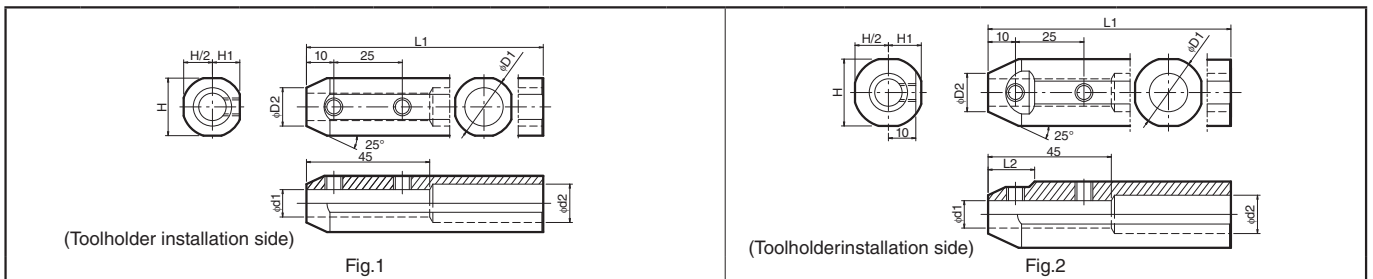
Sleeves for Tip-Bars

Shape	Description	Std.	Dimension (mm)						Spare Parts		
			φD1	φD2	φd1	φd2	H	L1	L2	Screw	Wrench
 (Tip-Bar installation side)	PH 0212-60	○	12	19	1.8	6	11	60	20	HS3X4	LW-1.5
	0312-60	○			2.8						
	0412-60	○			3.8						
	0512-60	○			4.8						
	0612-60	○			5.8						
	0712-60	○			6.8						
	PH 0216-80	○	16	22	1.8	Rp¼ (PS¼)	15	80	20	HS3X4	LW-1.5
	0316-80	○			2.8						
	0416-80	○			3.8						
	0516-80	○			4.8						
	0616-80	○			5.8						
	0716-80	○			6.8						

Description Table for PH Sleeves and Applicable Toolholders

Shank Size (Hole Dia.: mm)	02 (1.8mm)	03 (2.8mm)	04 (3.8mm)	05 (4.8mm)	06 (5.8mm)	07 (6.8mm)	
PH type sleeve	PH0212-60	PH0312-60	PH0412-60	PH0512-60	PH0612-60	PH0712-60	
Description	PH0216-80	PH0316-80	PH0416-80	PH0516-80	PH0616-80	PH0716-80	
1-Edge Tip-Bars	Boring	PSB%/.0202-	PSB%/.0303-	PSB%/.0404-	PSB%/.0505-	PSB%/.0606-	
	Internal Grooving			PSBT%/.0415-	PSBT%/.0515-		
	Face Grooving			PSG%/.0510-	PSG%/.0610-	PSG%/.0710-	PSG%/.0810-
				PSG%/.0520-	PSG%/.0620-	PSG%/.0720-	PSG%/.0820-
							PSFG%/.0810-
Internal Threading			PSTR0604-	PSTR0805-		PSFG%/.0820-	

SHA sleeves (Applicable Toolholders F86)



Description	Std.	Dimension (mm)							Drawing	Spare Parts		Applicable Machine Manufacturer	
		φd1	φD1	φD2	φd2	H	H1	L1		L2	Screw		Wrench
SHA 0820-120	●	8	20	14	12	19	9.25	120	-	Fig.1	HS6x4P	LW-3	Eguro Tsumami Citizen Machinery
1020-120	●	10											
SHA 0825.0-135	●	8	25	14	14	24	11.5	135	17	Fig.2	HS6x4P	LW-3	
1025.0-135	●	10											
1225.0-135	●	12											
SHA 0819-120	●	8	19.05	14	12	18	8.75	120	-	Fig.1	HS6x4P	LW-3	
1019-120	●	10											
SHA 0820-120	●	8	20	14	12	19	9.25	120	-	Fig.1	HS6x4P	LW-3	
1020-120	●	10											
SHA 0825.4-120	●	8											25.4
1025.4-120	●	10											
1225.4-120	●	12											
SHA 0822-125	●	8	22	14	14	21	10	125	-	Fig.1	HS6x4P	LW-3	Star Micronics Nomura DS
1022-125	●	10											
1222-125	●	12											
SHA 0823-120	●	8	23	14	14	22	10.5	120	16	Fig.2	HS6x4P	LW-3	Nomura DS
1023-120	●	10											
1223-120	●	12											

* Length of φd1...45mm (All of SHA sleeves)

· Choose sleeves(φd1) to meet with φD dimension of toolholder.

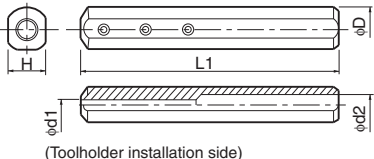
· Machine manufacturers in random order.

●: Std. Item

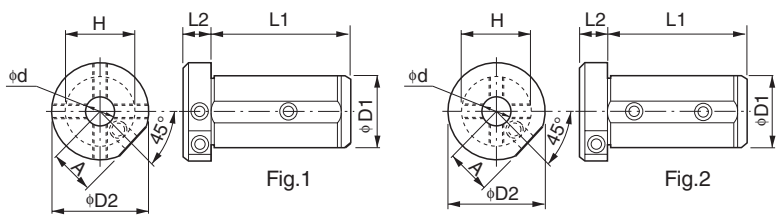
○: Check Availability

Sleeves for Boring Bars

Sleeves for Boring Bars

Shape	Description	Std.	Dimension (mm)					Spare Parts	
			ϕD	$\phi d1$	$\phi d2$	H	L1	Screw	Wrench
	SH 0416-100	●	16	4	5	14	100	HS4X4	LW-2
	0516-100	●		5	6				
	0616-100	●		6	7				
	0716-100	●		7	8				
	SH 0820-120	●	20	8	9	18	120	HS4X4	LW-2
	1020-120	●		10	11				
	1225-150	●	25	12	13	23	150	HS5X5	LW-2.5
	1632-180	●	32	16	18	30	180		
2032-180	●	20		22					

Coolant Sleeve Dimensions



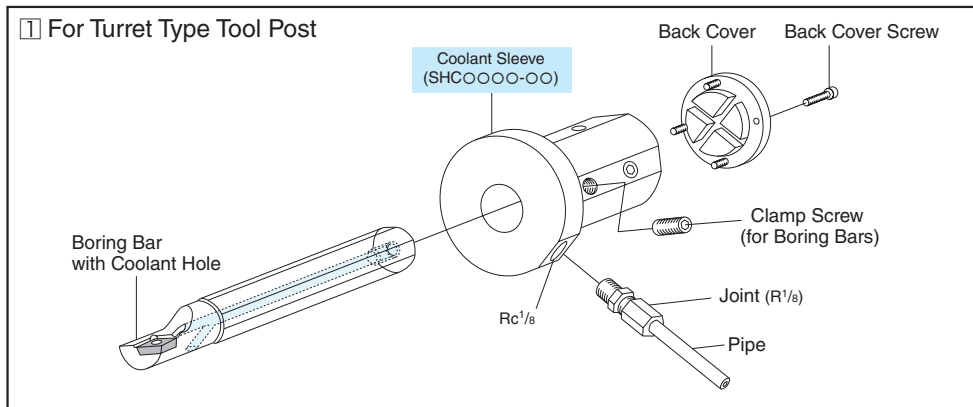
Accessories

- Back Cover / SHL-4...SHC○○○40-70
SHL-5...SHC○○○50-95
- Back Cover Screw
- Shank Clamp Screw

(Note) To stabilize the Toolholder and to prevent coolant leaks, tighten all 4 screws of coolant sleeve securely.

Description	Std.	Dimension (mm)						Drawing	Spare Parts							
		$\phi D1$	$\phi D2$	ϕd	L1	L2	H		A	Front Screw	Wrench	Back Screw	Wrench	Back Cover	Back Cover Screw	Wrench
SHC 0840-70	●	40	56	8	70	16	38	27	Fig.1	HS6X22	LW-3	HS6X14	LW-3	SHL-4	HH3X6	LW-2.5
1040-70	●			10												
1240-70	●			12												
1640-70	●			16												
2040-70	●			20												
2540-70	●			25												
SHC 0850-95	●	50	65	8	95	16	47	30.5	Fig.1	HS6X22	LW-3	HS6X14	LW-3	SHL-5	HH3X12	LW-2.5
1050-95	●			10												
1250-95	●			12												
1650-95	●			16												
2050-95	●			20												
2550-95	●			25												

How to Install

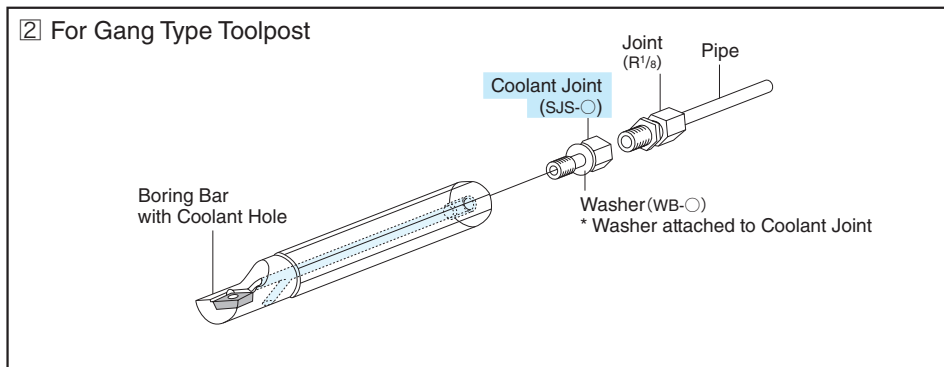


Sleeves for Boring Bars

● Coolant Joint Dimensions *This Coolant Joint is not applicable for Dynamic Bar

	Description	Std.	Dimension (mm)				Thread (Toolholder Side)	Thread (Joint Side)	Spare Parts
			D	L1	L2	H			Washer
	SJS-5	●	15	15	7	13	M5XP0.8	Rc1/8 (PT1/8)	WB-5
	SJS-6	●			9				WB-6
	SJS-8	●			13				WB-8

② For Gang Type Toolpost



● List of toolholders and applicable joints

Toolholder Description	Applicable Coolant Joint
A08-...-○○E	SJS-5
A10-...-○○E	
A12-...-○○E	
A16-...-○○E	SJS-6
A20-...-○○E	
A25-...-○○E	SJS-8
E08-...-○○	
E10-...-○○	SJS-5
E12-...-○○	
E16-...-○○	SJS-6
E20-...-○○	
E16-...-○○	SJS-8
E20-...-○○	

*This Coolant Joint is not applicable for Dynamic Bar

■ SHA / SH / SHC Sleeves and Applicable Toolholders

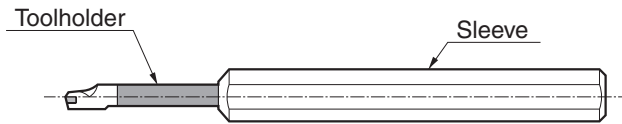
Shank Size (Hole Dia. : mm)	04 (4mm)	05 (5mm)	06 (6mm)	07 (7mm)	08 (8mm)	10 (10mm)	12 (12mm)	16 (16mm)	20 (20mm)	25 (25mm)
Sleeve Description	SH0416-100	SH0516-100	SH0616-100	SH0716-100	SH0820-120	SH1020-120	SH1225-150	SH1632-180	SH2032-180	
					SHA0819-120	SHA1019-120				
					SHA0820-120	SHA1020-120				
					SHA0822-125	SHA1022-125	SHA1222-125			
					SHA0823-120	SHA1023-120	SHA1223-120			
					SHA0825.0-135	SHA1025.0-135	SHA1225.0-135			
					SHA0825.4-120	SHA1025.4-120	SHA1225.4-120			
					SHC0840-70	SHC1040-70	SHC1240-70	SHC1640-70	SHC2040-70	SHC2540-70
					SHC0850-95	SHC1050-95	SHC1250-95	SHC1650-95	SHC2050-95	SHC2550-95
Boring Bar Description	C04-....	C05-....	C06-....	C07-....	A08-....	A10-....	A12-....	A16-....	A20-....	A25-....
					C08-....	C10-....	C12-....	C16-....	C20-....	C25-....
			S06-....		E08-....	E10-....	E12-....	E16-....	E20-....	E25-....
Internal Grooving Toolholder Description					S08-....	S10-....	S12-....	S16-....	S20-....	S25-....
					SIGE%_0808A-EH	SIGE%_1010B-EH	SIGE%_1412C-EH	SIGE%_1616C-EH	SIGE%_2020D-EH	SIGE%_2525E-EH
						SIGE%_1210B-EH	SIGE%_1612C-EH			KIGBA%_3525-16
					SIGE%_0808A-WH	SIGE%_1010B-WH	SIGE%_1412C-WH	KIGM%_2016B-3V	KIGM%_2520B-3V	KIGM%_3225B-4V
						SIGE%_1210B-WH	SIGE%_1612C-WH			KITG%_3525T-16
					SIGER1008B-WH-90	SIGER1210B-WH-90	SIGER1412C-WH-90			
							GIV%_1412-1SE	GIV%_1216-1SS	GIV%_1420-1S	GIV%_2025-1B
							GIV%_1612-1AE	GIV%_2016-1BE	GIV%_1620-1A	GIV%_2025-2B
								GIV%_2016-2BE	GIV%_2520-1CE	GIV%_3225-1CE
								GIV%_1616-1AW	GIV%_2720-2CE	GIV%_3225-2CE
Internal Threading Toolholder Description							SINR0612S-06E	SINR0816S-08E	SIN%_2420S-16	CIN%_3025S-16
								SIN%_1216S-11E	SINR2420S-22	CINR3025S-22
								SIN%_1516S-11		
								SIN%_1616S-16		
								SIN%_2016S-16		

* For **SHA sleeves**, please ref. to page **F84**.
For **SH / SHC sleeves**, please ref. to page **F85**.



C...-AS (Assembly List)

■ C...-AS (Assembly List)



Assembly configuration

Assembly (Discontinued Description)	Toolholder (Discontinued Description)	Alternative Toolholder (Dynamic Bar)	Sleeve Description	Remarks
C04G- SCLCR03-05-AS	C04G- SCLCR03-05	C04G- SCLCR03-05AN	SH0416-100	
SCLCL03-05-AS	SCLCL03-05	SCLCL03-05AN		
C05H- SCLCR03-06-AS	C05H- SCLCR03-06	C05H- SCLCR03-06AN	SH0516-100	
SCLCL03-06-AS	SCLCL03-06	SCLCL03-06AN		
C05H- SWUBR06-06-AS	C05H- SWUBR06-06	C05H- SWUBR06-06AN	SH0516-100	
SWUBL06-06-AS	SWUBL06-06	SWUBL06-06AN		
C06J- SCLCR04-07-AS	C06J- SCLCR04-07	C06J- SCLCR04-07AN	SH0616-100	
SCLCL04-07-AS	SCLCL04-07	SCLCL04-07AN		
C06J- SWUBR06-07-AS	C06J- SWUBR06-07	C06J- SWUBR06-07AN	SH0616-100	
SWUBL06-07-AS	SWUBL06-07	SWUBL06-07AN		
C07K- SCLCR04-08-AS	C07K- SCLCR04-08	C07K- SCLCR04-08AN	SH0716-100	
SCLCL04-08-AS	SCLCL04-08	SCLCL04-08AN		
C07K- SWUBR08-08-AS	C07K- SWUBR08-08	C07K- SWUBR08-08AN	SH0716-100	
SWUBL08-08-AS	SWUBL08-08	SWUBL08-08AN		
C08L- STUPR08-10-AS	C08L- STUPR08-10	E08L- STLPR08-10AN	SH0820-120	
C10N- STUPR09-12-AS	C10N- STUPR09-12	E10N- STLPR09-12AN	SH1020-120	
C10N- STUPR11-12-AS	C10N- STUPR11-12	E10N- STLPR11-12AN		
C12Q- STUPR09-16-AS	C12Q- STUPR09-16	E12Q- STLPR09-16A	SH1225-150	
C12Q- STUPR11-14-AS	C12Q- STUPR11-14	E12Q- STLPR11-14A		
C12Q- STUPR11-16-AS	C12Q- STUPR11-16			
C16X- STUPR11-18-AS	C16X- STUPR11-18	E16X- STLPR11-18A	SH1632-180	
C16X- STUPR11-20-AS	C16X- STUPR11-20			
C20S- STUPR11-25-AS	C20S- STUPR11-25	E20S- STLPR11-22A	SH2032-180	
C20S- STUPR16-25-AS	C20S- STUPR16-25	E20S- STLPR16-25A		

* "AS" indicates an assembly of toolholder and sleeve.

You can purchase the toolholder and sleeve and assemble them to make the corresponding assembly part.

■ Former Parts List (Boring Bar)

Description (Previous Description)	Spare Parts				
	Clamp Screw	Wrench	Shim	Shim Screw	Wrench
S32S-SVJB^β/L 16-40E	SB-40115TR	FT-15	SVN-32	SB-2050TR	FT-6
S40T-SVJB^β/L 16-50E					
S25X-SVPB^β/L 16-34E					
S32S-SVPB^β/L 16-40E					
S25X-SVUB^β/L 16-34E					
S32S-SVUB^β/L 16-40E					
S25X-SVZB^β/L 16-34E					
S32S-SVZB^β/L 16-40E					

·S32S-SVJB^β/L 16-40E and S40T-SVJB^β/L 16-50E have been shifted to A32S-SVJB^β/L 16-40AE and A40T-SVJB^β/L 16-50AE respectively. Ref. to page [F52](#)

·S25X-SVPB^β/L 16-34E and S32S-SVPB^β/L 16-40E have been shifted to A25S-SVPB^β/L 16-31AE and A32S-SVPB^β/L 16-40AE respectively. Ref. to page [F54](#)

·S25X-SVUB^β/L 16-34E and S32S-SVUB^β/L 16-40E have been shifted to A25S-SVUB^β/L 16-34AE and A32S-SVUB^β/L 16-40AE respectively. Ref. to page [F57](#)

·S25X-SVZB^β/L 16-34E and S32S-SVZB^β/L 16-40E have been shifted to A25S-SVZB^β/L 16-34AE and A32S-SVZB^β/L 16-40AE respectively. Ref. to page [F57](#)



Alternative Toolholder Reference Table for Boring Bar

Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Description)				Alternative Toolholder						
Shank type	Insert Shape	Coolant Hole	Description	Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)			
				Coolant Hole	Description	Ref. to Page	Coolant Hole	Description	Ref. to Page	
Excellent Bar	CC..	No	S08X-SCLC%06-10E	Yes	A08X-SCLC%06-10AE	F39	No	S08X-SCLC%06-10A	F39	
			S10H-SCLC%03-05E	No	S10H-SCLC%03-05AE		-	-	-	
			S10H-SCLC%03-06E		S10H-SCLC%03-06AE		-	-	-	
			S10J-SCLC%04-07E		S10H-SCLC%04-07AE		-	-	-	
		S10J-SCLC%04-08E	S10H-SCLC%04-08AE	-	-	-				
		Yes	A08H-SCLC%06-10E	Yes	A08X-SCLC%06-10AE	No	S08X-SCLC%06-10A	F39		
		CP..	No	S10M-SCLP%08-12E	Yes	A10L-SCLP%08-12AE	F41	No	S10L-SCLP%08-12A	F41
				S12M-SCLP%08-14E		A12M-SCLP%08-14AE			S12M-SCLP%08-14A	
	S12M-SCLP%09-16E			A12M-SCLP%09-16AE		S12M-SCLP%09-16A				
	S16Q-SCLP%09-18E			A16Q-SCLP%09-18AE		S16Q-SCLP%09-18A				
	S16R-SCLP%09-20E			A20R-SCLP%09-22AE		S20R-SCLP%09-22A				
	S20X-SCLP%09-25E			A20R-SCLP%09-22AE		S20R-SCLP%09-22A				
	Yes		A10X-SCLP%08-12E	Yes	A10L-SCLP%08-12AE	F41	No	S10L-SCLP%08-12A	F41	
			A12X-SCLP%08-14E		A12M-SCLP%08-14AE			S12M-SCLP%08-14A		
			A12X-SCLP%09-16E		A12M-SCLP%09-16AE			S12M-SCLP%09-16A		
			A16M-SCLP%09-18E		A16Q-SCLP%09-18AE			S16Q-SCLP%09-18A		
			A16M-SCLP%09-20E		A20R-SCLP%09-22AE			S20R-SCLP%09-22A		
			A20Q-SCLP%09-25E		A20R-SCLP%09-22AE			S20R-SCLP%09-22A		
	DC..	No	S10M-SDUC%07-14E	Yes	A10L-SDUC%07-14AE	F43	No	S10L-SDUC%07-14A	F43	
			S12M-SDUC%07-16E		A12M-SDUC%07-16AE			S12M-SDUC%07-16A		
			S16Q-SDUC%07-20E		A16Q-SDUC%07-20AE			S16Q-SDUC%07-20A		
			S16Q-SDUC%11-25E		A16Q-SDUC%11-23AE			S16Q-SDUC%11-23A		
			S20Q-SDUC%11-32E		A20R-SDUC%11-27AE			S20R-SDUC%11-27A		
		No	S10M-SDZC%07-14E	Yes	A10L-SDZC%07-14AE	F45	No	S10L-SDZC%07-14A	F45	
			S12M-SDZC%07-16E		A12M-SDZC%07-16AE			S12M-SDZC%07-16A		
			S16Q-SDZC%07-20E		A16Q-SDZC%07-20AE			S16Q-SDZC%07-20A		
			S16Q-SDZC%11-25E		A16Q-SDZC%11-23AE			S16Q-SDZC%11-23A		
			S20Q-SDZC%11-32E		A20R-SDZC%11-27AE			S20R-SDZC%11-27A		
	TB..	No	S06H-STUB%06-08E	No	S06H-STLB%06-08AE	F49	No	S06H-STLB%06-08A	F49	
	TP..	No	S08K-STUP%08-10E	Yes	A08X-STLP%08-10AE	F49	No	S08X-STLP%08-10A	F49	
			S10M-STUP%09-12E		A10L-STLP%09-12AE			S10L-STLP%09-12A		
			S10M-STUP%11-12E		A10L-STLP%11-12AE			S10L-STLP%11-12A		
			S12M-STUP%09-16E		A12M-STLP%09-16AE			S12M-STLP%09-16A		
			S12M-STUP%11-14E		A12M-STLP%11-14AE			S12M-STLP%11-14A		
			S12M-STUP%11-16E		A16Q-STLP%11-18AE			S16Q-STLP%11-18A		
			S16R-STUP%11-18E		A20R-STLP%11-22AE			S20R-STLP%11-22A		
			S16R-STUP%11-20E		A20R-STLP%16-25AE			-		
			S20X-STUP%11-25E		A25S-STLP%16-27AE			No		S25S-STLP%16-27A
		S25X-STUP%16-32E	A08X-STLP%08-10AE	Yes	A08X-STLP%08-10AE	F49	No	S08X-STLP%08-10A	F49	
		A10X-STUP%09-12E	A10L-STLP%09-12AE		S10L-STLP%09-12A					
		A10X-STUP%11-12E	A10L-STLP%11-12AE		S10L-STLP%11-12A					
		A12X-STUPR09-16E	A12M-STLPR09-16AE		S12M-STLPR09-16A					
		A12X-STUP%11-14E	A12M-STLP%11-14AE		S12M-STLP%11-14A					
		A12X-STUPR11-16E	A12M-STLPR11-14AE		S12M-STLPR11-14A					
		A16M-STUP%11-18E	A16Q-STLP%11-18AE		S16Q-STLP%11-18A					
		A16M-STUP%11-20E	A20R-STLP%11-22AE		S20R-STLP%11-22A					
		A20Q-STUP%11-25E	A20R-STLP%16-25AE		-					
	A20Q-STUP%16-25E	A25S-STLP%16-27AE	No	S25S-STLP%16-27A	F49					
A25R-STUP%16-32E	A20R-SVJB%11-25AE	Yes	A20R-SVJB%11-25AE	F52	No	S20R-SVJB%11-25A	F52			
S20R-SVJB%11-25E	A25S-SVJB%11-30AE		S25S-SVJB%11-30A							
S25S-SVJB%11-30E	A32S-SVJB%16-40AE		S32S-SVJB%16-40A							
S32S-SVJB%16-40EN	A40T-SVJB%16-50AE		S40T-SVJB%16-50A							
S40T-SVJB%16-50EN										

Note) The corresponding replacements may be different from the conventional parts in minimum processing diameter or applicable insert size. Make sure of their specifications by referring to the catalog or other documents.

Alternative Toolholder Reference Table for Boring Bar

Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Description)				Alternative Toolholder					
Shank type	Insert Shape	Coolant Hole	Description	Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)		
				Coolant Hole	Description	Ref. to Page	Coolant Hole	Description	Ref. to Page
Excellent Bar	VB..	No	S12M-SVPB [®] /L11-20E	Yes	A12M-SVPB [®] /L11-18AE	F54	No	S12M-SVPB [®] /L11-18A	F54
			S16Q-SVPB [®] /L11-25E		A16Q-SVPB [®] /L11-22AE			S16Q-SVPB [®] /L11-22A	
			S25X-SVPB [®] /L16-34EN		A25S-SVPB [®] /L16-31AE			S25S-SVPB [®] /L16-31A	
			S32S-SVPB [®] /L16-40EN		A32S-SVPB [®] /L16-40AE			S32S-SVPB [®] /L16-40A	
		No	S16Q-SVUB [®] /L11-20E	Yes	A16Q-SVUB [®] /L11-20AE	F57	No	S16Q-SVUB [®] /L11-20A	F57
			S20R-SVUB [®] /L11-25E		A20R-SVUB [®] /L11-25AE			S20R-SVUB [®] /L11-25A	
			S25X-SVUB [®] /L16-34EN		A25S-SVUB [®] /L16-34AE			S25S-SVUB [®] /L16-34A	
			S32S-SVUB [®] /L16-40EN		A32S-SVUB [®] /L16-40AE			S32S-SVUB [®] /L16-40A	
		No	S16Q-SVZB [®] /L11-20E	Yes	A16Q-SVZB [®] /L11-20AE	F57	No	S16Q-SVZB [®] /L11-20A	F57
			S20R-SVZB [®] /L11-25E		A20R-SVZB [®] /L11-25AE			S20R-SVZB [®] /L11-25A	
			S25X-SVZB [®] /L16-34EN		A25S-SVZB [®] /L16-34AE			S25S-SVZB [®] /L16-34A	
			S32S-SVZB [®] /L16-40EN		A32S-SVZB [®] /L16-40AE			S32S-SVZB [®] /L16-40A	
	VC..	No	S12M-SVJC [®] /L08-16E	Yes	A12M-SVJC [®] /L08-16AE	F52	No	S12M-SVJC [®] /L08-16A	F52
			S16Q-SVJC [®] /L08-20E		A16Q-SVJC [®] /L08-20AE			S16Q-SVJC [®] /L08-20A	
		No	S10M-SVPC [®] /L08-16E	Yes	A10L-SVPC [®] /L08-14AE	F54	No	S10L-SVPC [®] /L08-14A	F54
		No	S12M-SVUC [®] /L08-16E	Yes	A12M-SVUC [®] /L08-16AE	F57	No	S12M-SVUC [®] /L08-16A	F57
	No	S12M-SVZC [®] /L08-16E	Yes	A12M-SVZC [®] /L08-16AE	F57	No	S12M-SVZC [®] /L08-16A	F57	
	VP..	No	S12M-SVJP [®] /L08-16E	Yes	A12M-SVJP [®] /L08-16AE	F52	No	S12M-SVJP [®] /L08-16A	F52
	WB..	No	S08K-SWUB [®] /L08-10E	Yes	A08X-SWUB [®] /L08-10AE	F59	No	S08X-SWUB [®] /L08-10A	F59
			S10M-SWUB [®] /L08-12E		A10L-SWUB [®] /L08-12AE			S10L-SWUB [®] /L08-12A	
			S10H-SWUB [®] /L06-06E	No	S10H-SWUB [®] /L06-06AE			S10H-SWUB [®] /L06-06A	
			S10H-SWUB [®] /L06-07E		S10H-SWUB [®] /L06-07AE			S10H-SWUB [®] /L06-07A	
			S10J-SWUB [®] /L08-08E		S10H-SWUB [®] /L08-08AE			S10H-SWUB [®] /L08-08A	
	WP..	No	S12M-SWUP [®] /L11-14E	Yes	A12M-SWUP [®] /L11-14AE	F59	No	S12M-SWUP [®] /L11-14A	F59
S12M-SWUP [®] /L11-16E			A16Q-SWUP [®] /L11-18AE		S16Q-SWUP [®] /L11-18A				
S16N-SWUP [®] /L11-18E			A16Q-SWUP [®] /L16-18AE		S16Q-SWUP [®] /L16-18A				
S16Q-SWUP [®] /L16-20E			A20R-SWUP [®] /L16-22AE		S16Q-SWUP [®] /L16-18A				
S20R-SWUP [®] /L16-25E		S20R-SWUP [®] /L16-22A							
Steel Bar	CC..	No	S08X-SCLC [®] /L06-10	No	S08X-SCLC [®] /L06-10A	F39	-	-	-
	CP..	No	S10M-SCLP [®] /L08-12	No	S10L-SCLP [®] /L08-12A	F41	-	-	-
			S12M-SCLP [®] /L08-14		S12M-SCLP [®] /L08-14A				
			S12M-SCLP [®] /L09-16		S12M-SCLP [®] /L09-16A				
			S16N-SCLP [®] /L09-18		S16Q-SCLP [®] /L09-18A				
			S16Q-SCLP [®] /L09-20		S20R-SCLP [®] /L09-22A				
			S20R-SCLP [®] /L09-25		S25S-SCLP [®] /L09-27A				
	S25S-SCLP [®] /L09-30								
	DC..	No	S16Q-SDUC [®] /L07-14	No	S16Q-SDUC [®] /L07-14A	F43	-	-	-
			S16Q-SDUC [®] /L07-16		S20R-SDUC [®] /L11-20A				
			S20R-SDUC [®] /L11-20		S16Q-SDUC [®] /L11-23A				
			S25X-SDUC [®] /L11-25						
		No	S16Q-SDZC [®] /L07-14	No	S16Q-SDZC [®] /L07-14A	F45	-	-	-
			S16Q-SDZC [®] /L07-16		S20R-SDZC [®] /L11-20A				
			S20R-SDZC [®] /L11-20		S16Q-SDZC [®] /L11-23A				
			S25X-SDZC [®] /L11-25						
						No	S25S-SDUC [®] /L11-32A	F43	
						No	S25S-SDZC [®] /L11-32A	F45	

Note) The corresponding replacements may be different from the conventional parts in minimum processing diameter or applicable insert size. Make sure of their specifications by referring to the catalog or other documents.



Alternative Toolholder Reference Table for Boring Bar

Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Description)				Alternative Toolholder					
Shank type	Insert Shape	Coolant Hole	Description	Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)		
				Coolant Hole	Description	Ref. to Page	Coolant Hole	Description	Ref. to Page
Steel Bar	TB..	No	S06H-STUB [®] /06-08	No	S06H-STLB [®] /06-08A	F49	-	-	-
	TP..	No	S08K-STUP [®] /08-10	No	S08X-STLP [®] /08-10A	F49	-	-	-
			S10M-STUP [®] /09-12		S10L-STLP [®] /09-12A				
			S12M-STUP [®] /09-16		S12M-STLP [®] /09-16A				
			S16Q-STUP [®] /11-20		S16Q-STLP [®] /11-18A				
			S20R-STUP [®] /11-25		S20R-STLP [®] /11-22A				
			S25X-STUP [®] /16-32		S25S-STLP [®] /16-27A				
	WB..	No	S10H-SWUB [®] /06-06	No	S10H-SWUB [®] /06-06A	F59	-	-	-
			S10H-SWUB [®] /06-06-15		S10H-SWUB [®] /06-07A				
			S10H-SWUB [®] /06-07		S10H-SWUB [®] /08-08A				
			S10J-SWUB [®] /08-08						
			S10J-SWUB [®] /08-08-20						
Carbide Shank Boring Bar	CC..	No	C04G-SCLC [®] /03-05	No	C04G-SCLC [®] /03-05AN	F39	-	-	-
			C05H-SCLC [®] /03-06		C05H-SCLC [®] /03-06AN				
			C06J-SCLC [®] /04-07		C06J-SCLC [®] /04-07AN				
			C07K-SCLC [®] /04-08		C07K-SCLC [®] /04-08AN				
			C08L-SCLC [®] /06-10						
		Yes	E08L-SCLC [®] /06-10	Yes	E08L-SCLC [®] /06-10AN				
	CP..	No	C10N-SCLP [®] /08-12	Yes	E10N-SCLP [®] /08-12AN	F41	-	-	-
			C10N-SCLPR08-12-1/2		E10N-SCLPR08-12AN1/2				
			C10N-SCLPR08-12-2/3		E10N-SCLPR08-12AN2/3				
			C12Q-SCLP [®] /09-16		E12Q-SCLP [®] /09-16A				
			C12Q-SCLPR09-16-1/2		E12Q-SCLPR09-16A-1/2				
			C12Q-SCLPR09-16-2/3		E12Q-SCLPR09-16A-2/3				
			C16X-SCLP [®] /09-20		E16X-SCLP [®] /09-18A				
			C16X-SCLPR09-20-1/2		E16X-SCLPR09-18A-1/2				
			C16X-SCLPR09-20-2/3		E16X-SCLPR09-18A-2/3				
			C20S-SCLP [®] /09-25		E20S-SCLP [®] /09-22A				
		C20S-SCLPR09-25-1/2	E20S-SCLPR09-22A-1/2						
		C20S-SCLPR09-25-2/3	E20S-SCLPR09-22A-2/3						
Yes	E10N-SCLP [®] /08-12	Yes	E10N-SCLP [®] /08-12AN	F41	-	-	-		
	E12Q-SCLP [®] /09-16		E12Q-SCLP [®] /09-16A						
	E16X-SCLP [®] /09-20		E16X-SCLP [®] /09-18A						
	E20S-SCLP [®] /09-25		E20S-SCLP [®] /09-22A						
DC..	No	C10N-SDUC [®] /07-14	Yes	E10N-SDUC [®] /07-14A	F43	-	-	-	
		C12Q-SDUC [®] /07-16		E12Q-SDUC [®] /07-16A					
		C12Q-SDUC [®] /11-20		E16X-SDUC [®] /11-23A					
		C16X-SDUC [®] /11-25		E20S-SDUC [®] /11-27A					
		C20S-SDUC [®] /11-32							
TB..	No	C10L-STUB [®] /06-08	No	C06J-STLB [®] /06-08AN					
TP..	No	C08L-STUP [®] /08-10	Yes	E08L-STLP [®] /08-10AN	F49	-	-	-	
		C10N-STUP [®] /09-12		E10N-STLP [®] /09-12AN					
		C10N-STUPR09-12-1/2		E10N-STLPR09-12AN1/2					
		C10N-STUPR09-12-2/3		E10N-STLPR09-12AN2/3					
		C10N-STUP [®] /11-12		E10N-STLP [®] /11-12AN					
		C10N-STUPR11-12-1/2		E10N-STLPR11-12AN1/2					
		C10N-STUPR11-12-2/3		E10N-STLPR11-12AN2/3					
		C12Q-STUP [®] /09-16		E12Q-STLP [®] /09-16A					
		C12Q-STUPR09-16-1/2		E12Q-STLPR09-16A-1/2					
		C12Q-STUPR09-16-2/3		E12Q-STLPR09-16A-2/3					
		C12Q-STUP [®] /11-14		E12Q-STLP [®] /11-14A					
		C12Q-STUPR11-14-1/2		E12Q-STLPR11-14A-1/2					
		C12Q-STUPR11-14-2/3		E12Q-STLPR11-14A-2/3					
		C12Q-STUP [®] /11-16		E12Q-STLP [®] /11-14A					
		C12Q-STUPR11-16-1/2		E12Q-STLPR11-14A-1/2					
		C12Q-STUPR11-16-2/3		E12Q-STLPR11-14A-2/3					

Note) The corresponding replacements may be different from the conventional parts in minimum processing diameter or applicable insert size. Make sure of their specifications by referring to the catalog or other documents.

Alternative Toolholder Reference Table for Boring Bar

Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Description)				Alternative Toolholder						
Shank type	Insert Shape	Coolant Hole	Description	Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)			
				Coolant Hole	Description	Ref. to Page	Coolant Hole	Description	Ref. to Page	
Carbide Shank Boring Bar	TP..	No	C16X-STUP [®] /11-18	Yes	E16X-STLP [®] /11-18A	F49	-	-	-	
			C16X-STUPR11-18-1/2		E16X-STLPR11-18A-1/2					
			C16X-STUPR11-18-2/3		E16X-STLPR11-18A-2/3					
			C16X-STUP [®] /11-20		E16X-STLP [®] /11-18A					
			C16X-STUPR11-20-1/2		E16X-STLPR11-18A-1/2					
			C16X-STUPR11-20-2/3		E16X-STLPR11-18A-2/3					
			C20S-STUP [®] /11-25		E20S-STLP [®] /11-22A					
			C20S-STUPR11-25-1/2		E20S-STLPR11-22A-1/2					
			C20S-STUPR11-25-2/3		E20S-STLPR11-22A-2/3					
			C20S-STUP [®] /16-25		E20S-STLP [®] /16-25A					
			C20S-STUPR16-25-1/2		E20S-STLPR16-25A-1/2					
		C20S-STUPR16-25-2/3	E20S-STLPR16-25A-2/3							
		Yes	E08L-STUP [®] /08-10	Yes	E08L-STLP [®] /08-10AN	F49	-	-	-	
			E10N-STUP [®] /09-12		E10N-STLP [®] /09-12AN					
			E10N-STUP [®] /11-12		E10N-STLP [®] /11-12AN					
			E12Q-STUP [®] /09-16		E12Q-STLP [®] /09-16A					
			E12Q-STUP [®] /11-14		E12Q-STLP [®] /11-14A					
			E12Q-STUP [®] /11-16		E16X-STLP [®] /11-18A					
			E16X-STUP [®] /11-18		E20S-STLPR11-22A					
			E16X-STUP [®] /11-20		E20S-STLPR16-25A					
			E20S-STUPR11-25							
	E20S-STUPR16-25									
	WB..	No	No	C05H-SWUB [®] /06-06	No	C05H-SWUB [®] /06-06AN	F59	-	-	-
				C06J-SWUB [®] /06-07		C06J-SWUB [®] /06-07AN				
				C07K-SWUB [®] /08-08		C07K-SWUB [®] /08-08AN				
			Yes	C08L-SWUB [®] /08-10	E08L-SWUB [®] /08-10AN					
				C10N-SWUB [®] /08-12	E10N-SWUB [®] /08-12AN					
				C10N-SWUBR08-12-1/2	E10N-SWUBR08-12AN1/2					
				C10N-SWUBR08-12-2/3	E10N-SWUBR08-12AN2/3					
	WP..	No	Yes	C12Q-SWUP [®] /11-14	E12Q-SWUP [®] /11-14A	F59	-	-	-	
				C12Q-SWUPR11-14-1/2	E12Q-SWUPR11-14A-1/2					
				C12Q-SWUPR11-14-2/3	E12Q-SWUPR11-14A-2/3					
				C12Q-SWUP [®] /11-16	E12Q-SWUP [®] /11-14A					
				C12Q-SWUPR11-16-1/2	E12Q-SWUPR11-14A-1/2					
				C12Q-SWUPR11-16-2/3	E12Q-SWUPR11-14A-2/3					
				C16X-SWUP [®] /11-18	E16X-SWUP [®] /11-18A					
				C16X-SWUPR11-18-1/2	E16X-SWUPR11-18A-1/2					
				C16X-SWUPR11-18-2/3	E16X-SWUPR11-18A-2/3					
				C16X-SWUP [®] /16-20	E16X-SWUP [®] /16-18A					
				C16X-SWUPR16-20-1/2	E16X-SWUPR16-18A-1/2					
				C16X-SWUPR16-20-2/3	E16X-SWUPR16-18A-2/3					
				C20S-SWUP [®] /16-25	E20S-SWUP [®] /16-22A					
C20S-SWUPR16-25-1/2				E20S-SWUPR16-22A-1/2						
C20S-SWUPR16-25-2/3				E20S-SWUPR16-22A-2/3						

Note) The corresponding replacements may be different from the conventional parts in minimum processing diameter or applicable insert size. Make sure of their specifications by referring to the catalog or other documents.



System Tip-Bars Recommended Cutting Conditions

◆ Recommended Cutting Conditions (VNB-S)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)						VNB01-S type VNB015-S type	VNB02-S type VNB04-S type				Remarks
	MEGA	PVD	Carbide	CBN	PCD			ap (mm), f (mm/rev)				
	PR1225	PR930	KW10	KBN510	KPD001	KPD010	ap		f			
	30~120	30~100					~0.1	~0.01	~0.2	~0.03		
Carbon Steel / Alloy Steel	★	☆					~0.1	~0.01	~0.2	~0.03	Coolant	
Stainless Steel	★	☆					~0.1	~0.01	~0.2	~0.02		

★ :1st Recommendation ☆ :2nd Recommendation

◆ Recommended Cutting Conditions (VNB / VNB-NB / VNB-T)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)						VNB02 type		VNB03 type		VNB04 VNB04 type		VNB05 VNB06 VNB07 VNB05 type		Remarks
	MEGA	PVD	Carbide	CBN	PCD		ap (mm), f (mm/rev)								
	PR1225	PR930	KW10	KBN510	KPD001	KPD010	ap		f		ap		f		
	30~120	30~100					~0.3	~0.03	~0.4	~0.04	~0.45	~0.07	~0.5	~0.1	
Carbon Steel / Alloy Steel	★	☆					~0.3	~0.03	~0.4	~0.04	~0.45	~0.07	~0.5	~0.1	Coolant
Stainless Steel	★	☆					~0.3	~0.02	~0.4	~0.03	~0.45	~0.05	~0.5	~0.07	
Non-ferrous Metals			☆		★	☆	~0.3	~0.05	~0.4	~0.06	~0.45	~0.1	~0.5	~0.15	

★ :1st Recommendation ☆ :2nd Recommendation

◆ Recommended Cutting Conditions (VNBX-S)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)							VNBX01-S type VNBX015-S type		VNBX02-S type VNBX04-S type		Remarks
	PVD Coated Carbide			Carbide	CBN	PCD		ap (mm), f (mm/rev)				
	PR630	PR915	PR930	KW10	KBN510	KPD001	KPD010	ap		f		
			★					~0.1	~0.01	~0.2	~0.03	
Carbon Steel / Alloy Steel			★				~0.1	~0.01	~0.2	~0.03	Coolant	
Stainless Steel			★				~0.1	~0.01	~0.2	~0.02		

★ :1st Recommendation

F



Boring

Recommended Cutting Conditions

Recommended Cutting Conditions - Boring (Positive Insert: Cutting Dia. under 10mm) [ap indicates radius]

ISO Classification	Workpiece Material	Hardness	Cutting Range	Applications	Recommended Chipbreaker	Recommended Insert Grades	Corner-R (r _e)	Lower Limit - Recommendation - Upper Limit		
								Vc (m/min)	ap (mm)	f (mm/rev)
* P	Low-carbon Steel Low-carbon Alloy	HB ≤ 300	Finishing (Solid Type)	Continuous Interruption	EZB-F EZB-H	PR1225	0.05 0.15	30 - 70 - 110 30 - 60 - 90	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2	0.01 - 0.04 - 0.07 0.03 - 0.07 - 0.1
			Finishing	Continuous Interruption	F	PR1425	0.1 0.2	40 - 80 - 120 40 - 70 - 100	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing-Medium	Continuous Interruption	CF	PR1425	0.1 0.2	40 - 80 - 120 40 - 70 - 100	0.05 - 0.15 - 0.25 0.05 - 0.15 - 0.25	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
	Medium-carbon Steel Medium-carbon Alloy	HB ≤ 300	Finishing (Solid Type)	Continuous Interruption	EZB-F EZB-H	PR1225	0.05 0.15	30 - 70 - 110 30 - 60 - 90	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2	0.01 - 0.04 - 0.07 0.03 - 0.07 - 0.1
			Finishing	Continuous Interruption	F	PR1425	0.1 0.2	40 - 80 - 120 40 - 70 - 120	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing-Medium	Continuous Interruption	CF	PR1425	0.1 0.2	40 - 80 - 120 40 - 70 - 100	0.05 - 0.15 - 0.25 0.05 - 0.15 - 0.25	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
	High-carbon Alloy	HB ≤ 280	Finishing (Solid Type)	Continuous Interruption	EZB-F EZB-H	PR1225	0.05 0.15	30 - 70 - 110 30 - 60 - 90	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2	0.01 - 0.04 - 0.07 0.03 - 0.07 - 0.1
			Finishing	Continuous Interruption	F	PR1425	0.1 0.2	40 - 80 - 120 40 - 70 - 100	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing-Medium	Continuous Interruption	CF	PR1425	0.1 0.2	40 - 80 - 120 40 - 70 - 100	0.05 - 0.15 - 0.25 0.05 - 0.15 - 0.25	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
M	Stainless Steel	HB ≤ 220	Finishing (Solid Type)	Continuous Interruption	EZB-F EZB-H	PR1225	0.05 0.15	30 - 60 - 80 30 - 60 - 80	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2	0.01 - 0.03 - 0.05 0.02 - 0.05 - 0.07
			Finishing	Continuous Interruption	F	PR1225 PR1535	0.1 0.2	30 - 60 - 80 30 - 60 - 80	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing-Medium	Continuous Interruption	CF	PR1225 PR1535	0.1 0.2	30 - 60 - 80 30 - 60 - 80	0.05 - 0.15 - 0.25 0.05 - 0.15 - 0.25	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
	Stainless Steel	HB ≤ 300	Finishing (Solid Type)	Continuous Interruption	EZB-F EZB-H	PR1225	0.05 0.15	30 - 60 - 80 30 - 60 - 80	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2	0.01 - 0.03 - 0.05 0.02 - 0.05 - 0.07
			Finishing	Continuous Interruption	F	PR1225 PR1535	0.1 0.2	30 - 60 - 80 30 - 60 - 80	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing-Medium	Continuous Interruption	CF	PR1225 PR1535	0.1 0.2	30 - 60 - 80 30 - 60 - 80	0.05 - 0.15 - 0.25 0.05 - 0.15 - 0.25	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
K	Gray Cast Iron	HB ≤ 250	Finishing (Solid Type)	Continuous Interruption	(VNB) (VNB-NB)	KW10	0.03 0.2	30 - 60 - 100 30 - 60 - 100	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing	Continuous Interruption	F	KW10	0.1 0.2	30 - 60 - 100 30 - 60 - 80	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing-Medium	Continuous Interruption	Without Chipbreaker	KW10	0.2 0.4	30 - 60 - 100 30 - 60 - 80	0.1 - 0.2 - 0.3 0.1 - 0.2 - 0.3	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
	Nodular Cast Iron	HB ≤ 270	Finishing (Solid Type)	Continuous Interruption	(VNB) (VNB-NB)	KW10	0.03 0.2	30 - 60 - 80 30 - 60 - 80	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing	Continuous Interruption	F,U	KW10	0.1 0.2	30 - 60 - 80 30 - 60 - 80	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing-Medium	Continuous Interruption	Without Chipbreaker	KW10	0.2 0.4	30 - 60 - 100 30 - 60 - 80	0.1 - 0.2 - 0.3 0.1 - 0.2 - 0.3	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
N	Non-ferrous Metals Copper Alloy Aluminum Aluminum Alloys	HB ≤ 100	High Speed Finishing (Rainbow Surface Gloss)	Continuous Interruption	Without Chipbreaker	KPD001	0.05	150 - 200 - 300	0.05 - 0.1 - 0.3	0.05 - 0.1 - 0.15
			Finishing (Long Tool Life)	Continuous Interruption	F,U	PDL025	0.1 0.2	100 - 150 - 200 100 - 150 - 200	0.05 - 0.3 - 0.5 0.05 - 0.3 - 0.5	0.03 - 0.1 - 0.2 0.03 - 0.1 - 0.2
			Finishing	Continuous Interruption	F,U	KW10	0.1 0.2	100 - 150 - 200 100 - 150 - 200	0.05 - 0.3 - 0.5 0.05 - 0.3 - 0.5	0.03 - 0.1 - 0.2 0.03 - 0.1 - 0.2
S	Titanium Alloys	HB ≤ 400	Precision Finishing (Rainbow Surface Gloss)	Continuous Interruption	Without Chipbreaker	KPD001	0.1 0.2	100 - 120 - 150 70 - 100 - 120	0.05 - 0.1 - 0.3 0.05 - 0.1 - 0.3	0.03 - 0.07 - 0.1 0.03 - 0.07 - 0.1
			Finishing	Continuous Interruption	F,U	KW10	0.1 0.2	20 - 40 - 60 20 - 40 - 60	0.05 - 0.2 - 0.5 0.05 - 0.2 - 0.5	0.03 - 0.1 - 0.2 0.03 - 0.1 - 0.2
	Heat-resistant Alloys	HB ≤ 350	Finishing (Solid Type)	Continuous Interruption	(VNB)	KW10	0.2 0.2	10 - 30 - 50 10 - 30 - 50	0.05 - 0.1 - 0.3 0.05 - 0.1 - 0.3	0.03 - 0.05 - 0.1 0.03 - 0.05 - 0.08
			Finishing	Continuous Interruption	F,U	KW10	0.2 0.2	10 - 30 - 50 10 - 30 - 50	0.05 - 0.2 - 0.4 0.05 - 0.2 - 0.4	0.03 - 0.05 - 0.1 0.03 - 0.05 - 0.1
H	Hardened Steel Hard Materials	40-50 HRC	Finishing	Continuous Interruption	(VNB)	PR930	0.2 0.2	30 - 50 - 70 30 - 50 - 70	0.05 - 0.1 - 0.4 0.05 - 0.1 - 0.2	0.01 - 0.02 - 0.05 0.01 - 0.02 - 0.03
		45-68 HRC	Finishing	Continuous Interruption	ME MES	KBN05M	0.2 0.4	60 - 100 - 140 60 - 80 - 120	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2	0.02 - 0.05 - 0.1 0.02 - 0.05 - 0.1

* Please use it with PR1005 set to Vc=150m/min or below, for machining of free-cutting steel such as small size SUM. For ap and f, refer to specs for low carbon steels.



Boring

Recommended Cutting Conditions

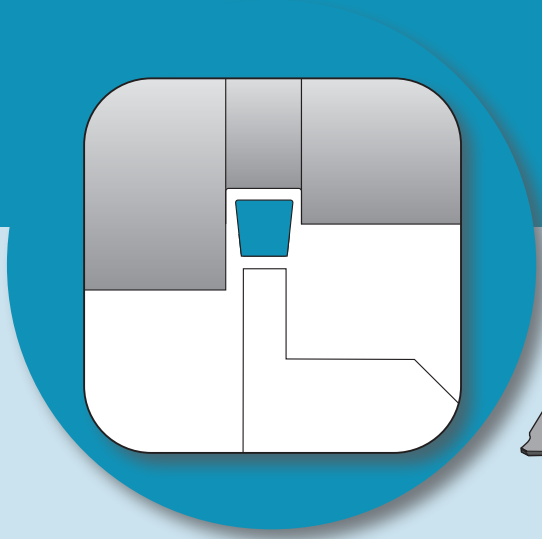
Recommended Cutting Conditions - Boring (Positive Insert: Cutting Dia. over 10mm) [ap indicates radius]

ISO Classification	Workpiece Material	Hardness	Cutting Range	Applications	Recommended Chipbreaker	Recommended Insert Grades	Corner-R (r _c)	Lower Limit - Recommendation - Upper Limit		
								V _c (m/min)	ap (mm)	f (mm/rev)
* P	Low-carbon Steel Low-carbon Alloy	HB ≤ 300	Precision Finishing	Continuous Interruption	F,U	TN620 PR1425	0.1 0.2	250 - 300 - 350 120 - 170 - 220	0.05 - 0.3 - 0.5 0.05 - 0.3 - 0.5	0.03 - 0.1 - 0.15 0.03 - 0.1 - 0.15
			Finishing	Continuous Interruption	XP	PV710 CA525	0.4 0.4	200 - 250 - 300 150 - 200 - 250	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Finishing-Medium	Continuous Interruption	XQ	PV710 CA525	0.4 0.4	150 - 200 - 250 100 - 150 - 200	0.5 - 1.0 - 2.0 0.5 - 1.0 - 1.5	0.1 - 0.15 - 0.25 0.1 - 0.15 - 0.2
			Medium	Continuous Interruption	Standard	PV720 CA525	0.8 0.8	100 - 150 - 200 80 - 120 - 150	1.0 - 1.5 - 2.5 1.0 - 1.5 - 2.0	0.1 - 0.15 - 0.3 0.1 - 0.15 - 0.2
	Medium-carbon Steel Medium-carbon Alloy	HB ≤ 300	Precision Finishing	Continuous Interruption	F,U	TN620 PR1425	0.2 0.4	150 - 200 - 250 120 - 140 - 170	0.05 - 0.3 - 0.5 0.05 - 0.3 - 0.5	0.03 - 0.1 - 0.15 0.03 - 0.1 - 0.15
			Finishing	Continuous Interruption	PP	PV710 CA525	0.4 0.4	150 - 200 - 250 120 - 180 - 200	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Finishing-Medium	Continuous Interruption	HQ	PV710 CA525	0.4 0.4	120 - 180 - 220 100 - 150 - 200	0.5 - 1.0 - 2.0 0.5 - 1.0 - 1.5	0.1 - 0.15 - 0.25 0.1 - 0.15 - 0.2
			Medium	Continuous Interruption	Standard	PV720 CA525	0.8 0.8	100 - 150 - 200 80 - 120 - 150	1.0 - 1.5 - 2.5 1.0 - 1.5 - 2.0	0.1 - 0.15 - 0.3 0.1 - 0.15 - 0.2
	High-carbon Alloy	HB ≤ 280	Precision Finishing	Continuous Interruption	F,U	TN620 PR1425	0.2 0.4	120 - 150 - 180 110 - 130 - 160	0.05 - 0.3 - 0.5 0.05 - 0.3 - 0.5	0.03 - 0.1 - 0.15 0.03 - 0.1 - 0.15
			Finishing	Continuous Interruption	PP	PV710 CA525	0.4 0.4	120 - 150 - 180 100 - 120 - 150	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Finishing-Medium	Continuous Interruption	HQ	PV710 CA525	0.4 0.4	120 - 150 - 180 100 - 120 - 150	0.5 - 1.0 - 2.0 0.5 - 1.0 - 1.5	0.1 - 0.15 - 0.25 0.1 - 0.15 - 0.2
			Medium	Continuous Interruption	Standard	CA515 CA525	0.8 0.8	100 - 120 - 150 80 - 100 - 120	1.0 - 1.5 - 2.5 1.0 - 1.5 - 2.0	0.1 - 0.15 - 0.3 0.1 - 0.15 - 0.2
M	Stainless Steel	HB ≤ 220	Finishing	Continuous Interruption	MQ	CA6525 PR1535	0.4 0.8	120 - 150 - 180 100 - 120 - 150	0.2 - 0.5 - 0.8 0.2 - 0.5 - 0.8	0.05 - 0.08 - 0.1 0.05 - 0.08 - 0.1
			Medium	Continuous Interruption	Standard	CA6525 PR1535	0.4 0.8	120 - 150 - 180 100 - 120 - 150	0.5 - 1.0 - 1.5 0.5 - 1.0 - 1.5	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
	Stainless Steel	HB ≤ 300	Finishing	Continuous Interruption	MQ	CA6525 PR1535	0.4 0.8	80 - 100 - 120 60 - 80 - 100	0.2 - 0.7 - 1.0 0.2 - 0.7 - 1.0	0.05 - 0.1 - 0.15 0.05 - 0.1 - 0.15
			Medium	Continuous Interruption	Standard	CA6525 PR1535	0.4 0.8	80 - 100 - 120 60 - 80 - 100	0.5 - 1.0 - 1.5 0.5 - 1.0 - 1.5	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
K	Gray Cast Iron	HB ≤ 250	High Speed Finishing	Continuous Interruption	Without Chipbreaker	KBN475 PT600M	0.4 0.8	400 - 500 - 600 200 - 250 - 350	0.05 - 0.2 - 0.5 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.15 0.05 - 0.1 - 0.15
			Finishing (Gloss Oriented)	Continuous Interruption	Standard	PV7005 TN620	0.8 0.8	200 - 250 - 300 120 - 180 - 230	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Finishing	Continuous Interruption	Standard	CA4505 CA4515	0.4 0.8	150 - 180 - 200 100 - 150 - 180	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Medium	Continuous Interruption	Standard	CA4505 CA4515	0.8 0.8	100 - 150 - 200 80 - 120 - 150	0.5 - 1.0 - 2.0 0.5 - 1.0 - 2.0	0.1 - 0.15 - 0.2 0.05 - 0.1 - 0.15
	Nodular Cast Iron	HB ≤ 270	High Speed Finishing	Continuous Interruption	Without Chipbreaker	KBN60M PT600M	0.4 0.8	200 - 300 - 400 150 - 200 - 250	0.05 - 0.2 - 0.5 0.2 - 0.5 - 1.0	0.03 - 0.05 - 0.1 0.05 - 0.1 - 0.15
			Finishing (Gloss Oriented)	Continuous Interruption	Standard	PV7005 TN620	0.8 0.8	150 - 200 - 250 120 - 150 - 200	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Finishing	Continuous Interruption	Standard	CA4505 CA4515	0.4 0.8	120 - 150 - 180 100 - 120 - 150	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Medium	Continuous Interruption	Standard	CA4505 CA4515	0.8 0.8	100 - 120 - 150 80 - 100 - 120	0.5 - 1.0 - 2.0 0.5 - 1.0 - 2.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.15
N	Non-ferrous Metals Copper Alloy Aluminum Aluminum Alloys	HB ≤ 100	High Speed Finishing (Rainbow Surface Gloss)	Continuous	Without Chipbreaker	KPD001	0.2	200 - 400 - 1,000	0.05 - 0.1 - 0.3	0.05 - 0.1 - 0.15
			Finishing (Long Tool Life)	Continuous Interruption	F,U	PDL025	0.4 0.4	100 - 200 - 400 100 - 200 - 400	0.05 - 0.5 - 1.0 0.05 - 0.5 - 1.0	0.03 - 0.1 - 0.2 0.03 - 0.1 - 0.2
			Finishing	Continuous Interruption	F,U	KW10	0.4 0.4	100 - 200 - 400 100 - 200 - 400	0.05 - 0.5 - 1.0 0.05 - 0.5 - 1.0	0.03 - 0.1 - 0.2 0.03 - 0.1 - 0.2
S	Titanium Alloys	HB ≤ 400	Precision Finishing (Rainbow Surface Gloss)	Continuous Interruption	Without Chipbreaker	KPD001	0.2 0.4	100 - 120 - 150 70 - 100 - 120	0.05 - 0.1 - 0.3 0.05 - 0.1 - 0.3	0.03 - 0.07 - 0.1 0.03 - 0.07 - 0.1
			Finishing	Continuous Interruption	F,U	KW10	0.2 0.4	30 - 50 - 70 30 - 50 - 70	0.05 - 0.5 - 1.0 0.05 - 0.5 - 1.0	0.03 - 0.1 - 0.2 0.03 - 0.1 - 0.2
	Heat-resistant Alloys	HB ≤ 350	Finishing	Continuous Interruption	F,U	KW10	0.4 0.4	10 - 30 - 50 10 - 30 - 50	0.05 - 0.5 - 1.0 0.05 - 0.5 - 1.0	0.03 - 0.1 - 0.2 0.03 - 0.1 - 0.2
			Finishing	Continuous Interruption	MQ	PR1310	0.4 0.8	40 - 60 - 80 40 - 60 - 80	0.1 - 0.3 - 0.5 0.1 - 0.3 - 0.5	0.03 - 0.05 - 0.1 0.03 - 0.05 - 0.1
H	Hardened Steel	40~50 HRC	Finishing	Continuous Interruption	HQ Standard	CA515	0.8 0.8	60 - 80 - 100 30 - 50 - 70	0.05 - 0.3 - 0.5 0.05 - 0.3 - 0.5	0.05 - 0.08 - 0.1 0.05 - 0.08 - 0.1
			Finishing	Continuous Interruption	ME MET	KBN05M	0.4 0.8	100 - 140 - 180 90 - 120 - 160	0.1 - 0.2 - 0.3 0.1 - 0.2 - 0.3	0.02 - 0.07 - 0.1 0.02 - 0.07 - 0.1
	Hard Materials	45~68 HRC	Medium	Continuous	Without Chipbreaker (Negative)	KBN900	0.8	60 - 80 - 100	0.3 - 0.7 - 1.0	0.03 - 0.1 - 0.15

* When machining free-cutting steel such as SUM, please use PR1005 for V_c=200m/min or under and use PV720 / CA515, etc.

Grooving

G1~G108



G

External Grooving

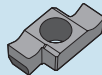
G2~G40



Summary of External Grooving	G2
KGBA / KGBAS	G9
KGB / KGBS → Will be switched to KGBA / KGBAS	G11
KGBF-F	G12
KTGF-F / KTGF	G14
S...KTGF	Sleeve Holder G15
KTG → Will be switched to KGBA	G16
KGD (Integral Type for Automatic Lathe)	G21
KGD (Integral Type)	G22
KGD-S (0° Separate Type)	G23
KGDS-S (90° Separate Type)	G24
KGM (For automatic lathe)	G34
KGM-T	G35
KGMM / KGMS	G36
KGMU	G37
KGH / KGHS	G38
KGA	G39
KGMW (For Aluminum Wheel)	G40

Internal Grooving

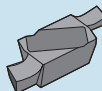
G41~G63



Summary of Internal Grooving	G41
EZG	EZ Bars G43
VNG	System Tip-Bars G45
HPG	2-Edge Tip-Bars G46
PSG-S → Will be switched to EZG	Tip-Bars G46
SIGE-EH / SIGE-WH / SIGE-WH-90	G49
GIV / GIV-E / GIV-W	G54
KIGBA	G56
KITG → Will be switched to KIGBA	G57
KIGM-V	G60
KIGH	G61
KIGM-8 / KIGMU-8	G62
KGIA	G63

Face Grooving

G64~G100



Summary of Face Grooving	G64
EZFG	G68
VNFG	System Tip-Bars G70
HPFG	2-Edge Tip-Bars G71
PSFG-S → Will be switched to EZFG	Tip-Bars G71
TWFG / TWFGT	Twin-Bars G72
KGDF (0° Separate Type)	G78
KGDF-Z (Integral Type)	G82
KGDF (90° Separate Type)	G83
GFVS-AA / GFVT-AA	G88
GFV	G90
GFVS / GFVT	G92
KFMS	G96
KFMS-8	G98
KFTB-S	G99
GIFV (Boring Bar Type)	G100

Technical Information

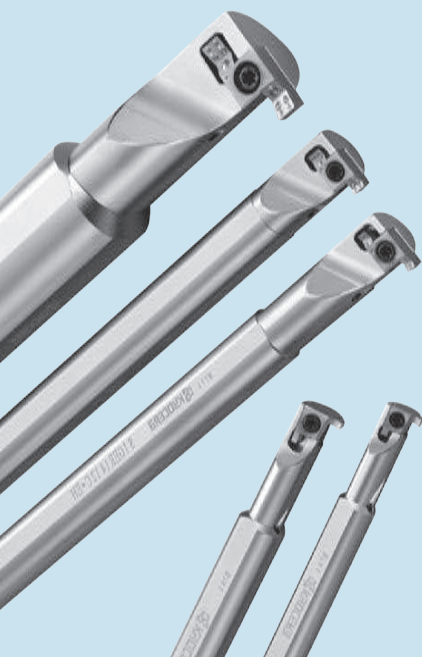
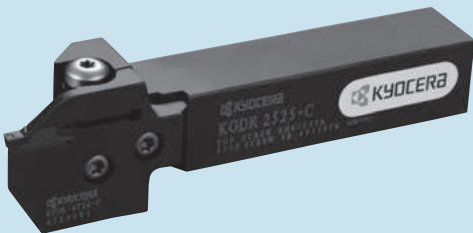
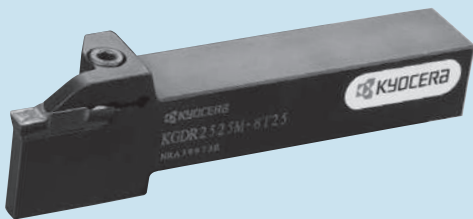
G101~G108



Recommended Cutting Conditions	G101
Guide for Grooving	G106

Alternative Toolholder Reference Table for Grooving Toolholder

G108



Summary of External Grooving

■ KGD Grooving (External Grooving & Turning) (G17~G29)

• Integral Type

Type	KGD
Edge Width (mm)	2.0~8.0
Grooving Depth (mm)	6~30
Ref. to Page	G22

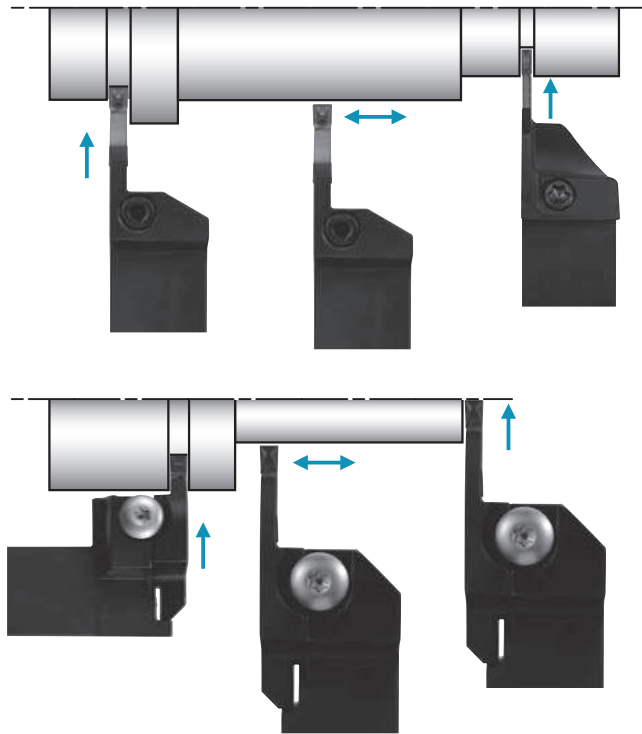
• Integral Type for Automatic Lathe

Type	KGD
Edge Width (mm)	2.0~4.0
Grooving Depth (mm)	10~21
Ref. to Page	G21

• Separate Type

Type	*KGD-S
Edge Width (mm)	3.0
Grooving Depth (mm)	10
Ref. to Page	G24

* The separate type toolholders can accept all the blades if their hand is matching.

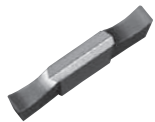


• Separate Type

Type	*KGD-S
Edge Width (mm)	2.0~5.0
Grooving Depth (mm)	10~25
Ref. to Page	G23

* The separate type toolholders can accept all the blades if their hand is matching.

Low Cutting Force
GS



Low Feed
GL



General purpose
GM



High Feed
PH



Copying
CM



G

Grooving

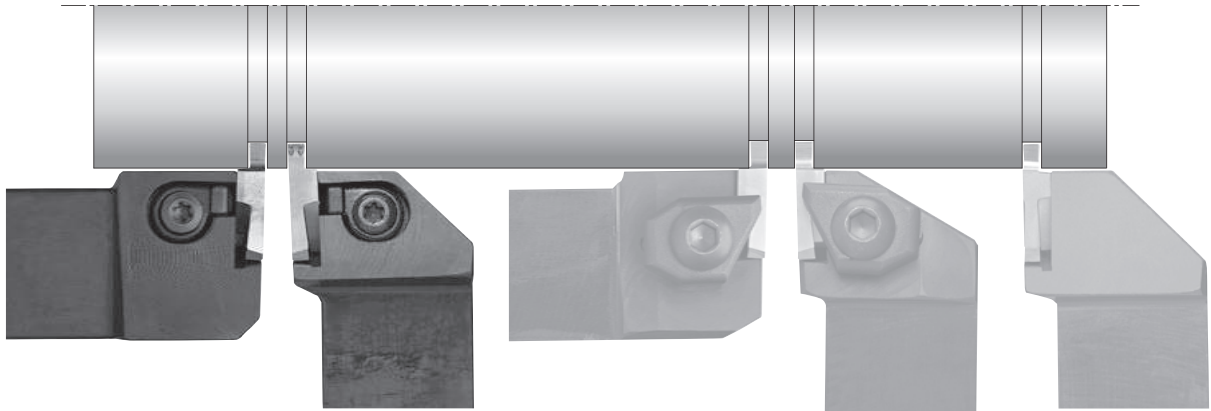
External

Internal

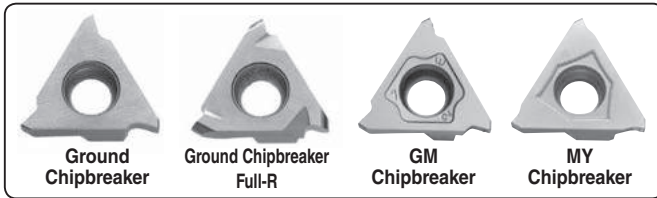
Face

External Grooving (G6~G16, G38, G39)

Shallow Grooving (Grooving Depth: ~5mm)



Type	KGBAS	KGBA	KGBS	KGB	KTG
Edge Width (mm)	0.33~4.8	0.33~4.8	0.5~4.8	0.5~4.8	0.75~4.5
Grooving Depth (mm)	0.8~5.0	0.8~5.0	1.0~5.0	1.0~5.0	2.0~5.0
Ref. to Page	G9	G9	G11	G11	G16

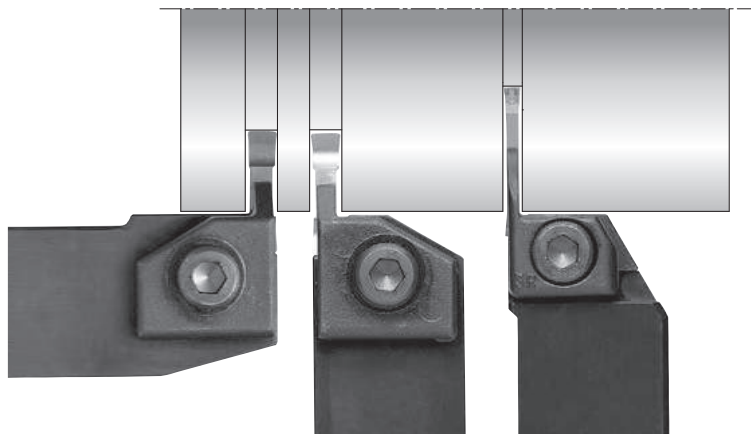


Edge Shape	General (Square)	Full-R (Round)	GM Chipbreaker	MY Chipbreaker

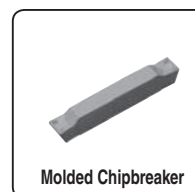
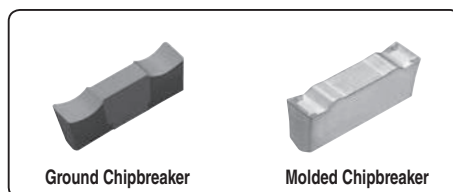
* These shallow groove types of the previous system will be switched to the system on the left.

KGBS → **KGBAS**
KGB → **KGBA**
KTG → **KGBA**

Deep Grooving (Grooving Depth: ~25mm)



Type	KGHS	KGH	KGA
Edge Width (mm)	4.0~8.0	4.0~12.0	3.0~5.0
Grooving Depth (mm)	13	13~17	20~25
Ref. to Page	G38	G38	G39

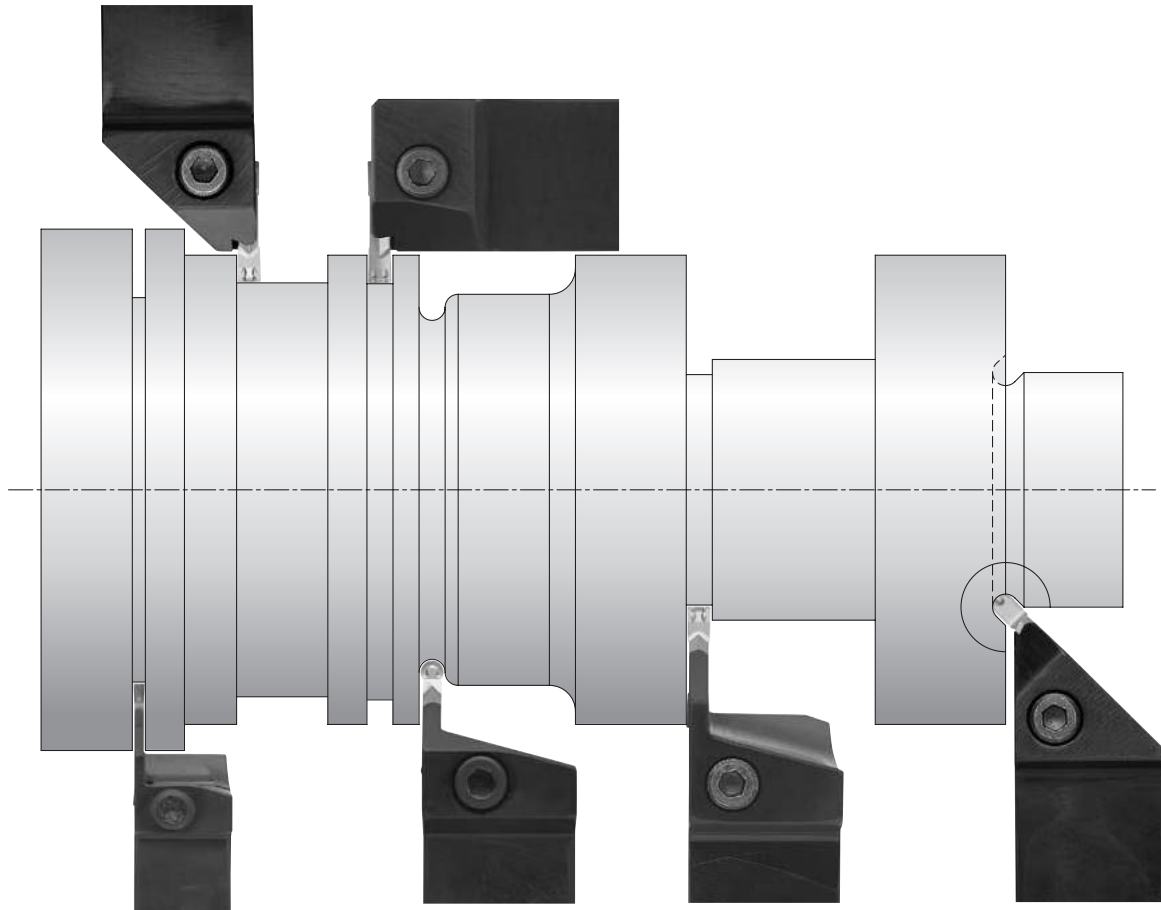


Summary of External Grooving

■ KGM Grooving (External Grooving & Turning) (G30~G37)

Type	KGMM
Edge Width (mm)	3.0~5.0
Grooving Depth (mm)	4.8
Ref. to Page	G36

Type	KGMS
Edge Width (mm)	3.0~5.0
Grooving Depth (mm)	4.8
Ref. to Page	G36

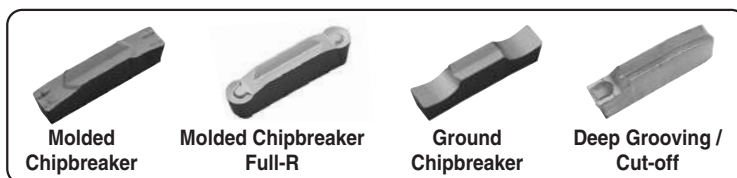


Type	KGM
Edge Width (mm)	1.5~4.0
Grooving Depth (mm)	10~16
Ref. to Page	G34

Type	KGM
Edge Width (mm)	3.0~8.0
Grooving Depth (mm)	9~25
Ref. to Page	G34

Type	KGM-T
Edge Width (mm)	2.0~6.0
Grooving Depth (mm)	17~30
Ref. to Page	G35

Type	KGMU
Edge Width (mm)	3.0~5.0
Grooving Depth (mm)	3.5~4.5
Ref. to Page	G37



G

Grooving

External

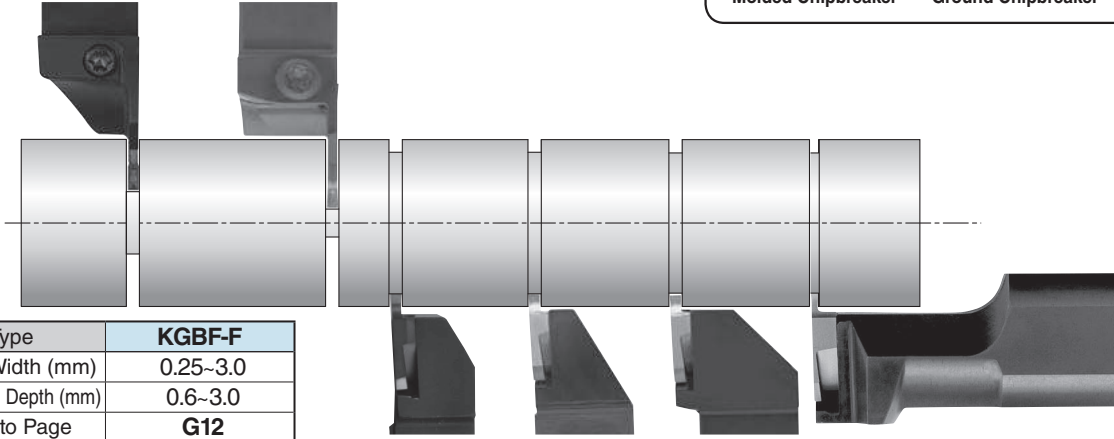
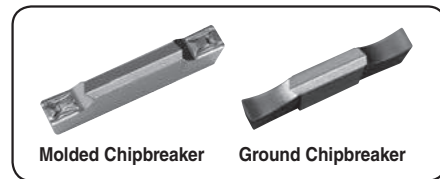
Internal

Face

External Grooving of Precision Parts (G14, G15, G21, G34)

For Automatic Lathe

Type	KGD	Type	KGM
Edge Width (mm)	2.0~4.0	Edge Width (mm)	1.5~4.0
Grooving Depth (mm)	10~21	Grooving Depth (mm)	10~16
Ref. to Page	G21	Ref. to Page	G34

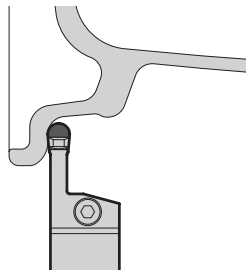


Type	KGBF-F
Edge Width (mm)	0.25~3.0
Grooving Depth (mm)	0.6~3.0
Ref. to Page	G12

Type	KTGF-F	KTGF	S-KTGF
Edge Width (mm)	0.33~2.5		0.33~2.5
Grooving Depth (mm)	0.8~2.5		0.8~2.5
Ref. to Page	G14		G15



For Aluminum Wheel External Grooving (External / Facing / Copying) (G40)




Type	KGMW
Edge Width (mm)	6.0~8.0
Grooving Depth (mm)	25
Ref. to Page	G40



Applicable Inserts

NEW

Description	A	T	φd	Classification of usage								
				P	M	K	N	S	H			
				●	○	●	○	○	○			
				P Carbon steel / Alloy steel M Stainless Steel K Cast Iron N Non-ferrous Metals S Titanium Alloys H Hard materials (-40HRC) H Hard materials (40HRC-)								
				● : Continuous-Light Interruption / 1st Choice ○ : Continuous-Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice								
Insert	Description	Dimension (mm)			Cermet		MEGACOAT	PVD Coated Carbide		Applicable Toolholders		
		W	B	rε	TN620		TN6020	PR1215			PR1115	PR930
					R	L	R	L	R		L	R

Insert	Description	W	B	rε	Cermet		MEGACOAT	PVD Coated Carbide		Applicable Toolholders		
					TN620	TN6020	PR1215	PR1115	PR930			
Handed Insert shows Right-hand  Sharp Edge	GBA32 ^φ / _L 050-005F * 075-005F 095-005F 100-005F 125-020F 145-020F 150-020F 175-020F 200-020F 250-020F	0.50	1.0	0.05	●	●					KGBA ^φ / _L ...16 KGBAS ^φ / _R ...16 KIGBA ^φ / _R ...16 (Internal)	
					●	●						
					●	●						
					●	●						
		0.2	●	●								
			●	●								
			●	●								
			●	●								
	0.3	●	●								KGBA ^φ / _L ...22-15 KGBAS ^φ / _R ...22-15 KIGBA ^φ / _R ...22 (Internal)	
		●	●									
		●	●									
		●	●									
	GBA43 ^φ / _L 125-020F 145-020F 150-020F 175-020F 185-020F 200-020F 230-020F 250-030F 265-030F 280-030F 300-030F 330-030F 350-030F 400-040F 430-040F 450-040F 480-040F	1.25	2.0	0.2	●	●					KGBA ^φ / _L ...22-15 KGBAS ^φ / _R ...22-15 KIGBA ^φ / _R ...22 (Internal)	
					●	●						
					●	●						
					●	●						
		1.45	3.5	0.2	●	●						KGBA ^φ / _L ...22-25T5 KGBAS ^φ / _R ...22-25T5 KIGBA ^φ / _R ...22 (Internal)
					●	●						
					●	●						
					●	●						
1.75	4.0	0.3	●	●						KGBA ^φ / _L ...22-35 KGBAS ^φ / _R ...22-35 KIGBA ^φ / _R ...22 (Internal)		
			●	●								
			●	●								
			●	●								
2.00	5.0	0.4	●	●						KGBA ^φ / _L ...22-35 KGBAS ^φ / _R ...22-35 KIGBA ^φ / _R ...22 (Internal)		
			●	●								
			●	●								
			●	●								
GBA43 ^φ / _L 140-010GM 150-020GM 175-020GM 185-020GM 200-020GM 230-020GM 250-030GM 265-030GM 300-030GM 330-030GM 350-030GM 400-040GM	1.40	3.5	0.1	●	●		●	●			KGBA ^φ / _L ...22-15 KGBAS ^φ / _R ...22-15 KIGBA ^φ / _R ...22 (Internal)	
				●	●		●	●				
				●	●		●	●				
				●	●		●	●				
	1.50	0.2	●	●		●	●				KGBA ^φ / _L ...22-25T5 KGBAS ^φ / _R ...22-25T5 KIGBA ^φ / _R ...22 (Internal)	
			●	●		●	●					
			●	●		●	●					
			●	●		●	●					
	1.75	0.3	●	●		●	●				KGBA ^φ / _L ...22-35 KGBAS ^φ / _R ...22-35 KIGBA ^φ / _R ...22 (Internal)	
			●	●		●	●					
			●	●		●	●					
			●	●		●	●					
1.85	0.4	●	●		●	●				KGBA ^φ / _L ...22-15 KGBAS ^φ / _R ...22-15 KIGBA ^φ / _R ...22 (Internal)		
		●	●		●	●						
		●	●		●	●						
		●	●		●	●						
2.00	5.0	0.4	●	●		●	●			KGBA ^φ / _L ...22-35 KGBAS ^φ / _R ...22-35 KIGBA ^φ / _R ...22 (Internal)		
			●	●		●	●					
			●	●		●	●					
			●	●		●	●					
GBA43 ^φ / _L 175-020MY 185-020MY 200-020MY 230-020MY 250-030MY 265-030MY 300-030MY 330-030MY 350-030MY 400-040MY	1.75	3.5	0.2	●	●		●	●			KGBA ^φ / _L ...22-15 KGBAS ^φ / _R ...22-15 KIGBA ^φ / _R ...22 (Internal)	
				●	●		●	●				
				●	●		●	●				
				●	●		●	●				
	1.85	4.0	0.3	●	●		●	●			★2 ★1 ★2 ★1	
				●	●		●	●				
				●	●		●	●				
				●	●		●	●				
2.00	5.0	0.4	●	●		●	●			★2 ★1 ★2 ★1		
			●	●		●	●					
			●	●		●	●					
			●	●		●	●					
2.30	5.0	0.4	●	●		●	●			KGBA ^φ / _L ...22-35 KGBAS ^φ / _R ...22-35 KIGBA ^φ / _R ...22 (Internal)		
			●	●		●	●					
			●	●		●	●					
			●	●		●	●					

- Dimension B shows available grooving depth.

* The edge width tolerance of GBA32^φ/_L 050-005F is ±0.05

★ Applicable Toolholders

- 1: KGBA^φ/_L...22-25T5, KGBAS^φ/_R...22-25T5, KIGBA^φ/_R...22
- 2: KGBA^φ/_L...22-25T5, KGBAS^φ/_R...22-25T5, KGBA^φ/_L...22-25, KGBAS^φ/_R...22-25, KIGBA^φ/_R...22

Recommended Cutting Conditions **G101**

● Rake Angle (α) after Installment of GBA-GM type

α	Insert Description
10°	GBA43 ^φ / _L 150-020GM
15°	GBA43 ^φ / _L 175-020GM
	GBA43 ^φ / _L 265-030GM
12°	GBA43 ^φ / _L 300-030GM
	GBA43 ^φ / _L 400-040GM

α indicates the rake angle at the center of the edge width, after installing insert.

● Rake Angle (α) after Installment of GBA-MY type

α	Insert Description
15°	GBA43 ^φ / _L 175-020MY
	GBA43 ^φ / _L 350-030MY
14°	GBA43 ^φ / _L 400-040MY

α indicates the rake angle at the center of the edge width, after installing insert.

● : Std. Item

Inserts are sold in 10 piece boxes.

G



Grooving

G9
G11

G56
(Internal)

Grooving Inserts

NEW

Applicable Inserts

Description	A	T	φd	P	M	K	N	S	H	Classification of usage																Ref. to Page for Applicable Toolholders
										● : Continuous-Light Interruption / 1st Choice ◐ : Continuous-Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice																
Dimension (mm)				MEGACOAT Cermet				MEGA COAT				PVD Coated Carbide				Carbide										
				PV7040		TN620		TN90		PR1215		PR1115		PR905		PR930		KW10								
Handed Insert shows Right-hand				W	B	rε		R	L	R	L	R	L	R	L	R	L	R	L							
<p>Full-R Full-R (Round)</p>	GBA32	200-100R	9.525	3.18	4.4																	KGBA ^{1/8} ...16 KGBAS ^{1/8} ...16 KIGBA ^{1/8} ...16 (Internal)				
		300-150R																								
	GBA43 ^{1/8}	100-050R	12.70	4.76	5.5																		KGBA ^{1/8} ...22-15 KGBAS ^{1/8} ...22-15 KIGBA ^{1/8} ...22 (Internal)			
		150-075R																								
		200-100R																								
		250-125R																								
		300-150R																								
		400-200R																								
	GBA43 ^{1/8}	100-050RF	12.70	4.76	5.5																		★2 KGBA ^{1/8} ...22-35 KGBAS ^{1/8} ...22-35 KIGBA ^{1/8} ...22 (Internal)			
		150-075RF																								
		200-100RF																								
		250-125RF																								
		300-150RF																								
		400-200RF																								

· Dimension B shows available grooving depth.

Recommended Cutting Conditions G101

★ Applicable Toolholders

2: KGBA^{1/8}...22-25T5, KGBAS^{1/8}...22-25T5, KGBA^{1/8}...22-25, KGBAS^{1/8}...22-25, KIGBA^{1/8}...22

Applicable Inserts

Description	A	T	φd	P	M	K	N	S	H	Classification of usage																Ref. to Page for Applicable Toolholders
										● : Continuous-Light Interruption / 1st Choice ◐ : Continuous-Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice																
Dimension (mm)				CBN				PCD				Applicable Toolholders														
				W	B	rε		KBN510		KBN525		KPD001		KPD010												
Handed Insert shows Right-hand				R	L	R	L	R	L	R	L	R	L	R	L											
<p>1-edge</p> <p>GBA32 S=1.7 GBA43 S=1.9</p>	GBA32R	125-010	9.525	3.18	4.4																	KGBA ^{1/8} ...16 KGBAS ^{1/8} ...16 KIGBA ^{1/8} ...16 (Internal)				
		150-010																								
	GBA43 ^{1/8}	125-010	12.70	4.76	5.5																		KGBA ^{1/8} ...22-15 KGBAS ^{1/8} ...22-15 KIGBA ^{1/8} ...22 (Internal)			
		125-020																								
		150-010																								
		150-020																								
		200-010																								
		200-020																								
	GBA43 ^{1/8}	250-010	12.70	4.76	5.5																		★2			
		250-020																								
		300-010																								
		300-020																								

· Dimension B shows available grooving depth.

Recommended Cutting Conditions G101

★ Applicable Toolholders

2: KGBA^{1/8}...22-25T5, KGBAS^{1/8}...22-25T5, KGBA^{1/8}...22-25, KGBAS^{1/8}...22-25, KIGBA^{1/8}...22

GBA type applicable for KGBA / KGBAS type toolholders is also usable for KGB / KGBS type toolholders.

● Rake Angle (α) after Installment of GBA type

GBA32 ^{1/8} ○○○-○○○		GBA43 ^{1/8} ○○○-○○○		GBA43 ^{1/8} ○○○-○○○R (Full-R)	
α	Insert Grades	α	Insert Grades	α	Insert Grades
10°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR905 KPD001, KPD010	0°	KBN510, KBN525	10°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR905
		10°	TN620, TN90, PV7040 PR930, PR1115, PR1215, PR905 KPD001, KPD010		050R-150R
20°	KW10	10°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR905	14°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR905
		20°	KW10		200R
					KW10
					050R-200R

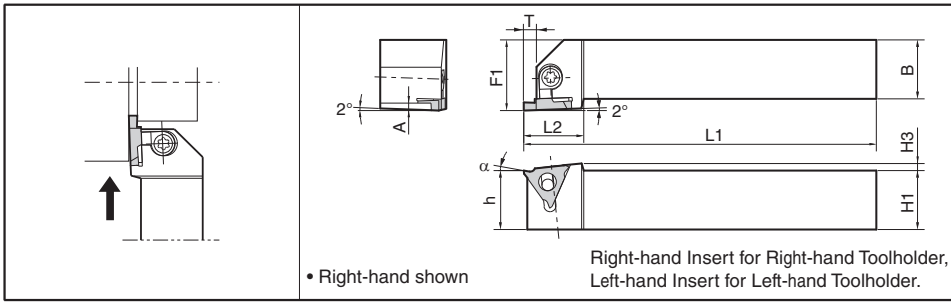
· For GM Chipbreaker and MY Chipbreaker, ref. to page G7.

Inserts are sold in 10 piece boxes.

CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item

■ KGBA

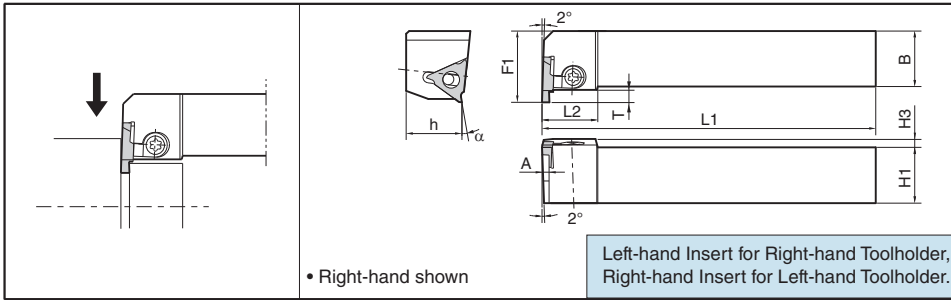


■ Alternative Toolholder Reference Table

KGBA ← (KGB)	(KGB)
KGBA ^{°/L} ...22-15	KGB ^{°/L} ...22-15
KGBA ^{°/L} ...22-25	KGB ^{°/L} ...22-25
KGBA ^{°/L} ...22-35	KGB ^{°/L} ...22-35
KGBA ^{°/L} ...22-25T5	KGB ^{°/L} ...22-25 (Available grooving depth has a limit)

• Short shank type is not available for KGB / KGBS.

■ KGBAS



■ Alternative Toolholder Reference Table

KGBAS ← (KGBS)	(KGBS)
KGBAS ^{°/L} ...22-15	KGBS ^{°/L} ...22-15
KGBAS ^{°/L} ...22-25	KGBS ^{°/L} ...22-25
KGBAS ^{°/L} ...22-35	KGBS ^{°/L} ...22-35
KGBAS ^{°/L} ...22-25T5	KGBS ^{°/L} ...22-25 (Available grooving depth has a limit)

● Toolholder Dimensions

Description	Std.		Dimension (mm)									Spare Parts		Applicable Inserts ● G6~G8			
	R	L	H1=h	H3	B	L1	L2	F1	A	T	Clamp Set	Wrench					
KGBA^{°/L} 2020K-16 2525M-16 2020K22-15 2525M22-15 2020K22-25 2525M22-25 2020K22-25T5 2525M22-25T5 2020K22-35 2525M22-35 2020H22-15* 2020H22-25* 2020H22-35*	●	●	20	4.0	20	125	24	25	-	2.5			LGBA-16 ^{°/S} LGBA-22 ^{°/S} FT-15	GBA32 ^{°/L} type GBA43 ^{°/L} type			
	●	●	25	4.0	20	125	25.5	25	1.0	4.0							
	●	●	20	4.0	20	125	25.5	25	2.0	4.5							
	●	●	25	4.0	20	125	25.5	25	2.0	5.5							
	●	●	20	4.0	20	125	25.5	25	3.0								
	●									1.0	4.0						
	●		20	4.0	20	100	25.5	25		2.0	4.5						
	●									3.0	5.5						
	KGBAS^{°/L} 2020K-16 2525M-16 2020K22-15 2525M22-15 2020K22-25 2525M22-25 2020K22-25T5 2525M22-25T5 2020K22-35 2525M22-35	●	●	20	4.0	20	125	25	25	-	2.5					LGBA-16 ^{°/RS} LGBA-22 ^{°/RS} FT-15	GBA32 ^{°/R} type GBA43 ^{°/R} type
		●	●	25	4.5	20	125	25	27	1.0	4.0						
●		●	20	4.5	20	125	25	27	2.0	4.5							
●		●	25	5.0	20	125	25	27	2.0	5.5							
●		●	20	4.5	20	125	25	27									
●		●	25	5.0	20	125	25	27									
●		●	20	4.5	20	125	25	27	3.0								
●		●	25	5.0	20	125	25	27									

• Dimension T shows the distance from the toolholder to the cutting edge. Available Groove Depth: "B" Dimension of Insert.

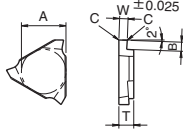
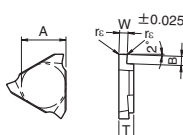
* mark indicates short shank type

• Clamp Set : KGBA^{°/L}...LGBA-○ORS for Right-hand Toolholder, and LGBA-○OLS for Left-hand Toolholder.
KGBAS^{°/L}...LGBA-○OLS for Right-hand Toolholder, and LGBA-○ORS for Left-hand Toolholder.

■ External Grooving Toolholders KGBA Short Shank types are available

For NC lathe and HSK tooling, KGBAR2020K-○ (Overall length 125mm) short shank type KGBAR2020H22-○ (Overall length 100mm) is available.
No longer required for the users to cut the shank portion.

Applicable Inserts

Description (mm)			P	M	K	N	S	H	Classification of usage												
GB32	9.525	3.18	Carbon steel / Alloy steel	Stainless Steel	Cast Iron	Non-ferrous Metals	Titanium Alloys	Hard materials (~40HRC)	Hard materials (40HRC-)	● : Continuous-Light Interruption / 1st Choice ☉ : Continuous-Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice											
Insert	Description	Dimension (mm)			Cermet		PVD Coated Carbide		PCD		Applicable Toolholders	Ref. to Page for Applicable Toolholders									
		W	B	C or r _c	TC40N	TC60M	PR630	PR930	KPD010												
Handed Insert shows Right-hand																					
 <p>General (Square) (Corner is Chamfered)</p> <p>GB32 type</p>	GB32^{R/L} 050* 075 095 100 125 145 150 200 250	2.0	C0.05	0.50	C0.10																
				0.75																	
				0.95																	
				1.00																	
				1.25																	
				1.45																	
				1.50																	
	 <p>General (Square) (Corner is R shape)</p> <p>GB43 type</p>	GB43^{R/L} 125 145 150 175 185 200 230 250 265 280 300 330 350 400 430 450 480	2.0	0.1																	
				0.2																	
				0.2																	
			3.5	0.1																	
				0.2																	
				0.2																	
				0.2																	
			4.0	0.1																	
				0.3																	
				0.3																	
				0.3																	
				0.3																	
				0.3																	
5.0	0.1																				
	0.3																				
	0.3																				
	0.1																				
	0.4																				
	0.4																				
	0.4																				
GB43^{R/L} 125 150 200 250 300	1.25	2.0	0.1																		
GB43^{R/L} 050R 075R 100R 125R 150R 200R	1.00	2.0	0.50																		
				3.5	0.75																
					1.00																
		4.0	1.25																		
			1.50																		
5.0	2.00																				

G11

· Dimension B shows available grooving depth.
 · The edge width tolerance of GB32^{R/L}050 is different 0.50^{+0.05} (*)

Recommended Cutting Conditions  G101

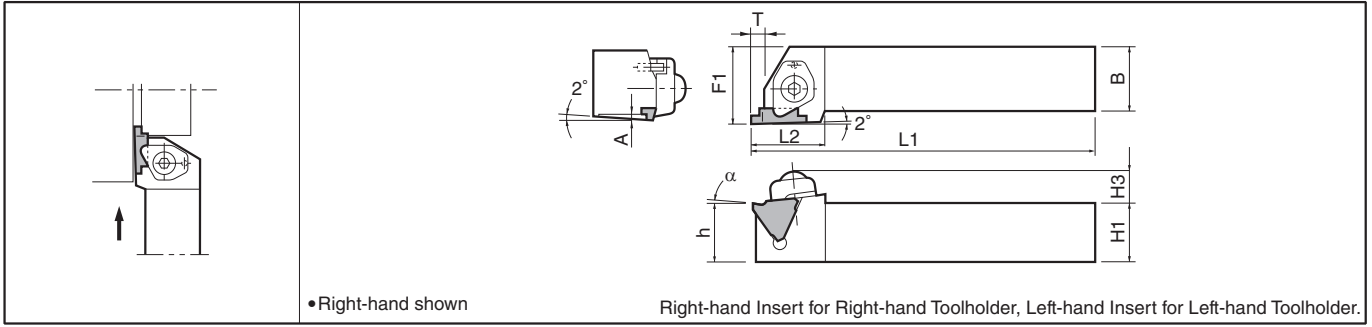
* Insert grades selection standard when changing to GBA.

GB Inserts	GBA Inserts
TC40N	TC40N / PV7040
TC60M	TN620 / TN90
PR630	PR1215 / PR1115
PR930	PR1215 / PR1115
KPD010	KPD001 (KPD010)

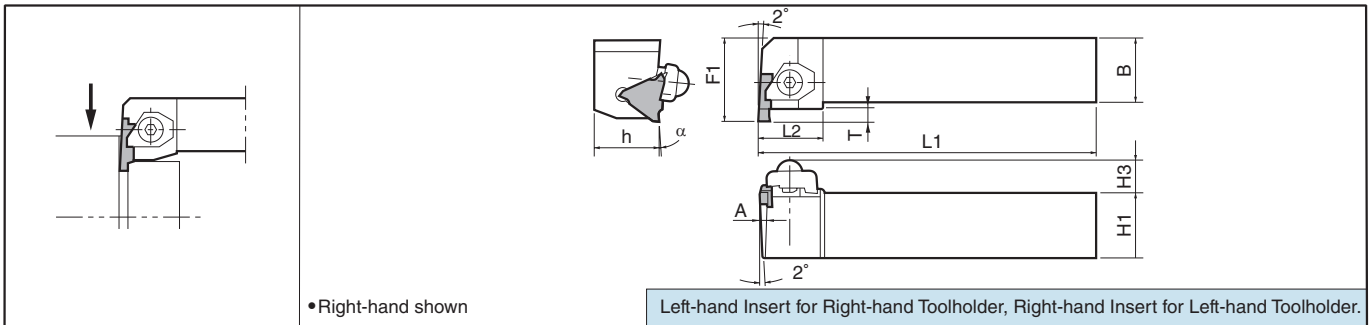
* Check the corner-R(r_c) of the insert when changing.

○ : Check Availability
 □ : Deleted from the next catalogue

KGB (Will be switched to KGBA ⚡ G9)



KGBS (Will be switched to KGBAS ⚡ G9)



Toolholder Dimensions

Description	Std.		Dimension (mm)									Spare Parts				Applicable Inserts ⚡ G6~G8 ⚡ G10
	R	L	H1-h	H3	B	L1	L2	F1	A	T	Clamp	Clamp Bolt	Spring	Wrench		
KGB^{R/L} 2020K-16 2525M-16 2020K22-15 2525M22-15 2020K22-25 2525M22-25 2020K22-35 2525M22-35	○	○	20	11	20	125	24	25	-	2.5	CGB ^{R/L}	BH6X25	SP-6	LW-4	GB32 ^{R/L} type	
	○	○	25	25	150	25	30	-	2.5	GBA32 ^{R/L} type						
	○	○	20	11.5	20	125	25.5	25	1.0	4.0					GB43 ^{R/L} type	
	○	○	25	25	150	25.5	30	2.0	4.5	GBA43 ^{R/L} type						
	○	○	20	11.5	20	125	25.5	25	3.0	5.5						
	○	○	25	25	150	25.5	30	3.0	5.5							
KGBS^{R/L} 2020K-16 2525M-16 2020K22-15 2525M22-15 2020K22-25 2525M22-25 2020K22-35 2525M22-35	○	○	20	11	20	125	25	25	-	2.5	CGB ^{L/R}	BH6X25	SP-6	LW-4	GB32 ^{R/L} type	
	○	○	25	25	150	25	30	-	2.5	GBA32 ^{R/L} type						
	○	○	20	11.5	20	125	25	27	1.0	4.0					GB43 ^{R/L} type	
	○	○	25	25	150	25	32	2.0	4.5	GBA43 ^{R/L} type						
	○	○	20	11.5	20	125	25	27	3.0	5.5						
	○	○	25	25	150	25	32	3.0	5.5							

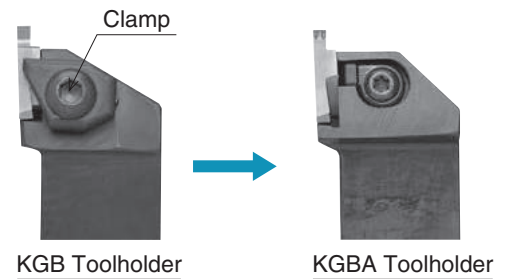
Dimension T shows the distance from the toolholder to the cutting edge. Available Groove Depth: "B" Dimension of Insert.

Clamp : KGB^{R/L} ... CGBR for Right-hand Toolholder, and CGBL for Left-hand Toolholder.

KGBS^{R/L} ... CGBL for Right-hand Toolholder, and CGBR for Left-hand Toolholder.

Rake Angle(α) after Installment of GB type

GB32 ^{R/L} ○○○○		GB43 ^{R/L} ○○○○		GB43 ^{R/L} ○○○○R (Full-R)	
α	Insert Grades	α	Insert Grades	α	Insert Grades
5°	TC60M PR630	5°	TC40N TC60M PR630 PR930	5°	TC60M } 050R~150R PR630 }
20°	KW10	10°	KPD010	14°	TC60M } 200R PR630 }
		20°	KW10		



* KGB / KGBS toolholder will be switched to KGBA / KGBAS.

Better Chip flow.

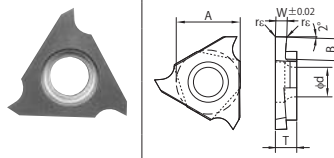
* For applicable insert, GB insert will be switched to GBA.

There are various types of GBA insert grades available dependent on the user's cutting condition requirements.

GBF

				P	Carbon steel / Alloy steel	☐	☐		Classification of usage	
				M	Stainless Steel	○	●		●	Continuous-Light Interruption / 1st Choice
				K	Cast Iron			●	☐	Continuous-Light Interruption / 2nd Choice
				N	Non-ferrous Metals			●	●	Continuous / 1st Choice
				S	Titanium Alloys			●	○	Continuous / 2nd Choice
				H	Hard materials (~40HRC)					
				H	Hard materials (40HRC-)					

				Dimension (mm)			MEGACOAT		MEGACOAT NANO		Carbide		Applicable Toolholders	Ref. to Page for Applicable Toolholders	
Description		A	T	φd	W	B	rε	PR1215		PR1535		GW15			
GBF32_		9.525	3.18	4.4				R	L	R	L	R			L

Insert	Description	Dimension (mm)			MEGACOAT		MEGACOAT NANO		Carbide		Applicable Toolholders	Ref. to Page for Applicable Toolholders	
		W	B	rε	PR1215		PR1535		GW15				
 <p>Handed Insert shows Right-hand</p>	GBF32[®]/L	025-005	0.25	0.6	0.05	●	●	●	●	●	●	KGBF[®]/L...16F	G13
		030-005	0.30	0.8		●	●	●	●	●	●		
		033-005	0.33			●	●	●	●	●	●		
		043-005	0.43	1.0		●	●	●	●	●	●		
		050-005	0.50			●	●	●	●	●	●		
		053-005	0.53	1.2		●	●	●	●	●	●		
		065-005	0.65			●	●	●	●	●	●		
		075-005	0.75			●	●	●	●	●	●		
		080-005	0.80			●	●	●	●	●	●		
		095-005	0.95			●	●	●	●	●	●		
		100-005	1.00			●	●	●	●	●	●		
		110-005	1.10	2.0		●	●	●	●	●	●		
		120-005	1.20		●	●	●	●	●	●			
		125-010	1.25		0.1	●	●	●	●	●	●		
		130-010	1.30			●	●	●	●	●	●		
		140-010	1.40			●	●	●	●	●	●		
		145-010	1.45	2.7		●	●	●	●	●	●		
		150-010	1.50			●	●	●	●	●	●		
		165-010	1.65			●	●	●	●	●	●		
		170-010	1.70		3.0	●	●	●	●	●	●		
		175-010	1.75			●	●	●	●	●	●		
		200-010	2.00			●	●	●	●	●	●		
		225-010	2.25			●	●	●	●	●	●		
		250-010	2.50			●	●	●	●	●	●		
300-010	3.00		●	●		●	●	●	●				

G



Grooving

External

Internal

Face

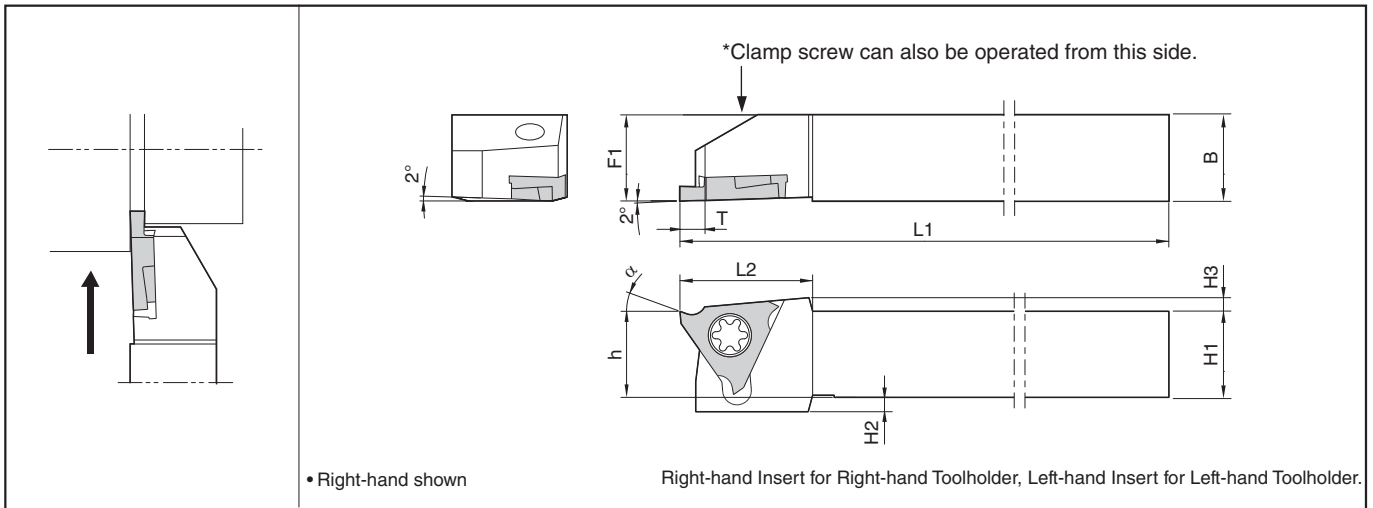
◆ Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)			(1) f for Grooving (mm/rev)				Remarks
	MEGACOAT	MEGACOAT NANO	Carbide	(2) f for Turning (mm/rev)				
	PR1215	PR1535	GW15	(3) ap for Turning (mm)				
				GBF32%/025-053	GBF32%/065-095	GBF32%/100-145	GBF32%/150-300	
Carbon Steel	★ 80-180	☆ 70-160	-	(1) 0.01-0.05	(1) 0.02-0.07	(1) 0.03-0.08	(1) 0.03-0.08	Coolant
				(2) Not recom.	(2) Not recom.	(2) 0.03-0.06	(2) 0.03-0.06	
				(3) Not recom.	(3) Not recom.	(3) MAX. 0.2	(3) MAX. 0.2	
Alloy Steel	★ 80-180	☆ 70-160	-	(1) 0.01-0.04	(1) 0.02-0.06	(1) 0.03-0.07	(1) 0.03-0.07	
				(2) Not recom.	(2) Not recom.	(2) 0.02-0.05	(2) 0.02-0.05	
				(3) Not recom.	(3) Not recom.	(3) MAX. 0.2	(3) MAX. 0.2	
Stainless Steel	☆ 60-130	★ 50-120	-	(1) 0.01-0.04	(1) 0.02-0.06	(1) 0.03-0.07	(1) 0.03-0.07	
				(2) Not recom.	(2) Not recom.	(2) 0.02-0.05	(2) 0.02-0.05	
				(3) Not recom.	(3) Not recom.	(3) MAX. 0.2	(3) MAX. 0.2	
Cast Iron	-	-	★ 60-100	(1) 0.01-0.05	(1) 0.02-0.07	(1) 0.03-0.08	(1) 0.03-0.08	
				(2) Not recom.	(2) Not recom.	(2) 0.03-0.06	(2) 0.03-0.06	
				(3) Not recom.	(3) Not recom.	(3) MAX. 0.2	(3) MAX. 0.2	
Aluminum	-	-	★ 150-400	(1) 0.01-0.05	(1) 0.02-0.07	(1) 0.03-0.08	(1) 0.03-0.08	
				(2) Not recom.	(2) Not recom.	(2) 0.03-0.06	(2) 0.03-0.06	
				(3) Not recom.	(3) Not recom.	(3) MAX. 0.2	(3) MAX. 0.2	
Brass	-	-	★ 150-300	(1) 0.01-0.04	(1) 0.02-0.06	(1) 0.03-0.07	(1) 0.03-0.07	
				(2) Not recom.	(2) Not recom.	(2) 0.02-0.05	(2) 0.02-0.05	
				(3) Not recom.	(3) Not recom.	(3) MAX. 0.2	(3) MAX. 0.2	

★:1st Recommendation ☆:2nd Recommendation

● : Std. Item

KGBF-F (without offset)



Toolholder Dimensions

Description	Std.		Dimension (mm)							Spare Parts	
	R	L	H1=h	H2	H3	B=F1	L1	L2	T	Clamp Screw	Wrench
KGBF^{R/L} 1010JX-16F	●	●	10	4	2.1	10	120	18.5	3	SB-4070TRW	FT-8
	●	●	12	2		12					
	●	●	16	-		16					
	●	●	20	-		20					

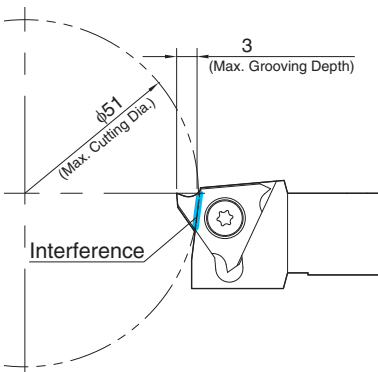
* Dimension T shows the distance from the toolholder to the cutting edge. Available Groove Depth: "B" Dimension of Insert.
 Max. cutting dia. is $\phi 51$ mm
 The rake angle after installation in the toolholder is 20°.

Compatibility with GBF and GBA

- GBF will fit KGBA / KGBAS toolholders
 Caution: The maximum groove depth for KGBA / KGBAS toolholders is 2.5 mm
- GBA inserts will also fit KGBF-F toolholders
 Caution: The rake angle after installation in the toolholder is 11°
 2.5 mm groove depth is available on workpiece diameters up to 200 mm max.
 2.2 mm groove depth is available on workpiece diameters over 200 mm

Max. Cutting Dia.

Max. cutting dia. is $\phi 51$ mm
 The workpiece interferes with the holder at $\phi 51$ mm workpiece diameter or larger



● : Std. Item



External Shallow Grooving Toolholders [for TGF Insert]

KTGF-F (without offset)

α	Insert Grades
20°	PR1115, PR1215 PR930, KW10
11°	KPD001
6°	TC40N

• Right-hand shown

*Clamp screw can also be operated from this side.

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

KTGF (with offset)

α	Insert Grades
20°	PR1115, PR1215 PR930, KW10
11°	KPD001
6°	TC40N

• Right-hand shown

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Description	Std.	Dimension (mm)									Spare Parts					
		R	L	H1-h	H2	H3	B	L1	L2	F1	Clamp Screw	Wrench				
KTGF ^{R/L} 1010JX-16F 1212JX-16F 1616JX-16F	●●	10	2		10				10			SB-4070TRW	FT-8			
	●●	12	-	2.5	12	120	18.5	12								
	●●	16			16			16								
KTGF ^{R/L} 1212F-16F	●●	12	-	2.5	12	85	18.5	12			SB-4070TRW	FT-8				
KTGF ^{R/L} 1010F-16 1212H-16 1616H-16 2020K-16 2525M-16	●●	10	4		10	80		12			SB-4070TRS	FT-10				
	●●	12	2		12	100	18.5	16								
	●●	16		2.5	16	100		20								
	●●	20	-		20	125		25								
	●●	25			25	150		32								

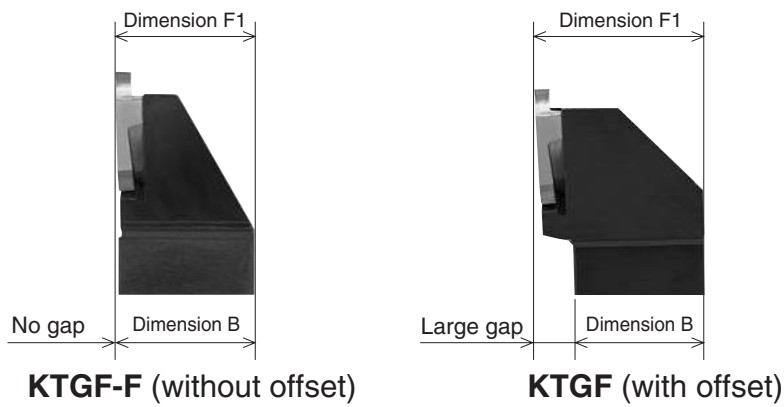
KTGF-F / KTGF Selection Reference

Q: What is the difference between "Without Offset" and "With Offset" of KTGF toolholders for external grooving?

A: When operating the automatic lathe, the toolholder come very close to the chuck.

In such cases, the "With Offset" toolholder sometimes interferes with the chuck due to the large gap between B and F1 dimensions as shown below.

It is necessary to use "Without Offset" in such cases.



G
Grooving
External
Internal
Face

S-KTGF (Sleeve Holder)

α	Insert Grades
20°	PR1115, PR1215 PR930, KW10
11°	KPD001
6°	TC40N

• Left-hand shown

Right-hand Insert for Left-hand Toolholder.

Note 1) Dimension B shows available grooving depth.

Toolholder Dimensions

Description	Std.	Dimension (mm)							Spare Parts			
		ϕD	L1	F1	F2	$\phi d1$	$\phi d2$	H1=H2	Clamp Screw	Wrench		
S12F-KTGFL16	●	12	80	6	9.0	11.0	27	11	SB-4070TRS	FT-10		
S14H-KTGFL16	●	14	100									
S15F-KTGFL16	●	15.875	85								13.0	15
S16F-KTGFL16	●	16										
S19G-KTGFL16	●	19.05	90								17.6	17
S19K-KTGFL16	●		120									
S20G-KTGFL16	●	20	90								18.6	18
S20K-KTGFL16	●		120									
S25.0H-KTGFL16	●	25	100	10	14.0	23.6	32	23				
S25K-KTGFL16	●	25.4	120									

Applicable Inserts

Description	(mm)			P	M	K	N	S	H	Classification of usage
	A	T	ϕd							
TGF32_	9.525	3.18	4.6	Carbon steel / Alloy steel	Stainless Steel	Cast Iron	Non-ferrous Metals	Titanium Alloys	Hard materials (~40HRC)	Hard materials (40HRC~)

Insert	Description	Dimension(mm)					Cermet		MEGACOAT		PVD Coated Carbide		Carbide		PCD		Applicable Toolholders	Ref. to Page for Applicable Toolholders
		W	B	r_ϵ	TC40N		PR1215		PR930		PR1115		KW10		KPD001			
					R	L	R	L	R	L	R	L	R	L	R	L		
	TGF32 ^{R/L} 033-005	0.33	0.8	0.05													KTGF ^{R/L} ...16F KTGF ^{R/L} ...16 S...KTGFL ^L /16	G14 G15
	050-005	0.50	1.2															
	075-010	0.75																
	095-010	0.95																
	100-010	1.00																
	120-010	1.20																
	125-010	1.25	2.0															
	140-010	1.40																
	145-010	1.45																
	150-010	1.50																
175-010	1.75																	
200-010	2.00	2.5																
250-010	2.50																	
	TGF32 ^{R/L} 125-010	1.25	2.0	0.1														
	150-010	1.50																
	200-010	2.00	2.5															

• Dimension B shows available grooving depth.

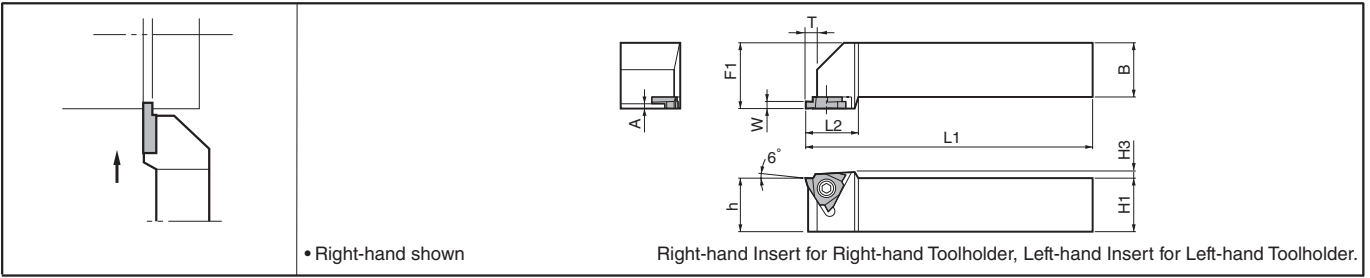
Recommended Cutting Conditions **G102**

● : Std. Item

Inserts are sold in 10 piece boxes.

CBN & PCD Inserts are sold in 1 piece boxes.

KTG (Will be switched to KGBA \rightarrow G9)



Toolholder Dimensions

Description	Std.	Dimension (mm)										Spare Parts					
		R	L	H1-h	H3	B	L1	L2	F1	A	T	Clamp Screw		Wrench			
KTG^{R/L}																	
2020K-16	○	○	20	3.0	20	125	20	25	-	2.5			SB-4TR	-	FT-15	-	
2525M-16	○	○	25	3.0	25	150	25	30									
2020K22-15	○	○	20	3.0	20	125	20	25	1.0	4.0							
2525M22-15	○	○	25	3.0	25	150	25	30									
2020K22-25	○	○	20	3.0	20	125	25	25	2.0	4.5			-	GS-50	-	LW-3	
2525M22-25	○	○	25	3.0	25	150	25	30									
2020K22-35	○	○	20	3.0	20	125	25	25	3.0	5.5							
2525M22-35	○	○	25	3.0	25	150	25	30									

Dimension T shows the distance from the toolholder to the cutting edge. Available groove depth: "B" dimension of insert.

* GBA insert cannot be installed to this toolholder.

Applicable Inserts (TG insert will be switched to GBA \rightarrow G6-G8)

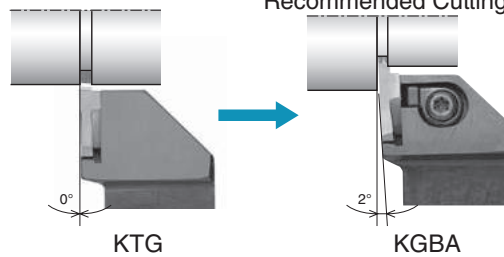
Description	A	T	ϕd
TG32_	9.525	3.18	4.5
TG43_	12.70	4.76	5.5

P	Carbon steel / Alloy steel	Classification of usage ●: Continuous-Light Interruption / 1st Choice ○: Continuous-Light Interruption / 2nd Choice ●: Continuous / 1st Choice ○: Continuous / 2nd Choice
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metals	
S	Titanium Alloys	
H	Hard materials (~40HRC)	
H	Hard materials (40HRC-)	

Insert Handed Insert shows Right-hand	Description	Dimension (mm)			Cermet TN60	Applicable Toolholders	Ref. to Page for Applicable Toolholders									
		W	B	C or r _c												
								R	L							
 General (Square) (Corner is Chamfered) TG32 type	 (Corner is Chamfered)	TG32^{R/L} 075 095 125 145 150 175 200	0.75 0.95 1.25 1.45 1.50 1.75 2.00	2.0 C0.1	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	KTG^{R/L}...16	G16									
								 General (Square) (Corner is R shape) TG43 type		TG43^{R/L} 150 175 200 230 250 265 280 300 330 350 400 430 450	1.50 1.75 2.00 2.30 2.50 2.65 2.80 3.00 3.30 3.50 4.00 4.30 4.50	3.5 4.0 5.0	0.2 0.3 0.4	○ ○	KTG^{R/L}...22-15 KTG^{R/L}...22-25 KTG^{R/L}...22-35	G16

Dimension B shows available grooving depth.

Recommended Cutting Conditions \rightarrow G102



- * KTG will be switched to KGBA. Machining against the wall is available.
- * For applicable insert, TG insert will be switched to GBA. Change Insert Grade TN60 for TN90. There are various types of GBA insert grades available dependent on the user's cutting condition requirements.
- * Check the corner-R(r_c) of the insert when changing.

G

Grooving

External

Internal

Face

G16

Inserts are sold in 10 piece boxes.

○ : Check Availability

Features

1 Various insert lineup

Smooth chip control

➔ Newly-introduced chipbreakers designed to cover a variety of workpiece materials.

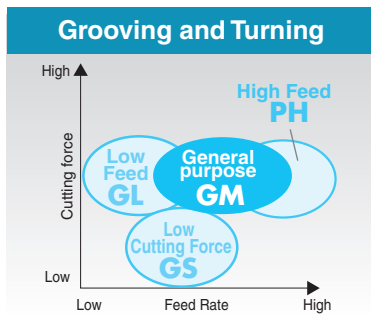
High precision edge preparation

➔ High precision molding technology with tolerance $\pm 0.03\text{mm}$ (Edge width 2, 3, 4mm types)

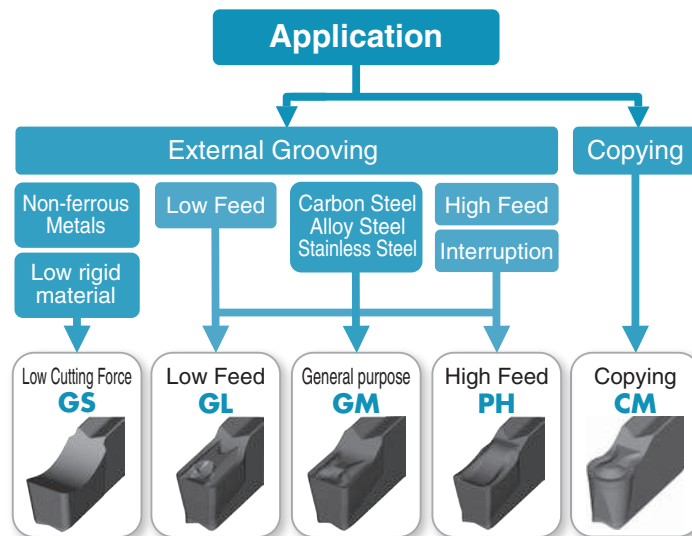
Highly-reputed MEGACOAT technology

➔ Long tool life and high efficiency machining achieved by superior oxidation resistance and wear resistance.

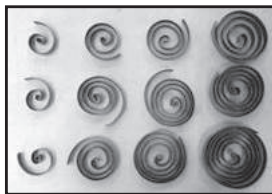
Application Map



Chipbreaker Selection



Comparison of Chip Control (SCM415 Vc=150m/min, f=0.15mm/rev)



GM Chipbreaker



Competitor A



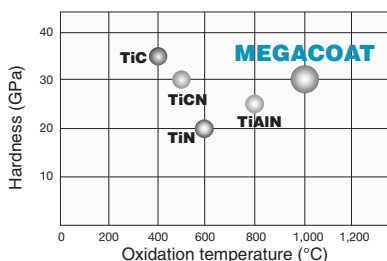
Competitor B

Smooth chip control

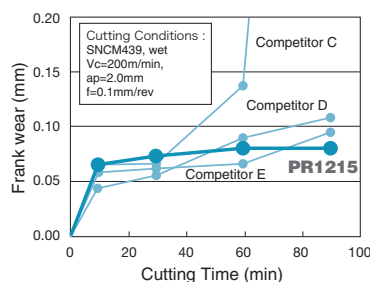


Less chip biting troubles

Features of MEGACOAT



Comparison of Wear Resistance

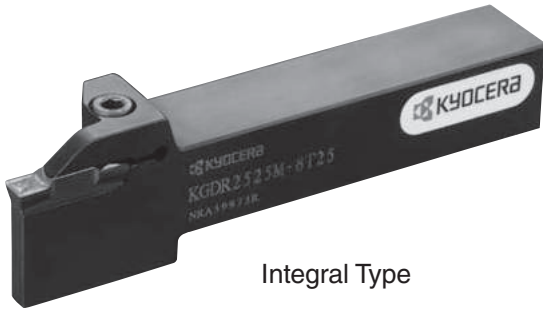


PR1225:
1st choice for cut-off, grooving and turning.

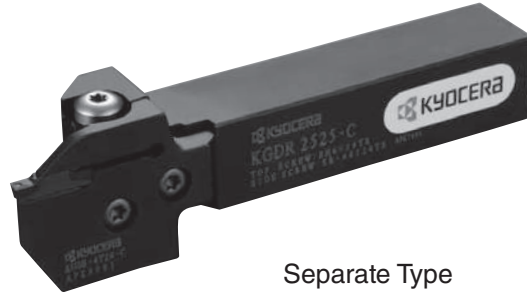
PR1215:
With superior wear resistance, recommended for grooving and cut-off under the stable conditions as well as machining of cast iron.

2 Toolholder

● Integral Type and Separate Type (Toolholder + Blade) are available



Integral Type

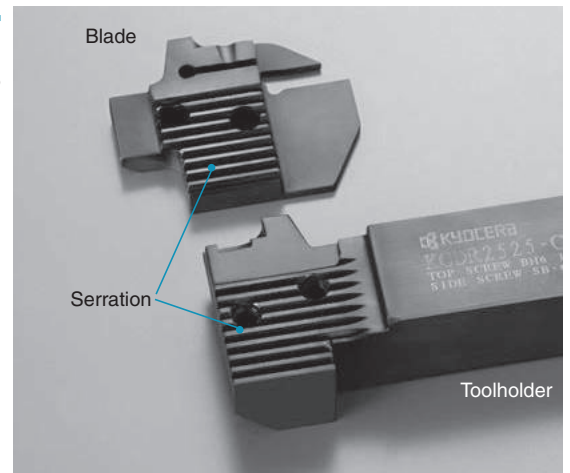


Separate Type

● High rigidity separate type toolholder

➔ Adaptable to wide applications by changing blades

Deals with various edge widths and cutting depths by changing the blade and toolholder combination. Even if the blade is broken, you only need to replace the broken part.



G



Grooving

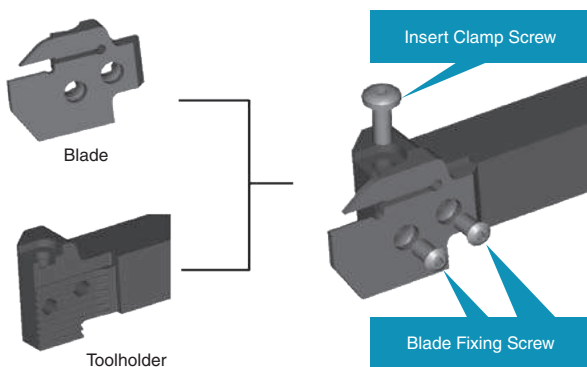
External

Internal

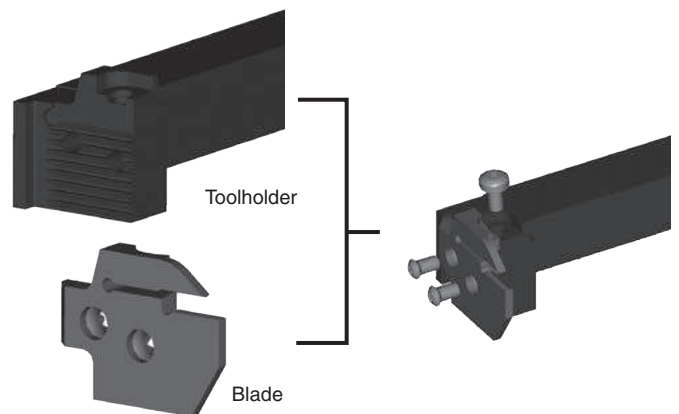
Face

■ Structure of toolholder unit (Toolholder + Blade)

● KGD-S (0° Separate Type)



● KGDS-S (90° Separate Type)



* Note for the toolholder and blade combination of 0° Separate Type

Toolholder (KGD^{1/2}L-○○○○-C)

+

Blade (KGD^{1/2}L-○T○○-C)

⇒ Right-hand Blade for Right-hand Toolholder,
Left-hand Blade for Left-hand Toolholder.

* Note for the toolholder and blade combination of 90° separate type

Toolholder (KGDS^{1/2}L-○○○○-C)

+

Blade (KGD^{1/4}L-○T○○-C)

⇒ Left-hand Blade for Right-hand Toolholder,
Right-hand Blade for Left-hand Toolholder.

Inserts for Grooving and Cut-off

GDM / GDMS / GDG

Classification of usage	P	Carbon steel / Alloy steel	●	○		☉	☺	
M	Stainless Steel					☉	☺	
K	Cast Iron							☉
N	Non-ferrous Metals							☉
S	Titanium Alloys					☉		
H	Hard materials (~40HRC)					○		
	Hard materials (40HRC~)							

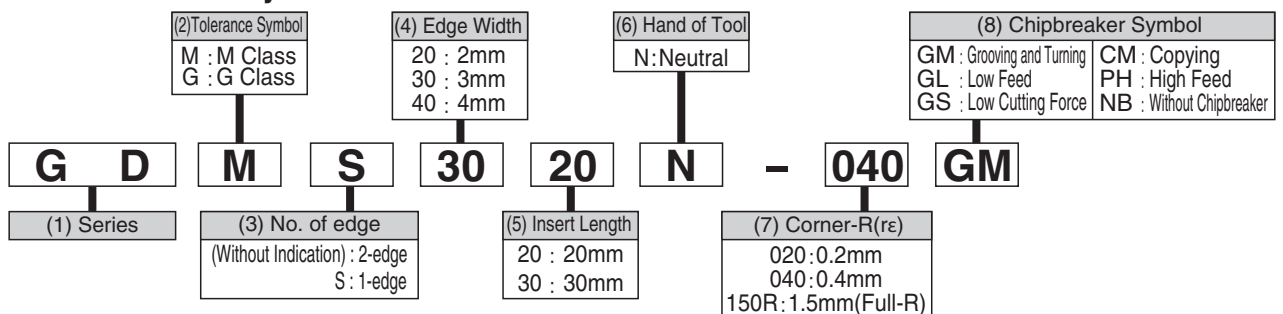
●: Continuous-Light Interruption / 1st Choice
 ☉: Continuous-Light Interruption / 2nd Choice
 ●: Continuous / 1st Choice
 ○: Continuous / 2nd Choice

Insert	Description	Dimension (mm)					Cermet		MEGACOAT NANO	MEGACOAT	PR1215	Carbide	Ref. to Page for Applicable Toolholders
		W	Tolerance	rε	M	L	H	TN620	TN90	PR1535	PR1225	GW15	
Grooving and Turning General purpose	GDM 2420N-020GM	2.4	±0.03	0.2	1.95	20	4.3	●	●	●	●	●	G21 G22 G23 G24
	3020N-020GM	3.0		0.4	2.3			●	●	●	●	●	
	3020N-040GM	3.0		0.2	3.3			●	●	●	●	●	
	4020N-020GM	4.0		0.4	3.3			●	●	●	●	●	
	4020N-040GM	4.0		0.8	3.3			●	●	●	●	●	
	5020N-040GM	5.0		0.4	4.2			●	●	●	●	●	
	5020N-080GM	5.0		0.8	4.2			●	●	●	●	●	
	6020N-040GM	6.0		0.4	5.2			●	●	●	●	●	
	6020N-080GM	6.0		0.8	5.2			●	●	●	●	●	
	8030N-080GM	8.0		±0.05	6.0			30	5.5	●	●	●	
Grooving General purpose 1-edge	GDMS 2220N-020GM	2.2	±0.03	0.2	1.75	20	4.3	○	●	○	●	●	G21 G22 G23 G24
	3020N-040GM	3.0		0.4	2.3			○	●	○	●	●	
	4020N-040GM	4.0		0.4	3.3			○	●	○	●	●	
	5020N-080GM	5.0		0.8	4.2			○	●	○	●	●	
	6020N-040GM	6.0		0.8	5.2			○	●	○	●	●	
	6020N-080GM	6.0		0.8	5.2			○	●	○	●	●	
Grooving Low Feed	GDM 2420N-020GL	2.4	±0.03	0.2	1.95	20	4.3	○	●	●	●	●	G21 G22 G23 G24
	3020N-020GL	3.0		0.4	2.3			○	●	○	●	●	
	3020N-040GL	3.0		0.2	3.3			○	●	○	●	●	
	4020N-020GL	4.0		0.4	3.3			○	●	○	●	●	
	4020N-040GL	4.0		0.4	4.2			○	●	○	●	●	
	6020N-040GL	6.0		0.4	5.2			○	●	○	●	●	
Grooving Low Cutting Force	GDG 2520N-020GS	2.5	±0.02	0.2	2.0	20	4.3	●	●	●	●	●	G21 G22 G23 G24
	3020N-020GS	3.0		0.2	2.3			●	●	●	●	●	
	3520N-020GS	3.5		0.2	2.8			●	●	●	●	●	
	4020N-040GS	4.0		0.4	3.3			●	●	●	●	●	
	5020N-040GS	5.0		0.4	4.2			●	●	●	●	●	
	6020N-040GS	6.0		0.4	5.2			○	●	○	●	●	
	8030N-040GS	8.0		6.0	30			5.5	○	●	○	●	
Full-R / Copying	GDM 3020N-150R-CM	3.0	±0.03	1.5	2.3	20	4.3	○	●	○	●	●	G21 G22 G23 G24
	4020N-200R-CM	4.0		2.0	3.3			○	●	○	●	●	
	5020N-250R-CM	5.0		2.5	4.2			○	●	○	●	●	
	6020N-300R-CM	6.0		3.0	5.2			○	●	○	●	●	
Grooving / Cut-off High Feed	GDM 2020N-020PH	2.0	±0.03	0.2	1.5	20	4.3			●	●	●	G21 G22 G23 G24
	3020N-030PH	3.0		0.3	2.3					●	●	●	
	4020N-030PH	4.0		0.3	3.3					●	●	●	
	GDMS 2020N-020PH	2.0		0.2	1.5					●	●	●	
	3020N-030PH	3.0		0.3	2.3					●	●	●	
	4020N-030PH	4.0		0.3	3.3					●	●	●	

*GDM50/60-CM differs from other descriptions in length (L) to avoid interference of a toolholder with workpiece.

Recommended Cutting Conditions ➔ G27,G28

Inserts Identification System




● : Std. Item
 ○ : Check Availability

Inserts are sold in 10 piece boxes.

Inserts for Grooving

● GDGS (CBN / PCD)

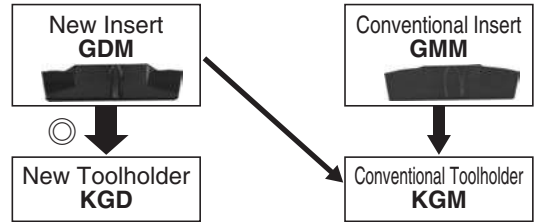
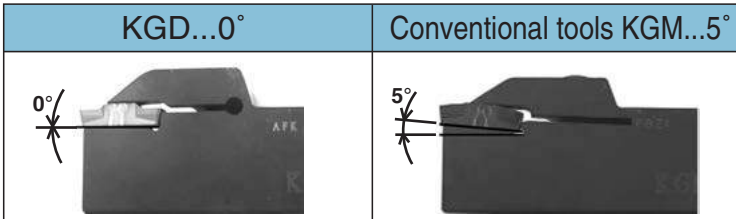
Classification of usage	P	Carbon steel / Alloy steel			
	M	Stainless Steel			
●: Continuous-Light Interruption / 1st Choice	K	Cast Iron			
☺: Continuous-Light Interruption / 2nd Choice	N	Non-ferrous Metals			●
	S	Titanium Alloys			●
●: Continuous / 1st Choice	H	Hard materials (~40HRC)			
○: Continuous / 2nd Choice		Hard materials (40HRC~)	●		
		Sintered Steel		●	

Insert	Description	Dimension (mm)						Angle θ	MEGA CBN	CBN	PCD	Ref. to Page for Applicable Toolholders
		W	rε	M	L	H	S					
Grooving  1-edge	GDGS 2020N-020NB 3020N-020NB 3020N-040NB 4020N-020NB 4020N-040NB 5020N-020NB 5020N-040NB 6020N-020NB 6020N-040NB	2.0	0.2	1.8					●	●	●	G21
		3.0	0.2	2.3					●	●	●	G22
		4.0	0.2	3.3					●	●	●	G23
		4.0	±0.03	0.4	20	4.3	2.9	-	●	●	●	G24
		5.0	0.2	4.2					●	●	●	G22
		5.0	0.4						●	●	●	G23
		6.0	0.2	5.2					●	●	●	G23
		6.0	0.4						●	●	●	G24

Recommended Cutting Conditions ● G27,G28

◆ Note for the toolholder and insert combination of KGD type (new) and KGM type (conventional)

● Insert setting angle for grooving toolholders



Installing conventional inserts to the new toolholder is not recommended.

G

Grooving

External

Internal

Face

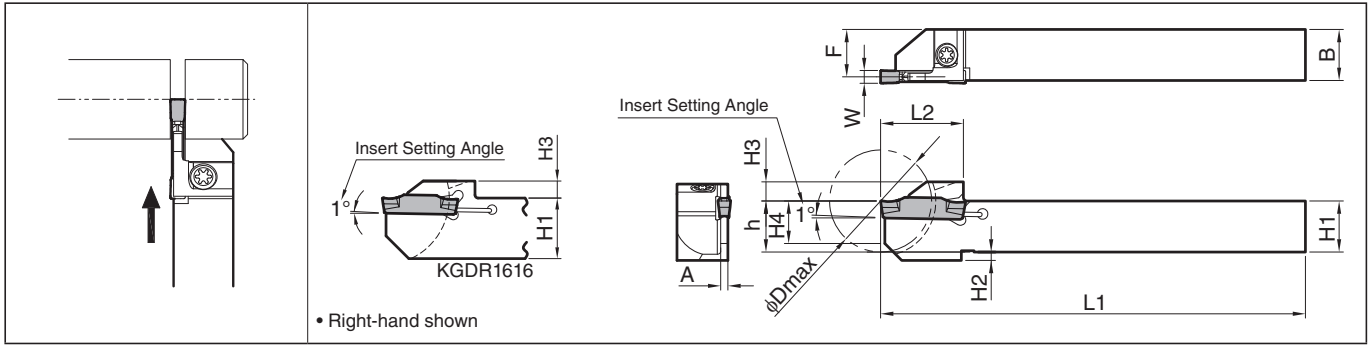
CBN & PCD Inserts are sold in 1 piece boxes.

●: Std. Item

Toolholders for Grooving and Cut-off

KG D (Integral Type for Automatic Lathe)

Edge Width: 2.0~4.0mm

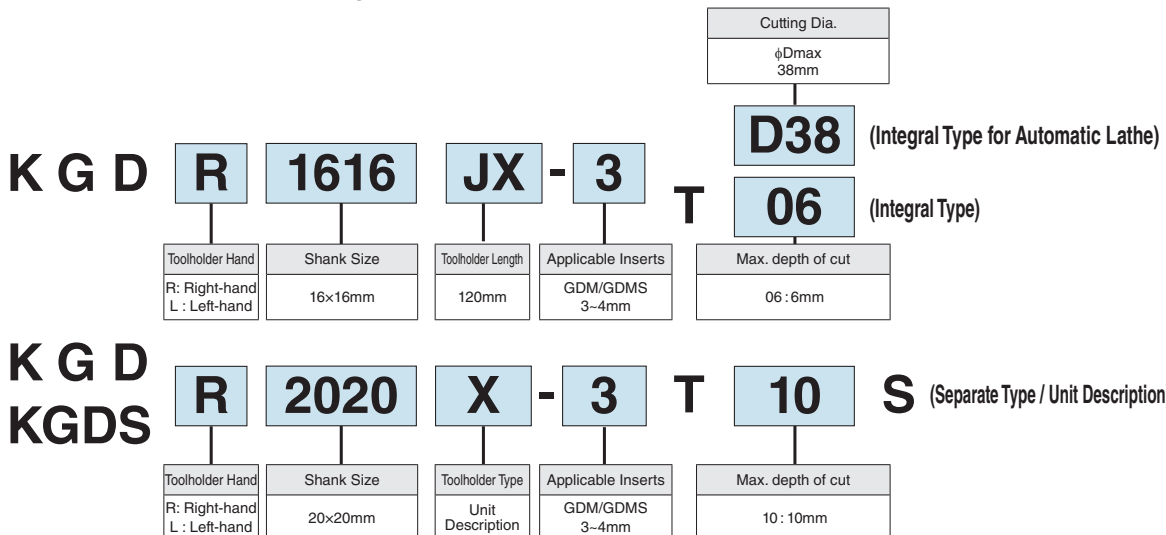


Toolholder Dimensions

Description	Std.		Cutting Dia. φDmax	Dimension (mm)										Angle θ	Edge Width W(mm)		Spare Parts	
	R	L		H1=h	H2	H3	H4	B	L1	L2	F	A	MIN.		MAX.	Clamp Screw	Wrench	
KG D ^φ /L 1010JX-2 1212F-2 1212JX-2 1616JX-2 2012K-2D34 2020K-2D34	●	●	20	10	2	4.5	8	10	120	18	9.15	1.7	1°	2.0	3.0	SB-40120TR	LTW-15S	
	●	●	24	12				12	85	19.5	11.15							
	●	●	32	16	-	9.5	20	12	125	32.5	11.2	1.6	0°	HH5X16	LW-4			
	●	●	34	20				20	125	32.5	19.2							
	●	●	34	20				20	125	32.5	19.2							
KG D ^φ /L 1010JX-2.4 1212F-2.4 1212JX-2.4 1616JX-2.4 2012K-2.4D34 2020K-2.4D34	●	●	20	10	2	4.5	8	10	120	18	9	2.0	1°	2.4	3.0	SB-40120TR	LTW-15S	
	●	●	24	12				12	85	19.5	11							
	●	●	32	16	-	9.5	20	12	125	32.5	11	2.0	0°	HH5X16	LW-4			
	●	●	34	20				20	125	32.5	19							
	●	●	34	20				20	125	32.5	19							
KG D ^φ /L 1212JX-3 1616JX-3 1616JX-3D38 1913K-3D38 2012JX-3D42 2012JX-3D51 2020JX-3D42 2020JX-3D51	●	●	24	12	2	4.5	10	12	120	19.5	10.8	2.4	1°	3.0	4.0	SB-40120TR	LTW-15S	
	●	●	32	16				16	120	24.5	14.8							
	●	●	38	19	-	6	13	13	125	29	11.8	2.4	1°	3.0	4.0	SE-50125TR	LTW-20	
	●	●	42	20				12	31	10.8								
	●	●	51	20				12	31	10.8								
	●	●	42	20	-	6	14	14	120	31	18.8	2.4	1°	3.0	4.0	SE-50125TR	LTW-20	
	●	●	51	20				14	31	18.8								

- Note) 1. 4mm width Insert can be installed in KG D^φ/L 1212JX-3, but is not recommended due to the toolholder's rigidity.
 2. Recommended tightening torque of clamp screw : 2.0N·m(SB-40120TR), 2.5N·m(SE-50125TR), 6.5N·m(HH5X16)
 3. When machining the material greater than φ36mm with KG D^φ/L...-3D38, KG D^φ/L...-3D42 or KG D^φ/L...-3D51 toolholders, please use 1-edge inserts.
- Applicable Inserts ● G19, G20

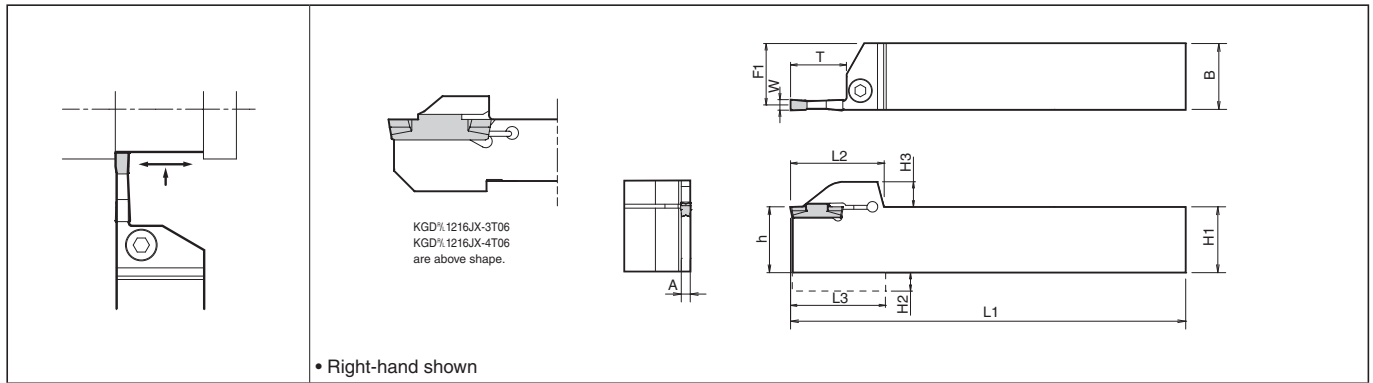
Toolholder Identification System



● : Std. Item

Toolholders for Grooving and Cut-off

KGD (Integral Type)



Toolholder Dimensions

Width (mm)	Max. depth of cu (mm)	Description	Std.		Dimension (mm)										Edge Width W (mm)		Spare Parts							
			R	L	H1=h	H2	H3	B	L1	L2	L3	F1	A	T	MIN.	MAX.	Clamp Bolt	Wrench						
2	6	KGD% 1616H-2T06	●	●	16	4.0	9.5	16	100	27.7	28.0	15.2	1.7	6	2.0	3.0	HH5X16	LW-4						
		2020K-2T06	●	●	20	-		20	125	28.0	-	19.2					HH5X25							
		2525M-2T06	●	●	25	-		25	150	28.0	-	24.2					HH5X25							
	10	KGD% 1616H-2T10	●	●	16	4.0		16	100	30.2	30.5	15.2					10		2.0	3.0	HH5X16	LW-4		
		2020K-2T10	●	●	20	-		20	125	30.5	-	19.2									HH5X25			
		2525M-2T10	●	●	25	-		25	150	30.5	-	24.2									HH5X25			
	17	KGD% 1616H-2T17	●	●	16	4.0		16	100	31.2	31.5	15.2					17		2.0	3.0	HH5X16	LW-4		
		2012K-2T17	●	●	20	-		12	125	-	-	11.2									HH5X16			
		2020K-2T17	●	●	20	-		20	125	32.5	-	19.2									HH5X25			
	2.4	17	KGD% 2012K-2.4T17	●	●	20		-	12	125	32.5	-					11.0		2.0	17	2.4	3.0	HH5X16	LW-4
			2020K-2.4T17	●	●	20		-	20	125	32.5	-					19.0						HH5X25	
3	6	KGD% 1216JX-3T06	●	●	12	2.0	9.5	16	120	19.5	19	14.8	2.4	6	3.0	4.0	SE-50125TR	LW-20						
		1616H-3T06	●	●	16	4.0		20	125	28.0	-	18.8					HH5X16							
		2020K-3T06	●	●	20	-		25	150	28.0	-	23.8					HH5X25							
	10	KGD% 1616H-3T10	●	●	16	4.0		16	100	30.2	30.5	14.8					10		3.0	4.0	HH5X16	LW-4		
		2020K-3T10	●	●	20	-		20	125	30.5	-	18.8									HH5X25			
		2525M-3T10	●	●	25	-		25	150	30.5	-	23.8									HH5X25			
	20	KGD% 1616H-3T20	●	●	16	4.0		16	100	34.2	34.5	14.8					20		3.0	4.0	HH5X16	LW-4		
		2012K-3T20	●	●	20	-		12	125	34.5	-	10.8									HH5X16			
		2020K-3T20	●	●	20	-		20	125	34.5	-	18.8									HH5X25			
	2525M-3T20	●	●	25	-	25		150	35.5	-	23.8	HH5X25												
4	6	KGD% 1216JX-4T06	●	●	12	2.0	9.5	16	120	19.5	19	14.3	3.4	6	4.0	5.0	SE-50125TR	LW-20						
		2020K-4T10	●	●	20	-		20	125	30.5	-	18.3					HH5X16							
	2525M-4T10	●	●	25	-	25		150	30.5	-	23.3	HH5X25												
	10	KGD% 2020K-4T20	●	●	20	-		20	125	34.5	-	18.3					10		4.0	5.0	HH5X16	LW-4		
		2525M-4T20	●	●	25	-		25	150	35.5	-	23.3									HH5X25			
	25	KGD% 2525M-4T25	●	●	25	-		25	150	40.5	-	23.3					25		4.0	5.0	HH5X25	LW-4		
5	10	KGD% 2020K-5T10	●	●	20	-	9.5	20	125	30.5	-	17.8	4.4	10	5.0	6.0	HH5X16	LW-4						
		2525M-5T10	●	●	25	-		25	150	30.5	-	22.8					HH5X25							
	17	KGD% 2020K-5T17	●	●	20	-		20	125	37.5	-	17.8					17		5.0	6.0	HH5X25	LW-4		
		2525M-5T17	●	●	25	-		25	150	37.5	-	22.8									HH5X25			
25	KGD% 2525M-5T25	●	●	25	-	25	150	40.5	-	22.8	25	5.0	6.0	HH5X25	LW-4									
6	15	KGD% 2525M-6T15	●	●	25	-	25	150	32.5	-	22.4	5.3	15	6.0	6.0	HH5X25	LW-4							
	30	KGD% 2525M-6T30	●	●	25	-	25	150	45.5	-	22.4					HH5X25								
8	25	KGD% 2525M-8T25	●	●	25	7.0	25	150	43.3	44.2	22.0	6.0	25	8.0	8.0	HH6X25	LW-5							
		3232P-8T25	●	●	32	-	32	170	43.3	-	29.0					HH6X25								

Note) 1. Dimension T : Maximum depth to which processing can be made. (If the dimension T is 20 mm or more, the maximum groove-depth of groove made by the 2-edge insert will be 18 mm.)
 2. Recommended tightening torque of clamp bolt : 6.5N·m(HH5X○○), 2.5N·m(SE-50125TR)
 3. Above toolholders are applicable to Cut-off, too.

Applicable Inserts **G19, G20**

● : Std. Item

G

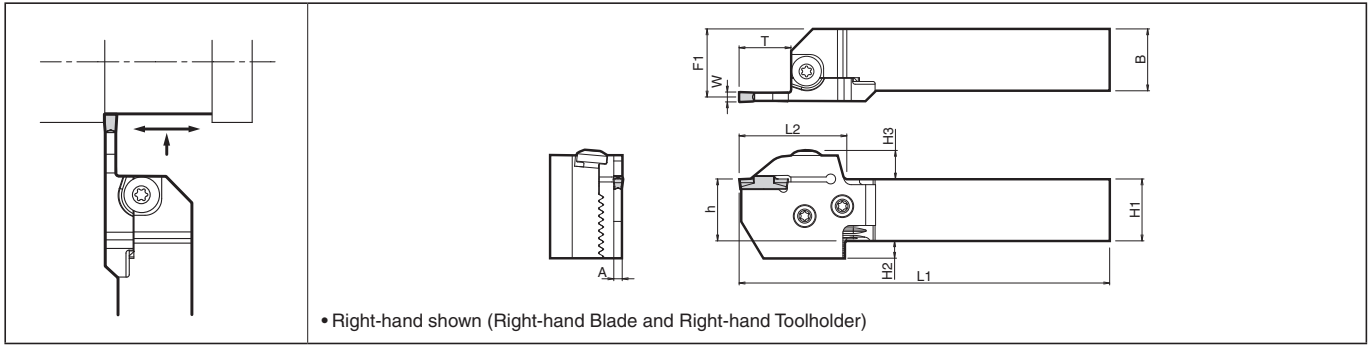
Grooving

External

Internal

Face

KGD-S (0° Separate Type)



Toolholder Dimensions (Blade + Toolholder)

Shank Angle	Width (mm)	Max. depth of cut (mm)	Shank Size (mm)	Unit Description (Standard Stock Description)	Std.		Blade Description G25	Toolholder Description G25	Dimension (mm)										Edge Width W (mm)	
					R	L			H1=h	H2	H3	B	L1	L2	L3	F1	A	T	MIN.	MAX.
0°	2	17	□20	KGD% 2020X-2T17S	●	●	KGD% -2T17-C	KGD% 2020-C	20	12	11.6	20	122	40	23.4	1.7	17	2.0	3.0	
			□25	2525X-2T17S	●	●		KGD% 2525-C	25	7		25	147							28.4
			□32	No unit description	→	KGD% 3232-C		32	-	32		167	35.4							
	3	10	□20	KGD% 2020X-3T10S	●	●	KGD% -3T10-C	KGD% 2020-C	20	12	20	115	33	23.0	2.4	10	3.0	4.0		
			□25	2525X-3T10S	●	●		KGD% 2525-C	25	7	25	140							28.0	
			□32	3232X-3T10S	●	●		KGD% 3232-C	32	-	32	160							35.0	
		20	□20	KGD% 2020X-3T20S	●	●	KGD% -3T20-C	KGD% 2020-C	20	12	20	125	43	23.0	2.0	20	3.0	4.0		
			□25	2525X-3T20S	●	●		KGD% 2525-C	25	7	25	150							28.0	
			□32	3232X-3T20S	●	●		KGD% 3232-C	32	-	32	170							35.0	
	4	10	□20	KGD% 2020X-4T10S	●	●	KGD% -4T10-C	KGD% 2020-C	20	12	20	115	33	22.5	3.4	10	4.0	5.0		
			□25	2525X-4T10S	●	●		KGD% 2525-C	25	7	25	140							27.5	
			□32	3232X-4T10S	●	●		KGD% 3232-C	32	-	32	160							34.5	
		20	□20	KGD% 2020X-4T20S	●	●	KGD% -4T20-C	KGD% 2020-C	20	12	20	125	43	22.5	2.0	20	4.0	5.0		
			□25	2525X-4T20S	●	●		KGD% 2525-C	25	7	25	150							27.5	
			□32	3232X-4T20S	●	●		KGD% 3232-C	32	-	32	170							34.5	
		25	□20	KGD% 2020X-4T25S	●	●	KGD% -4T25-C	KGD% 2020-C	20	12	20	130	48	22.5	2.5	25	3.0	4.0		
			□25	2525X-4T25S	●	●		KGD% 2525-C	25	7	25	155							27.5	
			□32	3232X-4T25S	●	●		KGD% 3232-C	32	-	32	175							34.5	
	5	10	□20	KGD% 2020X-5T10S	●	●	KGD% -5T10-C	KGD% 2020-C	20	12	20	115	33	22.0	4.4	10	5.0	6.0		
			□25	2525X-5T10S	●	●		KGD% 2525-C	25	7	25	140							27.0	
			□32	3232X-5T10S	●	●		KGD% 3232-C	32	-	32	160							34.0	
		25	□20	KGD% 2020X-5T25S	●	●	KGD% -5T25-C	KGD% 2020-C	20	12	20	130	48	22.0	2.5	25	3.0	4.0		
			□25	2525X-5T25S	●	●		KGD% 2525-C	25	7	25	155							27.0	
			□32	3232X-5T25S	●	●		KGD% 3232-C	32	-	32	175							34.0	

Note) 1. When using the toolholder in normal mounting position, the lower jaw of toolholder may interfere with the tool presetter.

Applicable Inserts G19, G20

2. The toolholder and blade descriptions are printed on the toolholder body. (Unit description is not printed.)

KGD-S: Right-hand Blade for Right-hand Toolholder, Left-hand Blade for Left-hand Toolholder.

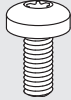
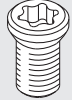
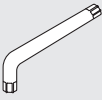
The toolholder is applicable for all blade with suitable hand.

3. In case the unit description is not available (No unit description), please purchase toolholder and blade separately.

4. Dimension T : Maximum depth to which processing can be made. (If the dimension T is 20 mm or more, the maximum groove-depth of groove made by the 2-edge insert will be 18 mm.)

Spare Parts (Common with separate types)

* The parts are included in the toolholder and unit.

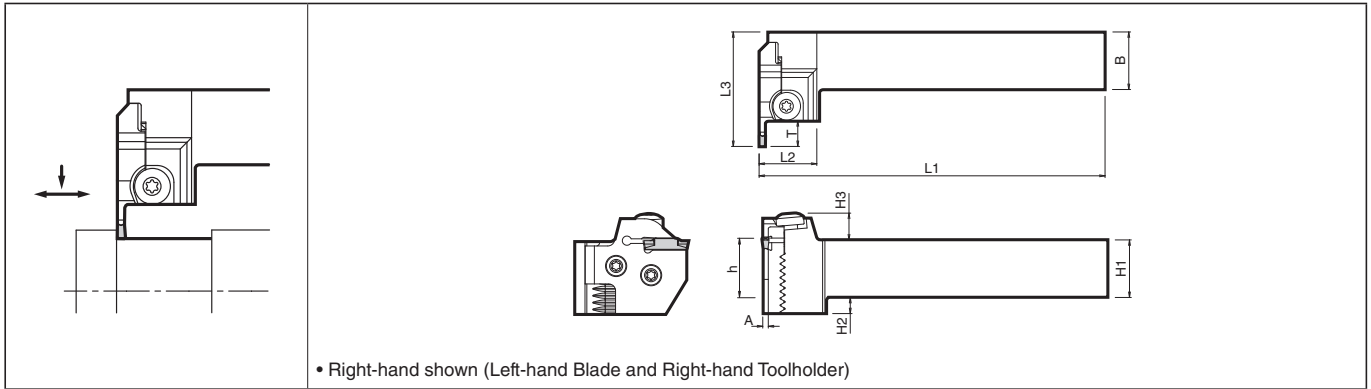
Unit Description	Spare Parts		
	Clamp Bolt (for Insert Clamp)	Clamp Screw (for Blade)	Wrench
KGD%...S			
	BH6X10TR	SB-60120TR	LTW-25

● : Std. Item



Grooving Toolholder

KGDS-S (90° Separate Type)



Toolholder Dimensions (Blade + Toolholder)

Shank Angle	Width (mm)	Max. depth of cut (mm)	Shank Size (mm)	Blade Description G25	Toolholder Description G25	Unit Description (Standard Stock Description)	Std.	Dimension (mm)											Edge Width W (mm)								
								R	L	H1-h	H2	H3	B	L1	L2	L3	F1	A	T	MIN.	MAX.						
90°	2	17	□20	KGDS ^{1/2} _R -2T17-C	KGDS ^{1/2} _L 2020-C	-	-	-	20	12	11.6	20	125	27.7	56.7	-	1.7	17	2.0	3.0							
			□25	KGDS ^{1/2} _R 2525-C	-	-	-	25	7	25		150															
	3	10	□20	KGDS ^{1/2} _R -3T10-C	KGDS ^{1/2} _L 2020-C	KGDS ^{1/2} _L 2020X-3T10S	●	●	20	12		20	125								49.7	-	2.4	10	3.0	4.0	
			□25	KGDS ^{1/2} _R 2525-C	2525X-3T10S	●	●	25	7	25		150															
		20	□20	KGDS ^{1/2} _R -3T20-C	KGDS ^{1/2} _L 2020-C	-	-	-	20	12		20	125														59.7
			□25	KGDS ^{1/2} _R 2525-C	-	-	-	25	7	25		150															
	4	10	□20	KGDS ^{1/2} _R -4T10-C	KGDS ^{1/2} _L 2020-C	-	-	-	20	12		20	125								49.7	-	3.4	20	4.0	5.0	
			□25	KGDS ^{1/2} _R 2525-C	-	-	-	25	7	25		150															
		20	□20	KGDS ^{1/2} _R -4T20-C	KGDS ^{1/2} _L 2020-C	-	-	-	20	12		20	125														59.7
			□25	KGDS ^{1/2} _R 2525-C	-	-	-	25	7	25		150															
		25	□20	KGDS ^{1/2} _R -4T25-C	KGDS ^{1/2} _L 2020-C	-	-	-	20	12		20	125														64.7
			□25	KGDS ^{1/2} _R 2525-C	-	-	-	25	7	25		150															
5	10	□20	KGDS ^{1/2} _R -5T10-C	KGDS ^{1/2} _L 2020-C	-	-	-	20	12	20	125	49.7	-	4.4	10	5.0	6.0										
		□25	KGDS ^{1/2} _R 2525-C	-	-	-	25	7	25	150																	
	25	□20	KGDS ^{1/2} _R -5T25-C	KGDS ^{1/2} _L 2020-C	-	-	-	20	12	20	125							64.7									
		□25	KGDS ^{1/2} _R 2525-C	-	-	-	25	7	25	150																	

Note) 1. When using the toolholder in normal mounting position, the lower jaw of toolholder may interfere with the tool presetter.

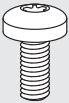

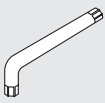
2. The toolholder and blade descriptions are printed on the toolholder body. (Unit description is not printed.)
KGDS-S: **Left-hand Blade for Right-hand Toolholder, Right-hand Blade for Left-hand Toolholder.**
The toolholder is applicable for all blade with suitable hand.

3. Dimension T : Maximum depth to which processing can be made. (If the dimension T is 20 mm or more, the maximum groove-depth of groove made by the 2-edge insert will be 18 mm.)

Applicable Inserts ● G19, G20

Spare Parts (Common with separate types)

* The parts are included in the toolholder and unit.

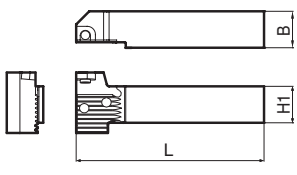
Unit Description	Spare Parts		
	Clamp Bolt (for Insert Clamp)	Clamp Screw (for Blade)	Wrench
KGDS ^{1/2} _LS	 BH6X10TR	 SB-60120TR	 LTW-25

● : Std. Item

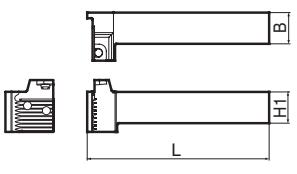
Toolholders and Blades for Grooving and Cut-off

● Toolholder

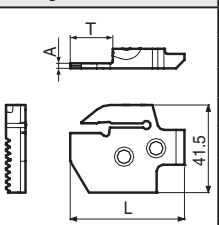
KGDS (0° Separate Type)

Shape of 0° type Right-hand shown	Toolholder Description	Std.		Dimension		
		R	L	L	B	H1
	KGDS [®] /L 2020-C	●	●	104	20	20
	2525-C	●	●	129	25	25
	3232-C	●	●	149	32	32

KGDS-S (90° Separate Type)

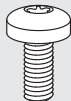
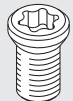
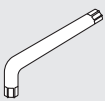
Shape of 90° type Right-hand shown	Toolholder Description	Std.		Dimension		
		R	L	L	B	H1
	KGDS [®] /L 2020-C	●	●	122	20	20
	2525-C	●	●	147	25	25

● Blade

Shape of Blade Right-hand shown	Blade Description	Std.		Dimension		
		R	L	L	T	A
	KGDS [®] /L -2T17-C	●	●	51.2	17.2	1.7
	-3T10-C	●	●	44.2	10.2	2.4
	-3T20-C	●	●	53.2	20.2	
	-4T10-C	●	●	44.2	10.2	3.4
	-4T20-C	●	●	54.2	20.2	
	-4T25-C	●	●	59.2	25.2	4.4
	-5T10-C	●	●	44.2	10.2	
	-5T25-C	●	●	59.2	25.2	

● Spare Parts (Common with separate types)

* The parts are included in the toolholder.

Unit Description	Spare Parts		
	Clamp Bolt (for Insert Clamp)	Clamp Screw (for Blade)	Wrench
			
KGDS [®] /L.....S KGDS [®] /L.....S	BH6X10TR	SB-60120TR	LTW-25

● : Std. Item

G



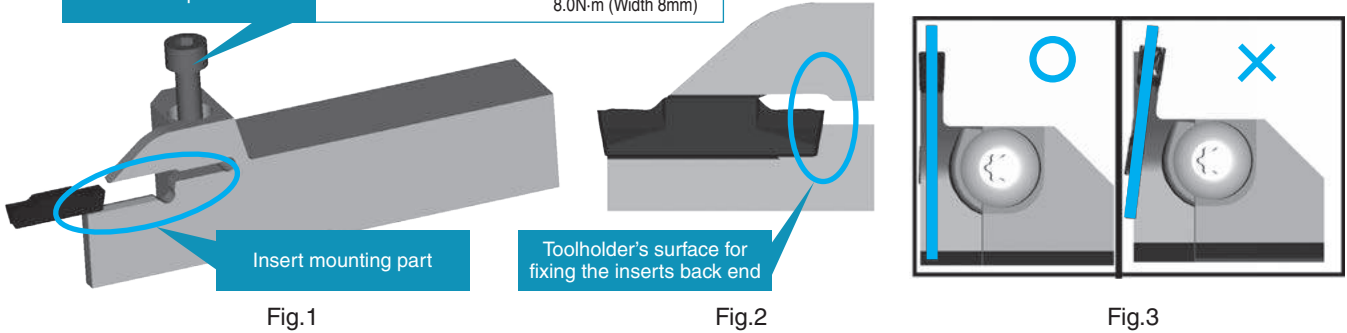
Grooving

Setting the inserts and the blade

Setting the inserts

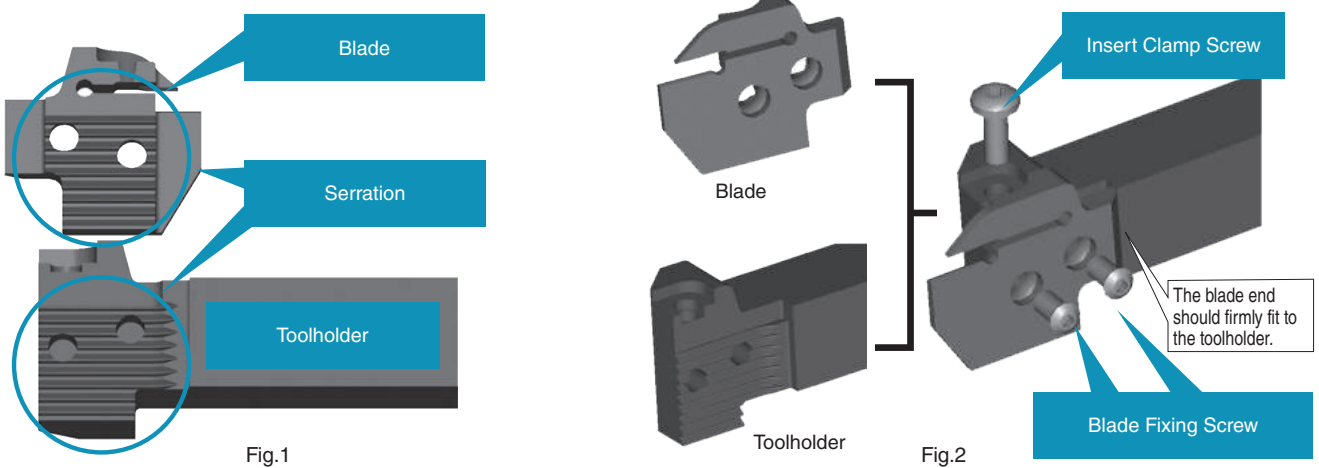
1. Use compressed air or other measures to remove chips from the insert mounting part (Ref. to Fig. 1).
2. Put the insert into the toolholder and push it makes contact with the back end of toolholder's surface (Ref. to Fig. 2 and 3).
3. Keeping the insert fit to the surface, tighten the insert clamp screw at an appropriate torque.
4. Make sure that there is no gap between the insert and the back end of the toolholder's surface and that the insert is set straight (Ref. to Fig. 2 and 3).

Clamp Screw (For Automatic Lathe)	Recommended tightening torque: 2.0N·m (SB-40120TR) 2.5N·m (SE-50125TR)
Clamp Bolt	Recommended tightening torque: 6.5N·m (Width 2-6mm) 8.0N·m (Width 8mm)



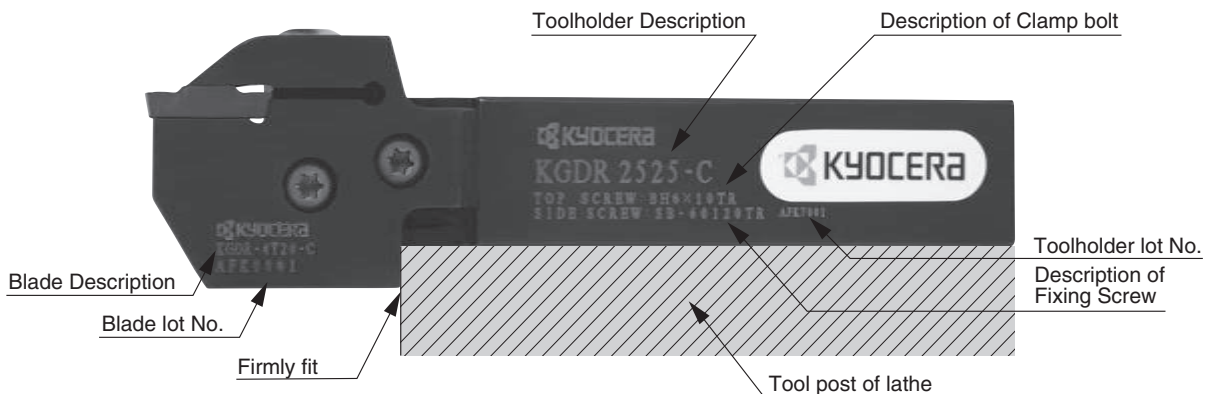
Setting the blade (Separate type toolholder)

1. Use compressed air or other measures to remove chips and dust from the serration part (Ref. to Fig. 1).
2. Mate and fit the serrations of the blade and toolholder, and also fit the blade end to the toolholder. (Ref. to Fig. 2)
3. Tighten the blade fixing screws at an appropriate torque. You can tighten them in any order. (Ref. to Fig. 2)
(Recommended tightening torque : 8N·m)
4. Set the insert after setting the blade.



Separate type Toolholder Identification System and Their Setting to Lathe

- Firmly fit the lower jaw to the tool post of the lathe.



G

Grooving

External

Internal

Face

Recommended Cutting Conditions

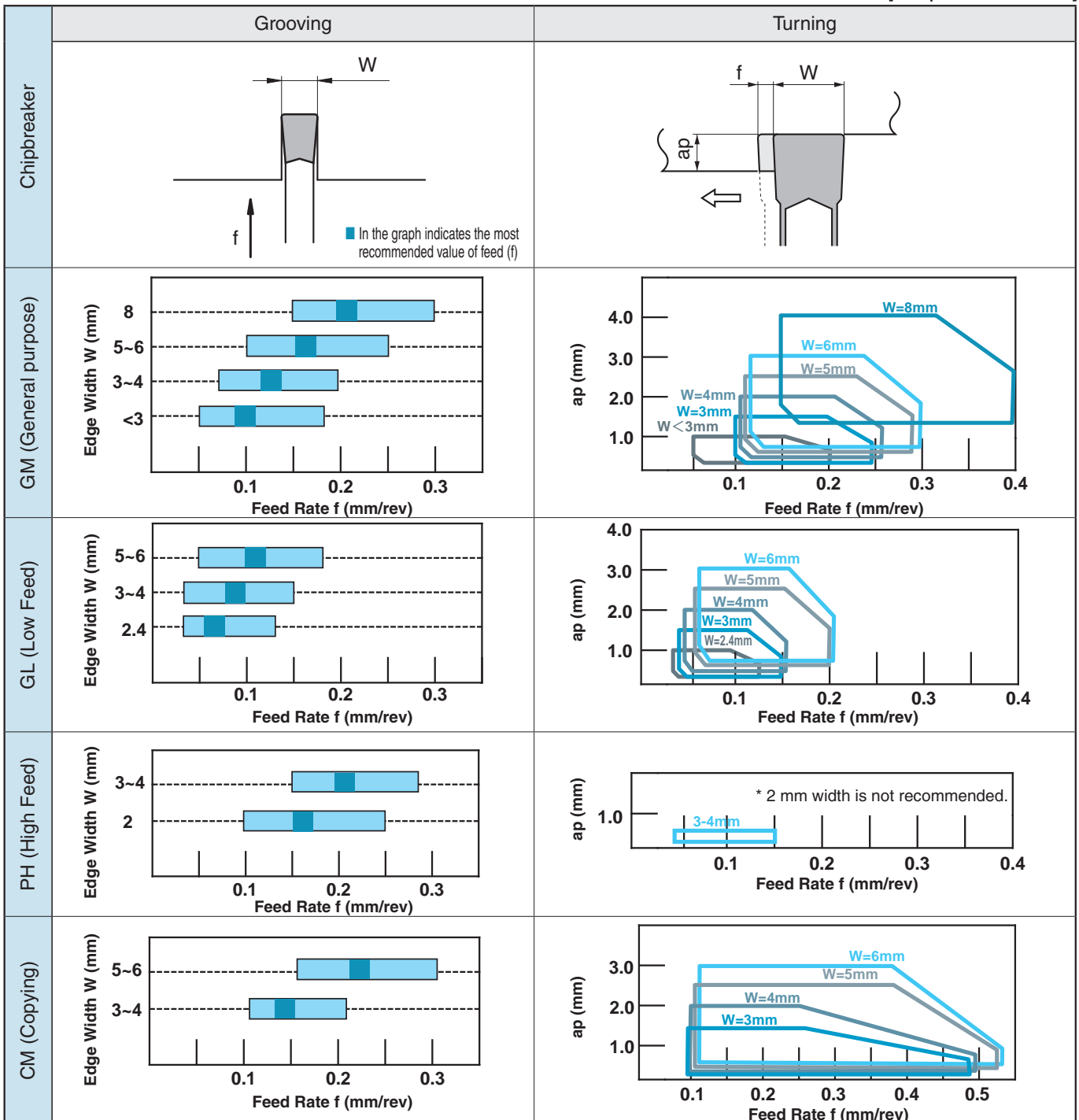
Recommended Cutting Conditions (Vc)

Workpiece Material	Chipbreaker	Recommended Insert Grades (Cutting Speed Vc: m/min)									Remarks
		Cermet		MEGACOAT NANO	MEGACOAT		Carbide	MEGACOAT CBN	CBN	PCD	
		TN620	TN90	PR1535	PR1225	PR1215	GW15	KBN05M	KBN570	KPD001	
Carbon Steel	GM GL CM PH GS	☆80-220	☆100-220	☆80-200	★80-200	☆100-200	-	-	-	-	
Alloy Steel		☆70-200	☆80-200	☆70-180	★70-180	☆80-180	-	-	-	-	
Stainless Steel		-	-	★60-150	★60-150	☆60-150	-	-	-	-	
Cast Iron		-	-	-	-	★100-200	-	-	-	-	
Aluminum	GS NB	-	-	-	-	-	☆200-500	-	-	★150-2,000	
Brass		-	-	-	-	-	☆100-200	-	-	★200-800	
Hard materials	NB	-	-	-	-	-	-	★80-150	-	-	
Sintered Steel		-	-	-	-	-	-	-	★100-250	-	

★:1st Recommendation ☆:2nd Recommendation

Recommended Cutting Conditions (Feed Rate / ap)

[Workpiece Material: S50C]



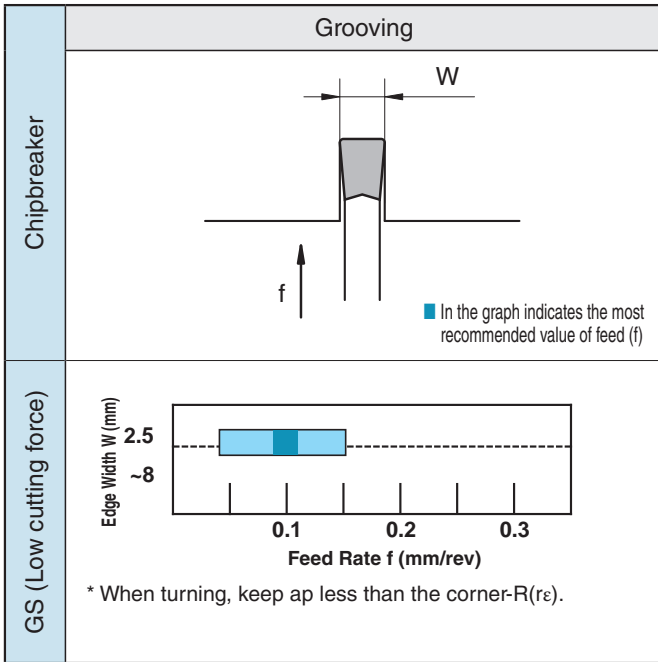
Note) 1. The above values are based on the condition that the dimension T of toolholder is 17 mm or less.

2. If the toolholder is not for the 8mm width insert and its dimension T is over 17mm, set the values for turning to less than 90% of those above.



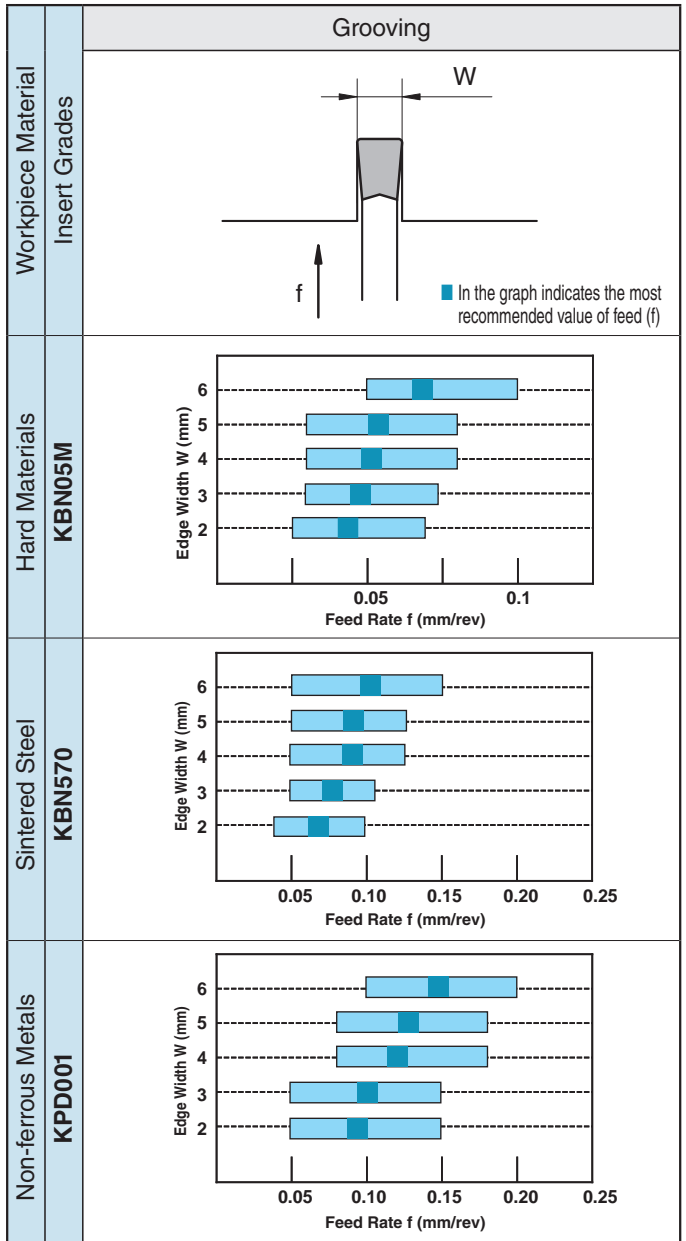
Recommended Cutting Conditions

◆ Recommended Cutting Conditions (Feed Rate / ap) [Workpiece Material: S50C]



Note) 1. The above values are based on the condition that the dimension T of toolholder is 17 mm or less.

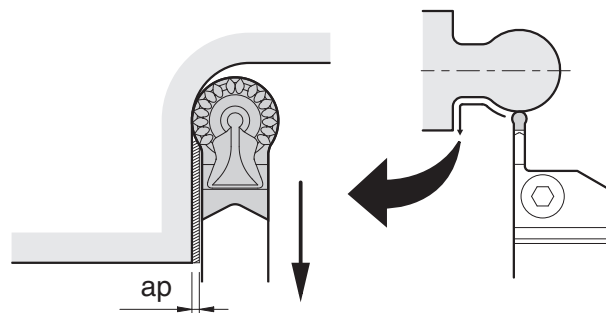
◆ Recommended Cutting Conditions (Feed Rate)



◆ CM Chipbreaker [Cutting amount (ap) in back copying]

● Max. ap in back copying

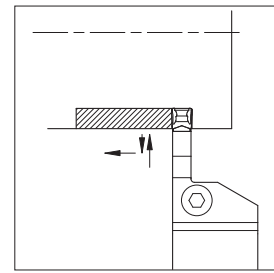
Description	Max. ap (mm)				
	Toolholder Description				
	KGD....2T...	KGD....3T...	KGD....4T...	KGD....5T...	KGD....6T...
GDM 3020N-150R-CM	0.24	0.20	-	-	-
4020N-200R-CM	-	0.24	0.20	-	-
5020N-250R-CM	-	-	0.30	0.20	-
6020N-300R-CM	-	-	-	0.30	0.25



Guide for External Grooving

Point (I) (Turning after Grooving)

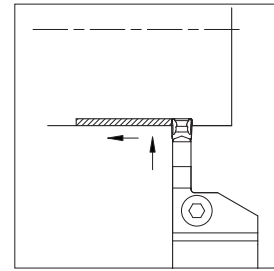
- 1) Grooving Depth Over 0.5mm: For roughing (Refer to Fig. 1)
Before turning, pull the tool back about 0.1mm after grooving, instead of turning subsequent to grooving.
(Failure to pull the tool back before traverse machining will result in an unbalanced load applied on only one side of the cutting edge.)



Before turning, pull the tool back about 0.1mm after grooving.
(Grooving Depth Over 0.5mm: At roughing)

Fig. 1

- 2) Grooving Depth under 0.5mm: For finishing (Refer to Fig.2)
Turning subsequent to grooving is possible because shallow groove depths relate a small load on the cutting edge.
(Retention time is not necessary.)



Turning subsequent to grooving
(Grooving Depth under 0.5mm: At finishing)

Fig. 2

Point (II)

- 1) When widening the groove width (Refer to Fig.3), apply the "Step Turning."
 - 2) The widened groove and side walls should be finished last.
(For better chip control, a_p over 0.5mm is recommended.)
- Note) If the workpiece is not supported at the center, reduce the feed rate when grooving towards center.

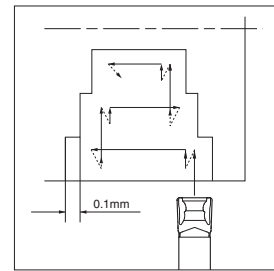


Fig. 3



Case Studies

SCr420H (Grooving)	
<ul style="list-style-type: none"> ·Gear ·$V_c=113\sim 164$ m/min ·$f=0.06$ mm/rev ·Wet ·GDM4020N-040GM (PR1225) ·KGDL2525X-3T10S 	
GM Chipbreaker (PR1225)	1,500 pcs/C
Competitor K (PVD Coated Carbide)	250 pcs/C
<p>· GM chipbreaker (PR1225) showed 6 times longer tool life than that of Competitor K.</p> <p>· Good chip control without burned chips.</p>	
(Evaluation by the user)	

SCM420 (Grooving / Turning)	
<ul style="list-style-type: none"> ·Gear ·$V_c=170$ m/min ·$f=0.15$ mm/rev (Roughing) ·0.10 mm/rev (Finishing) ·$a_p=0.2$ mm (Finishing) ·Wet ·GDM4020N-040GM (PR1215) ·KGDR2525X-4T20S 	
GM Chipbreaker (PR1215)	250 pcs/C
Competitor L (Roughing: PVD Coated Carbide, Finishing: Cermet)	200 pcs/C
<p>· GM chipbreaker reduced occurrence rate of tangle of chips (occurrence rate $80\% \Rightarrow 10\%$). The problem was persistent with Competitor L. Machining productivity is improved.</p>	
(Evaluation by the user)	

Multi-Function / Grooving (Cut-off)

GMM / GMG (Will be switched to GDM / GDG **G19~G20**)

Classification of usage	
P	Carbon steel / Alloy steel
M	Stainless Steel
K	Cast Iron
N	Non-ferrous Metals
S	Titanium Alloys
H	Hard materials (~40HRC)
H	Hard materials (40HRC~)

: Continuous-Light Interruption / 1st Choice
 : Continuous-Light Interruption / 2nd Choice
 : Continuous / 1st Choice
 : Continuous / 2nd Choice


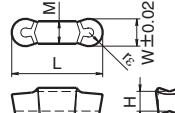

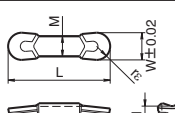

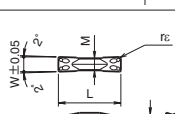
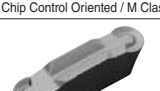
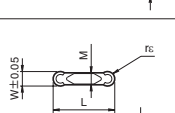

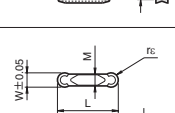

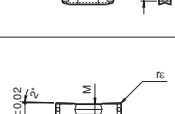
Insert	Description	Dimension (mm)						Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide			Carbide KW10	Ref. to Page for Applicable Toolholders
		W	r _ε	M	L	H	PR915			PR930	PR905			
<p>Chip Control Oriented / M Class</p> <p>Shows GMM2420-02</p>	GMM 2420-020MW	2.4	0.2	1.9	20	4.3	●	●	●	●	●	●	G34 G35	
	3020-020MW	3.0	0.2	2.3			●	●	●	●	●	●		
	3020-040MW		0.4				●	●	●	●	●			
	4020-020MW	4.0	0.2	3.3			●	●	●	●	●	●		
	4020-040MW		0.4				●	●	●	●	●			
	4020-080MW		0.8				●	●	●	●	●			
	5020-040MW	5.0	0.4	4.2			●	●	●	●	●	●		
	5020-080MW		0.8				●	●	●	●	●			
	6020-040MW	6.0	0.4	5.2			●	●	●	●	●	●		
6020-080MW	0.8		●		●	●	●	●						
8030-080MW	8.0	0.8	6.0	30	5.5	●	●	●	●	●	G34,G62			
<p>Sharp-Cutting Oriented / M Class</p>	GMM 3020-020MS	3.0	0.2	2.3	20	4.3	●	●	●	●	●	G34 G35		
	3020-040MS		0.4				●	●	●	●				
	4020-040MS	4.0	0.4	3.3			●	●	●	●				
	5020-040MS	5.0	0.4	4.2			●	●	●	●				
	6020-040MS		0.8	●			●	●	●					
<p>Sharp-Cutting Oriented / Precision Class</p>	GMG 3020-000MS	3.0	0.0	2.3	20	4.3	●	●	●	●	●	G34 G35		
	3020-020MS		0.2				●	●	●	●				
	3020-040MS		0.4				●	●	●	●				
	4020-020MS	4.0	0.2	3.3			●	●	●	●	●		●	
	4020-040MS		0.4				●	●	●	●	●			
	4020-080MS		0.8				●	●	●	●	●			
	5020-040MS	5.0	0.4	4.2			20	4.3	●	●	●		●	●
	5020-080MS		0.8	●			●	□	●	●	●			
	6020-040MS	6.0	0.4	5.2			20	4.3	●	●	●		●	●
6020-080MS	0.8		●		●	●	●	●						
<p>Sharp-Cutting Oriented / Precision Class Ground Chipbreaker</p>	GMG 2520-030MG	2.5	0.3	2.0	20	4.3	●	●	●	●	□	●	G34 G35	
	3020-030MG	3.0		2.3			●	●	●	●	●			
	3520-030MG	3.5		2.8			●	●	●	●	●			
	4020-040MG	4.0	3.3	●			●	●	●	●	●			
	5020-040MG	5.0	0.4	4.2			●	●	●	●	●			
	6020-040MG		0.8	●			●	●	●	●				
	8030-050MG	8.0	0.5	6.0			30	5.5	●	●	●	●		●
<p>Chip Control Oriented / M Class Full-R / Copying</p>	GMM 3020-150R	3.0	1.5	2.3	20	4.3	●	●	●	●	●	G34 G35		
	4020-200R	4.0	2.0	3.3			●	●	●	●	●			
	5020-250R	5.0	2.5	4.2			●	●	●	●	●			
	6020-300R	6.0	3.0	5.2			●	●	●	●	●			
<p>Sharp-Cutting Oriented / Precision Class Full-R / Copying</p>	GMG 3020-150R	3.0	1.5	2.3	20	4.3	●	●	●	●	●	G34 G35		
	4020-200R	4.0	2.0	3.3			●	●	●	●	●			
	5020-250R	5.0	2.5	4.2			●	●	●	●	●			
	6020-300R	6.0	3.0	5.2			●	●	●	●	●			
<p>Undercutting Chip Control Oriented</p>	GMG 3020-150RU	3.0	1.5	2.3	20	4.3	●	●	●	●	●	G34 G35 G37		
	4020-200RU	4.0	2.0	3.3			●	●	●	●	●			
	5020-250RU	5.0	2.5	4.2			●	●	●	●	●			


Recommended Cutting Conditions **G105**

: Std. Item
 : Deleted from the next catalogue







Inserts are sold in 10 piece boxes.

GMM / GMGA / FGG






Insert		Description	Dimension (mm)					Cermet		CVD Coated Carbide		PVD Coated Carbide		Carbide	Ref. to Page for Applicable Toolholders
			W	r _ε	M	L	H	TN90	CR9025	PR915	PR930	KW10			
 Sharp-Cutting Oriented / Precision Class Full-R / Copying		 GMMGA 6020-300R	6.0	3.0	4.3	20	4.3								G34 G35
 Sharp-Cutting Oriented / Precision Class Full-R / Copying		 GMMGA 8030-400R	8.0	4.0	6.0	30	5.5								G34 G62
 Chip Control Oriented / M Class		 GMM 3014-04	3.0	0.4	2.3	14	4.3	●	●	●	●	●	●	●	G36
 Chip Control Oriented / M Class Full-R / Copying		 GMM 3014-15R	3.0	1.5	2.3	14	4.3	●	□			●	●		
 Chip Control Oriented Undercutting		 GMM 3014-15RU	3.0	1.5	2.3	14	4.3					●			
 Chip Control Oriented / Precision Class Face Grooving		 FGG ^{R/L} 3020-02 4020-04 5020-04	3.0 4.0 5.0	0.2 0.4 0.4	2.3 3.3 4.2	20	4.3	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	G36

Recommended Cutting Conditions  G105

Features of Chipbreaker

Series	Insert	Features
GMM-MW		Excellent chip evacuation at Grooving, Turning, Cut-off.
GMG-MG		Low cutting force with ground chipbreaker.
GMG-MS GMM-MS		Grooving / Turning / Cut-off operations are minimum cutting force at Positive Edge.
GMM-MT		Small corner-R(r _ε) and minimize the core which remains in the center of the face.
GMM-TK		Large corner-R(r _ε) and stable performance at cut-off.
GMM-NB		Flat rake face and non-chipbreaker. It works well for brass

Edge Preparation

Edge Prep.	Chamfer + Honed Corner-R(r _ε) = 0.05	Chamfer + Honed Sharp Corner
	MT Chipbreaker	
Edge Prep.	CR9025 / PR915 Chamfer + Honed Corner-R(r _ε) = 0.2-0.3	PR930 / KW10 Sharp Edge Corner-R(r _ε) = 0.2-0.3
		
TK Chipbreaker	CR9025 / PR915 Honed Corner-R(r _ε) = 0.05	PR930 / KW10 Sharp Edge Sharp Corner
Edge Prep.		
Without Chipbreaker (-NB)	CR9025	PR930 / KW10

• Sharp Edge Spec. can reduce cutting force by 40% less than that of chamfer edge.




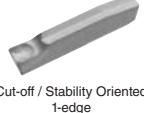



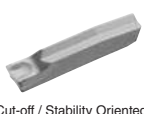

● : Std. Item
□ : Deleted from the next catalogue


Inserts are sold in 10 piece boxes.

Grooving / Cut-off (Multi-Function)

GMM / GMN

Classification of usage	P	Carbon steel / Alloy steel				
	M	Stainless Steel			☺	☹
☺: Continuous-Light Interruption / 1st Choice	K	Cast Iron				☺
☹: Continuous-Light Interruption / 2nd Choice	N	Non-ferrous Metals				☺
●: Continuous / 1st Choice	S	Titanium Alloys				☺
○: Continuous / 2nd Choice	H	Hard materials (~40HRC)		○	●	
		Hard materials (40HRC~)				

Insert	Description	Dimension (mm)					Angle	Cermel	CVD Coated Carbide	PVD Coated Carbide	Carbide	Ref. to Page for Applicable Toolholders		
		W	r _ε	M	L	H							θ	TN90
 <p>Deep Grooving / Cut-off Sharp-Cutting Oriented</p>	GMM 1520-MT	1.5	0.0 0.05	1.2	20	4.3	-				●	G34 G35		
	2020-MT	2.0	0.0 0.05	1.5						●	●		●	●
	2520-MT	2.5	0.0 0.05	1.9						●	●		●	●
	3020-MT	3.0	0.0 0.05	2.3						●	●		●	●
 <p>Deep Grooving / Cut-off Sharp-Cutting Oriented Without Chipbreaker</p>	GMM 1520-NB	1.5	0.0 0.05	1.2	20	4.3	-				●			
	2020-NB	2.0	0.0 0.05	1.5						●				●
	2520-NB	2.5	0.0 0.05	1.9						●				●
	3020-NB	3.0	0.0 0.05	2.3						●				●
 <p>Deep Grooving / Cut-off Stability Oriented</p>	GMM 2020-TK	2.0	0.20	1.5	20	4.3	-			●	●		●	
	2520-TK	2.5		1.9						●	●		●	●
	3020-TK	3.0	0.30	2.3						●	●		●	●
 <p>Cut-off / Stability Oriented 1-edge</p>	GMN 2-TK	2.0	0.20	1.5	20	4.3	-			●	●		●	
	3-TK	3.0	0.25	2.3						●	●	●	●	
	4-TK	4.0	0.30	3.3										
 <p>Deep Grooving / Cut-off 1-edge</p>	GMN 2.2	2.2	0.17	1.8	20	4.3	-	●	●		●	●		
	3	3.0	0.20	2.3						●	●		●	●
	4	4.0	0.25	3.3						●	●		●	●
	5	5.0	0.80	4.2						●	●		●	●
	6	6.0	0.80	5.2						●	●		●	●
 <p>Cut-off Sharp-Cutting Oriented With lead angle</p>	GMM 1520%L-MT-15D	1.5	0 0.05	1.2	20	4.3	15°				●	●	●	
	2020%L-MT-15D	2.0	0 0.05	1.5						●	●	●	●	●
	2520%L-MT-15D	2.5	0 0.05	1.9						●	□		●	●
	3020%L-MT-15D	3.0	0 0.05	2.3						●	●		●	●
 <p>Cut-off Stability Oriented With lead angle</p>	GMM 2020R-TK-8D	2.0	0.20	1.5	20	4.3	8°			●	●	●		
	2520R-TK-8D	2.5	0.20	1.9						●	●	●	●	
	3020R-TK-8D	3.0	0.25	2.3						●	●	●	●	
 <p>Cut-off / Stability Oriented 1-edge / Lead Angle</p>	GMR 2-TK-8D	2.0	0.20	1.5	20	4.3	8°			□	●	●		
	3-TK-8D	3.0	0.25	2.3						□	●	●	●	
	4-TK-8D	4.0	0.30	3.3						□	●	●	●	
 <p>Cut-off / Sharp-Cutting Oriented 1-edge / Lead Angle</p>	GM%L 2.2-8D	2.2	0.17	1.8	20	4.3	8°	●	●		●	●		
	2.2-15D		0.00							●	●	●	●	
	3-4D	3.0	0.20	2.3						●	●	●	●	
	4-4D	4.0	0.25	3.3						●	●	●	●	

Recommended Cutting Conditions  G105

● : Std. Item
□ : Deleted from the next catalogue

GMN

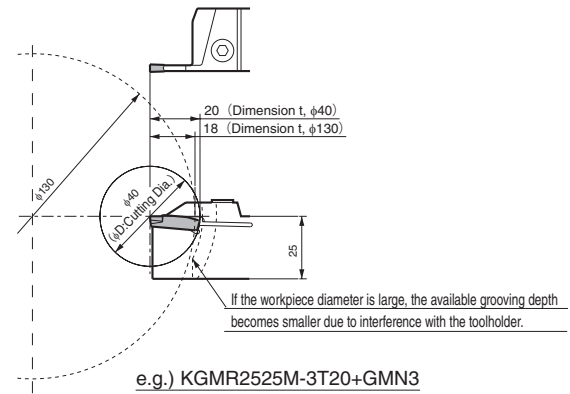
Classification of usage	P	Carbon steel / Alloy steel			
	M	Stainless Steel			
●: Continuous-Light Interruption / 1st Choice	K	Cast Iron			
○: Continuous-Light Interruption / 2nd Choice	N	Non-ferrous Metals			●
●: Continuous / 1st Choice	S	Titanium Alloys			●
○: Continuous / 2nd Choice	H	Hard materials (~40HRC)			
		Hard materials (40HRC-)	○	●	

Insert	Description	Dimension (mm)					Angle	CBN		PCD		Ref. to Page for Applicable Toolholders
		W	r _ε	M	L	H		θ	KBN510	KBN525	KPD001	
	GMN 2	2.0	0.2 0.4	1.8	20	4.3	-	●	●	●	●	G34 G35
	3	3.0	0.2 0.4	2.3				●	●	●	●	
	4	4.0	0.2 0.4	3.3				●	●	●	●	
	5	5.0	0.2 0.4	4.2				●	●	●	●	
	6	6.0	0.2 0.4	5.2				●	●	●	●	

Recommended Cutting Conditions **G104**

Available Cutting Diameter of KGM (For automatic lathe) / KGM-T

There is a limit to available grooving depth depending on the workpiece diameter.



◆ KGM (For automatic lathe) Possible Cutting Diameter and Available Grooving Depth Table

Toolholder Description	φD (Cutting Dia.)																
	16	15	14	13	12.5	12	11	10	9	8	7	6	5	4	3	2	1
KGM^{φ/L} 0810K-1.5-125	-	-	-	-	-	-	-	-	-	-	-	-	10	14	16	32	
1010□-1.5...	-	-	-	-	-	-	-	20	25	32	40	60	∞	∞	∞	∞	
1212□-1.5...	-	-	-	-	25	26	28	32	36	40	60	100	∞	∞	∞	∞	
0810K-2-125	-	-	-	-	-	-	-	-	-	-	-	-	10	14	16	32	
1010□-2...	-	-	-	-	-	-	-	20	25	32	40	60	∞	∞	∞	∞	
1212□-2...	-	-	-	-	25	26	28	32	36	40	60	100	∞	∞	∞	∞	
1616□-2...	32	40	50	60	80	100	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	
1010□-2.5...	-	-	-	-	-	-	-	20	25	32	40	60	∞	∞	∞	∞	
1212□-2.5...	-	-	-	-	25	26	28	32	36	40	60	100	∞	∞	∞	∞	
1616□-2.5...	32	40	50	60	80	100	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	
1616□-3...	32	40	50	60	80	100	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	
Available Grooving Depth t (mm)	16	15	14	13	12.5	12	11	10	9	8	7	6	5	4	3	2	1

◆ KGM-T Possible Cutting Diameter and Available Grooving Depth Table (GMN, GM^{φ/L} when using 1-edge insert)

Toolholder Description	φD (Cutting Dia.)														
	30	27	25	23	22	20	19	18	17	16	15	14	Under 13		
KGM^{φ/L} 2012K-2T17	-	-	-	-	-	-	-	-	66	80	130	260			
2020K-2T17	-	-	-	-	-	-	-	-	66	80	130	260			
2525M-2T17	-	-	-	-	-	-	-	-	66	80	130	260			
1616H-3T20	-	-	-	-	-	40	54	70	100	180	∞	∞			
2012K-3T20	-	-	-	-	-	40	54	70	100	180	∞	∞			
2020K-3T20	-	-	-	-	-	40	54	70	100	180	∞	∞			
2525M-3T20	-	-	-	-	-	40	54	70	100	180	∞	∞			
2020K-4T20	-	-	-	-	-	40	54	70	100	180	∞	∞			
2525M-4T20	-	-	-	-	-	40	54	70	100	180	∞	∞			
2525M-4T25	-	-	50	140	240	∞	∞	∞	∞	∞	∞	∞			
2525M-5T25	-	-	50	140	240	∞	∞	∞	∞	∞	∞	∞			
3232P-5T25	-	-	50	280	600	∞	∞	∞	∞	∞	∞	∞			
2525M-6T30	100	300	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞			
Available Grooving Depth t (mm)	30	27	25	23	22	20	19	18	17	16	15	14	Under 13		

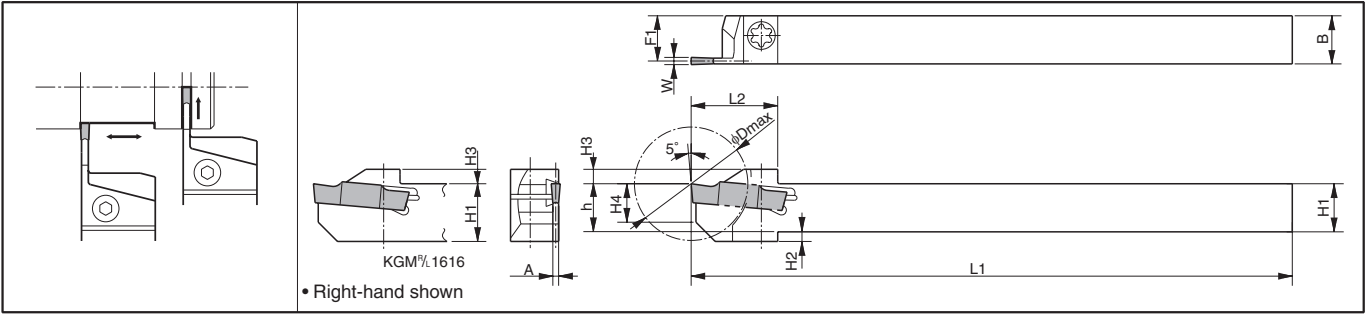
● : Std. Item

CBN & PCD Inserts are sold in 1 piece boxes.











External Grooving Toolholders

KGM (For Automatic Lathe) (Will be switched to KGD)

Edge Width: 1.5~4.0mm

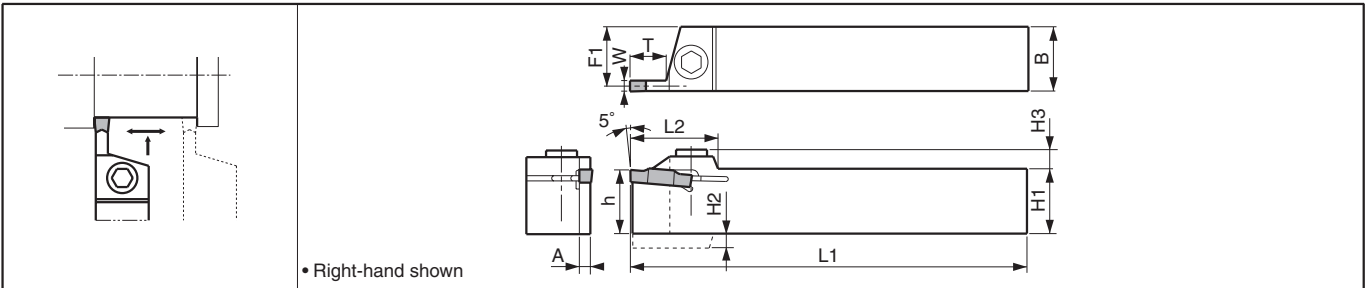


Toolholder Dimensions














Description	Std.		Cutting Dia. ϕD_{max}	Dimension (mm)										Edge Width W (mm)		Spare Parts	
	R	L		H1-h	H2	H3	H4	B	L1	L2	F1	A	MIN.	MAX.			
KGM ^{R/L} 1010JX-1.5	●	●	20	10	2	3	8	10	120	18	9.4	1.2	1.5	2.0		SE-40120TR	LTW-15S
	●	●	25	12		4	10	12		19	11.4						
KGM ^{R/L} 1010JX-2	●	●	20	10	2	3	8	10	120	18	9.15	1.7	2.0	3.0		SE-40120TR	LTW-15S
	●	●	25	12		4	10	12		19	11.15						
	●	●	32	16		-	4	9		16	24.5						
KGM ^{R/L} 1616JX-2	●	●	20	10	2	3	8	10	120	18	9	2.0	2.4	3.0		SE-40120TR	LTW-15S
	●	●	25	12		4	10	12		19	11						
	●	●	32	16		-	4	9		16	24.5						
KGM ^{R/L} 1010JX-2.5	●	●	20	10	2	3	8	10	120	18	9	2.0	2.4	3.0		SE-40120TR	LTW-15S
KGM ^{R/L} 1212JX-2.5	●	●	25	12		4	10	12		19	11						
KGM ^{R/L} 1616JX-2.5	●	●	32	16		-	4	9		16	24.5						
KGM ^{R/L} 1616JX-3	●	●	32	16	-	4	9	16	120	24.5	14.8	2.4	3.0	4.0		SE-50125TR	LTW-20
KGM ^{R/L} 1212F-1.5-85	●		25	12	2	4	10	12	85	19	11.4	1.2	1.5	2.0		SE-40120TR	LTW-15S
KGM ^{R/L} 1212F-2-85	●	●	25	12	2	4	10	12	85	19	11.15	1.7	2.0	3.0		SE-40120TR	LTW-15S
KGM ^{R/L} 1212F-2.5-85	●	●	25	12	2	4	10	12	85	19	11	2.0	2.4	3.0		SE-40120TR	LTW-15S

KGM (Will be switched to KGD)

Edge Width: 3.0~8.0mm




Toolholder Dimensions

Description	Std.		Dimension (mm)										Edge Width W (mm)		Spare Parts			
	R	L	H1-h	H2	H3	B	L1	L2	F1	A	T	MIN.	MAX.	Screw		Wrench		
																		
KGM ^{R/L} 1212H-3	●	●	12	4	6	12	100	27	10.8	2.4	9	3.0	3.0		-	LTW-20	-	
	●	●	16		7	16			14.8									
	●	●	20		7	20			18.8									
	●	●	25		7	25			23.8									
KGM ^{R/L} 2020K-3	●	●	20	-	7	20	125	27	18.8	3.4	10	4.0	5.0		-	-	LW-4	
	●	●	25	7	25	23.8												
KGM ^{R/L} 2525M-3	●	●	25	-	7	25	150	27	18.3	3.4	10	4.0	5.0		-	-	LW-4	
	●	●	25	7	25	23.3												
KGM ^{R/L} 2020K-4	●	●	20	-	7	20	125	27	17.8	4.4	10	5.0	6.0		-	-	LW-4	
	●	●	25	7	25	22.8												
	●	●	32	7	32	29.8												
KGM ^{R/L} 2525M-4	●	●	20	-	7	20	125	27	17.8	4.4	10	5.0	6.0		-	-	LW-4	
	●	●	25	7	25	22.8												
KGM ^{R/L} 2020K-5	●	●	20	-	7	20	125	27	17.8	4.4	10	5.0	6.0		-	-	LW-4	
	●	●	25	7	25	22.8												
KGM ^{R/L} 2525M-5	●	●	25	-	7	25	150	27	22.8	4.4	10	5.0	6.0		-	-	LW-4	
	●	●	32	7	32	29.8												
KGM ^{R/L} 3232P-5	●	●	32	-	7	32	170	27	29.8	4.4	10	5.0	6.0		-	-	LW-4	
	●	●	32	7	32	29.8												
KGM ^{R/L} 2525M-8	●	●	25	7.5	10.5	25	150	40	22.0	6.0	25	8.0	8.0		-	-	LW-5	
	●	●	32	7.5	10.5	32	170		29.0									

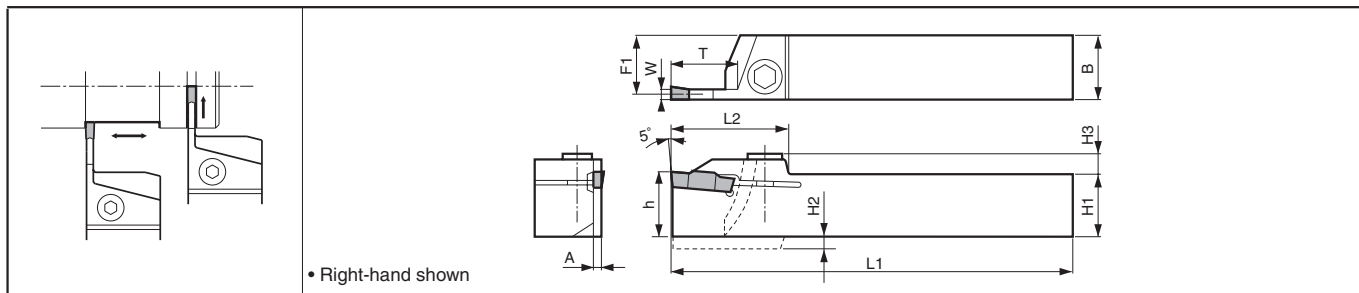
· Dimension T shows available grooving depth.

· 4mm width Insert can be installed in KGM^{R/L}1212H-3, but is not recommended due to the toolholder's rigidity.





● : Std. Item

KGM-T (Deep Grooving Type) (Will be switched to KGD 

Edge Width: 2.0~6.0mm



Toolholder Dimensions



Description	Std.	Dimension (mm)											Edge Width		Spare Parts			
		R	L	H1-h	H2	H3	B	L1	L2	F1	A	T	MIN.	MAX.	Screw		Wrench	
																		
KGM ^{R/L} 2012K-2T17 2020K-2T17 2525M-2T17	●●	20	-	7	12	125	33	11.15	1.7	17	2.0	3.0	SB-5TR	-	LTW-20	-		
	●●	25	-	7	20	150	33	19.15	1.7	17	2.0	3.0	-	HH5X16	-	LW-4		
	●●	25	-	7	25	150	33	24.15	1.7	17	2.0	3.0	-	HH5X25	-	LW-4		
KGM ^{R/L} 1616H-3T20 2012K-3T20 2020K-3T20 2525M-3T20	●●	16	4	7	16	100	36	14.8	2.4	20	3.0	4.0	-	HH5X16	-	LW-4		
	●●	20	-	7	12	125	36	10.8	2.4	20	3.0	4.0	SB-5TR	-	LTW-20	-		
	●●	20	-	7	20	125	36	18.8	2.4	20	3.0	4.0	-	HH5X16	-	LW-4		
	●●	25	-	7	25	150	36	23.8	2.4	20	3.0	4.0	-	HH5X25	-	LW-4		
KGM ^{R/L} 2020K-4T20 2525M-4T20 2525M-4T25	●●	20	-	7.5	20	125	36	18.3	3.4	20	4.0	5.0	-	HH5X16	-	LW-4		
	●●	25	-	7.5	25	150	36	23.3	3.4	20	4.0	5.0	-	HH5X25	-	LW-4		
	●●	25	-	7.5	41	150	41	23.3	3.4	25	4.0	5.0	-	HH5X25	-	LW-4		
KGM ^{R/L} 2525M-5T25 3232P-5T25	●●	25	-	8.5	25	150	42	22.8	4.4	25	5.0	6.0	-	HH5X25	-	LW-4		
	●●	32	-	8.5	32	170	42	29.8	4.4	25	5.0	6.0	-	HH5X25	-	LW-4		
KGM ^{R/L} 2525M-6T30	●●	25	-	9.5	25	150	45	22.4	5.3	30	6.0	6.0	-	HH5X25	-	LW-4		

• Dimension T shows the distance from the toolholder to the cutting edge. Ref. to the Table (G33) for the relationship between the available grooving depth and the cutting dia.
• When using GMG / GMM type (2-edge) insert, set the groove depth under 15mm.

Applicable Inserts

Applications	Grooving / Turning	Grooving / Turning	Grooving	Full-R / Copying	Full-R / Copying	Deep Grooving / Cut-off	Deep Grooving / Cut-off	Deep Grooving / Cut-off	Deep Grooving / Cut-off	Deep Grooving / Cut-off	Deep Grooving
Ref. to Page	G30	G30	G30	G30	G31	G32	G32	G32	G32	G32	G33
Insert	MW	MS	MG			MT	NB	TK	TK		CBN PCD
KGM ^{R/L} ...1.5	-	-	-	-	-	GMM1520..MT GMM2020..MT GMM1520%..MT GMM2020%..MT	GMM1520..NB GMM2020..NB	GMM2020..TK GMM2020%..TK	GMN2..TK GM%2..TK	-	-
KGM ^{R/L} ...2(T)	GMM2420..MW GMM3020..MW	GMG3020..MS GMM3020..MS	GMG2520..MG GMM3020..MG	GMG3020..R GMM3020..R	-	GMM2020..MT GMM2520..MT GMM3020..MT GMM2020%..MT GMM2520%..MT GMM3020%..MT	GMM2020..NB GMM2520..NB GMM3020..NB	GMM2020..TK GMM2520..TK GMM3020..TK GMM2020%..TK GMM2520%..TK GMM3020%..TK	GMN2..TK GMN3..TK GM%2..TK GM%3..TK	GMN2.2 GMN3 GM%2.2 GM%3	GMN2 GMN3
KGM ^{R/L} ...2.5	GMM2420..MW GMM3020..MW	GMG3020..MS GMM3020..MS	GMG2520..MG GMM3020..MG	GMG3020..R GMM3020..R	-	GMM2520..MT GMM3020..MT GMM2520%..MT GMM3020%..MT	GMM2520..NB GMM3020..NB	GMM2520..TK GMM3020..TK GMM2520%..TK GMM3020%..TK	GMN3..TK GM%3..TK	GMN3 GM%3	GMN3
KGM ^{R/L} ...3(T)	GMM3020..MW GMM4020..MW	GMG3020..MS GMM3020..MS GMM4020..MS	GMG3020..MG GMM3520..MG GMM4020..MG	GMG3020..R GMM3020..R GMM4020..R	-	GMM3020..MT GMM3020%..MT	GMM3020..NB	GMM3020..TK GMM3020%..TK	GMN3..TK GMN4..TK GM%3..TK GM%4..TK	GMN3 GMN4 GM%3 GM%4	GMN3 GMN4
KGM ^{R/L} ...4(T)	GMM4020..MW GMM5020..MW	GMM4020..MS GMM4020..MS GMM5020..MS	GMM4020..MG GMM5020..MG	GMM4020..R GMM4020..R GMM5020..R	-	-	-	-	GMN4..TK GM%4..TK	GMN4 GMN5 GM%4	GMN4 GMN5
KGM ^{R/L} ...5(T)	GMM5020..MW GMM6020..MW	GMM5020..MS GMM5020..MS GMM6020..MS	GMM5020..MG GMM6020..MG	GMM5020..R GMM5020..R GMM6020..R	GMGA6020..R	-	-	-	-	GMN5 GMN6	GMN5 GMN6
KGM ^{R/L} ...6T	GMM6020..MW	GMM6020..MS GMM6020..MS	GMM6020..MG	GMM6020..R GMM6020..R	GMGA6020..R	-	-	-	-	GMN6	GMN6
KGM ^{R/L} ...8	GMM8030..MW	-	GMM8030..MG	-	GMGA8030..R	-	-	-	-	-	-

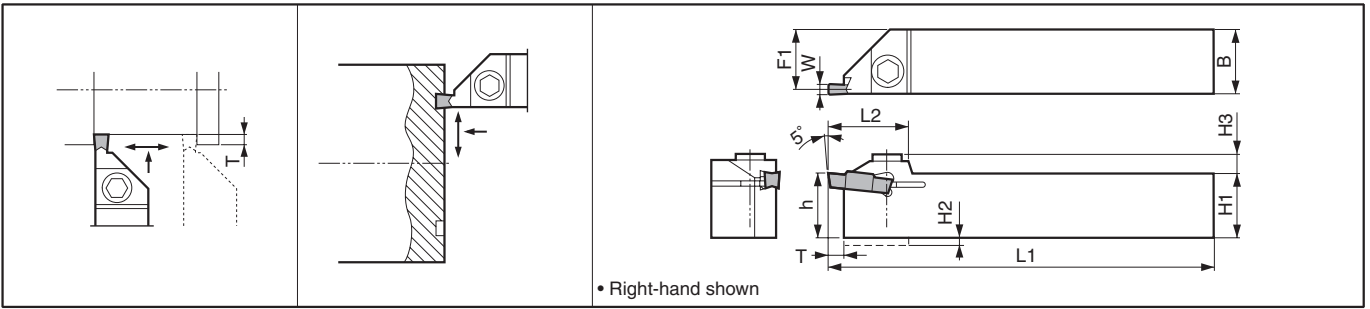
-If using a full-R insert, you need to modify the corner of insert adapter part (dimension A) of toolholder.

Recommended Cutting Conditions  **G105**
Recommended Cutting Conditions of CBN / PCD  **G104**

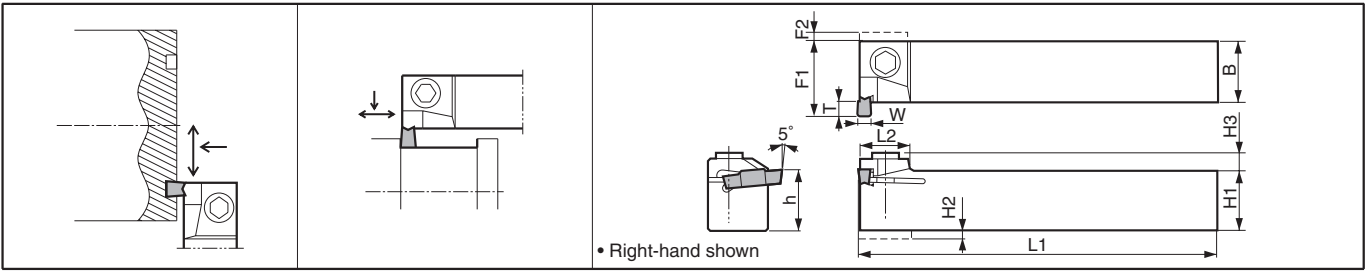


External Grooving (External / Face Grooving) Toolholders

KGMM



KGMS



Toolholder Dimensions

Description	Std.		Dimension (mm)										Edge Width W (mm)		Spare Parts			
	R	L	H1=h	H2	H3	B	L1	L2	F1	F2	T	MIN.	MAX.	Screw		Wrench		
														SB-5TR	HH5X16	LTW-20	LW-4	
KGMM ^{R/L}	1212H-3	●●	12	4	5	12	100	25	10.8	-	4.8	3.0	5.0	SB-5TR	-	LTW-20	-	
	1616H-3	●●	16	-	5	16	100	25	14.8	-	4.8	3.0	5.0	-	HH5X16	-	LW-4	
	2020K-3	●●	20	-	6	20	125	17	18.8	-	4.8	3.0	5.0	-	HH5X25	-	LW-4	
	2525M-3	●●	25	-	6	25	150	17	23.8	-	4.8	3.0	5.0	-	HH5X25	-	LW-4	
KGMS ^{R/L}	1212H-3	●●	12	4	5	12	100	17	17	1.5	4.8	3.0	3.0	SB-5TR	-	LTW-20	-	
	1616H-3	●●	16	-	5	16	100	17	21.5	-	4.8	3.0	5.0	GS-50	-	-	LW-3	
	2020K-3	●●	20	-	6	20	125	17	25	-	4.8	3.0	5.0	-	HH5X16	-	LW-4	
	2525M-3	●●	25	-	6	25	150	17	30	-	4.8	3.0	5.0	-	HH5X25	-	LW-4	

• Dimension T shows available grooving depth. (Ref. to the table G37 for Face Grooving)

Applicable Inserts [External Grooving]

Applications	Grooving / Turning	Grooving / Turning	Grooving	Full-R / Copying	Grooving	Grooving	Grooving	Grooving	Grooving	Grooving
Ref. to Page	G30,G31	G30	G30	G30,G31	G32	G32	G32	G32	G32	G32
Insert	(MW)	MS	MG		MT	NB	TK	TK		CBN PCD
Toolholder Description										
KGMS ^{R/L} 1212H-3	GMM3014..	-	-	GMM3014..R	-	-	-	-	-	-
KGMM ^{R/L...3} KGMS ^{R/L...3}	GMM3020..MW GMM4020..MW GMM5020..MW	GMG3020..MS GMM3020..MS GMG4020..MS GMM4020..MS GMG5020..MS GMM5020..MS	GMG3020..MG GMM3020..MG GMG4020..MG GMM4020..MG GMG5020..MG GMM5020..MG	GMG3020..R GMM3020..R GMG4020..R GMM4020..R GMG5020..R GMM5020..R	GMM3020..MT	GMM3020..NB	GMM3020..TK	GMN3..TK GMN4..TK	GMN3 GMN4 GMN5	GMN3 GMN4 GMN5

Applicable Inserts [Face Grooving]

Applications	Grooving / Turning	Undercutting	Grooving / Turning	Grooving / Turning	Grooving	Full-R / Copying	Grooving	Grooving	Grooving	Grooving
Ref. to Page	G31	G30,G31	G30	G30	G30	G30	G32	G32	G32	G32
Insert			MW	MS	MG		MT	NB	TK	
Toolholder Description										
KGMS ^{R/L} 1212H-3	-	GMM3014..RU	-	-	-	-	-	-	-	-
KGMM ^{R/L...3} KGMS ^{R/L...3}	FGG ^{R/L} 3020.. FGG ^{R/L} 4020.. FGG ^{R/L} 5020..	GMG3020..RU GMM3020..RU GMG4020..RU GMM4020..RU GMG5020..RU GMM5020..RU	GMM3020..MW GMM4020..MW GMM5020..MW	GMG3020..MS GMM3020..MS GMG4020..MS GMM4020..MS GMG5020..MS GMM5020..MS	GMG3020..MG GMM3020..MG GMG3520..MG GMM3520..MG GMG4020..MG GMM4020..MG GMG5020..MG GMM5020..MG	GMG3020..R GMM3020..R GMG4020..R GMM4020..R GMG5020..R GMM5020..R	GMM3020..MT	GMM3020..NB	GMM3020..TK	GMN3 GMN4 GMN5 GMN3..TK GMN4..TK

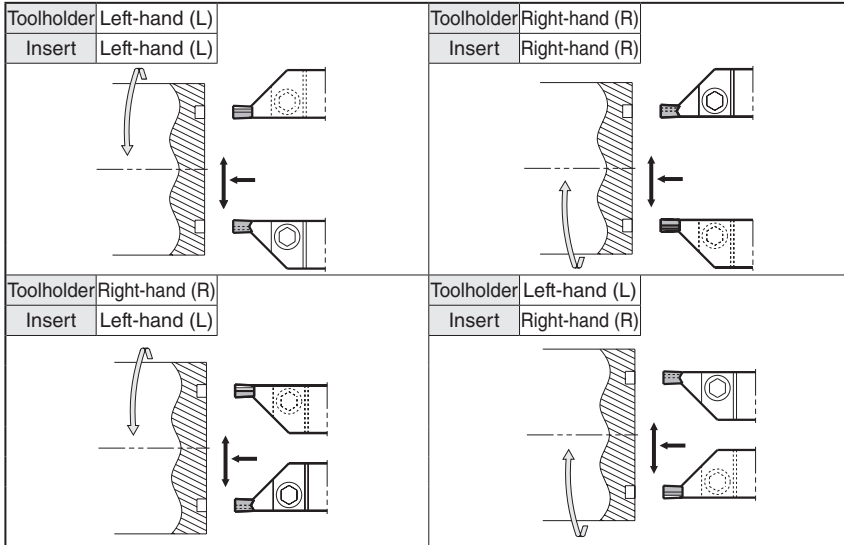
Recommended Cutting Conditions **G105**

Recommended Cutting Conditions of CBN / PCD **G104**

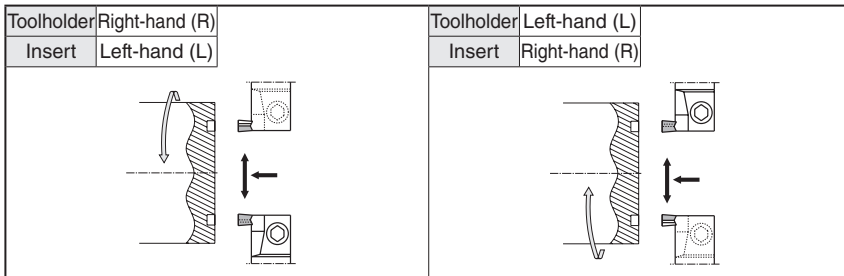
● : Std. Item

◆ Selection of Insert & Toolholder (Face Grooving)

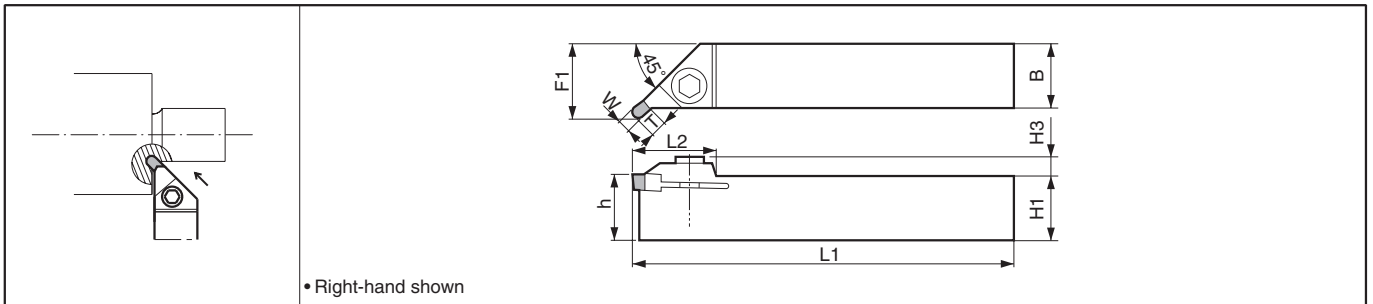
● Case of KGMM



● Case of KGMS



■ KGMU (External Undercutting Toolholder)



● Toolholder Dimensions

Description	Std.	Dimension (mm)								Edge Width W (mm)		Spare Parts		
		R	L	H1=h	H3	B	L1	L2	F1	T	MIN.	MAX.	Clamp Bolt	Wrench
KGMU ^{R/L} 2020K 2525M	● ●	20	6	20	125	28.5	23.6	4.8		3.0	5.0	HH5X16	LW-4	
	● ●	25		25	150	28.6	28.6			(6.0)		HH5X25		

· Dimension T shows the distance from the toolholder to the cutting edge. Ref. to the table below for the available grooving depth.

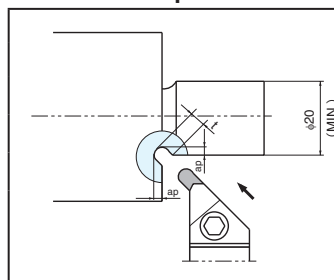
Dimension F1 shows at GMM5020-RU. () indicates external grooving inserts when installed.

● Applicable Inserts

Applications	Undercutting		
Ref. to Page	G30		
Insert			
Toolholder Description			
KGMU ^{R/L} 2020K 2525M	GMG3020..RU GMG4020..RU GMG5020..RU		

· External grooving inserts (grooving width 3mm-6mm) will be attached.
(In case of using GMG○○20-○○○○□□, GMM○○20-○○○○□□, GMN○ insert)

◆ Undercut Depth t



Description	Undercut Depth	
	t (mm)	ap (mm)
GMG3020-150RU	3.5	1.8
GMG4020-200RU	4.0	1.9
GMG5020-250RU	4.5	2.1

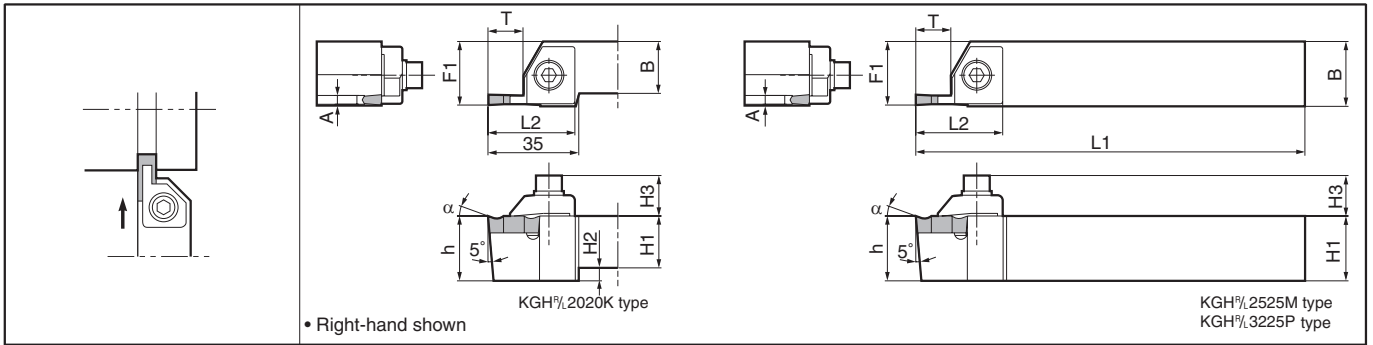
* In case of undercutting for the diameter over 100mm, Inserts for External Grooving GMG○○20-○○○○□□, GMM○○20-○○○○□□, GMN○ are also available.

◆ Face Groove Dia. & Grooving Depth (Face Grooving)

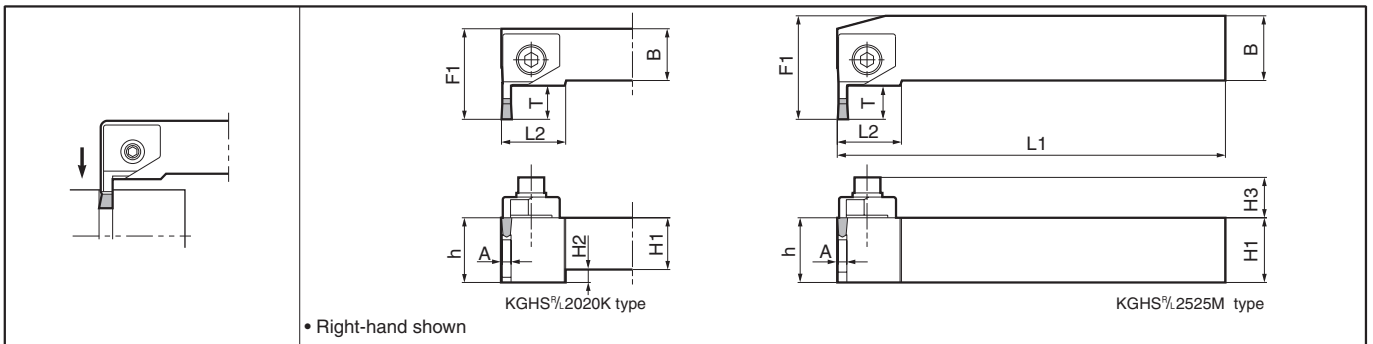
● KGMM / KGMS (Common) (mm)

Description	φDmin	t
GMG/GMM3020-○○○○□□	φ100	4.8
GMG/GMM4020-○○○○□□		
GMG/GMM5020-○○○○□□		
FGG ^{R/L} 3020-02	φ22	4.3
FGG ^{R/L} 4020-04	φ28	4.8
FGG ^{R/L} 5020-04	φ30	
GMG3020-150RU	φ22	4.3
GMG4020-200RU	φ28	4.8
GMG5020-250RU	φ30	

KGH



KGHS



Toolholder Dimensions

Description	Std.		Dimension (mm)										Spare Parts				
	R	L	H1-h	H2	H3	B	L1	L2	F1	A	T	Clamp	Clamp Bolt	Washer	Spring	Wrench	
KGH[°]/L 2020K-4 2525M-4 2020K-5 2525M-5 3225P-5 2020K-7 2525M-7 2525M-10 3225P-10	●	●	20	5	15.6	20	125	33.5	24.5-24.8	3.4	13	CGH-1 [°] /L	HH6X25	W-6	SP-6	LW-5	
	●	●	25	-	-	25	150	-	24.5-24.8	-	-	-					
	●	●	20	5	-	20	125	-	25.0-25.8	4.2	13	CGH-1 [°] /L					
	●	●	25	-	15.6	25	150	33.5	25.0-25.8	-	-	-					
	●	●	32	-	-	25	170	-	25.0-25.8	-	-	-					
	●	●	20	5	15.6	20	125	33.5	24.5-25.0	5.8	13	CGH-2 [°] /L					
	●	●	25	-	-	25	150	-	24.5-25.0	-	-	-					
KGHS[°]/L 2020K-4 2525M-4 2020K-5 2525M-5	●	●	20	5	15.6	20	125	25	35	3.4	13	CGH-1 ^{1/2} /R	HH6X25	W-6	SP-6	LW-5	
	●	●	25	-	-	25	150	-	40	-	-	-					
	●	●	20	5	-	20	125	25	35	4.2	13	CGH-1 ^{1/2} /R					
	●	●	25	-	15.6	25	150	-	40	-	-	-					
	●	●	25	-	-	25	150	-	40	-	-	-					

· Dimension T shows available grooving depth.

· Dimension F1 of KGH[°]/L Toolholder depends on the insert's edge width.

· Clamp KGH[°]/L ... CGH-OR for Right-hand Toolholder, and CGH-OL for Left-hand Toolholder.

KGHS[°]/L ... CGH-OL for Right-hand Toolholder, and CGH-OR for Left-hand Toolholder.

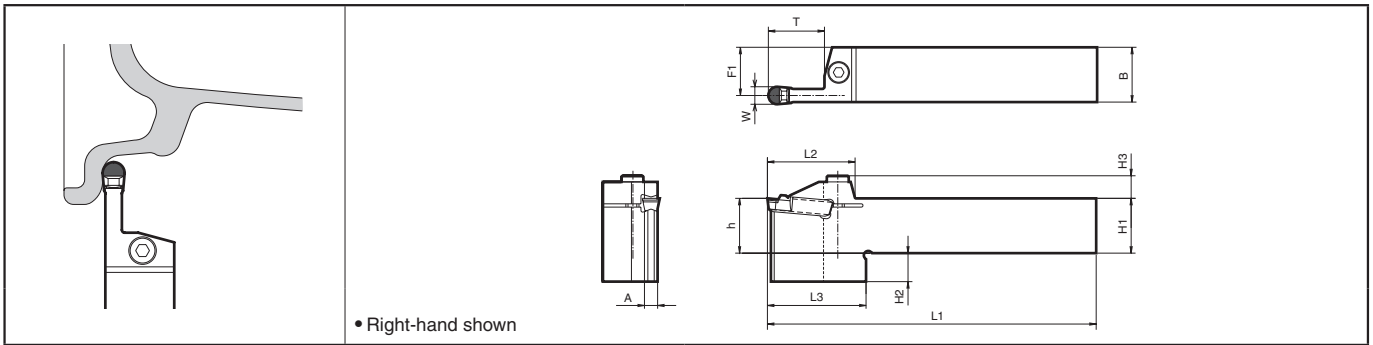
Rake Angle (α) after Installment of GH / GHU

When using GH○○○○○-○○		When using GHU○○○-○○	
α	Insert Grades	α	Insert Grades
0°	A65, A66N, PT600M	10°	TN60 CR9025
10°	TC40N		
20°	TN90, TC60M PR930 KW10		

● : Std. Item

For Aluminum Wheel External Grooving

KGMW (External / Facing / Copying)



Toolholder Dimensions

Description	Std.		Dimension (mm)										Spare Parts		Applicable Inserts
	R	L	H1=h	H2	H3	B	L1	L2	L3	F1	A	T	Clamp Bolt	Wrench	
KGMW^{R/L} 2525M-6	●	●	25	13	10.3	25	150	40	55	22.8	4.4	25	HH6X25	LW-5	GMGW6030-30R
	●	●													GMGW8030-40R

Applicable Inserts

Insert	Description	Dimension (mm)						No. of Edge	PCD
		W	r _e	L	H	M	S		
	GMGW 6030-30R	6	3	30	5.5	5	4.5	1	●
	8030-40R	8	4			6	6	1	●
	GMGW 8030-40R-HR	8	4	30	5.5	6	5	1	●

- GMGW inserts are exclusively used for KGMW type toolholder. It cannot be used for other toolholder because of its different installation angle.
- GMGW inserts Edge Preparation: R-honed Cutting Edge.

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)	
	PCD	
	KPD001	(1) f for Grooving (mm/rev) (2) f for Turning (mm/rev) (3) ap for Turning (mm)
Aluminum	★ 150~2,700	(1) 0.05~0.3 (2) 0.2~0.8 (3) MAX. 3

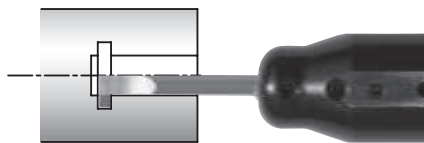
★ : 1st Recommendation

● : Std. Item

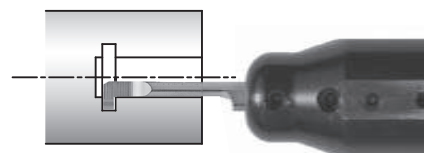
Summary of Internal Grooving

Small Dia. Internal Grooving $\phi 3\sim$ (G43-G46)

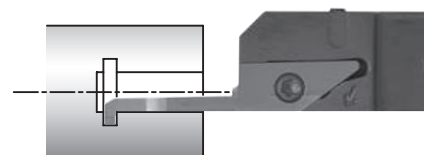
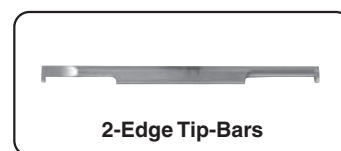
EZ Bars, 2-Edge Tip-Bars & System Tip-Bars



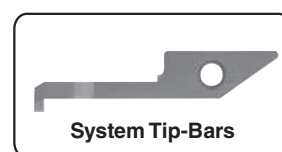
Type	EZG
Min. Bore Dia.	$\phi 3\sim\phi 8$
Edge Width (mm)	0.5~2.0
Grooving Depth (mm)	1.0~2.0
Ref. to Page	G43



Type	HPG
Min. Bore Dia.	$\phi 4\sim\phi 7$
Edge Width (mm)	1.0~2.0
Grooving Depth (mm)	1.0~2.0
Ref. to Page	G46

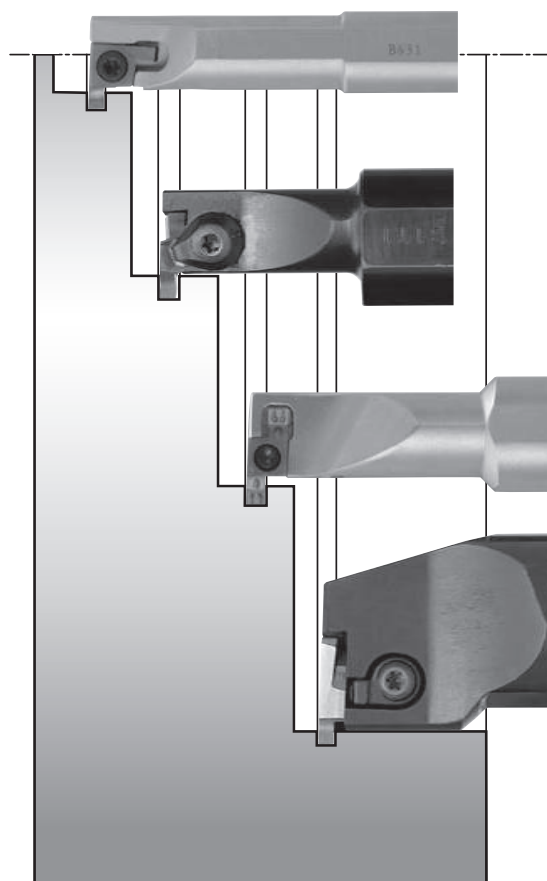


Type	VNG
Min. Bore Dia.	$\phi 4\sim\phi 7$
Edge Width (mm)	1.0~2.0
Grooving Depth (mm)	0.8~2.0
Ref. to Page	G45

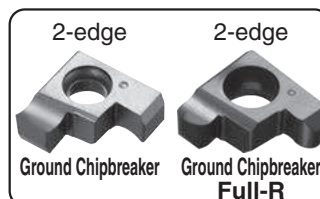


Internal Grooving $\phi 8\sim$ (G47-G57)

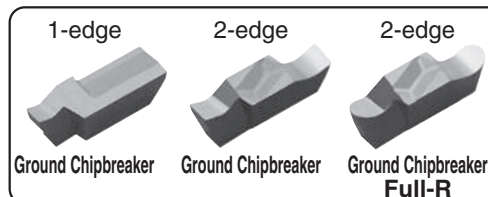
Shallow Grooving



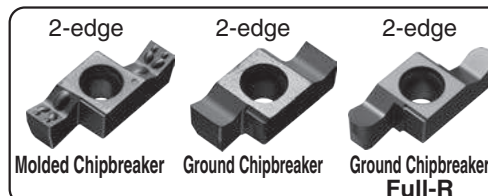
Type	SIGE
Min. Bore Dia.	$\phi 8\sim\phi 12$
Edge Width (mm)	1.0~3.0
Grooving Depth (mm)	1.5~2.2
Ref. to Page	G49



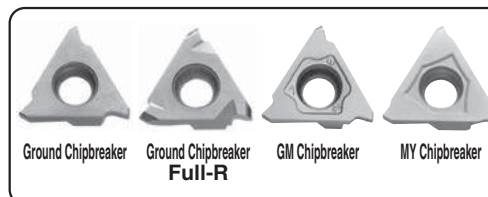
Type	GIV
Min. Bore Dia.	$\phi 12\sim\phi 40$
Edge Width (mm)	1.0~5.0
Grooving Depth (mm)	1.7~6.3
Ref. to Page	G54



Type	SIGE
Min. Bore Dia.	$\phi 14\sim\phi 40$
Edge Width (mm)	1.0~5.0
Grooving Depth (mm)	2.5~6.5
Ref. to Page	G49



Type	KIGBA
Min. Bore Dia.	$\phi 35\sim\phi 40$
Edge Width (mm)	0.33~4.8
Grooving Depth (mm)	0.8~2.8
Ref. to Page	G56



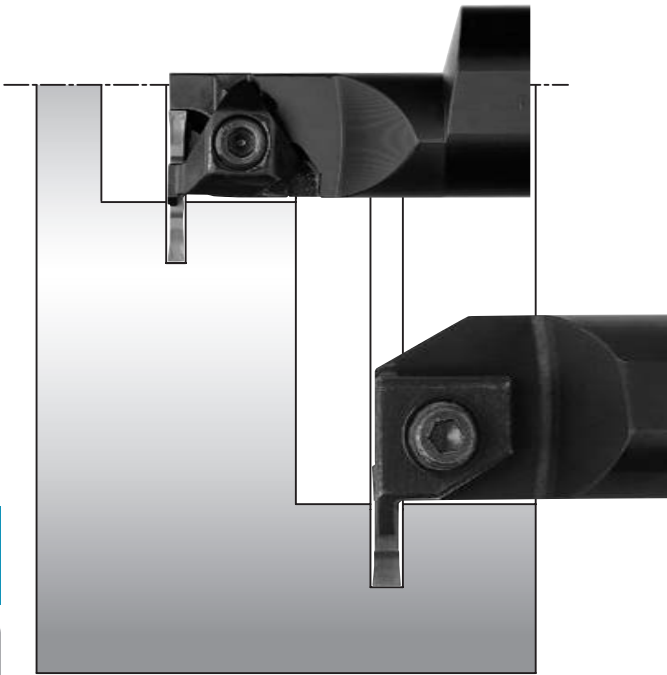
Type	KITG
Min. Bore Dia.	$\phi 35\sim\phi 45$
Edge Width (mm)	0.75~4.5
Grooving Depth (mm)	2.0~2.5
Ref. to Page	G57



* KITG will be switched to KIGBA.

Summary of Internal Grooving

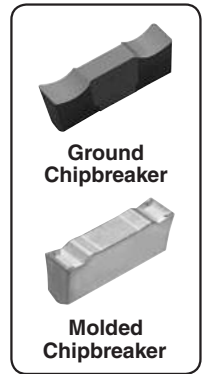
● Deep Grooving (G61, G63)



Type	KGIA
Min. Bore Dia.	φ32~φ66
Edge Width (mm)	3.0~5.0
Grooving Depth (mm)	10~15
Ref. to Page	G63



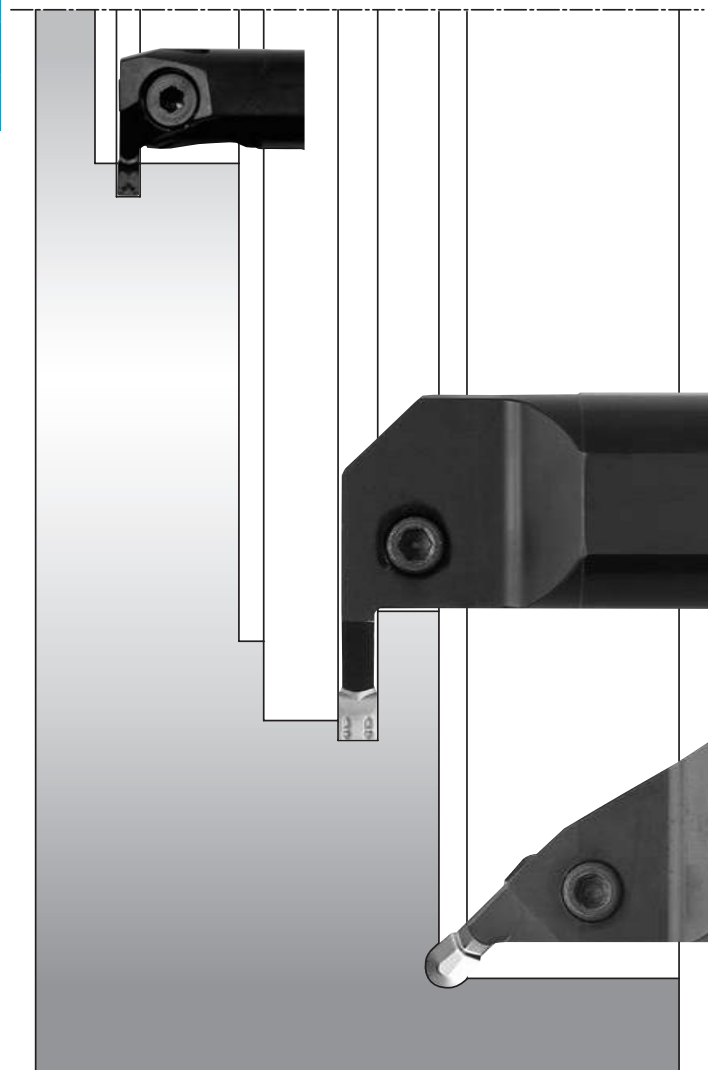
Type	KIGH
Min. Bore Dia.	φ45~φ65
Edge Width (mm)	4.0~8.0
Grooving Depth (mm)	12
Ref. to Page	G61



G

Grooving

■ Internal Grooving & Turning φ20~ (G58, G60, G62)

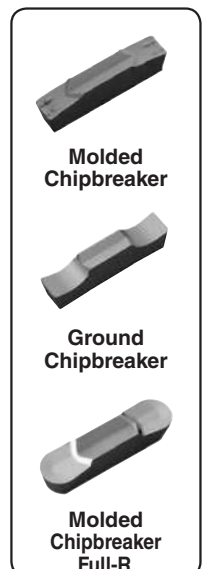


Type	KGDI
Min. Bore Dia.	φ18~φ40
Edge Width (mm)	2.0~5.0
Grooving Depth (mm)	4.5~11.0
Ref. to Page	G58



Type	KIGM-V
Min. Bore Dia.	φ20~φ40
Edge Width (mm)	3.0~5.0
Grooving Depth (mm)	5.5~11.0
Ref. to Page	G60

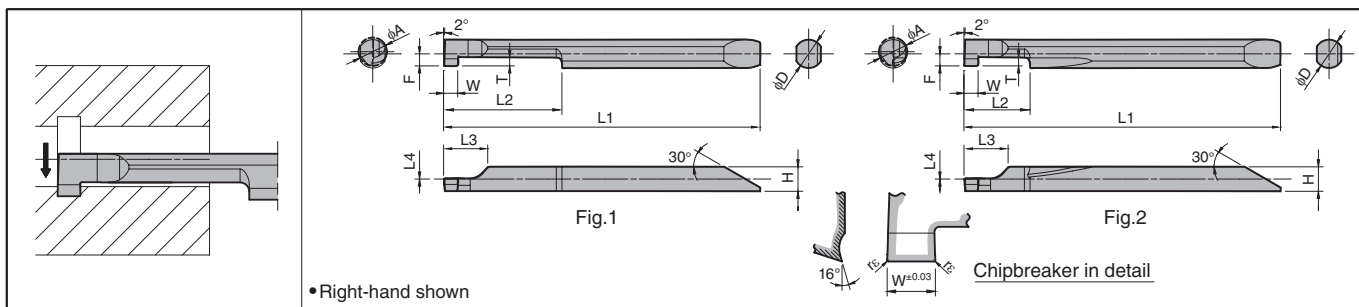
Type	KIGM-8
Min. Bore Dia.	φ65
Edge Width (mm)	8.0
Grooving Depth (mm)	20
Ref. to Page	G62



Type	KIGMU-8
Min. Bore Dia.	φ65
Edge Width (mm)	8.0
Grooving Depth (mm)	2.2
Ref. to Page	G62

Small Dia. Internal Grooving EZ Bars

EZG (Small Dia. Internal Grooving) NEW



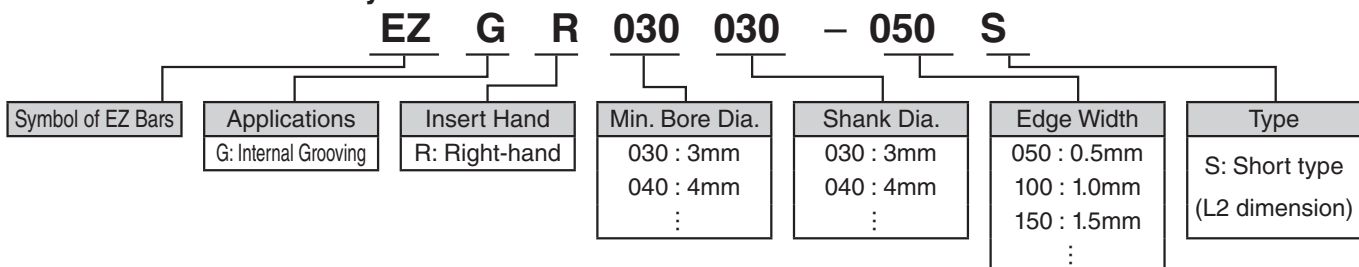
• Right-hand shown

Dimensions

Description	Min. Bore Dia.		Dimension (mm)									Drawing	MEGACOAT PR1225	Applicable Sleeves EZH0F23~F27
	ϕA	$W^{+0.03}$	r_ϵ	ϕD	H	L1	L2	L3	L4	F	T			
EZGR 040040-050	4	0.5	0.05	4	3.45	44.7	12	6.2	0	1.7	1	Fig.2	●	EZH040..
040040-100		1.0												
040040-150		1.5												
040040-200		2.0												
050050-100	5	1.0	0.05	5	4.3	52.8	20	6.7	0	2.15	1.5	Fig.1	●	EZH050..
050050-150		1.5												
050050-200		2.0												
060060-100	6	1.0	0.05	6	5.15	60.7	25	7.6	0	2.65	2	Fig.1	●	EZH060..
060060-150		1.5												
060060-200		2.0												
070070-100	7	1.0	0.05	7	6.2	63.7	25	7.6	0	3.05	2	Fig.1	●	EZH070..
070070-150		1.5												
070070-200		2.0												
080070-100	8	1.0	0.05	7	6.2	63.7	25	7.6	0	3.45	2	Fig.1	●	EZH070..
080070-150		1.5												
080070-200		2.0												
EZGR 030030-050S	3	0.5	0.05	3	2.5	38.7	5	4.8	0	1.25	0.8	Fig.2	●	EZH030..
030030-100S		1.0												
040040-050S	4	0.5	0.05	4	3.45	44.7	8	6.2	0	1.7	1	Fig.2	●	EZH040..
040040-100S		1.0												
040040-150S		1.5												
040040-200S	5	2.0	0.05	4	3.45	44.7	8	6.2	0	1.7	1	Fig.2	●	EZH040..
050050-100S		1.0												
050050-150S		1.5												
050050-200S	6	2.0	0.05	5	4.3	52.8	10	6.7	0	2.15	1.5	Fig.2	●	EZH050..
060060-100S		1.0												
060060-150S		1.5												
060060-200S	7	2.0	0.05	6	5.15	60.7	10	7.6	0	2.65	2	Fig.2	●	EZH060..
070070-100S		1.0												
070070-150S		1.5												
070070-200S	8	2.0	0.05	7	6.2	63.7	10	7.6	0	3.05	2	Fig.2	●	EZH070..
080070-100S		1.0												
080070-150S		1.5												
080070-200S	8	2.0	0.05	7	6.2	63.7	10	7.6	0	3.45	2	Fig.2	●	EZH070..
080070-200S		2.0												

• Dimension T shows available grooving depth.

EZ Bars Identification System



Recommended Cutting Conditions

Workpiece Material	Insert Grades (Cutting Speed Vc: m/min)	EZGR030030-...S	EZGR040040-... EZGR050050-... EZGR040040-...S EZGR050050-...S	EZGR060060-... EZGR070070-... EZGR080070-... EZGR060060-...S EZGR070070-...S EZGR080070-...S	Remarks
	MEGACOAT				
	PR1225				
Carbon steel / Alloy steel	★ 30-100	~0.02	~0.03	~0.05	Coolant
Stainless Steel	★ 30-80	~0.01	~0.02	~0.03	

★ : 1st Recommendation

● : Std. Item

EZ Bars are sold in 1 piece boxes.

Applicable Sleeves for Internal Grooving Inserts

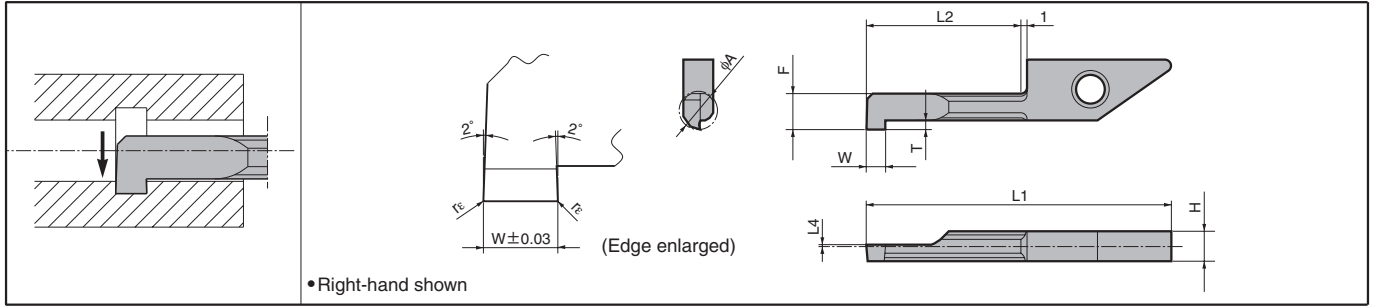
● Applicable Sleeves

Sleeve				Applicable Insert for Small Dia. Internal Grooving			Applicable Machine Manufacturer
EZH-CT (Adjustable overhang length with coolant hole) F23	EZH-HP (Adjustable overhang length) F24	EZH-ST F26	Sleeve Shank Dia. φD1 (mm)	EZG	HPG	Shank Dia. φD (mm)	
-	-	EZH 03012ST-80 04012ST-80 05012ST-80 06012ST-80 07012ST-80	12	EZGR ...030-... EZGR ...040-... EZGR ...050-... EZGR ...060-... EZGR ...070-...	- HPG ^{R/L} 0404-... HPG ^{R/L} 0505-... HPG ^{R/L} 0606-... HPG ^{R/L} 0707-...	3 4 5 6 7	(General purpose)
-	EZH 03016HP-100 04016HP-100 05016HP-100 06016HP-100 07016HP-100	EZH 03016ST-100 04016ST-100 05016ST-100 06016ST-100 07016ST-100	16	EZGR ...030-... EZGR ...040-... EZGR ...050-... EZGR ...060-... EZGR ...070-...	- HPG ^{R/L} 0404-... HPG ^{R/L} 0505-... HPG ^{R/L} 0606-... HPG ^{R/L} 0707-...	3 4 5 6 7	(General purpose)
EZH 03019CT-120 04019CT-120 05019CT-120 06019CT-120 07019CT-120	EZH 03019HP-120 04019HP-120 05019HP-120 06019HP-120 07019HP-120	EZH 03019ST-120 04019ST-120 05019ST-120 06019ST-120 07019ST-120	19.05	EZGR ...030-... EZGR ...040-... EZGR ...050-... EZGR ...060-... EZGR ...070-...	- HPG ^{R/L} 0404-... HPG ^{R/L} 0505-... HPG ^{R/L} 0606-... HPG ^{R/L} 0707-...	3 4 5 6 7	Citizen Machinery
EZH 03020CT-120 04020CT-120 05020CT-120 06020CT-120 07020CT-120	EZH 03020HP-120 04020HP-120 05020HP-120 06020HP-120 07020HP-120	EZH 03020ST-120 04020ST-120 05020ST-120 06020ST-120 07020ST-120	20	EZGR ...030-... EZGR ...040-... EZGR ...050-... EZGR ...060-... EZGR ...070-...	- HPG ^{R/L} 0404-... HPG ^{R/L} 0505-... HPG ^{R/L} 0606-... HPG ^{R/L} 0707-...	3 4 5 6 7	Eguro Tsugami Citizen Machinery (General purpose)
EZH 03022CT-135 04022CT-135 05022CT-135 06022CT-135 07022CT-135	EZH 03022HP-135 04022HP-135 05022HP-135 06022HP-135 07022HP-135	EZH 03022ST-135 04022ST-135 05022ST-135 06022ST-135 07022ST-135	22	EZGR ...030-... EZGR ...040-... EZGR ...050-... EZGR ...060-... EZGR ...070-...	- HPG ^{R/L} 0404-... HPG ^{R/L} 0505-... HPG ^{R/L} 0606-... HPG ^{R/L} 0707-...	3 4 5 6 7	Star Micronics Nomura DS Tsugami
EZH 03025.0CT-135 04025.0CT-135 05025.0CT-135 06025.0CT-135 07025.0CT-135	EZH 03025.0HP-135 04025.0HP-135 05025.0HP-135 06025.0HP-135 07025.0HP-135	EZH 03025.0ST-135 04025.0ST-135 05025.0ST-135 06025.0ST-135 07025.0ST-135	25	EZGR ...030-... EZGR ...040-... EZGR ...050-... EZGR ...060-... EZGR ...070-...	- HPG ^{R/L} 0404-... HPG ^{R/L} 0505-... HPG ^{R/L} 0606-... HPG ^{R/L} 0707-...	3 4 5 6 7	Eguro Tsugami Citizen Machinery (General purpose)
EZH 03025.4CT-120 04025.4CT-120 05025.4CT-120 06025.4CT-120 07025.4CT-120	EZH 03025.4HP-120 04025.4HP-120 05025.4HP-120 06025.4HP-120 07025.4HP-120	EZH 03025.4ST-120 04025.4ST-120 05025.4ST-120 06025.4ST-120 07025.4ST-120	25.4	EZGR ...030-... EZGR ...040-... EZGR ...050-... EZGR ...060-... EZGR ...070-...	- HPG ^{R/L} 0404-... HPG ^{R/L} 0505-... HPG ^{R/L} 0606-... HPG ^{R/L} 0707-...	3 4 5 6 7	Citizen Machinery

- Choose sleeves (φd1) to meet with φD dimension of Internal Grooving Inserts.
- Adjustment Pin cannot be installed to EZH-ST sleeves.
To adjust overhang of the bar, please use EZH-CT/HP Sleeves.
- Machine manufacturers in random order.



VNG



Classification of usage		P	M	K	N	S	H
	Carbon steel / Alloy steel	●	○				
	Stainless Steel	●	○				
●	Continuous / 1st Choice						
○	Continuous / 2nd Choice						
	Cast Iron			●			
	Non-ferrous Metals					●	
	Titanium Alloys						●
	Hard materials (~40HRC)	○	○				
	Hard materials (40HRC~)						

Dimensions

Description	Min. Bore Dia. φA	Dimension (mm)										MEGA COAT PR1225	PVD PR930	Carbide KW10	PCD		Ref. to Page for Applicable Toolholders								
		W	rε	φD	H	L1	L2	L3	L4	F	T				KPD001	KPD010									
VNGR 0410-11 0420-11 0510-11 0520-11 0610-20 0620-20 0710-20 0720-20	4	1.0 2.0	0.05	-	3.9	30.8	11	-	0.1	3.5	0.8	●	●	●					F30 F31						
	5	1.0 2.0	0.05									39.8	20	0.3	4.4	1.0	●	●		●					
	6	1.0 2.0	0.05														39.8	20		0.3	5.2	1.8	●	●	●
	7	1.0 2.0	0.05			39.8	20	0.3	6.2	2.0	●	●	●												
	VNGR 0410-11NB 0420-11NB 0510-11NB 0520-11NB 0610-20NB 0620-20NB 0710-20NB 0720-20NB	4	1.0 2.0								0.05	-	3.9	30.8	11	-	0.1	3.5		0.8					MTO
		5	1.0 2.0			0.05	39.8	20	0.3	4.4	1.0														MTO
6		1.0 2.0	0.05	39.8	20	0.3															5.2	1.8			
7		1.0 2.0	0.05				39.8	20	0.3	6.2	2.0							MTO		MTO					
																						MTO	MTO		
																	MTO	MTO							

· Dimension T shows available grooving depth.
· Dimension L4 indicates the cutting edge is above the Tool's Center Position.

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)			VNG04 VNG05	VNG06 VNG07	Remarks
	MEGA	PVD	Carbide			
	PR1225	PR930	KW10			
Carbon steel / Alloy steel	★ 30-100	☆ 30-100		~0.03	~0.05	Coolant
Stainless Steel	★ 30-80	☆ 30-80		~0.02	~0.03	
Non-ferrous Metals			★ ~300	~0.05	~0.08	

★ : 1st Recommendation ☆ : 2nd Recommendation

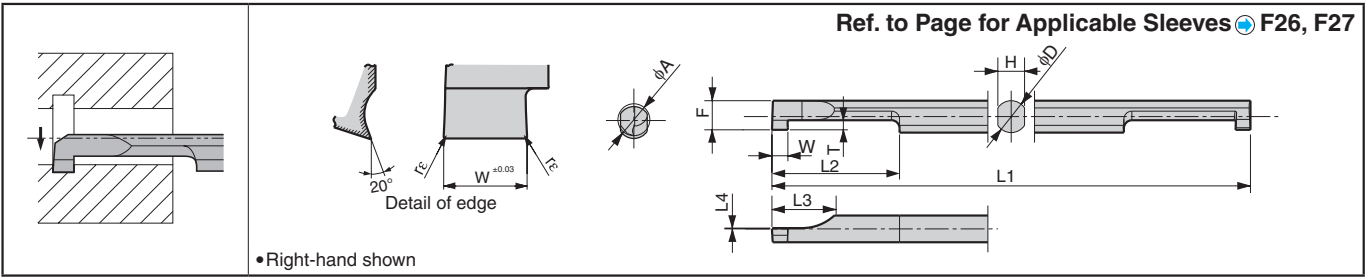
● : Std. Item
MTO : Made to order

System Tip-Bars (VNG) are sold in 5 piece boxes.

CBN & PCD Inserts are sold in 1 piece boxes.



HPG (Small Dia. Internal Grooving)



Dimensions

Description	Min. Bore Dia.		Dimension (mm)									PVD Coated Carbide		Carbide	
	φA	W±0.03	rε	φD	H	L1	L2	L3	L4	F	T	PR930		KW10	
												R	L	R	L
HPG^{R/L} 0404-10	4	1	0.05	4	3.35	60	15	8	0	3.65	1	●	●	●	
0404-20		2										●	●	●	
0505-10	5	1	0.05	5	4.3	70	20	0	4.55	1.5	●	●	●		
0505-20		2									●	●	●		
0606-10	6	1	0.05	6	5.2	80	25	10	5.5	2	●	●	●		
0606-20		2									●	●	●		
0707-10	7	1	0.05	7	6.2	80	25	10	6.45	2	●	●	●		
0707-20		2									●	●	●		

- Dimension T shows available grooving depth.

Description Table for Tip-Bars and Applicable Sleeves

Tip-Bars Description	Applicable Sleeves
HPG^{R/L} 0404...	EZH 04....
0505...	05....
0606...	06....
0707...	07....

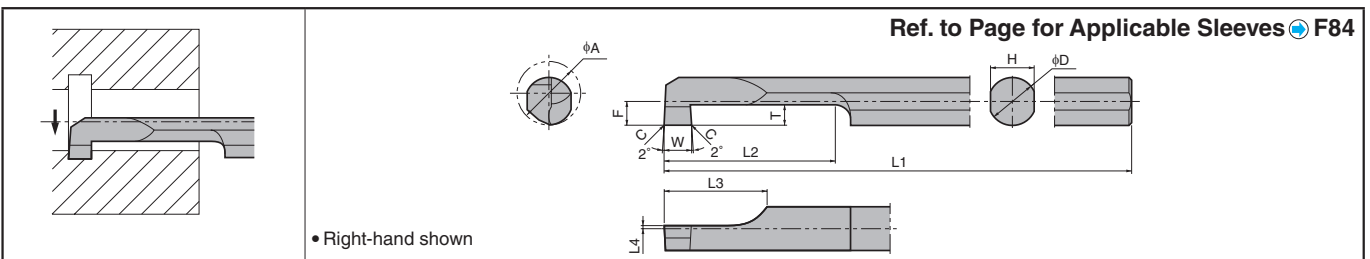
Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)		HPG ^{R/L} 04 HPG ^{R/L} 05	HPG ^{R/L} 06 HPG ^{R/L} 07	Remarks
	PVD Coated Carbide	Carbide			
	PR930	KW10	f (mm/rev)		
Carbon steel / Alloy steel	★ 30-100	-	-0.03	~0.05	Coolant
Stainless Steel	★ 30-80	-	-0.02	~0.03	
Non-ferrous Metals	-	★ -300	-0.05	~0.08	

★: 1st Recommendation

PSG-S (Tip-Bars)

This insert will be switched to EZG.



Dimensions

Description	Min. Bore Dia.		Dimension (mm)									PVD Coated Carbide		Carbide	
	φA	W±0.03	C	φD	H	L1	L2	L3	L4	F	T	PR930		KW10	
												R	L	R	L
PSG^{R/L} 0510-60S	5	1.0	0.05	3.8	3.6	60	15	8	0.1	1.86	1.5			○	○
0520-60S		2.0	0.1									○	○	○	○
0610-70S	6	1.0	0.05	4.8	4.4	70	20	0	2.36	2.0	○	○	○	○	
0620-70S		2.0	0.1								○	○	○	○	
0710-70S	7	1.0	0.05	5.8	5.2	70	20	10	2.86	2.0	○	□	○	○	
0720-70S		2.0	0.1								○	○	○	□	
0810-80S	8	1.0	0.05	6.8	6.2	80	25	0	3.38	2.0	○	○	○	○	
0820-80S		2.0	0.1								○	○	○	○	

- Dimension T shows available grooving depth.

- Dimension L4 indicates the cutting edge is above the Tool's Center Position.

Recommended Cutting Conditions G103

- : Std. Item
- : Check Availability
- : Deleted from the next catalogue

G

Grooving

External

Internal

Face


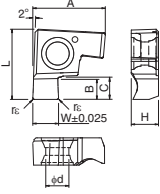
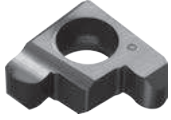
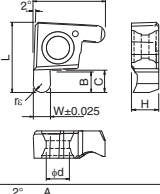
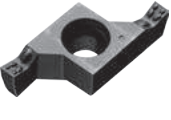
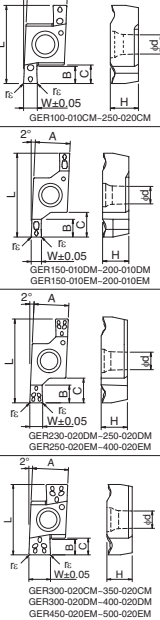
Internal Grooving SIGE

Applicable Inserts

Description	A	L	H	φd
GE [®] /...-A	6.69	6.5	2.58	2.5
GER...-AR				
GE [®] /...-B	8.46	8.2	3.18	2.7
GER...-BR				
GER...-CM	5.8	11.48	4.05	2.8
GER...-DM	6.8	16.44	5.05	3.4
GER...-EM	9.54	21.66	5.55	4.4

	P	M	K	N	S	H
P	Carbon steel / Alloy steel	●	☉			
M	Stainless Steel	●	☉			
K	Cast Iron				☉	
N	Non-ferrous Metals				●	
S	Titanium Alloys				●	
H	Hard materials (~40HRC)	●	○			
	Hard materials (40HRC~)					

Classification of usage
 ●: Continuous-Light Interruption / 1st Choice
 ☉: Continuous-Light Interruption / 2nd Choice
 ●: Continuous / 1st Choice
 ○: Continuous / 2nd Choice

Insert	Description	Dimension (mm)				Cermet	MEGA COAT	PVD Coated Carbide	Carbide				Applicable Toolholders	Ref. to Page for Applicable Toolholders						
		W	B	C	r _ε				TN6020		PR1225				PR1025		GW15		KW10	
									R	L	R	L			R	L	R	L	R	L
 2-edge 	GE [®] / 100-005A 120-005A 125-005A 150-010A 200-010A GE [®] / 100-005B 120-005B 125-005B 145-010B 150-010B 200-010B 250-020B 300-020B	1.00	1.5	1.8	0.05	●	●	●	●	●	●			●	●	SIGE [®] /...A-EH SIGE [®] /...A-WH	G49 G50			
						●	●	●	●	●	●			●	●					
						●	●	●	●	●	●			●	●					
						●	●	●	●	●	●			●	●					
						●	●	●	●	●	●			●	●					
		●	●	●	●	●	●			●	●									
		●	●	●	●	●	●			●	●									
		●	●	●	●	●	●			●	●									
		●	●	●	●	●	●			●	●									
		●	●	●	●	●	●			●	●									
 2-edge Full-R 	GER 100-050AR 200-100AR GER 100-050BR 200-100BR	1.00	1.5	1.8	0.5			●						●		SIGER...A-EH SIGER...A-WH	G49 G50			
								●					●							
				1.00	2.2	2.6	0.5			●						●		SIGER...B-EH SIGER...B-WH SIGER...B-WH-90	G49 G50 G51	
				2.00						●			●							
		 2-edge Molded Chipbreaker 	GER 150-010CM 200-010CM 250-020CM 300-020CM 350-020CM	1.50	2.5	2.7	0.1			●								SIGER...C-EH SIGER...C-WH SIGER...C-WH-90	G49 G50 G51	
										2.00			●							
								2.50			●									
								3.00			●									
GER 150-010DM 200-010DM 230-020DM 250-020DM 300-020DM 350-020DM	1.50		3.0	4.8	0.1			●								SIGER...D-EH	G49			
								2.00			●									
								2.30			●									
								2.50			●									
GER 150-010EM 200-010EM 250-020EM 300-020EM 350-020EM 400-020EM 450-020EM 500-020EM	1.50		3.0	6.8	0.1			●								SIGER...E-EH	G49			
								2.00			●									
				2.50	4.5	0.2			●								SIGER...E-EH	G49		
				3.00					●											
				3.50	5.5	0.2			●								SIGER...E-EH	G49		
				4.00					●											
		4.50	6.5					●							SIGER...E-EH	G49				
		5.00			●															

• Dimension B shows available grooving depth.

Recommended Cutting Conditions **G52**

Comparison of Chip Control (Molded Chipbreaker)

Description	f (mm/rev)			Evaluation
	SCM415 (Bore Dia. φ16)			
	0.05	0.07	0.1	
SIGER1612C-EH GER300-020CM (PR1025)				Good Chip Control
Competitor A Width : 3mm			Insert Fracture	Unstable Chip Control and biting
Competitor B Width : 3mm				Unstable Chip Control and biting

[Vc=100m/min, ap=2.0mm, Wet]

(Internal evaluation)

Comparison of Chip Control (Min. Bore Dia.: φ8)

Description	f (mm/rev)		Evaluation
	SCM415		
	0.02		
SIGER0808A-EH GER200-010A (PR1025)			✓
Competitor C Width : 2mm			Chipping

[Vc=50m/min, ap=1.25mm, Wet]

(Internal evaluation)

● : Std. Item

Inserts are sold in 10 piece boxes.

Internal Grooving SIGE

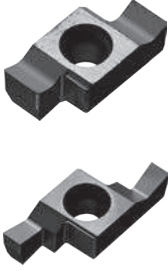

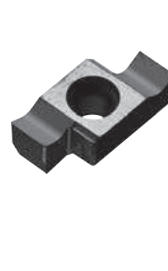

Applicable Inserts

(mm)

Description	A	L	H	φd
GE [®] /...-C	5.8	11.48	4.05	2.8
GER...-CR				
GE [®] /...-D	6.8	16.44	5.05	3.4
GER...-DR				
GE [®] /...-E	9.54	21.66	5.55	4.4

	P	M	K	N	S	H
Carbon steel / Alloy steel	☉	☉				
Stainless Steel	☉	☉				
Cast Iron					☉	
Non-ferrous Metals					☉	
Titanium Alloys					☉	
Hard materials (~40HRC)	●	○				
Hard materials (40HRC-)						

Classification of usage
 ●: Continuous-Light Interruption / 1st Choice
 ☉: Continuous-Light Interruption / 2nd Choice
 ●: Continuous / 1st Choice
 ○: Continuous / 2nd Choice

Insert Handed Insert shows Right-hand	Description	Dimension (mm)				Cermet		MEGA COAT		PVD Coated Carbide		Carbide				Applicable Toolholders	Ref. to Page for Applicable Toolholders				
		W	B	C	re	TN6020		PR1225		PR1025		GW15		KW10							
						R	L	R	L	R	L	R	L	R	L						
 2-edge	GE [®] / 100-005C	1.00	2.5	2.7	0.05	●	●	●	●	●	●	●	●			SIGE [®] /...C-EH SIGE [®] /...C-WH SIGER...C-WH-90	G49 G50 G51				
	120-005C	1.20				●	●	●	●	●	●	●	●	●	●						
	125-005C	1.25				●	●	●	●	●	●	●	●	●	●						
	140-005C	1.40				●	●	●	●	●	●	●	●	●	●						
	145-010C	1.45				●	●	●	●	●	●	●	●	●	●						
	150-010C	1.50				●	●	●	●	●	●	●	●	●	●						
	170-010C	1.70				●	●	●	●	●	●	●	●	●	●						
	185-010C	1.85				●	●	●	●	●	●	●	●	●	●						
	195-010C	1.95				●	●	●	●	●	●	●	●	●	●						
	200-010C	2.00				●	●	●	●	●	●	●	●	●	●						
 2-edge	GE [®] / 100-005D	1.00	2.5	3.0	0.05	●	●	●	●	●	●	●	●			SIGE [®] /...D-EH					
	140-005D	1.40				●	●	●	●	●	●	●	●	●	●						
	145-010D	1.45				●	●	●	●	●	●	●	●	●	●						
	150-010D	1.50				●	●	●	●	●	●	●	●	●	●						
	170-010D	1.70				●	●	●	●	●	●	●	●	●	●						
	185-010D	1.85				●	●	●	●	●	●	●	●	●	●						
	195-010D	1.95				●	●	●	●	●	●	●	●	●	●						
	200-010D	2.00				●	●	●	●	●	●	●	●	●	●						
	225-010D	2.25				●	●	●	●	●	●	●	●	●	●						
	230-020D	2.30				●	●	●	●	●	●	●	●	●	●						
 2-edge	GE [®] / 100-005E	1.00	2.5	3.0	0.05	●	●	●	●	●	●	●	●			SIGE [®] /...E-EH	G49				
	150-010E	1.50				●	●	●	●	●	●	●	●	●	●						
	170-010E	1.70				●	●	●	●	●	●	●	●	●	●						
	185-010E	1.85				●	●	●	●	●	●	●	●	●	●						
	195-010E	1.95				●	●	●	●	●	●	●	●	●	●						
	200-010E	2.00				●	●	●	●	●	●	●	●	●	●						
	225-010E	2.25				●	●	●	●	●	●	●	●	●	●						
	230-020E	2.30				●	●	●	●	●	●	●	●	●	●						
	250-020E	2.50				●	●	●	●	●	●	●	●	●	●						
	275-020E	2.75				●	●	●	●	●	●	●	●	●	●						
 2-edge Full-R	GER 200-100CR	2.00	2.5	2.7	1.0			●		●		●			SIGER...C-EH SIGER...C-WH SIGER...C-WH-90	G49 G50 G51					
	250-125CR	2.50				●	●	●	●	●	●	●	●	●			●				
	300-150CR	3.00				●	●	●	●	●	●	●	●	●			●				
	GER 200-100DR	2.00				3.2	4.8	1.0	●	●	●	●	●	●			●			SIGER...D-EH	G49
	300-150DR	3.00				4.5	1.5	●	●	●	●	●	●	●			●				

• Dimension B shows available grooving depth.

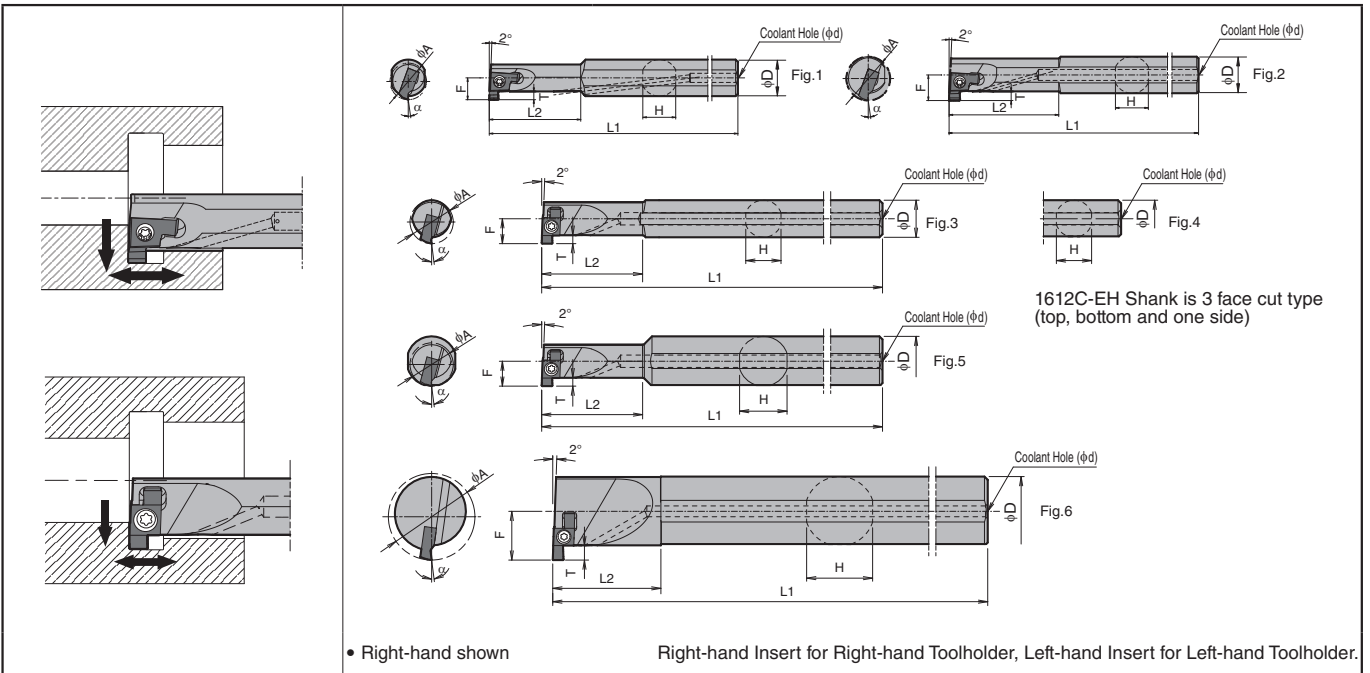
Recommended Cutting Conditions **G52**

● : Std. Item

G48 Inserts are sold in 10 piece boxes.

G
Grooving
External
Internal
Face

■ SIGE-EH Excellent Bar (with Coolant Hole)



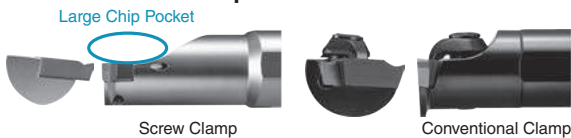
● Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)							Drawing	Spare Parts			Applicable Inserts ➔ G47, G48	
	R	L		φA	φD	H	L1	L2	F	T		φd	Clamp Screw	Wrench		
														FT		DT
SIGE[®] 0808A-EH	●	●	8	8	7.2	100	20	4.8	1.5	3	Fig.1	SB-2045TRN	FT-6	-	GE%100-005A-GE%200-010A GER100-050AR-GER200-100AR	
1010B-EH	●	●	10	10	9	125	25	6.2	2.2	3	Fig.1	SB-2255TR	-	DT-7	GE%100-005B-GE%300-020B GER100-050BR-GER200-100BR	
1210B-EH	●	●	12				30	7			Fig.2					
1412C-EH	●	●	14	12	11.4	150	33	8	2.5	4	Fig.3	SB-2570TR	FT-8	-	GE%100-005C-GE%350-020C GER150-010CM-GER350020CM GER200-100CR-GER300-150CR	
1612C-EH	●	●	16	16	15	160	20	8.5								Fig.4
1616C-EH	●	●					5	Fig.5	SB-3080TR	FT-10	-	GE%100-005D-GE%400-020D GER150-010DM-GER400-020DM GER200-100DR-GER300-150DR				
2020D-EH	●	●	20	20	19	180	40	12.1	4.5	5	Fig.6	SB-4085TR	FT-15	-	GE%100-005E-GE%500-020E GER150-010EM-GER500-020EM	
2525E-EH	●	●	25	25	24	200	45	15.6	6.5	5						
3232E-EH	●	●	32	32	30.4	220	55	19								
4032E-EH	●	●	40	40	30.4	250	45	23								

• Dimension T shows available grooving depth. Available Groove Depth: "B" Dimension of Insert.

■ Features

- Large chip pocket screw clamp toolholder design enables excellent chip evacuation



- Cost effective chip control from a molded chipbreaker



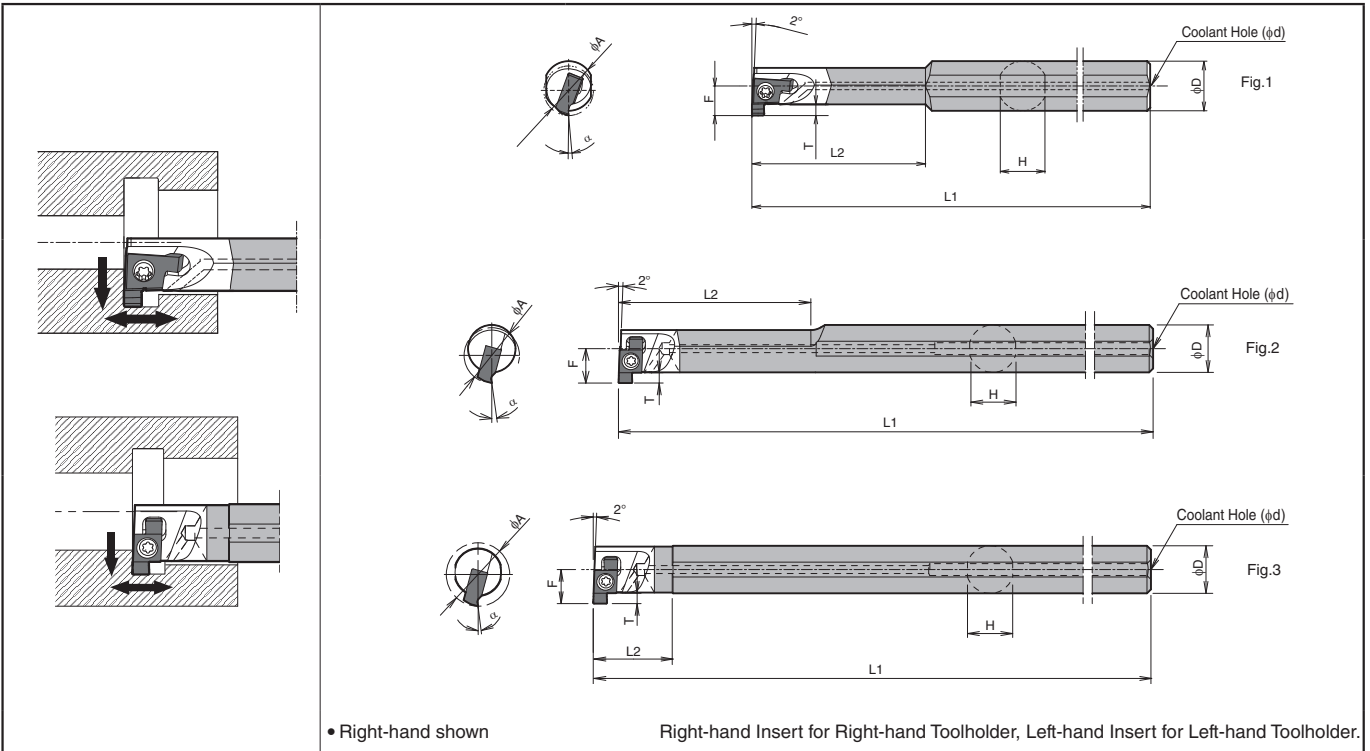
- Cutting edge is free from contact face



- An 8mm minimum bore diameter with a 2-edge design

Internal Grooving SIGE

SIGE-WH Carbide Shank Bar (with Coolant Hole)



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)							Drawing	Spare Parts			Applicable Inserts G47, G48	
	R	L		φA	φD	H	L1	L2	F	T		φd	Clamp Screw	Wrench		
SIGE [®] /L 0808A-WH	●	●	8	8	7.2	125	28	4.8	1.5	3	Fig.1	SB-2045TRN	FT-6	-	GE [®] /L 100-005A~GE [®] /L 200-010A GER100-050AR~GER200-100AR	
1010B-WH	●	●	10	10	9	125	35	6.2	2.2	3		Fig.2	SB-2255TR	-	DT-7	GE [®] /L 100-005B~GE [®] /L 300-020B GER100-050BR~GER200-100BR
1210B-WH	●	●	12			140	45	7								
1412C-WH	●	●	14	12	11.4	150	50	8.7	2.5	4	Fig.3	SB-2570TR	FT-8	-	GE [®] /L 100-005C~GE [®] /L 350-020C GER150-010CM~GER350-020CM GER200-100CR~GER300-150CR	
1612C-WH	●	●	16			180	20	8.5								

• Dimension T shows available grooving depth. Available Groove Depth: "B" Dimension of Insert.

Applicable Insert & Rake Angle (α) after Installment of Insert

Toolholder Description	Applicable Insert & Rake Angle (α) after Installment of Insert			
	Ground Chipbreaker	α	Molded Chipbreaker	α
SIGE [®] /L 0808A-EH	GE [®] /L 100-005A~GE [®] /L 200-010A GER100-050AR~GER200-100AR	5°	-	-
1010B-EH	GE [®] /L 100-005B~GE [®] /L 300-020B GER100-050BR~GER200-100BR	5°	-	-
1210B-EH				
1412C-EH	GE [®] /L 100-005C~GE [®] /L 350-020C GER200-100CR~GER300-150CR	8°	GER150-010CM~GER350-020CM	10°
1612C-EH				
2020D-EH	GE [®] /L 100-005D~GE [®] /L 400-020D GER200-100DR~GER300-150DR	9°	GER150-010DM~GER400-020DM	10°
2525E-EH	GE [®] /L 100-005E~GE [®] /L 500-020E	10°	GER150-010EM~GER500-020EM	10°
3232E-EH				
4032E-EH				
SIGE [®] /L 0808A-WH	GE [®] /L 100-005A~GE [®] /L 200-010A GER100-050AR~GER200-100AR	5°	-	-
1010B-WH	GE [®] /L 100-005B~GE [®] /L 300-020B GER100-050BR~GER200-100BR	5°	-	-
1210B-WH				
1008B-WH-90				
1210B-WH-90				
1412C-WH	GE [®] /L 100-005C~GE [®] /L 350-020C GER200-100CR~GER300-150CR	8°	GER150-010CM~GER350-020CM	10°
1612C-WH				
1412C-WH-90				

α indicates the rake angle at the center of the edge width, after installing insert.

● : Std. Item

G

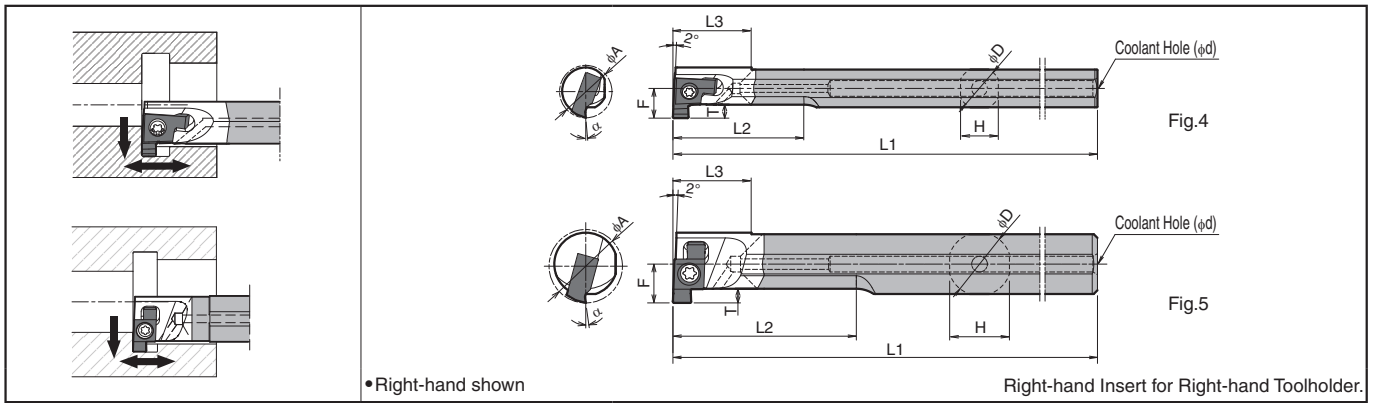
Grooving

External

Internal

Face

SIGE-WH-90 (For Automatic Lathe) Carbide Shank Bar (with Coolant Hole)



•Right-hand shown

Right-hand Insert for Right-hand Toolholder.

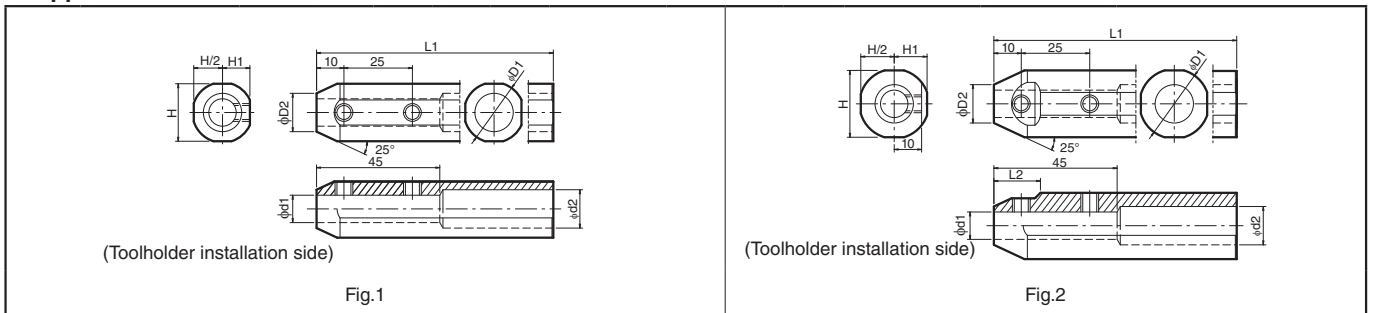
Toolholder Dimensions

Description	Std.	Min. Bore Dia.	Dimension (mm)										Drawing	Spare Parts		Applicable Inserts G47, G48
			φA	φD	H	L1	L2	*L3	F	T	φd	Clamp Screw		Wrench		
SIGER 1008B-WH-90	●	10	8	7.2	90	25	15	5.6	2.2	3	Fig.4	SB-2255TR	FT-7	GER100-005B~GER300-020B GER100-050BR~GER200-100BR		
1210B-WH-90	●	12	10	9.4		30		6.6								
1412C-WH-90	●	14	12	11.4	90	35	15	7.4	2.5	3	Fig.5	SB-2570TR	FT-8	GER100-005C~GER350-020C GER150-010CM~GER350-020CM GER200-100CR~GER300-150CR		

*Dimension L3 shows minimum overhang length.

· Ref. to Page G50 for Applicable Insert & Rake Angle (α) after Installment of Insert.

Applicable Sleeves



Description	Std.	Dimension (mm)								Drawing	Spare Parts		Applicable Machine Manufacturer
		φd1	φD1	φD2	φd2	H	H1	L1	L2		Screw	Wrench	
SHA 0820-120	●	8	20	14	12	19	9.25	120	-	Fig.1	HS6X4P	LW-3	Eguro Tsugami Citizen Machinery
SHA 1020-120	●	10											
SHA 0825.0-135	●	8	25	14	14	24	11.5	135	17	Fig.2	HS6X4P	LW-3	Citizen Machinery
SHA 1025.0-135	●	10											
SHA 1225.0-135	●	12											
SHA 0819-120	●	8	19.05	14	12	18	8.75	120	-	Fig.1	HS6X4P	LW-3	Citizen Machinery
SHA 1019-120	●	10											
SHA 0820-120	●	8	20	14	12	19	9.25	120	-	Fig.1	HS6X4P	LW-3	Citizen Machinery
SHA 1020-120	●	10											
SHA 0825.4-120	●	8											
SHA 1025.4-120	●	10	25.4	14	14	24.4	12	120	17	Fig.2	HS6X4P	LW-3	Citizen Machinery
SHA 1225.4-120	●	12											
SHA 0822-125	●	8	22	14	14	21	10	125	-	Fig.1	HS6X4P	LW-3	Star Micronics Nomura DS
SHA 1022-125	●	10											
SHA 1222-125	●	12											
SHA 0823-120	●	8	23	14	14	22	10.5	120	16	Fig.2	HS6X4P	LW-3	Nomura DS
SHA 1023-120	●	10											
SHA 1223-120	●	12											

* Length of φd1...45mm (All of SHA sleeves)

· Choose sleeves (φd1) to meet with φD dimension of toolholder.

· Machine manufacturers in random order.

● : Std. Item



Internal Grooving SIGE

◆ Recommended Cutting Conditions (Ground Chipbreaker: GE^{R/L}...A(R), GE^{R/L}...B(R))

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)				(1) f for Grooving (mm/rev)			Remarks
	Cermet	MEGACOAT	PVD Coated Carbide	Carbide	(2) f for Turning (mm/rev)			
	TN6020	PR1225	PR1025	KW10	(3) ap for Turning (mm)			
					GE ^{R/L} 100-200-010A 100-200-100AR	GE ^{R/L} 100-200-010B 100-200-100BR	GE ^{R/L} 250-300-020B	
Carbon Steel	☆ 50~80	★ 50~80	☆ 50~80	-	(1) 0.01~0.03 (2) 0.01~0.03 (3) Max. 0.05	(1) 0.02~0.04 (2) 0.02~0.04 (3) Max. 0.05	(1) 0.02~0.04 (2) 0.02~0.04 (3) Max. 0.1	Coolant
Alloy Steel	☆ 50~80	★ 50~80	☆ 50~80	-	(1) 0.01~0.03 (2) 0.01~0.03 (3) Max. 0.05	(1) 0.02~0.04 (2) 0.02~0.04 (3) Max. 0.05	(1) 0.02~0.04 (2) 0.02~0.04 (3) Max. 0.1	
Stainless Steel	-	★ 50~80	☆ 50~80	-	(1) 0.01~0.03 (2) 0.01~0.03 (3) Max. 0.05	(1) 0.01~0.03 (2) 0.01~0.03 (3) Max. 0.05	(1) 0.01~0.03 (2) 0.01~0.03 (3) Max. 0.1	
Cast Iron	-	-	-	★ 50~80	(1) 0.01~0.03 (2) 0.01~0.03 (3) Max. 0.05	(1) 0.02~0.04 (2) 0.02~0.04 (3) Max. 0.05	(1) 0.02~0.04 (2) 0.02~0.04 (3) Max. 0.1	
Aluminum	-	-	-	★ 50~100	(1) 0.01~0.03 (2) 0.01~0.03 (3) Max. 0.1	(1) 0.02~0.04 (2) 0.02~0.04 (3) Max. 0.1	(1) 0.02~0.04 (2) 0.02~0.04 (3) Max. 0.2	
Brass	-	-	-	★ 50~100	(1) 0.01~0.03 (2) 0.01~0.03 (3) Max. 0.1	(1) 0.02~0.04 (2) 0.02~0.04 (3) Max. 0.1	(1) 0.02~0.04 (2) 0.02~0.04 (3) Max. 0.2	

* Use PVD coated grade or carbide for turning with edge width 1mm. (GE^{R/L}100-005A / 100-005B)

★: 1st Recommendation ☆: 2nd Recommendation

◆ Recommended Cutting Conditions (Ground Chipbreaker: GE^{R/L}...C(R), GE^{R/L}...D(R), GE^{R/L}...E)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)				(1) f for Grooving (mm/rev)						Remarks	
	Cermet	MEGACOAT	PVD Coated Carbide	Carbide	(2) f for Turning (mm/rev)							
	TN6020	PR1225	PR1025	GW15	(3) ap for Turning (mm)							
					GE ^{R/L} 100-200-010C 200-100CR	GE ^{R/L} 250-350-020C 250-300-150CR			GE ^{R/L} 300-400-020D 300-150DR			GE ^{R/L} 350-430-020E
Carbon Steel	☆ 120~180	★ 60~140	☆ 60~140	-	(1) 0.03~0.08 (2) 0.03~0.08 (3) Max. 0.3	(1) 0.03~0.08 (2) 0.03~0.08 (3) Max. 0.3	(1) 0.04~0.09 (2) 0.04~0.09 (3) Max. 0.3	(1) 0.04~0.09 (2) 0.04~0.09 (3) Max. 0.3	(1) 0.05~0.12 (2) 0.05~0.1 (3) Max. 0.5	(1) 0.05~0.12 (2) 0.05~0.1 (3) Max. 0.5	(1) 0.05~0.12 (2) 0.05~0.1 (3) Max. 0.5	Coolant
Alloy Steel	☆ 100~160	★ 60~120	☆ 60~120	-	(1) 0.03~0.07 (2) 0.03~0.1 (3) Max. 0.3	(1) 0.03~0.07 (2) 0.03~0.1 (3) Max. 0.3	(1) 0.04~0.08 (2) 0.04~0.08 (3) Max. 0.3	(1) 0.04~0.08 (2) 0.04~0.08 (3) Max. 0.3	(1) 0.05~0.1 (2) 0.05~0.1 (3) Max. 0.5	(1) 0.05~0.1 (2) 0.05~0.1 (3) Max. 0.5	(1) 0.05~0.1 (2) 0.05~0.1 (3) Max. 0.5	
Stainless Steel	☆ 70~130	★ 60~110	☆ 60~110	-	(1) 0.03~0.07 (2) 0.03~0.1 (3) Max. 0.3	(1) 0.03~0.07 (2) 0.03~0.1 (3) Max. 0.3	(1) 0.04~0.08 (2) 0.04~0.08 (3) Max. 0.3	(1) 0.04~0.08 (2) 0.04~0.08 (3) Max. 0.3	(1) 0.05~0.1 (2) 0.05~0.1 (3) Max. 0.5	(1) 0.05~0.1 (2) 0.05~0.1 (3) Max. 0.5	(1) 0.05~0.1 (2) 0.05~0.1 (3) Max. 0.5	
Cast Iron	-	-	-	★ 60~100	(1) 0.03~0.08 (2) 0.03~0.08 (3) Max. 0.3	(1) 0.03~0.08 (2) 0.03~0.08 (3) Max. 0.3	(1) 0.04~0.09 (2) 0.04~0.09 (3) Max. 0.3	(1) 0.04~0.09 (2) 0.04~0.09 (3) Max. 0.3	(1) 0.05~0.12 (2) 0.05~0.1 (3) Max. 0.5	(1) 0.05~0.12 (2) 0.05~0.1 (3) Max. 0.5	(1) 0.05~0.12 (2) 0.05~0.1 (3) Max. 0.5	
Aluminum	-	-	-	★ 150~300	(1) 0.05~0.12 (2) 0.05~0.12 (3) Max. 0.5	(1) 0.05~0.12 (2) 0.05~0.12 (3) Max. 0.5	(1) 0.05~0.15 (2) 0.05~0.15 (3) Max. 0.5	(1) 0.05~0.15 (2) 0.05~0.15 (3) Max. 0.5	(1) 0.08~0.15 (2) 0.08~0.15 (3) Max. 0.8	(1) 0.08~0.15 (2) 0.08~0.15 (3) Max. 0.8	(1) 0.08~0.15 (2) 0.08~0.15 (3) Max. 0.8	
Brass	-	-	-	★ 100~250	(1) 0.05~0.12 (2) 0.05~0.12 (3) Max. 0.5	(1) 0.05~0.12 (2) 0.05~0.12 (3) Max. 0.5	(1) 0.05~0.15 (2) 0.05~0.15 (3) Max. 0.5	(1) 0.05~0.15 (2) 0.05~0.15 (3) Max. 0.5	(1) 0.08~0.15 (2) 0.08~0.15 (3) Max. 0.8	(1) 0.08~0.15 (2) 0.08~0.15 (3) Max. 0.8	(1) 0.08~0.15 (2) 0.08~0.15 (3) Max. 0.8	

* Use PVD coated grade or carbide for turning with edge width 1mm. (GE^{R/L}100-010C / 100-010D / 100-010E)

★: 1st Recommendation ☆: 2nd Recommendation

◆ Recommended Cutting Conditions (Molded Chipbreakers: GER...CM, GER...DM, GER...EM)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)				(1) f for Grooving (mm/rev)						Remarks	
	Cermet	MEGACOAT	PVD Coated Carbide	Carbide	(2) f for Turning (mm/rev)							
	TN6020	PR1225	PR1025	GW15	(3) ap for Turning (mm)							
					GER 150-200-010CM	GER 250-350-020CM			GER 300-400-020DM			GER 350-400-020EM
Carbon Steel	-	★ 60~160	☆ 60~160	-	(1) 0.03~0.1 (2) 0.03~0.1 (3) Max. 1.0	(1) 0.03~0.12 (2) 0.03~0.1 (3) Max. 1.5	(1) 0.04~0.12 (2) 0.04~0.1 (3) Max. 1.5	(1) 0.05~0.12 (2) 0.05~0.1 (3) Max. 1.5	(1) 0.05~0.12 (2) 0.05~0.1 (3) Max. 1.5	(1) 0.05~0.12 (2) 0.05~0.1 (3) Max. 1.5	(1) 0.05~0.12 (2) 0.05~0.1 (3) Max. 1.5	Coolant
Alloy Steel	-	★ 60~140	☆ 60~140	-	(1) 0.03~0.1 (2) 0.03~0.1 (3) Max. 1.0	(1) 0.03~0.1 (2) 0.03~0.1 (3) Max. 1.5	(1) 0.04~0.12 (2) 0.04~0.1 (3) Max. 1.5	(1) 0.05~0.12 (2) 0.05~0.1 (3) Max. 1.5	(1) 0.05~0.12 (2) 0.05~0.1 (3) Max. 1.5	(1) 0.05~0.12 (2) 0.05~0.1 (3) Max. 1.5	(1) 0.05~0.12 (2) 0.05~0.1 (3) Max. 1.5	
Stainless Steel	-	★ 60~110	☆ 60~110	-	(1) 0.03~0.08 (2) 0.03~0.1 (3) Max. 1.0	(1) 0.03~0.08 (2) 0.03~0.1 (3) Max. 1.5	(1) 0.04~0.08 (2) 0.04~0.1 (3) Max. 1.5	(1) 0.05~0.1 (2) 0.05~0.1 (3) Max. 1.5	(1) 0.05~0.1 (2) 0.05~0.1 (3) Max. 1.5	(1) 0.05~0.1 (2) 0.05~0.1 (3) Max. 1.5	(1) 0.05~0.1 (2) 0.05~0.1 (3) Max. 1.5	

★: 1st Recommendation ☆: 2nd Recommendation

G

Grooving




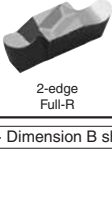
External

Internal

Face

Applicable Inserts (GIV / GIV-E / GIV-W)

(mm)

Description	A	L	H	Classification of usage	Dimension (mm)		Cermert		MEGA COAT	PVD Coated Carbide	Carbide	PCD	Applicable Toolholders													
					W	B	TC40N	TC60M						PR1225	PR930	KW10	KPD010									
GV^β/L...SS	3.6	9	3.0	P Carbon steel / Alloy steel M Stainless Steel K Cast Iron N Non-ferrous Metals S Titanium Alloys H Hard materials (~40HRC) Hard materials (40HRC-)									Applicable Toolholders													
GV^β/L...S	4.0	11	4.0																							
GV^β/L...A	4.0	12	5.0																							
GV^β/L...B	4.5	15	5.5																							
GV^β/L...C	5.8	21	6.5																							
Insert				Description	Dimension (mm)		Cermert		MEGA COAT	PVD Coated Carbide	Carbide	PCD														
Handed Insert shows Right-hand					W	B	TC40N	TC60M						PR1225	PR930	KW10	KPD010									
 1-edge				GV^β/L 100-020SS 1.00 125-020SS 1.25 145-020SS 1.45 200-020SS 2.00 250-020SS 2.50 300-020SS 3.00	2.3	0.2	●																			
							●																			
							●																			
							●																			
							●																			
							●																			
								GV^β/L 100-020S 1.00 125-020S 1.25 145-020S 1.45 185-020S 1.85 200-020S 2.00 250-020S 2.50 340-020S 3.40	2.3	0.2	●															
				●																						
				●																						
				●																						
				●																						
				●																						
				●																						
				●																						
 2-edge				GV^β/L 100-020A 1.00 125-020A 1.25 145-020A 1.45 185-020A 1.85 200-020A 2.00 250-020A 2.50 300-020A 3.00 340-020A 3.40	2.3	0.2	●																			
							●																			
							●																			
							●																			
							●																			
							●																			
								GV^β/L 145-020B 1.45 185-020B 1.85 200-020B 2.00 230-020B 2.30 250-020B 2.50 280-020B 2.80 300-020B 3.00 340-020B 3.40 400-020B 4.00	2.8	0.2	●															
				●																						
				●																						
				●																						
									GV^β/L 280-020C 2.80 300-020C 3.00 340-020C 3.40 400-020C 4.00 430-020C 4.30 460-020C 4.60 500-020C 5.00	3.2	0.2	●														
				●																						
										GV^β/L 280-020C 2.80 300-020C 3.00 340-020C 3.40 400-020C 4.00 430-020C 4.30 460-020C 4.60 500-020C 5.00	4.2	0.2	●													
				●																						
 1-edge				GV^β/L 145-020A 1.45 200-020A 2.00 300-020A 3.00	2.3	0.2	●											● MTO								
							●														● MTO					
							●															● MTO				
								GV^β/L 200-020B 2.00 250-020B 2.50 300-020B 3.00	3.2	0.2	●										● MTO					
				●																		● MTO				
				●																		● MTO				
								GV^β/L 300-020C 3.00 400-020C 4.00	4.2	0.2											MTO MTO					
																						MTO MTO				
				 2-edge Full-R				GV^β/L 200-100AR 2.00 250-125AR 2.50 300-150AR 3.00	2.3	1.25	●															
											●															
											●															
												GV^β/L 200-100BR 2.00 300-150BR 3.00	3.2	1.00	●											
								●																		
												GV^β/L 200-100AR 2.00 250-125AR 2.50 300-150AR 3.00	2.3	1.50	●											
●																										
								GV^β/L 200-100BR 2.00 300-150BR 3.00	4.2	1.50	●															
●																										

· Dimension B shows available grooving depth.

Recommended Cutting Conditions **G104**
 Ref. to Page for Applicable Toolholders **G55**

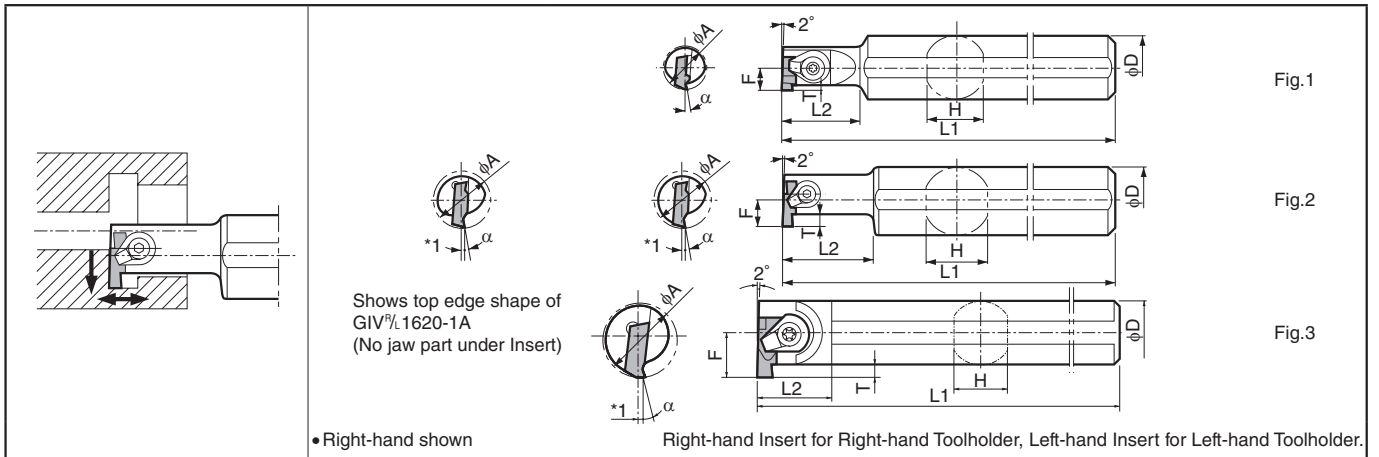
● : Std. Item
 MTO : Made to order

Inserts are sold in 10 piece boxes.

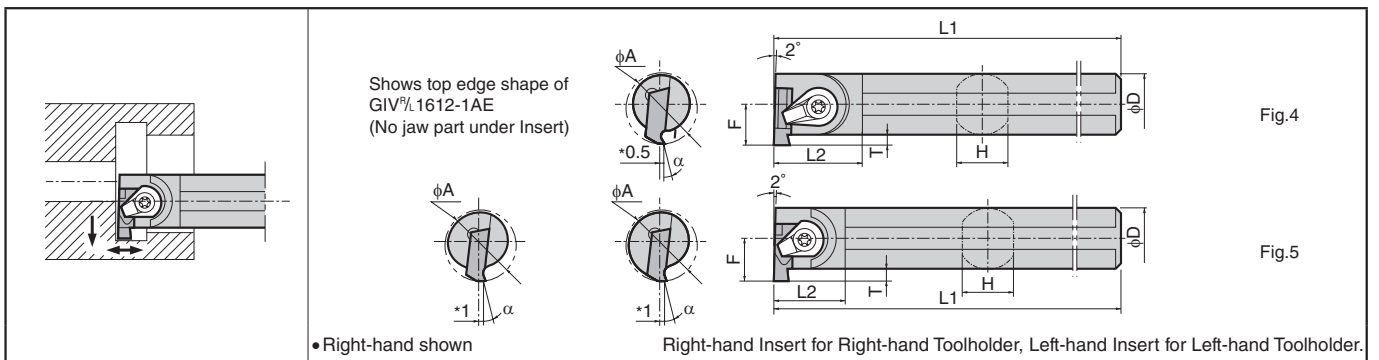
CBN & PCD Inserts are sold in 1 piece boxes.

Small Dia. Internal Grooving Toolholders [GV Insert]

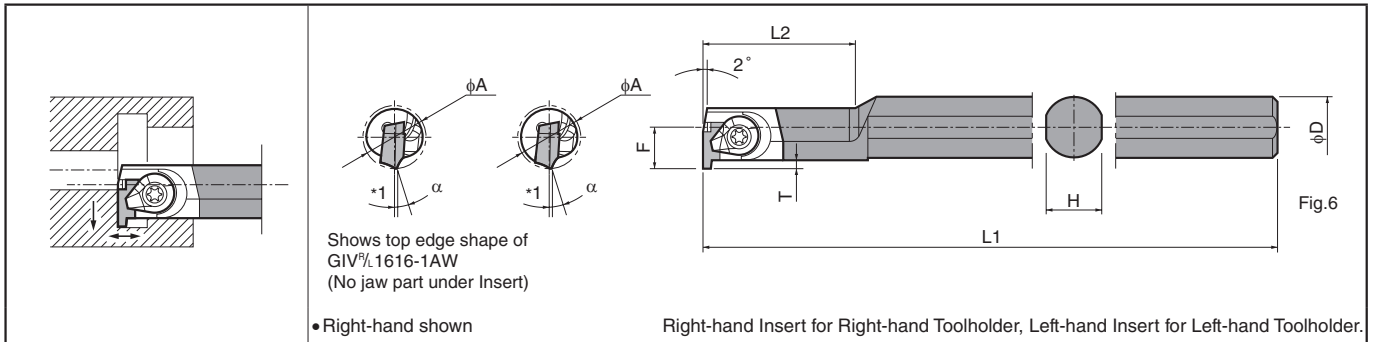
GIV



GIV-E Excellent Bar



GIV-W Carbide Shank Bar







Applicable Insert & Rake Angle (α) after Installment of Insert

Toolholder Description	Insert Description G53		Rake Angle (α)	
	General Grooving (Square)	Full-R Grooving (Round)	TC40N	TN90, TC60M PR930, PR1225 KW10
GIV%L...1SS	GV%L100~300-020SS	-	10°	15°
GIV%L...1S	GV%L100~340-020S	-	10°	15°
GIV%L...1SE	GV%L100~340-020S	-	3°	8°
GIV%L...1A(□)	GV%L100~340-020A	GV%L200-100AR-300-150AR	3°	8°
GIV%L...1B(□)	GV%L145~250-020B	GV%L200-100BR	4°	9°
GIV%L...2B(□)	GV%L280~400-020B	GV%L300-150BR		
GIV%L...1C(□)	GV%L280~340-020C	-	5°	10°
GIV%L...2C(□)	GV%L400~500-020C	-		

* GIV, GIV-E and GIV-W are designed to set the cutting edge height 1mm above the center height. (0.5mm for GIV%L1612-1AE)

● Toolholder Dimensions

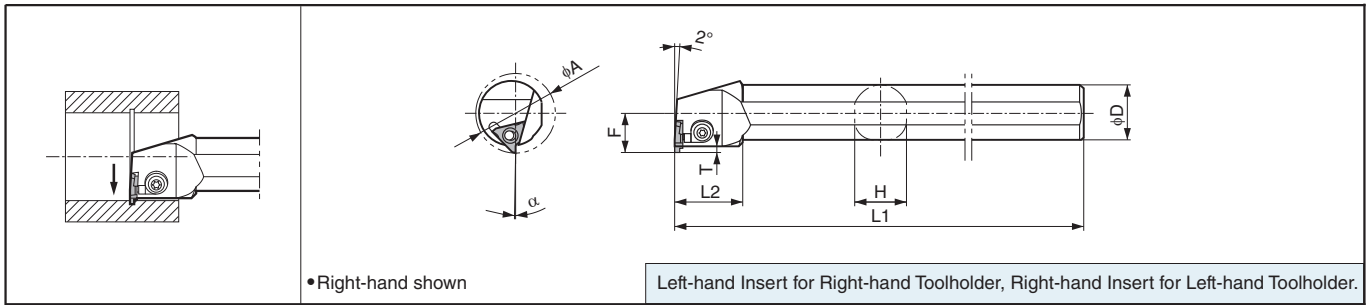
Description	Std.		Min. Bore Dia.	Dimension (mm)							Drawing	Spare Parts				Ref. to Page for Applicable Inserts
	R	L		φA	φD	H	L1	L2	F	T		Clamp Set		Wrench	Wrench	
																
GIV ^{R/L}	1216-1SS	●●	12	16	15	150	20	6.0	2.2	Fig.1	CPS-4V	-	FT-10	-		
	1420-1S	●●	14	20	19	150	24	7.0	2.2	Fig.1	CPS-5F	-	FT-15	-		
	1620-1A	●●	16	20	19	160	28	8.0	2.2	Fig.2	CPS-5V	-	FT-15	-		
	2025-1B	●●	20	25	23	180	35	10.0	Note 1) 2.8 Note 2) 3.2	Fig.2	CPS-5V	-	FT-15	-		
	2025-2B															
	2532-1C	●●	25	32	30	200	43	12.5	Note 3) 4.5	Fig.2	-	CPS-6V	-	LW-3		
	3232-1C	●●	32			220	52	16.0		Fig.3						
	4032-1C	●●	40			250	43	21.0		Fig.2						
	2532-2C	●●	25	32	30	200	43	12.5	Note 4) 5.5	Fig.2	-	CPS-6V	-	LW-3		
	3232-2C	●●	32			220	52	16.0		Fig.3						
4032-2C	●●	40	250			43	22.2	Fig.3								
GIV ^{R/L}	1412-1SE	●●	14	12	11.4	150	18	7.7	1.7	Fig.4	CPS-5F	-	FT-15	-		
	1612-1AE	●●	16	12	11.4	150	19	8.2	2.2	Fig.5	CPS-5V	-	FT-15	-		
	2016-1BE	●●	20	16	15.2	180	20	11.2	Note 1) 2.8 Note 5) 3.2	Fig.5	CPS-5V	-	FT-15	-		
	2016-2BE	●●					19	11.7								
	2520-1CE	●●	25	20	19	200	25	14.5	Note 6) 4.5 Note 7) 4.5 Note 7) 4.5	Fig.5	-	CPS-6V	-	LW-3		
	3225-1CE	●●	32	25	24	220	24	17.5								
	4032-1CE	●●	40	32	31	240	29	21.0								
	2720-2CE	●●	27	20	19	200	25	16.2	Note 4) 5.5	-	-	-	-			
3225-2CE	●●	32	25	24	220	24	18.7									
4032-2CE	●●	40	32	31	240	29	22.2									
GIV ^{R/L}	1616-1AW	●●	16	16	15	175	48	10.6	2.2	Fig.6	CPS-5V	-	FT-15	-		
	2020-1BW	●●	20	20	19	220	60	14.6	Note 1) 2.8 Note 2) 3.2	Fig.6	CPS-5V	-	FT-15	-		
	2020-2BW															
	2525-1CW	●●	25	25	24	260	70	19.1	Note 3) 4.5 Note 4) 5.5	Fig.6	-	CPS-6V	-	LW-3		
2525-2CW																

- Dimension T shows available grooving depth.

- Note 1: GV^{R/L}200-250-020B Insert can be used up to a Groove Depth 3.2mm.
 - Note 2: GV^{R/L}300-400-020B Insert can be used up to a Groove Depth 4.2mm.
 - Note 3: GV^{R/L}340-020C Insert can be used up to a Groove Depth 5.5mm.
 - Note 4: GV^{R/L}430-500-020C Insert can be used up to a Groove Depth 6.3mm.
 - Note 5: GV^{R/L}300-400-020B Insert can be used up to a Groove Depth 3.8mm. (When using GIV^{R/L}2016-2BE)
 - Note 6: GV^{R/L}340-020C Insert can be used up to a Groove Depth 4.7mm. (When using GIV^{R/L}2520-1CE)
 - Note 7: GV^{R/L}340-020C Insert can be used up to a Groove Depth 5.3mm. (When using GIV^{R/L}3225-1CE, GIV^{R/L}4032-1CE)
- If you need any of insert groove depth specified in notes 1 to 7, modify the dimension T of toolholder.

Internal Shallow Grooving Toolholders

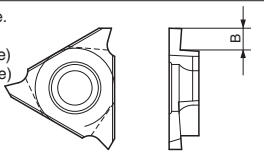
KIGBA



Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)							Spare Parts		Applicable Inserts ● G6-G8	
	R	L		phi A	phi D	H	L1	L2	F	*T	Clamp Set	Wrench		
	KIGBA^{R/L}													
3525-16	●	●	35	25	23	220	30	17.5	2.8			LGBA-16 ^{1/8} S	FT-15	GBA32 ^{1/8} type
4032-22	●	●	40	32	30	250	30	23.0	3.0			LGBA-22 ^{1/8} S	FT-15	GBA43 ^{1/8} type

*Dimension T shows the distance from the toolholder to the cutting edge.
Available Grooving Depth depends on the insert.
KIGBA^{R/L} 3525-16: Dimension B of the applicable insert (GBA32 type)
4032-22: Dimension B of the applicable insert (GBA43 type)
1. 2.0mm (Dimension B < 2.8mm)
2. 2.8mm (Dimension B ≥ 2.8mm)



Clamp Set : LGBA-○○ LS for Right-hand Toolholder, and LGBA-○○ RS for Left-hand Toolholder.

Rake Angle (α) after Installment of GBA type

GBA32 ^{R/L} ○○○-○○○		GBA43 ^{R/L} ○○○-○○○		GBA43 ^{R/L} ○○○-○○○R (Full-R)		
α	Insert Grades	α	Insert Grades	α	Insert Grades	Full-R Description
+1°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR905 KPD001, KPD010	-9°	KBN510, KBN525	+1°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR905	050R~150R
		+1°	TN620, TC40N, TN90, PV7040 PR930, PR1115, PR1215, PR905 KPD001, KPD010	+5°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR905	200R
+11°	KW10	+11°	KW10		KW10	050R~200R

Rake Angle (α) after Installment of GBA-GM type

α	Insert Description
+1°	GBA43 ^{R/L} 150-020GM
+6°	GBA43 ^{R/L} 175-020GM
	GBA43 ^{R/L} 265-030GM
+3°	GBA43 ^{R/L} 300-030GM
	GBA43 ^{R/L} 400-040GM

α indicates the rake angle at the center of the edge width, after installing insert.

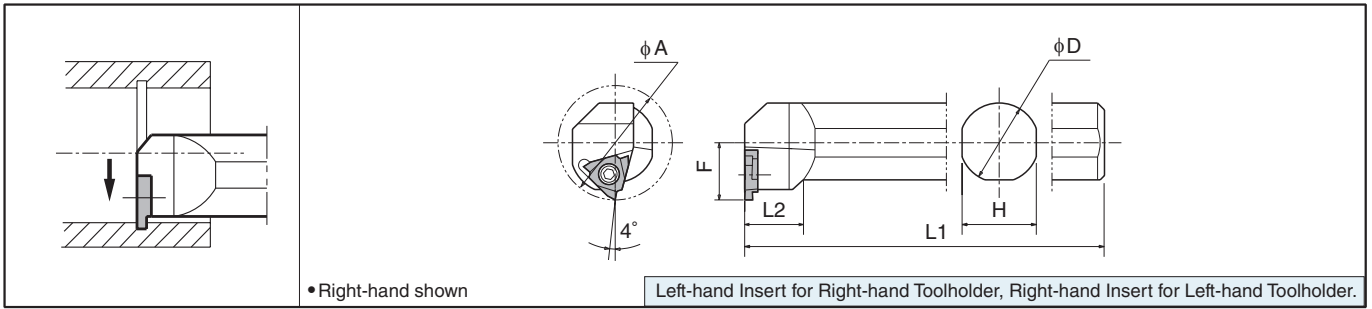
Rake Angle (α) after Installment of GBA-MY type

α	Insert Description
+6°	GBA43 ^{R/L} 175-020MY
	GBA43 ^{R/L} 350-030MY
+5°	GBA43 ^{R/L} 400-040MY





α indicates the rake angle at the center of the edge width, after installing insert.

Internal Large Dia. Shallow Grooving Toolholders [TG Insert]


KITG (Will be switched to KIGBA)



Toolholder Dimensions

Description	Std.	Min. Bore Dia.	Dimension (mm)							Spare Parts							
			R	L	φA	φD	H	L1	L2	F	Clamp Screw		Wrench				
																	
KITG^{R/L}																	
3525T-16	●●	35	25	23	220	18	17.5				SB-4TR	-	FT-15	-			
4532T-22	●●	45	32	30	250	20	22.5				-	GS-50	-	LW-3			





Available Grooving Depth: KITG^{R/L}3525T-16=2.0mm, KITG^{R/L}4532T-22=2.5mm

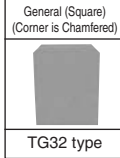
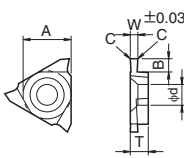
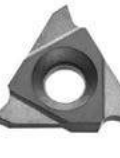
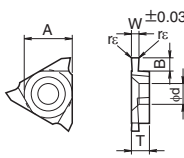
* KITG will be switched to KIGBA as an Internal Shallow Grooving Toolholder; however, it will continue to be sold as Internal Threading Toolholder ()
 - GBA Insert cannot be installed to this toolholder.

Applicable Inserts (TG insert will be switched to GBA)

Description	A	T	φd
TG32₋	9.525	3.18	4.5
TG43₋	12.70	4.76	5.5

P	Carbon steel / Alloy steel	Classification of usage
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metals	
S	Titanium Alloys	
H	Hard materials (~40HRC) Hard materials (40HRC~)	

 : Continuous-Light Interruption / 1st Choice
 : Continuous-Light Interruption / 2nd Choice
 : Continuous / 1st Choice
 : Continuous / 2nd Choice

Insert Handed Insert shows Right-hand	Description	Dimension (mm)			Cermet		Applicable Toolholders	Ref. to Page for Applicable Toolholders	
		W	B	C or r _ε	TN60				
					R	L			
 General (Square) (Corner is Chamfered) TG32 type	 (Corner is Chamfered)	TG32^{R/L} 075 095 125 145 150 175 200	0.75 0.95 1.25 1.45 1.50 1.75 2.00	2.0	C0.1	<input type="radio"/>	<input type="radio"/>	KITG^{R/L}...16	G57
						<input type="radio"/>	<input type="radio"/>		
						<input type="radio"/>	<input type="radio"/>		
						<input type="radio"/>	<input type="radio"/>		
						<input type="radio"/>	<input type="radio"/>		
						<input type="radio"/>	<input type="radio"/>		
 General (Square) (Corner is R shape) TG43 type		TG43^{R/L} 150 175 200 230 250 265 280 300 330 350	1.50 1.75 2.00 2.30 2.50 2.65 2.80 3.00 3.30 3.50	3.5	0.2	<input type="radio"/>	<input type="radio"/>	KITG^{R/L}...22	G57
						<input type="radio"/>	<input type="radio"/>		
						<input type="radio"/>	<input type="radio"/>		
						<input type="radio"/>	<input type="radio"/>		
						<input type="radio"/>	<input type="radio"/>		
						<input type="radio"/>	<input type="radio"/>		
		400 430 450	4.00 4.30 4.50	5.0	0.4	<input type="radio"/>	<input type="radio"/>		
						<input type="radio"/>	<input type="radio"/>		
						<input type="radio"/>	<input type="radio"/>		
						<input type="radio"/>	<input type="radio"/>		
						<input type="radio"/>	<input type="radio"/>		
						<input type="radio"/>	<input type="radio"/>		

Dimension B shows available grooving depth.

Recommended Cutting Conditions 

* KITG will be switched to KIGBA.
 * For applicable insert, TG insert will be switched to GBA.
 Change Insert Grade TN60 for TN90.
 There are various types of GBA insert grades available dependent on the user's cutting condition requirements.
 * Check the corner-R(r_ε) of the insert when changing.

● : Std. Item
 ○ : Check Availability

Inserts are sold in 10 piece boxes.

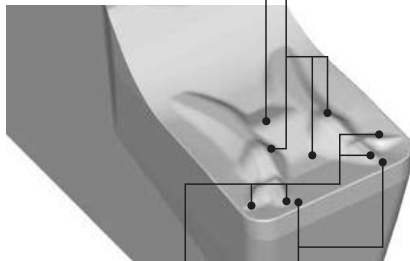
KGDI

Stable Machining with Excellent Chip Control and Smooth Chip Evacuation

Point 1 Excellent Chip Control with GMI Chipbreaker for Internal Grooving

Evenly breaks chips in various cutting conditions with newly designed chipbreaker geometry. Good chip control even in finishing applications with small depths of cut.

Rear ramp supports chip deformation. Center geometry squeezes chips and prevents chip clogging during high feed machining.



Comparison of Chip Control (Internal evaluation)



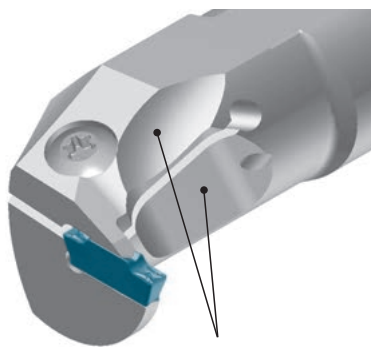
GMI Chipbreaker Competitor A Conventional product F

Smooth chip control with stable chip shape compared with Competitor A and Conventional F. Prevents frequent machine stops caused by tangled chips.

Cutting Conditions : $V_c=100\text{m/min}$, $f=0.07\text{mm/rev}$ Toolholder : KGDIR3225B-3
Insert : GDM3015N-040GMI Workpiece Material : SCr420

Point 2 Smooth Chip Evacuation by Creating Chip Pocket

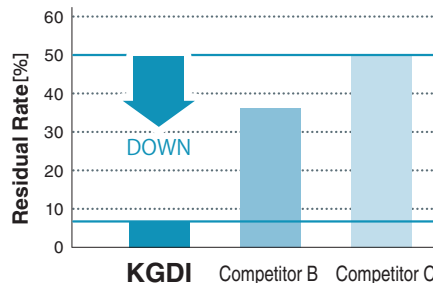
Smooth chip evacuation when grooving and finishing.



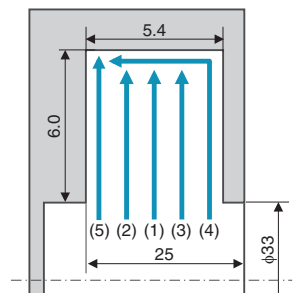
Improved chip evacuation by innovation chip pockets

Cutting Conditions : $V_c=100\text{m/min}$
(1) : $a_p=3\text{mm}$, (2)(3) : $a_p=1\text{mm}$, (4)(5) : $a_p=0.2\text{mm}$
 $f=0.08\text{mm/rev}$
Toolholder : KGDIR3225B-3
Insert : GDM3015N-040GMI
Workpiece Material : SCM415

Residual Chips (Internal evaluation)



Prevents Chip Clogging

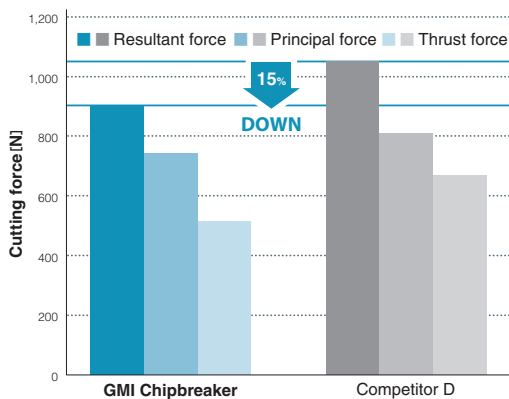


Chips remaining in machined bore were greatly reduced compared with Competitor B and C.

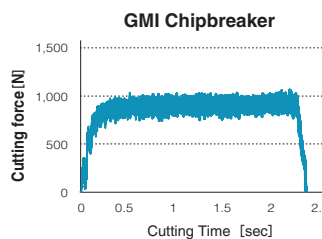
Point 3 Low Cutting Forces and Stable Machining

GMI chipbreaker prevents chip clogging and reduces cutting forces.

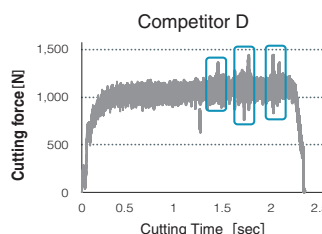
Comparison of Cutting force (Internal evaluation)



Cutting Conditions : $V_c=150\text{m/min}$, $f=0.1\text{mm/rev}$
Toolholder : KGDIR3225B-3 Insert : GDM3015N-040GMI
Workpiece Material : SCM415



Stable machining with few changes in cutting force.



Instantaneous increase of cutting force due to clogged chips.

G

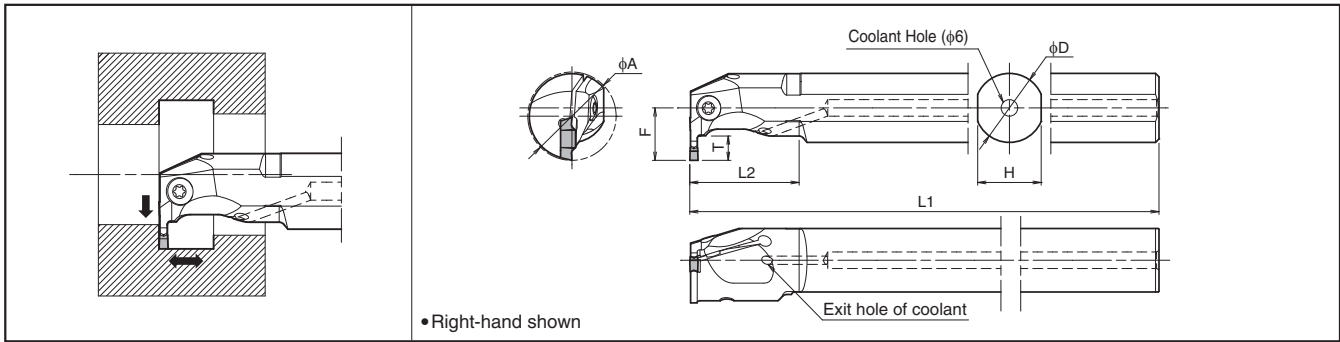
Grooving

External

Internal

Face

KGDI



Toolholder Dimensions

Description	Std.		Min. Bore Dia.		Dimension (mm)						Edge Width W (mm)		Spare Parts				
	R	L	φA		φD	H	L1	L2	F	T	MIN.	MAX.	Clamp Screw		Wrench		
			with GMI	with CM													
KGDI ^{R/L} 1816B-2	●	●	18		16	15	150	25	9.5	4.5	2.0	2.0		—	LW-3	—	
	●	●	25		20	18	180	30	14.5	6				—	SB-5TR	—	LTW-20
	●	●	32		25	23	200	40	19	7			—	SB-5TR	—	LTW-20	
KGDI ^{R/L} 2016B-3	●	●	20	21	16	15	150	25	11.5	5.5	3.0	3.0		—	LW-3	—	
	●	●	25	26	20	18	180	30	14.5	6				—	SB-5TR	—	LTW-20
	●	●	32	33	25	23	200	40	19	8			—	SB-5TR	—	LTW-20	
KGDI ^{R/L} 3225B-4	●	●	32	40 (34*)	25	23	200	40	19	8.5	4.0	5.0	—	SB-5TR	—	LTW-20	
	●	●	40	48 (42*)	32	29	220	50	23.5	11			—	SB-5TR	—	LTW-20	
KGDI ^{R/L} 3225B-5	●	●	32	37 (34*)	25	23	200	40	19	8.5	5.0	5.0	—	SB-5TR	—	LTW-20	
	●	●	40	45 (42*)	32	29	220	50	23.5	11			—	SB-5TR	—	LTW-20	

* Possible by slightly chamfering toolholder's tip about 0.5 mm

Applicable Inserts

Classification of usage		P	Carbon steel / Alloy steel			Applicable Toolholders			
●	Continuous-Light Interruption / 1st Choice	M	Stainless Steel			●	○	●	○
○	Continuous-Light Interruption / 2nd Choice	K	Cast Iron			○	○	○	○
●	Continuous / 1st Choice								
○	Continuous / 2nd Choice								

Insert	Description	Dimension (mm)						Cement				Applicable Toolholders
		W	Tolerance	r _e	M	L	H	TN620	MEGACOAT NANO	PR1225	PR1215	
								MEGACOAT	MEGACOAT			
	GDM 2013N-020GMI	2.0		0.2	1.5	13.5	4.3	●	●	●	●	KGDI ^{R/L} ...-2
	3015N-040GMI	3.0	±0.03		2.4	15.5	4.6	●	●	●	●	KGDI ^{R/L} ...-3
	4020N-040GMI	4.0		0.4	3.4			●	●	●	●	KGDI ^{R/L} ...-4
	5020N-040GMI	5.0	±0.04		4.4	20	4.3	●	●	●	●	KGDI ^{R/L} ...-4
	5020N-080GMI							0.8	●	●	●	●
	GDM 3015N-150R-CM	3.0	±0.03	1.5	2.3	16.3	4.6	○	○	●	●	KGDI ^{R/L} ...-3
	4020N-200R-CM	4.0		2.0	3.3	20		○	○	●	●	KGDI ^{R/L} ...-4
	5020N-250R-CM	5.0	±0.04	2.5	4.2	21	4.3	○	○	●	●	KGDI ^{R/L} ...-4 KGDI ^{R/L} ...-5

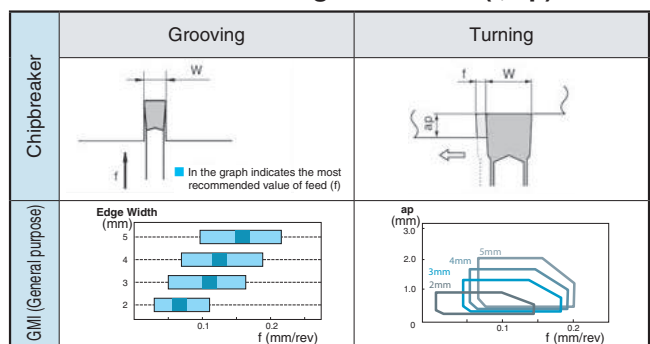
Recommended Cutting Conditions (Vc)

Workpiece Material	Chip-breaker	Recommended Insert Grades (Cutting Speed Vc: m/min)				Remarks
		Cermet		MEGACOAT		
		TN620	PR1535	PR1225	PR1215	
Carbon Steel	GMI CM	100~220	80~150	80~200	100~200	Coolant
Alloy Steel		80~200	70~150	70~180	80~180	
Stainless Steel		70~180	60~150	60~150	60~150	
Cast Iron					100~200	

★ 1st Recommendation ☆ 2nd Recommendation

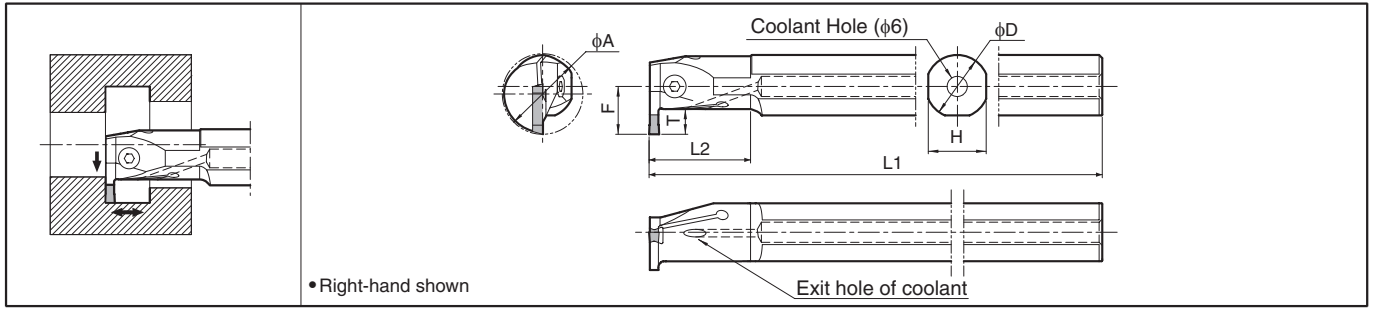
● : Std. Item
○ : Check Availability

Recommended Cutting Conditions (f, ap)



Internal Grooving Toolholders

KIGM-V (Will be switched to KGDI G58~G59)



• Right-hand shown

Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)							Edge Width W (mm)		Spare Parts					
	R	L		φA	φD	H	L1	L2	F	T	MIN.	MAX.	Clamp Screw		Wrench			
	KIGM^{R/L}																	
2016B-3V	○	○	20	16	15	150	25	11.5	5.5				GS-50	-	LW-3	-		
2520B-3V	○	○	25	20	18	180	32	14.5	6.0			3.0	3.0					
3225B-3V	○	○	32	25	23	200	40	19	8.0					-	SB-5TR	-	LTW-20	
3225B-4V	○	○	32	25	23	200	40	19	8.5			4.0	5.0	-	SB-5TR	-	LTW-20	
4032B-4V	○	○	40	32	29	220	50	23.5	11.0									

• Dimension T shows available grooving depth.

Applicable Inserts (mm)

Description	L	H
GMM3015...V <input type="checkbox"/>	15.5	4.3
GMM4020...V <input type="checkbox"/>	20	
GMM5020...V <input type="checkbox"/>	20	

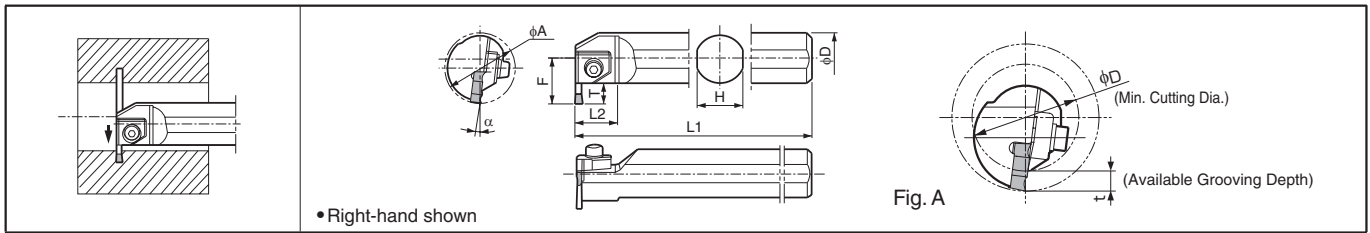
P	M	K	N	S	H	Classification of usage											
Carbon steel / Alloy steel	Stainless Steel	Cast Iron	Non-ferrous Metals	Titanium Alloys	Hard materials (~40HRC)												
					Hard materials (40HRC-)												

Insert	Description	Dimension (mm)			Cermet	CVD Coated Carbide	PVD Coated Carbide			Carbide	Applicable Toolholders			
		W	r _ε	M			TN90	CR9025	PR915			PR930	PR905	KW10
 Chip Control Oriented M Class	GMM 3015-040V	3.0	0.4	2.3	○	○	○	○	○	○	KIGM^{R/L} 2016B-3V 2520B-3V 3225B-3V			
	4020-040V	4.0	0.4	3.3	○	○	○	○	○	○	KIGM^{R/L} 3225B-4V 4032B-4V			
	5020-080V	5.0	0.8	4.2	○	○	○	○	○	○				
 Chip Control Oriented M Class Full-R / Copying	GMM 3015-150VR	3.0	1.5	2.3	○	○		○	○	○	KIGM^{R/L} 2016B-3V 2520B-3V 3225B-3V			
	4020-200VR	4.0	2.0	3.3		○		○	○	○	KIGM^{R/L} 3225B-4V 4032B-4V			
	5020-250VR	5.0	2.5	4.2		○		○	<input type="checkbox"/>	○				

• It is not recommended to use this for KIGM-V Internal Grooving Toolholders against GMM...V / GMM...VR which the front relief angle is 18°, because the relief angle of the insert used for GMM4020-04 toolholder is 10°.

Recommended Cutting Conditions **G105**

KIGH



Toolholder Dimensions

Description	Std.	Dimension (mm)							Spare Parts					
		φA	φD	H	L1	L2	F	T	Clamp	Clamp Bolt	Washer	Spring	Wrench	
KIGHR														
4532B-4	●	45	32	30	200		28.2							
5540B-4	●	55	40	38	250	27	32.3	12						
6550B-4	●	65	50	48	300		37.3							
4532B-5	●	45	32	30	200		28.2							
5540B-5	●	55	40	38	250	27	32.3	12						
6550B-5	●	65	50	48	300		37.3							
5540B-7	●	55	40	38	250	27	32.3	12						
6550B-7	●	65	50	48	300		37.3							

· Dimension T shows the distance from the toolholder to the cutting edge. For the available grooving depth (t), ref. to "List of Min. Available Cutting Diameter and Groove Depth".
 · Dimension L2 depends on the insert's edge width.

Rake Angle (α) after Installment of GH / GHU

GH○○○○-○○		GHU○○-○○	
α	Insert Grades	α	Insert Grades
-5°	A65, A66N, PT600M	+5°	TN60 CR9025
+5°	TC40N		
+15°	TN90, TC60M PR930 KW10		

List of the Min. Cutting Diameter and Grooving Depth (Refer to Fig. A)

Toolholder Description	φD (Min. Cutting Dia.)					
	φ110	φ70	φ65	φ60	φ55	φ45
KIGHR 4532B-○						
5540B-○						
6550B-○						
Available Grooving Depth t (mm)	12	11.5	11	10	9	Under 8

Applicable Inserts

Description	(mm)	
	L	H
GH4020-○○~GH8020-○○	20	7.5
GHU○○-○○	20	

P	M	K	N	S	H	Classification of usage									
Carbon steel / Alloy steel	Stainless Steel	Cast Iron	Non-ferrous Metals	Titanium Alloys	Hard materials (~40HRC) Hard materials (40HRC~)										
						●	○	●	○	●	○	●	○	●	○

● : Continuous-Light Interruption / 1st Choice
 ○ : Continuous-Light Interruption / 2nd Choice
 ● : Continuous / 1st Choice
 ○ : Continuous / 2nd Choice

Insert	Description	Dimension (mm)		Applicable Toolholders									
		W	re	TN60	TN90	TC40N	TC60M	CR9025	PVD Coated Carbide	Ceramic	A65	A66N	PT600M
<p>Ground Chipbreaker</p>	GH 4020-02	4.0	0.2	●	●	●	●	●	●	●	●	●	KIGHR4532B-4 5540B-4 6550B-4
	4020-05		0.5	●	●	●	●	●	●	●	●	●	
	4520-02	4.5	0.2	●	●	●	●	●	●	●	●	●	
	4520-05		0.5										KIGHR4532B-5 5540B-5 6550B-5
	5020-02	5.0	0.2	●	●	●	●	●	●	●	●	●	
	5020-05		0.5	●	●	●	●	●	●	●	●	●	
	5520-02	5.5	0.2	●	●	●	●	●	●	●	●	●	KIGHR5540B-7 6550B-7
	5520-05		0.5	●	●	●	●	●	●	●	●	●	
	6020-02	6.0	0.2	●	●	●	●	●	●	●	●	●	
	6020-05		0.5	●	●	●	●	●	●	●	●	●	
6520-02	6.5	0.2	●	●	●	●	●	●	●	●	●		
6520-05		0.5	●	●	●	●	●	●	●	●	●		
7020-02	7.0	0.2	●	●	●	●	●	●	●	●	●		
7020-05		0.5	●	●	●	●	●	●	●	●	●		
7520-02	7.5	0.2	●	●	●	●	●	●	●	●	●		
7520-05		0.5	●	●	●	●	●	●	●	●	●		
8020-02	8.0	0.2	●	●	●	●	●	●	●	●	●		
8020-05		0.5	●	●	●	●	●	●	●	●	●		
<p>Molded Chipbreaker</p>	GHU 40-20	4.0	0.25	●				●					KIGHR...○○○○B-4
	50-20	5.0	0.30	●				●					KIGHR...○○○○B-5
	60-20	6.0	0.30	●				●					

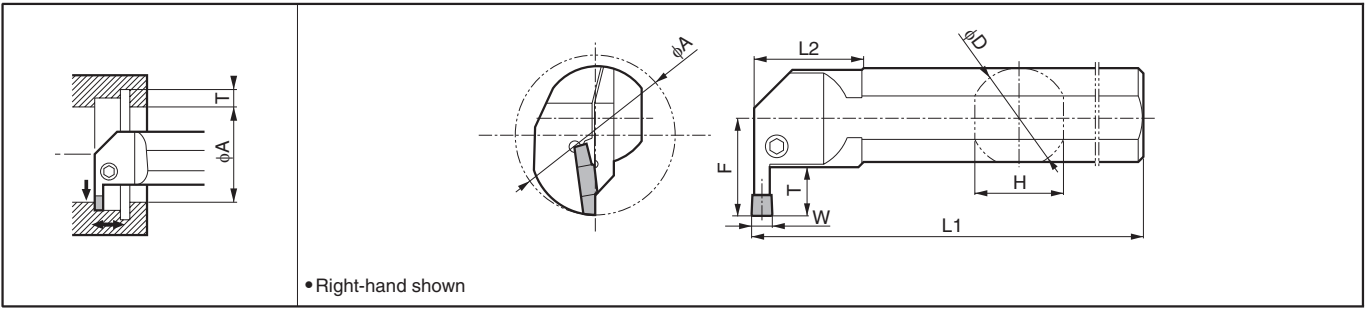
Recommended Cutting Conditions ● G102

● : Std. Item

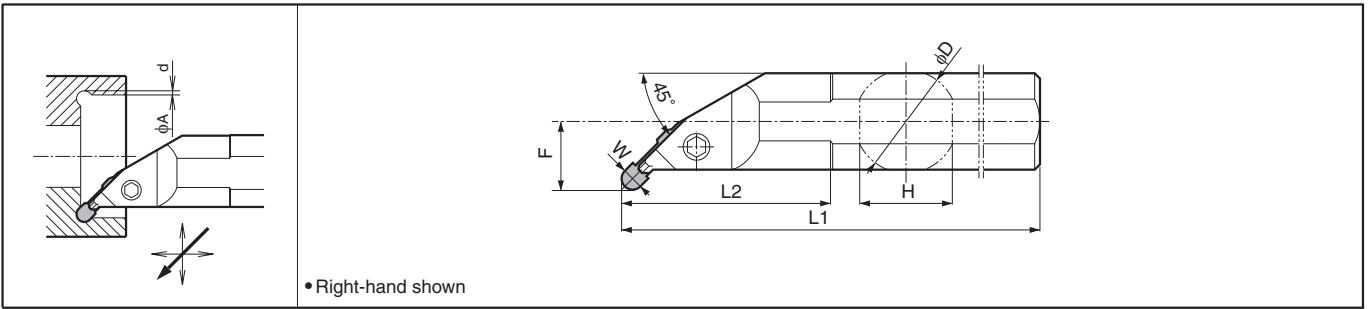
Inserts are sold in 10 piece boxes.

Internal Grooving Toolholder / Internal Undercutting Toolholder

KIGM-8 (8mm-Width Insert / Large Internal Diameter Deep Grooving)



KIGMU-8 (8mm-Width Insert / Large Internal Diameter Undercut Grooving)



Toolholder Dimensions

Description	Std.	Min. Bore Dia.	Dimension (mm)								Edge Width W (mm)		Spare Parts			
			R	L	φA	φD	H	L1	L2	F	T	d	MIN.	MAX.	Clamp Bolt	Wrench
KIGM^{R/L} 6540B-8	●	●	65	40	36	300	41	41	20	-		8.0	8.0	HH6X20	LW-5	
KIGMUR 6540B-8	●		65	40	36	300	83	26	-	2.2		8.0	8.0	HH6X20	LW-5	

• Dimension T shows available grooving depth.

• Dimension d shows the distance from the internal face of the workpiece.

Applicable Inserts (mm)

Description	L	H
GMM8030-080MW	30	5.5
GMG8030-050MG		
GMGA8030-400R		

P	M	K	N	S	H	Classification of usage										
Carbon steel / Alloy steel	Stainless Steel	Cast Iron	Non-ferrous Metals	Titanium Alloys	Hard materials (~40HRC)	○	●	○	●	○	●	●	○	○	○	● : Continuous-Light Interruption / 1st Choice ○ : Continuous-Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice
					Hard materials (40HRC~)											

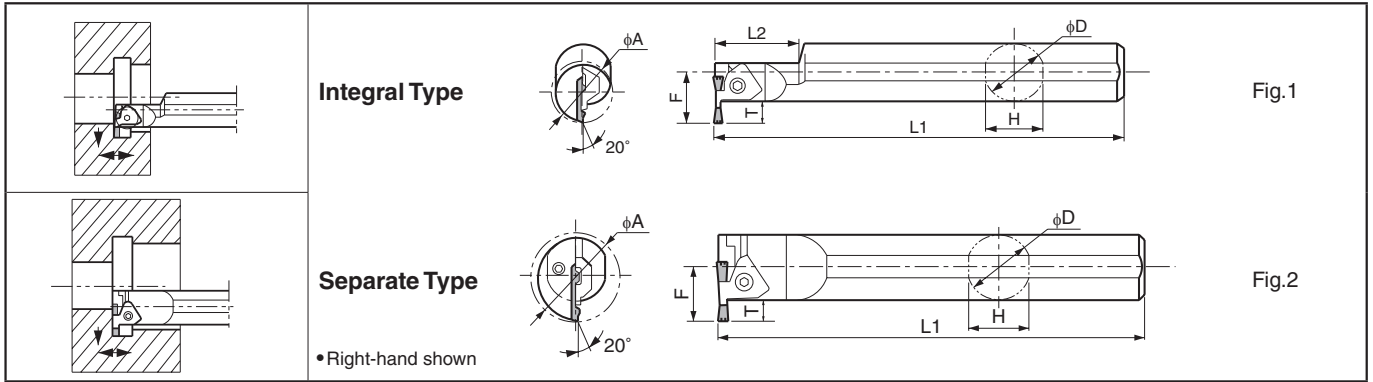
Insert	Description	Dimension (mm)			Cermet	PVD Coated Carbide	PVD Coated Carbide			Carbide	Applicable Toolholders	Ref. to Page for Applicable Toolholders
		W	r _ε	M			TN90	CR9025	PR915			
<p>Chip Control Oriented M Class</p>	<p>GMM 8030-080MW</p>	8.0	0.8	6.0		●	●	●	●	●		
<p>Sharp-Cutting Oriented / Precision Class Ground Chipbreaker</p>	<p>GMG 8030-050MG</p>	8.0	0.5	6.0	●	●		●	●	●	KIGM^{R/L} ...8 KIGMUR...8	G62
<p>Sharp-Cutting Oriented / Precision Class Full-R / Copying</p>	<p>GMGA 8030-400R</p>	8.0	4.0	6.0						●		

• If using a full-R insert with KIGM-8 type toolholder, you need to modify the corner of insert adapter of toolholder.

Recommended Cutting Conditions **G105**

Internal Large Dia. Deep Grooving Toolholders [GIA Insert]

KGIA



Toolholder Dimensions

Description	Std.	Min. Bore Dia.	Dimension (mm)							Drawing	Spare Parts			
			φA	φD	H	L1	L2	F	T		Clamp	Clamp Bolt	Spring	Wrench
KGIA	3232B-3	●	32	32	30.4	200	45	26.5		Fig.1	CGIA-3R	HH5X15	SP-5	LW-4
	4332B-3	●	43	32	30	200	-	26.3	10	Fig.2				
	5140B-3	●	51	40	38	250	-	30.3		Fig.1				
	3232B-4	●	32	32	30.4	200	45	26.5		Fig.2				
	4332B-4	●	43	32	30	200	-	26.3	10	Fig.1				
	5140B-4	●	51	40	38	250	-	30.3		Fig.2				
	5640B-5	●	56	40	38	250	-	35.3	15	Fig.2	CGIA-5R			
	6650B-5	●	66	50	48	250	-	40.3						

· Dimension T shows available grooving depth.

Composition

Type	Spare Parts	Toolholder	Blade	Clamp Screw	Wrench
Integral Type	KGIA	3232B-3	-	-	-
Separate Type		4332B-3	KGIA32H	BGIA43-3	SB-40140TR
Separate Type		5140B-3	KGIA40H	BGIA51-3	FT-15
Integral Type		3232B-4	-	-	-
Separate Type		4332B-4	KGIA32H	BGIA43-4	SB-40140TR
Separate Type		5140B-4	KGIA40H	BGIA51-4	FT-15
Separate Type		5640B-5	KGIA40H	BGIA56-5	SB-40140TR
Separate Type		6650B-5	KGIA50H	BGIA66-5	FT-15

Applicable Inserts

P	Carbon steel / Alloy steel	○	●	Classification of usage ●: Continuous-Light Interruption / 1st Choice ○: Continuous-Light Interruption / 2nd Choice ●: Continuous / 1st Choice ○: Continuous / 2nd Choice
M	Stainless Steel	○	●	
K	Cast Iron			
N	Non-ferrous Metals			
S	Titanium Alloys			
H	Hard materials (~40HRC)	○	●	
	Hard materials (40HRC-)			

Insert	Description	Dimension (mm)				Cermet CVD Coated Carbide	Applicable Toolholders
		W	rε	L	H		
	GIA 30	3.0	0.20	25	5.0	● ●	KGIA...3
	40	4.0	0.25			● ●	KGIA...4
	50	5.0	0.30	30	● ●	KGIA...5	

Recommended Cutting Conditions ● G103

● : Std. Item

Inserts are sold in 10 piece boxes.

Summary of Face Grooving

Face Grooving Dia. ϕD

Face grooving diameter (ϕD) is the suitable value for the initial grooving on the unprocessed workpiece (Ref. to Fig.1).

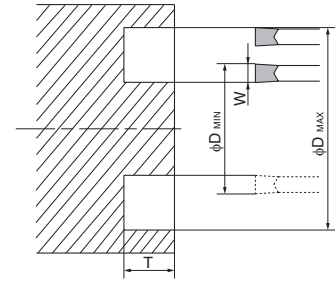
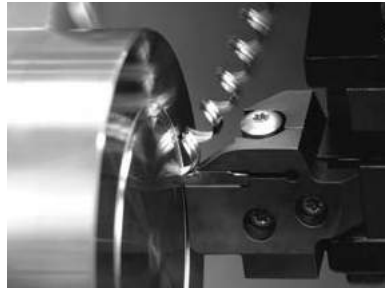
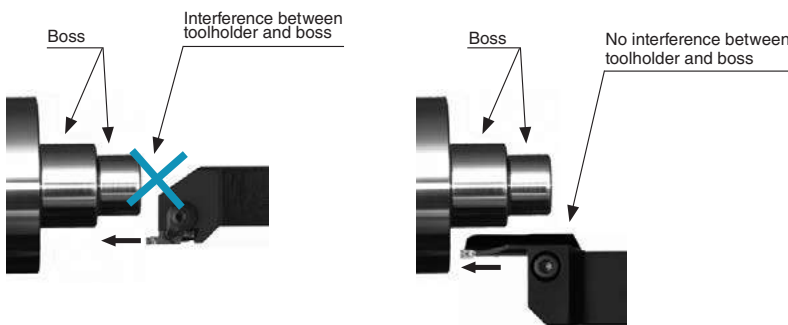


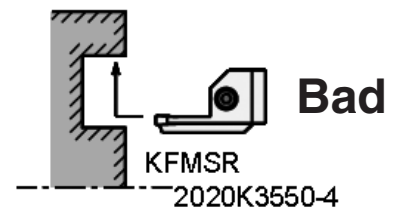
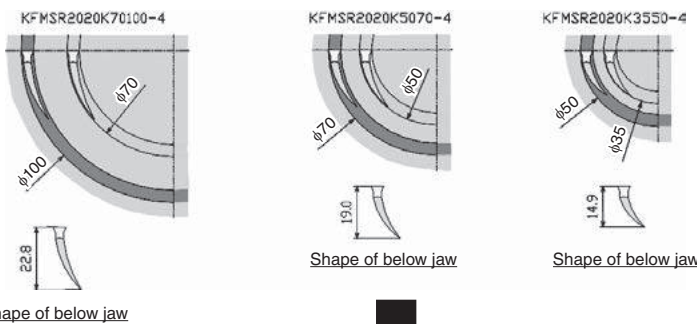
Fig.1

Caution for Face Grooving

1) When face grooving, the suitable toolholder depends on the length of the boss



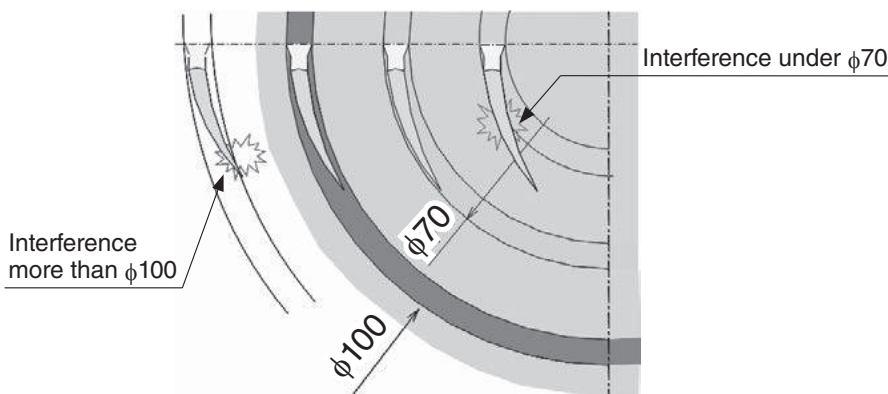
2) Selection of Face Grooving Toolholder



Wider grooving (turning) should be performed from the outside inwards

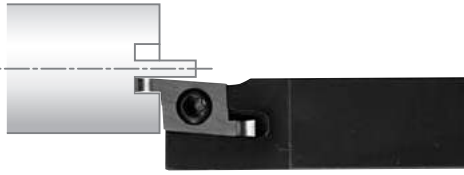
3) Interference of Face Grooving Toolholder

e.g.) KFMSR2525M70100-4

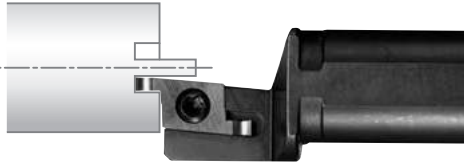


• Example of usage for the face grooving toolholder. When face grooving, KFMSR2525M70100-4 should be between $\phi 70 \sim \phi 100$ for grooving the outer diameter at first. If the workpiece is machined at a diameter $\phi 100$ or $\phi 70$, the jaw of toolholder interferes with the workpiece.

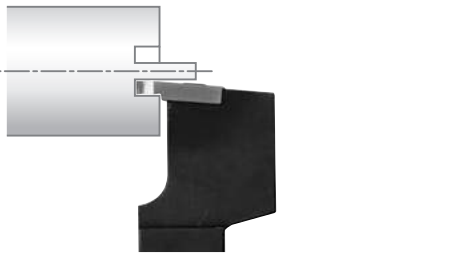
■ Small Dia. Face Grooving $\phi 6\sim$



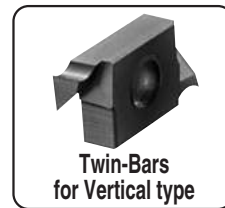
Type	STW
Face Groove Dia.	$\phi 6$
Edge Width (mm)	0.5~2.0
Grooving Depth(mm)	1.0~3.0
Ref. to Page	G72



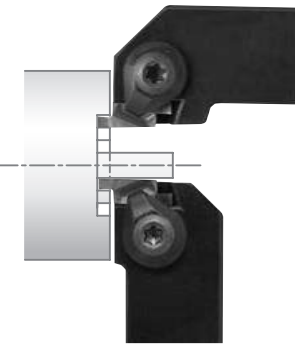
Type	S..-STW
Face Groove Dia.	$\phi 6$
Edge Width (mm)	0.5~2.0
Grooving Depth(mm)	1.0~3.0
Ref. to Page	G72



Type	STWS
Face Groove Dia.	$\phi 6$
Edge Width (mm)	0.5~2.0
Grooving Depth(mm)	1.0~3.0
Ref. to Page	G73

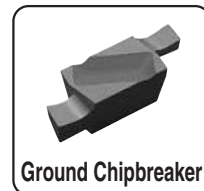


■ Small Dia. Face Grooving $\phi 8\sim$

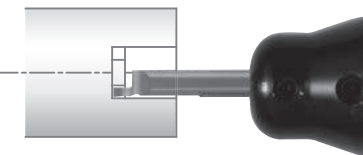


Type	GFVS-AA
Face Groove Dia.	$\phi 8$
Edge Width (mm)	1.0~3.0
Grooving Depth(mm)	2.2
Ref. to Page	G88

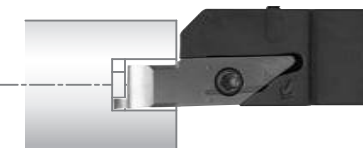
Type	GFVT-AA
Face Groove Dia.	$\phi 8$
Edge Width (mm)	1.0~3.0
Grooving Depth(mm)	2.2
Ref. to Page	G88



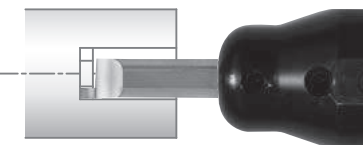
■ Small Dia. Face Grooving $\phi 5\sim, \phi 8\sim$



Type	EZFG
Face Groove Dia.	$\phi 5, \phi 6, \phi 8$
Edge Width (mm)	1.0~3.0
Grooving Depth(mm)	1.5~3.0
Ref. to Page	G68



Type	VNFG
Face Groove Dia.	$\phi 8$
Edge Width (mm)	1.0~3.0
Grooving Depth(mm)	2.0~3.0
Ref. to Page	G70



Type	HPFG
Face Groove Dia.	$\phi 8$
Edge Width (mm)	1.0~3.0
Grooving Depth(mm)	2.0~3.0
Ref. to Page	G71



Summary of Face Grooving

Face Grooving $\phi 20\sim$

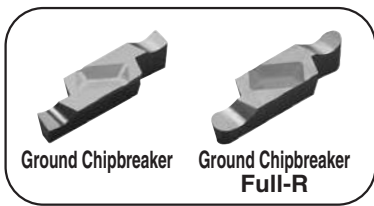
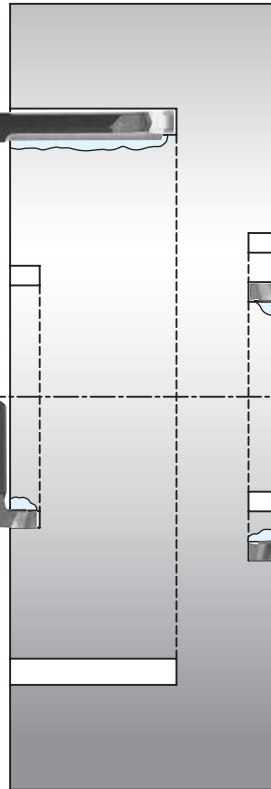


Molded Chipbreaker



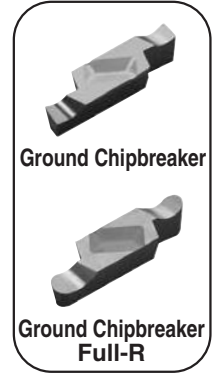
Type	KFTB
Face Groove Dia.	$\phi 65\sim\phi 250$
Edge Width (mm)	4.0~5.0
Grooving Depth (mm)	25~38
Ref. to Page	G99

Type	GFVS
Face Groove Dia.	$\phi 35\sim\phi 150$
Edge Width (mm)	2.5~6.0
Grooving Depth (mm)	4.6~8.1
Ref. to Page	G92



Ground Chipbreaker Ground Chipbreaker Full-R

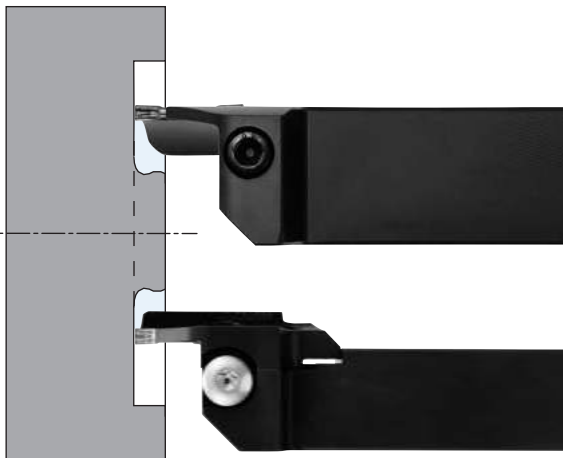
Type	GFV
Face Groove Dia.	$\phi 20\sim\phi 150$
Edge Width (mm)	2.0~6.0
Grooving Depth (mm)	2.2~8.1
Ref. to Page	G90



Ground Chipbreaker Ground Chipbreaker Full-R

Type	GFVT
Face Groove Dia.	$\phi 35\sim\phi 150$
Edge Width (mm)	2.5~6.0
Grooving Depth (mm)	4.6~8.1
Ref. to Page	G92

KGDF Face Grooving $\phi 25\sim$ (G74~G87)



Type	KGDF-Z
Face Groove Dia.	$\phi 50$
Edge Width (mm)	3.0~5.0
Grooving Depth (mm)	15
Ref. to Page	G82

Type	*KGDF
Face Groove Dia.	$\phi 25$
Edge Width (mm)	2.0~6.0
Grooving Depth (mm)	6~32
Ref. to Page	G78

* The separate type toolholders can accept all the blades if their hand is matching.

Grooving and Turning
GM

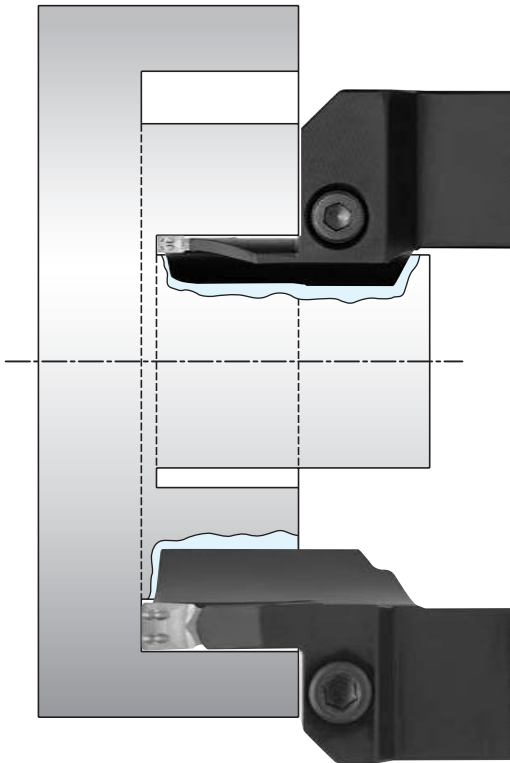
Deep grooving and Turning
DM

High Feed
GH

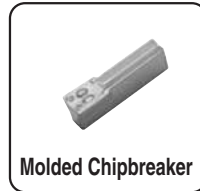
Full-R
CM



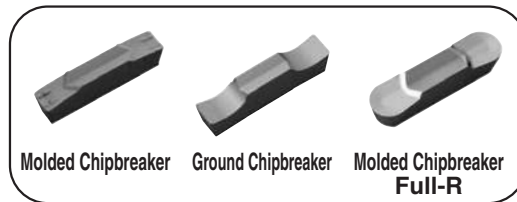
■ Face Grooving & Turning $\phi 25\sim$



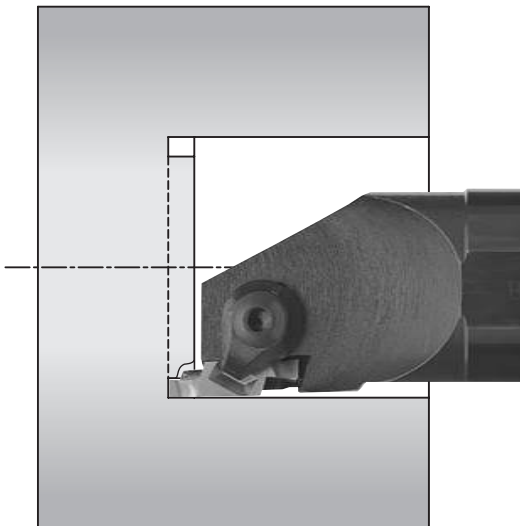
Type	KFMS
Face Groove Dia.	$\phi 25\sim\phi 235$
Edge Width (mm)	3.0~6.0
Grooving Depth(mm)	13~32
Ref. to Page	G96



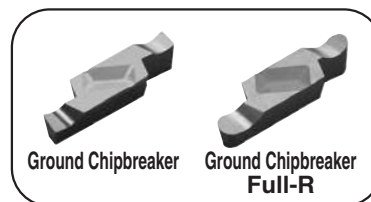
Type	KFMS-8
Face Groove Dia.	$\phi 54\sim\phi 155$
Edge Width (mm)	8.0
Grooving Depth(mm)	25
Ref. to Page	G98



■ Face Grooving $\phi 35\sim$

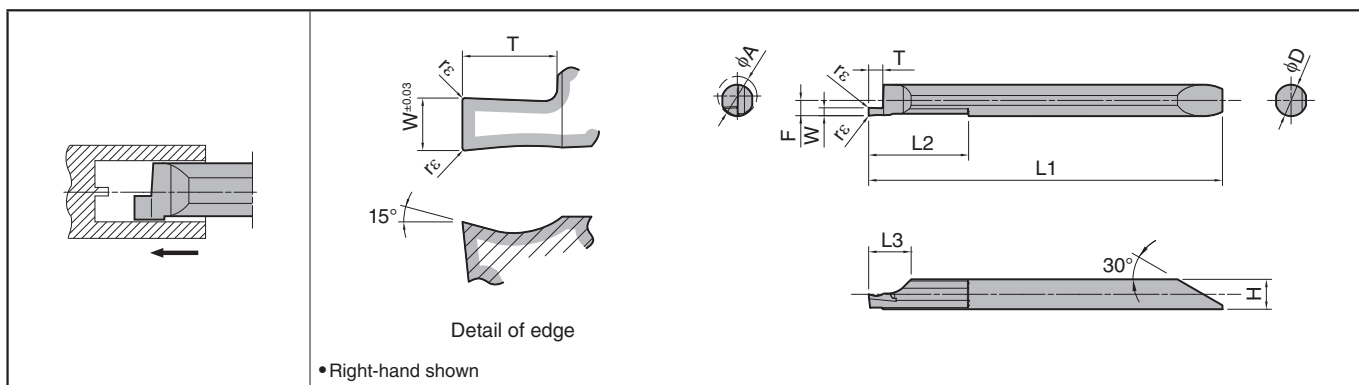


Type	GIFV
Face Groove Dia.	$\phi 35\sim\phi 50$
Edge Width (mm)	2.0~6.0
Grooving Depth(mm)	2.2~8.1
Ref. to Page	G100



Small Dia. Face Grooving EZ Bars

EZFG



Dimensions

Description	Min. Face Groove Dia.	Dimension (mm)									MEGACOAT PR1225	Applicable Sleeves
		φA	W ^{±0.03}	rε ^{±0.013}	φD	H	L1	L2	L3	F		
EZFGR 050040-100 050040-150	5	1.0	0.05	4	3.8	45.0	12	5.4	1.9	1.5	●	EZH040..
		1.5								2.0		
EZFGR 060050-100 060050-150 060050-200	6	1.0	0.05	5	4.8	53.2	15	6.9	2.4	1.5	●	EZH050..
		1.5								2.5		
		2.0								3.0		
EZFGR 080070-100 080070-150 080070-200 080070-300	8	1.0	0.05	7	6.8	64.2	25	7.9	3.4	2.0	●	EZH070..
		1.5								2.5		
		2.0								3.0		
		3.0								3.0		

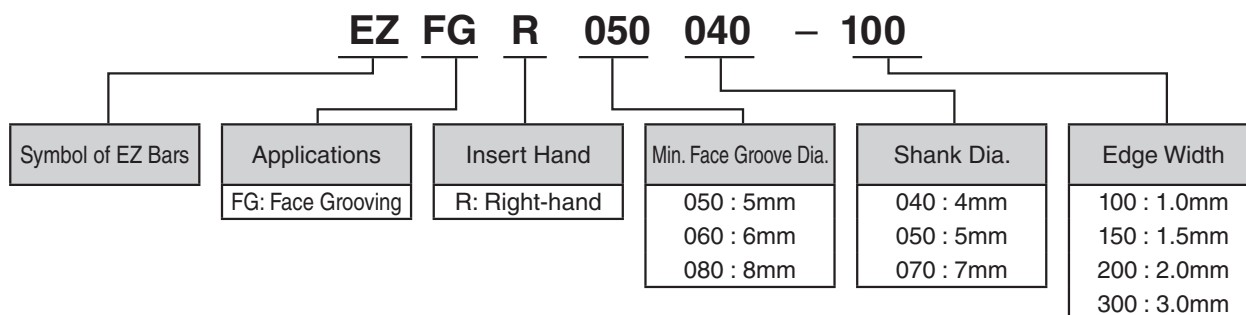
• Dimension T shows available grooving depth.

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)	EZFGR050040-100 EZFGR060050-100 EZFGR080070-100	EZFGR050040-150 EZFGR060050-150 EZFGR080070-150	EZFGR060050-200 EZFGR080070-200	EZFGR080070-300	Remarks
	MEGACOAT					
	PR1225	f (mm/rev)				
Carbon steel / Alloy steel	★ 30-100	~0.02	~0.03	~0.04	~0.05	Coolant
Stainless Steel	★ 30-80	~0.01	~0.02	~0.02	~0.03	

★ : 1st Recommendation

EZ Bars Identification System



EZ Bars are sold in 1 piece boxes.

● : Std. Item

● Applicable Sleeves

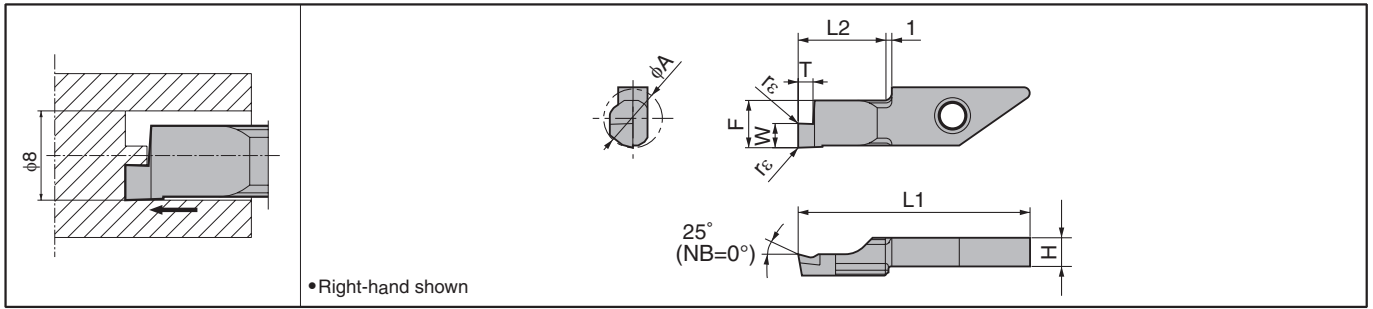
Sleeve				Applicable Insert for Internal Face Grooving			Applicable Machine Manufacturer
EZH-CT (Adjustable overhang length with coolant hole) F23	EZH-HP (Adjustable overhang length) F24	EZH-ST F26	Sleeve Shank Dia. φD1 (mm)	EZFG	HPFG	Shank Dia. φD (mm)	
-	-	EZH 04012ST-80 05012ST-80 07012ST-80	12	EZFGR ...040-... EZFGR ...050-... EZFGR ...070-...	- - HPFG ^{φL} 0807-...	4 5 7	(General purpose)
-	EZH 04016HP-100 05016HP-100 07016HP-100	EZH 04016ST-100 05016ST-100 07016ST-100	16	EZFGR ...040-... EZFGR ...050-... EZFGR ...070-...	- - HPFG ^{φL} 0807-...	4 5 7	(General purpose)
EZH 04019CT-120 05019CT-120 07019CT-120	EZH 04019HP-120 05019HP-120 07019HP-120	EZH 04019ST-120 05019ST-120 07019ST-120	19.05	EZFGR ...040-... EZFGR ...050-... EZFGR ...070-...	- - HPFG ^{φL} 0807-...	4 5 7	Citizen Machinery
EZH 04020CT-120 05020CT-120 07020CT-120	EZH 04020HP-120 05020HP-120 07020HP-120	EZH 04020ST-120 05020ST-120 07020ST-120	20	EZFGR ...040-... EZFGR ...050-... EZFGR ...070-...	- - HPFG ^{φL} 0807-...	4 5 7	Eguro Tsugami Citizen Machinery (General purpose)
EZH 04022CT-135 05022CT-135 07022CT-135	EZH 04022HP-135 05022HP-135 07022HP-135	EZH 04022ST-135 05022ST-135 07022ST-135	22	EZFGR ...040-... EZFGR ...050-... EZFGR ...070-...	- - HPFG ^{φL} 0807-...	4 5 7	Star Micronics Nomura DS Tsugami
EZH 04025.0CT-135 05025.0CT-135 07025.0CT-135	EZH 04025.0HP-135 05025.0HP-135 07025.0HP-135	EZH 04025.0ST-135 05025.0ST-135 07025.0ST-135	25	EZFGR ...040-... EZFGR ...050-... EZFGR ...070-...	- - HPFG ^{φL} 0807-...	4 5 7	Eguro Tsugami Citizen Machinery (General purpose)
EZH 04025.4CT-120 05025.4CT-120 07025.4CT-120	EZH 04025.4HP-120 05025.4HP-120 07025.4HP-120	EZH 04025.4ST-120 05025.4ST-120 07025.4ST-120	25.4	EZFGR ...040-... EZFGR ...050-... EZFGR ...070-...	- - HPFG ^{φL} 0807-...	4 5 7	Citizen Machinery

- Choose sleeves (φd1) to meet with φD dimension of Face Grooving Inserts.
- Adjustment Pin cannot be installed to EZH-ST sleeves. To adjust overhang of the bar, please use EZH-CT/HP sleeves.
- Machine manufacturers in random order.



System Tip-Bars for Small Dia. Internal Face Grooving

VNFG (System Tip-Bars)



Dimensions

Classification of usage ●: Continuous / 1st Choice ○: Continuous / 2nd Choice	P	Carbon steel / Alloy steel	●	○			
	M	Stainless Steel	●	○			
	K	Cast Iron			●		
	N	Non-ferrous Metals			○	●	
	S	Titanium Alloys			○	●	
	H	Hard materials (~40HRC) Hard materials (40HRC~)	○	○			

Description	Face Grooving Dia. ϕA		Dimension (mm)							MEGA COAT	PVD	Carbide	PCD		Ref. to Page for Applicable Toolholders
	MIN.	MAX.	$W_{\pm 0.03}$	r_{ϵ}	H	L1	L2	F	T	PR1225	PR930	KW10	KPD001	KPD010	
VNFGR 0810-10 0820-10 0830-10	8 (0)	∞	1.0	0.05	3.9	29.6	10	7.3	2.0	●	●	●			F30 F31
			2.0						●	●	●				
			3.0						●	●	●				
VNFGR 0820-10NB 0830-10NB			2.0	0.05	3.9	29.6	10	7.3	2.0				MTO	MTO	
			3.0									MTO	MTO		

· Dimension T shows available grooving depth.

· Face grooving diameter ϕA MIN. (0) means that you can make the initial groove within MIN. - MAX. and then widen it to the center.

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)			VNFG0810	VNFG0820	VNFG0830	Remarks
	MEGACOAT	PVD Coated Carbide	Carbide				
	PR1225	PR930	KW10				
Carbon steel / Alloy steel	★ 30~100	☆ 30~100		~0.02	~0.04	~0.05	Coolant
Stainless Steel	★ 30~80	☆ 30~80		~0.01	~0.02	~0.03	
Non-ferrous Metals			★ ~300	~0.04	~0.06	~0.08	

★ : 1st Recommendation ☆ : 2nd Recommendation

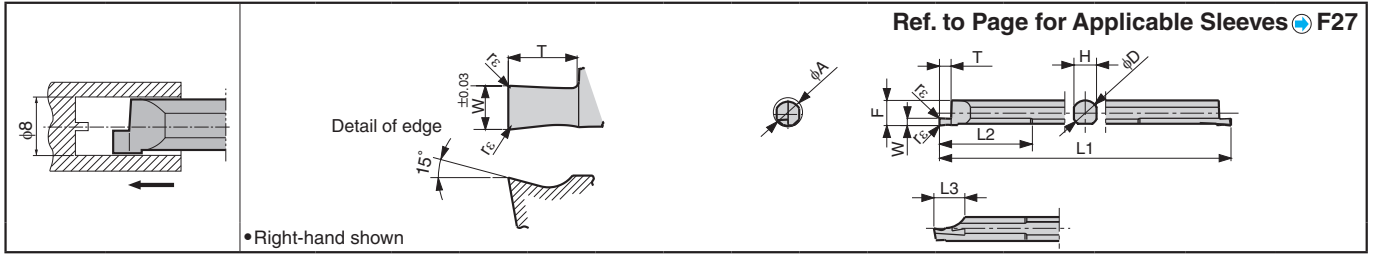
System Tip-Bars are sold in 5 piece boxes.

CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item
MTO : Made to order

Tip-Bars for Internal Face Grooving HPFG / PSFG-S

HPFG Face Grooving (Small Dia.)



Dimensions

Description	Face Grooving Dia. ϕA		Dimension (mm)									Insert Grades			
	MIN.	MAX.	$W_{\pm 0.03}$	r_{ϵ}	ϕD	H	L1	L2	L3	F	T	PVD Coated Carbide		Carbide	
												PR930		KW10	
HPFG ^{R/L} 0807-10	8 (0)	∞ (∞)	1	0.05	7	6.2	80	25	8.5	6.9	2	●	●	●	
HPFG ^{R/L} 0807-20			2									●	●	●	
HPFG ^{R/L} 0807-30			3									●	●	●	

Dimension T shows available grooving depth.

Face grooving diameter ϕA MIN. (0) means that you can make the initial groove within MIN. - MAX. and then widen it to the center.

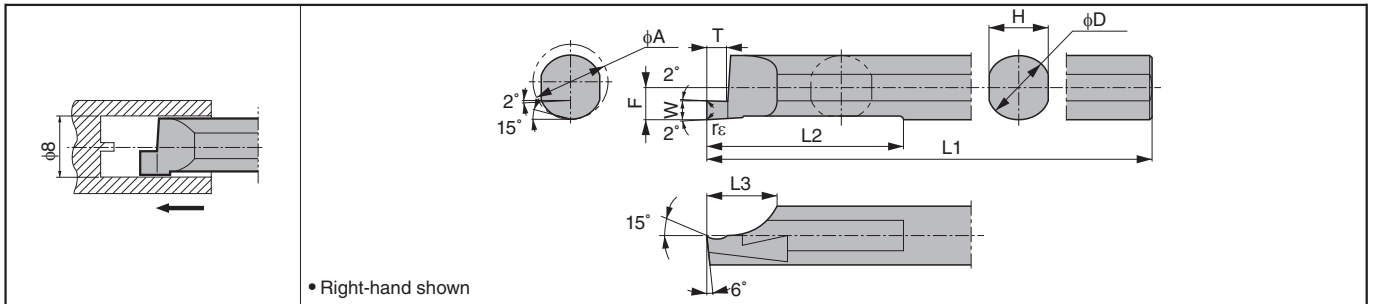
Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)		HPFG ^{R/L} 0807-10	HPFG ^{R/L} 0807-20	HPFG ^{R/L} 0807-30	Remarks
	PVD Coated Carbide	Carbide				
	PR930	KW10	f (mm/rev)			
Carbon steel / Alloy steel	★ 30-100	—	~0.02	~0.04	~0.05	Coolant
Stainless Steel	★ 30-80	—	~0.01	~0.02	~0.03	
Non-ferrous Metals	—	★ ~300	~0.04	~0.06	~0.08	

★ : 1st Recommendation

PSFG-S (Tip-Bars)

This insert will be switched to EZFG.



Description	Face Grooving Dia. ϕA		Dimension (mm)									PVD Coated Carbide		Carbide		Ref. to Page for Applicable Sleeves
	MIN.	MAX.	$W_{\pm 0.03}$	r_{ϵ}	ϕD	H	L1	L2	L3	F	T	PR930		KW10		
												R	L	R	L	
PSFG ^{R/L} 0810-20S	8 (0)	∞ (∞)	1.0	0.05	6.8	6.2	80	25.5	7	3.4	2.0	○	○	○	○	F84
PSFG ^{R/L} 0820-20S			2.0									○	○	○	○	
PSFG ^{R/L} 0830-20S			3.0									○	○	○	○	

Dimension T shows available grooving depth.

Face grooving diameter ϕA MIN. (0) means that you can make the initial groove within MIN. - MAX. and then widen it to the center.

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)		PSFG ^{R/L} 0810	PSFG ^{R/L} 0820	PSFG ^{R/L} 0830	Remarks
	PVD Coated Carbide	Carbide				
	PR930	KW10	f (mm/rev)			
Carbon steel / Alloy steel	★ 30-100	—	~0.02	~0.04	~0.05	Coolant
Stainless Steel	★ 30-80	—	~0.01	~0.02	~0.03	
Non-ferrous Metals	—	★ ~300	~0.04	~0.06	~0.08	

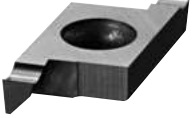
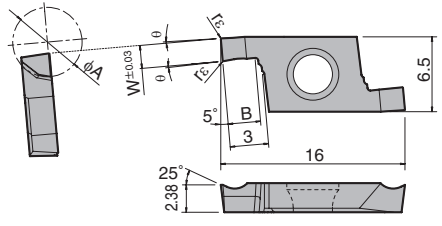
★ : 1st Recommendation

● : Std. Item
○ : Check Availability

Tip-Bars are sold in 1 piece boxes.

Small Dia. Face Grooving (Twin-Bars)

TWFG (Horizontal type)


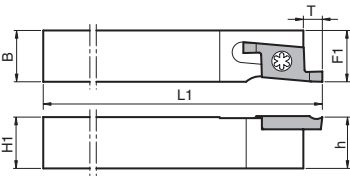
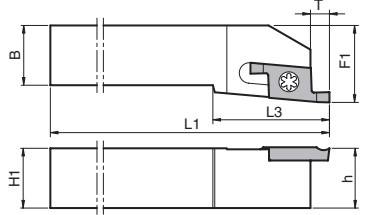
  <p>•Left-hand shown</p>	Description	Face Grooving Dia. φA		Dimension (mm)			Angle	Insert Grades		
		MIN.	MAX.	W	r _ε	B	θ	PVD Coated Carbide	Carbide	
	TWFG	050	6 (0)	∞ (∞)	0.5	0.05	1.0	1.5°	PR1025	KW10
		080			0.8		1.5			
		100			1.0					
		125			1.25	2.2	2°			
		150			1.5					
		180			1.8	3.0				
		200			2.0					

• Dimension B shows available grooving depth.

• Face grooving diameter φA MIN. (0) means that you can make the initial groove within MIN. - MAX. and then widen it to the center.

STW (Square Shank for Horizontal type)

(For right-hand toolholder for boring, ref. to page F34.)

	 <p>Fig.1</p>	 <p>Fig.2</p>
	•Left-hand shown	


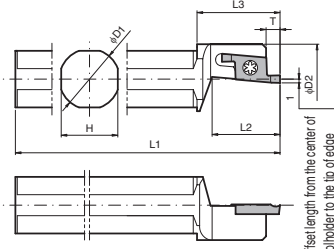
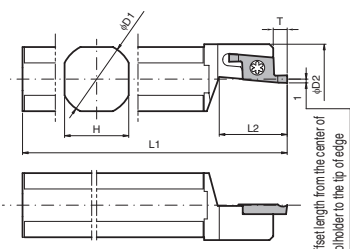
Toolholder Dimensions

Description	Std.	Dimension (mm)										Drawing	Spare Parts		Applicable Inserts G72
		H1=h	B	L1	L2	L3	F1	F2	T	F3	Clamp Screw		Wrench		
STWL 1010F-15	●	10	10	85	-	-	10	-	3	-	Fig.1	SB-3080TR	LTW-10S	TWFGLOOO	
1212F-15	●	12	12				12								
1212K-15	●	12	12				12								
1616K-15	●	16	16	125	-	16	25	25	Fig.2						
2020K-15	●	20	20			20									
2525M-15	●	25	25	150	25	32									

• Dimension T shows the distance from the toolholder to the cutting edge. Available groove depth: "B" dimension of insert.

S..-STW (Round Shank for Horizontal type)

(For right-hand toolholder for boring, ref. to page F34.)

	 <p>Fig.1</p>	 <p>Fig.2</p>
	•Left-hand shown	

Toolholder Dimensions

Description	Std.	Dimension (mm)								Drawing	Spare Parts		Applicable Inserts G72
		φD1	φD2	H	L1	L2	L3	T	Clamp Screw		Wrench		
S12F- STWL15	●	12	20	11	80	18	22	3	Fig.1	SB-3080TR	LTW-10S	TWFGLOOO	
S14H- STWL15	●	14		13	100								
S15F- STWL15	●	15.875		15	85								
S16F- STWL15	●	16	19.05	17	90	-	3	Fig.2					
S19G- STWL15	●	19.05			18.5				120				
S19K- STWL15	●	20	19.5	18	90	22	-	3					
S20G- STWL15	●				120								
S20K- STWL15	●	20	19.5	18	120	25	24.5	23	110				
S22K- STWL15	●	22	21.5	20	125								
S25.0J- STWL15	●	25	24.5	23	110	25.4	25	23	120				
S25K- STWL15	●	25.4	25	23	120								

• Dimension T shows the distance from the toolholder to the cutting edge. Available groove depth: "B" dimension of insert.

G

Grooving

External

Internal


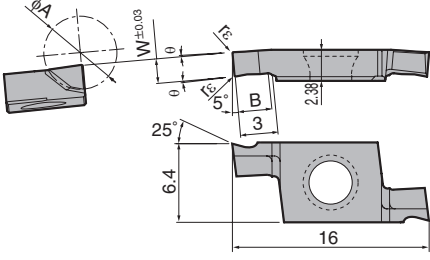
Face

G72

Twin-Bars are sold in 5 piece boxes.

● : Std. Item


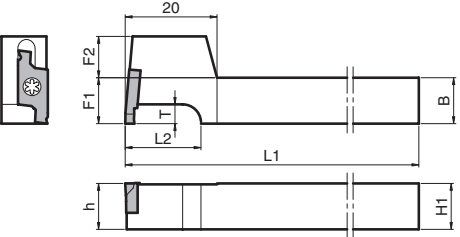
TWFGT (Vertical type)

		Description	Face Grooving Dia. φA		Dimension (mm)			Angle	Insert Grades		
			MIN.	MAX.	W	r _ε	B	θ	PVD Coated Carbide	Carbide	
		TWFGTR	050	6 (0)	∞ (∞)	0.5	0.05	1.0	1.5°	●	●
			080			0.8		1.5		●	●
			100			1.0		2.2		●	●
			125			1.25				●	●
			150			1.5				●	●
			180			1.8				●	●
			200	2.0	3.0	●	●				

• Right-hand shown

• Dimension B shows available grooving depth. • Face grooving diameter φA MIN. (0) means that you can make the initial groove within MIN. - MAX. and then widen it to the center.

STWS (Square Shank for vertical type : L-shape)

		• Right-hand shown

Toolholder Dimensions

Description	Std.	Dimension (mm)										Drawing	Spare Parts		Applicable Inserts ➔ G73
		H1=h	B	L1	L2	L3	F1	F2	T	F3	Clamp Screw		Wrench		
STWSR 1010JX-15T	●	10	10	120	16	-	10	9	3	-	-	SB-3080TR	LTW-10S	TWFGTR○○○	
1212JX-15T	●	12	12		16		12	7							
1616JX-15T	●	16	16		20		16	3							
STWSR 1010F-15T	●	10	10	85	16	-	10	9	-	-	-	-	-	-	
1212F-15T	●	12	12		12		7								

• Dimension T shows the distance from the toolholder to the cutting edge. Available groove depth: "B" dimension of insert.

Recommended Cutting Conditions (TWFG / TWFGT)

Workpiece Material	Recommended Insert Grades (Cutting Speed V _c : m/min)		TWFGT050	TWFGT125	TWFGT180	Remarks
	PVD Coated Carbide	Carbide	TWFGTR050	TWFGTR125	TWFGTR180	
	PR1025	KW10	TWFGTR080	TWFGTR150	TWFGTR200	
Carbon steel / Alloy steel	★ 30-100		~0.02	~0.03	~0.04	Coolant
Stainless Steel	★ 30-80		~0.01	~0.02	~0.02	
Non-ferrous Metals		★ ~300	~0.03	~0.04	~0.06	

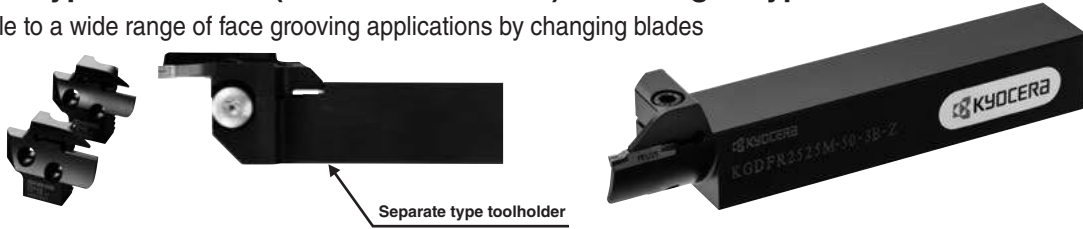
★ : 1st Recommendation

KGDF Face Grooving

Features

- Separate type toolholder (toolholder + blade) and Integral type toolholder are available.

Adaptable to a wide range of face grooving applications by changing blades

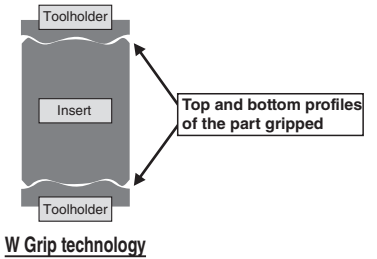


- New insert clamping system "W Grip"

Unique "W Grip" (insert anti-slip structure) provides stable machining quality

- 1) Prevents abnormal machining surface and / or insert breakage resulting from slip of insert.
- 2) Improves repetitive installation accuracy of insert

GDFM and GDFMS inserts are not applicable to KGD external grooving, cut-off and KGDI internal grooving toolholders.



- Smooth chip control

For general purpose GM Chipbreaker, For high feed grooving GH Chipbreaker, For deep grooving DM Chipbreaker

Advantages of Chipbreaker

For general purpose GM Chipbreaker

- Smooth surface from cutting edge to the far side
- Gradually raised surface. Keeps curling of chips in constant shape.
- Enhances breaking of chips and maintains their evacuation direction constant.
- Flat cutting edge line. Improves chip control.
- Steep surface near the cutting edge. Good chip control during shoulder grooving.

For high feed grooving GH Chipbreaker

- Concave part in middle. Control chips upward.
- Dots jutt out center side. Changes chip shape smoothly. Stable chip control during shoulder grooving.
- Slope portion. Constantly curled chips.
- Negative cutting edge line. Improvement of strong edge.
- Curved lead edge. Keeps chips in constant shape.

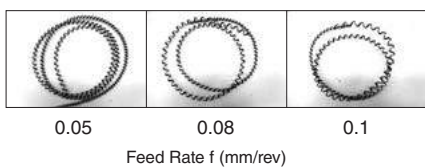
For deep grooving DM Chipbreaker

- Concave part in middle. Enhances breaking of chips.
- Inflated inner surface. Enhances breaking of chips and maintains their evacuation direction constant.
- Smooth surface up to the far side standing wall. Reduces cutting force, enhances breaking of chips and maintains their evacuation in constant direction.

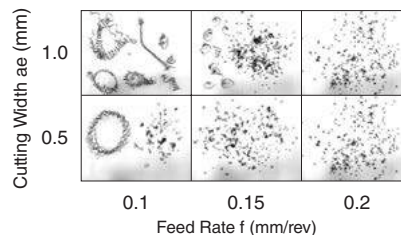
Chip Control of GM Chipbreaker

<Cutting Conditions>
Vc=150m/min f=0.05~0.2mm/rev GDFM5020N-040GM SCM415 Wet

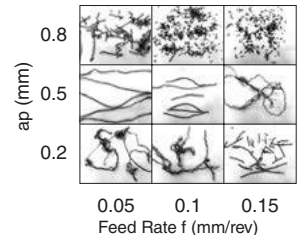
● Face Grooving (φ62)



● Side Grooving



● Turning



High precision edge preparation

- ➔ High precision molding technology with tolerance $\pm 0.03\text{mm}$ (Edge width 2, 3, 4mm types)

Highly-reputed MEGACOAT technology

- ➔ Long tool life and high efficiency machining achieved by superior oxidation resistance and wear resistance.

GDFM / GDFMS

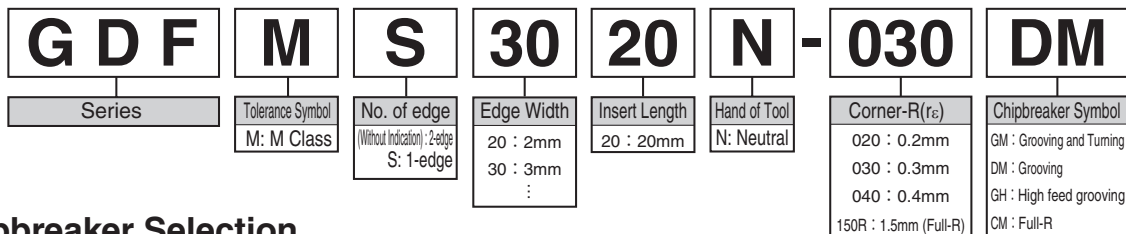
Classification of usage	P	Carbon steel / Alloy steel	●	●	☉
	M	Stainless Steel			● <th>☉</th>
●	Continuous-Light Interruption / 1st Choice				
☉	Continuous-Light Interruption / 2nd Choice				
●	Continuous / 1st Choice				
○	Continuous / 2nd Choice				
K	Cast Iron				●
N	Non-ferrous Metals				
S	Titanium Alloys				
H	Hard materials (~40HRC)				
	Hard materials (40HRC-)				

Insert	Description	Dimension (mm)						Cermet		MEGACOAT		Ref. to Page for Applicable Toolholders
		W	Tolerance	r _ε	M	L	H	TN620	TN90	PR1225	PR1215	
Grooving and Turning	GDFM 2020N-020GM	2.0		0.2	1.5	21	3.9		●	●	●	G78 G84
	3020N-030GM	3.0	±0.03	0.3	2.1		4.3		●	●	●	
	4020N-040GM	4.0			3.1				●	●	●	
	5020N-040GM	5.0		0.4		20	4.5		●	●	●	
	NEW 5020N-080GM	5.0		0.8	4.1	20	4.5		●	●	●	
	6020N-040GM	6.0	±0.04	0.4		5.0			●	●	●	
NEW 6020N-080GM	6.0		0.8					●	●	●		
Grooving and Turning (High feed)	NEW GDFM 4020N-040GH	4.0	±0.03	0.4	3.1					●	●	
	5020N-040GH	5.0			4.1	20	4.5			●	●	
	5020N-080GH	5.0	±0.04	0.8						●	●	
	6020N-040GH	6.0		0.4		5.0				●	●	
	6020N-080GH	6.0		0.8						●	●	
Deep grooving and Turning	GDFM 3020N-030DM	3.0	±0.03	0.3	2.1		4.3		●	●	●	
	4020N-040DM	4.0			3.1	20	4.5		●	●	●	
	5020N-040DM	5.0	±0.04	0.4	4.1				●	●	●	
	6020N-040DM	6.0			5.0				●	●	●	
Deep grooving and Turning (1-edge)	GDFMS 3020N-030DM	3.0	±0.03	0.3	2.1		4.3		●	●	●	
	4020N-040DM	4.0			3.1	20	4.5		●	●	●	
	5020N-040DM	5.0	±0.04	0.4	4.1				●	●	●	
	6020N-040DM	6.0			5.0				●	●	●	
Full-R	NEW GDFM 3020N-150R-CM	3.0	±0.03	1.5	2.1	20	4.3	●		●	●	
	4020N-200R-CM	4.0		2.0	3.1	*21		●		●	●	
	5020N-250R-CM	5.0	±0.04	2.5	4.1		4.5	●		●	●	
	6020N-300R-CM	6.0		3.0	5.0	*22		●		●	●	

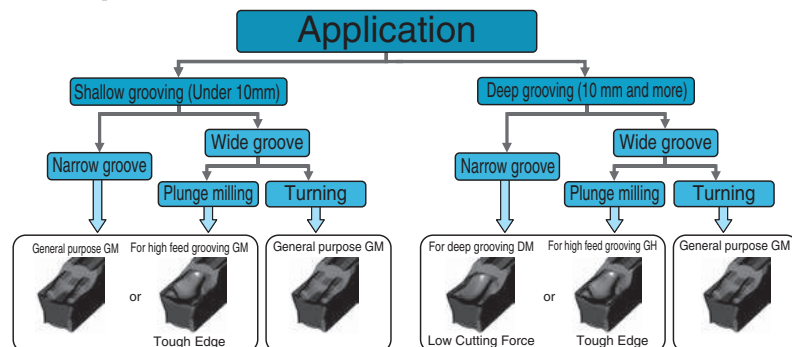
*GDFM40/50/60-CM differs from other descriptions in length (L) to avoid interference of a toolholder with workpiece.

Recommended Cutting Conditions **G86**

Inserts Identification System



Chipbreaker Selection



* If chip control is not stable when using the general GM chipbreaker for grooving, change the chipbreaker to the DM chipbreaker for deep grooving or GH chipbreaker for high feed grooving.

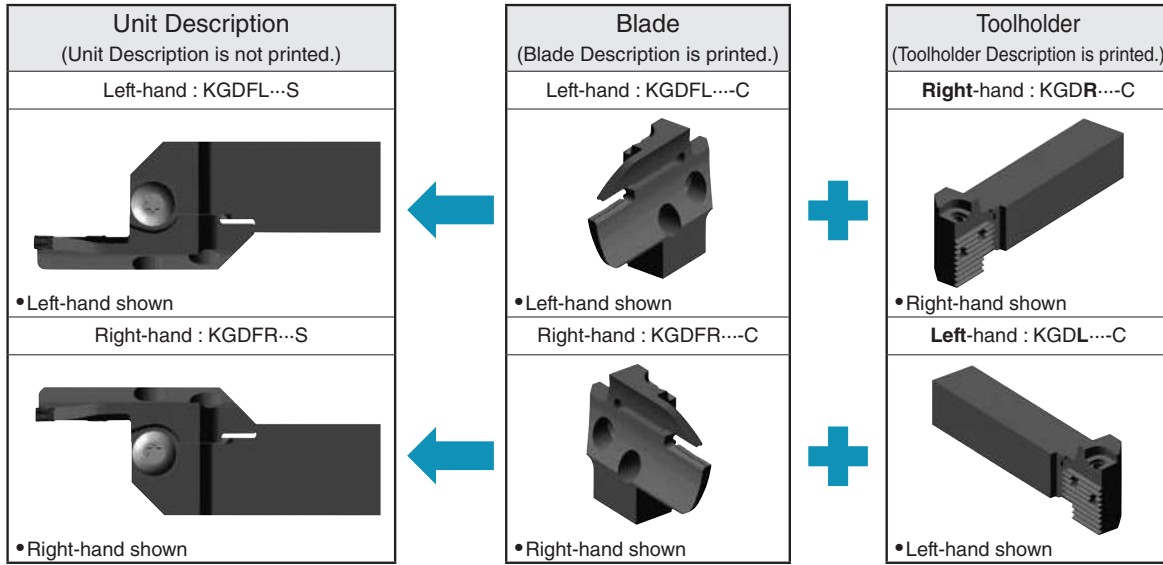
● : Std. Item

Inserts are sold in 10 piece boxes.




Face Grooving Toolholders (Separate Type)

KGDF

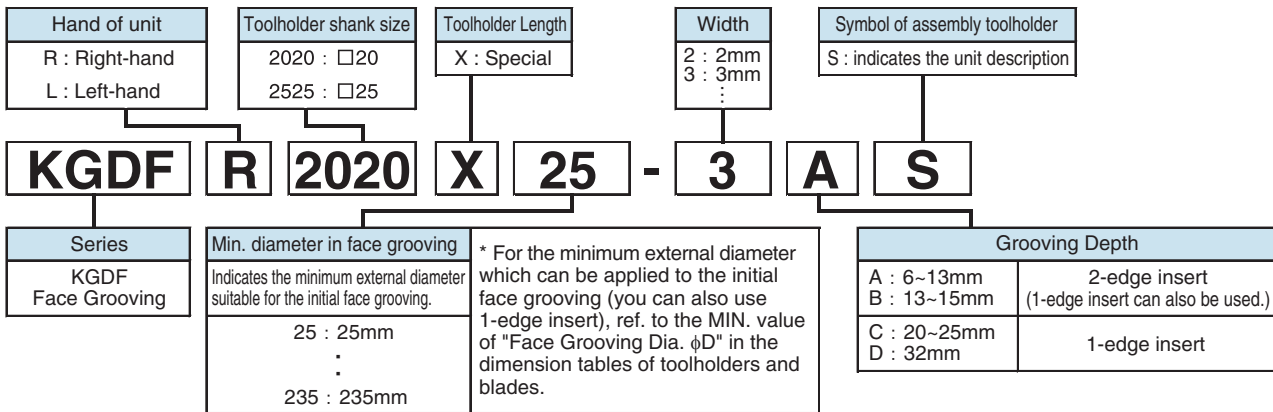
Toolholder Assembly Identification



- Right-hand Blade for **Left-hand** Toolholder, Left-hand Blade for **Right-hand** Toolholder.
- The Unit Description is not printed on the product. It is printed on the box label.
- Combination of the toolholder and blade (both separately sold) can make up the corresponding assembly.
- The insert clamping screw (BH6X10TR), blade fixing screw (SB-60120TR) and wrench (LTW-25) which are included in the toolholder can be used.

Clamp Bolt (for Insert Clamp)	Clamp Screw (for Blade)	Wrench
		
BH6X10TR	SB-60120TR	LTW-25

Face Grooving Toolholder Assembly Identification System



G

Grooving

External

Internal

Face

◆ Face Grooving Dia. ϕD

Face grooving diameter (ϕD) is the suitable value for the initial grooving on the unprocessed workpiece (Ref. to Fig.1).

Then, you can widen it up to the center towards the inside (excluding the models listed in the right table) and towards the outside according to machine limits.

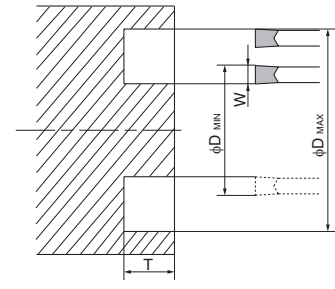
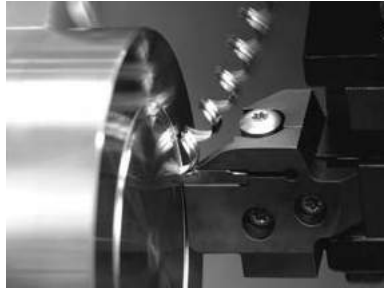
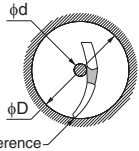


Fig.1

◆ Limit of Turning toward Center

Turning towards the Center causes the toolholder to interfere with the groove wall depending on the initial cut's diameter.

Description	ϕD			
	25	26	27	28 and over
KGDF^{F/L} 2020X25-3AS 2525X25-3AS	4	2	0	0 (No remaining Boss)
KGDF^{F/L} 2020X25-4AS 2525X25-4AS	6	3	0	
KGDF^{F/L} 2020X25-5AS 2525X25-5AS	7	4	1	
KGDF^{F/L} 2020X25-6AS 2525X25-6AS	9	4	1	

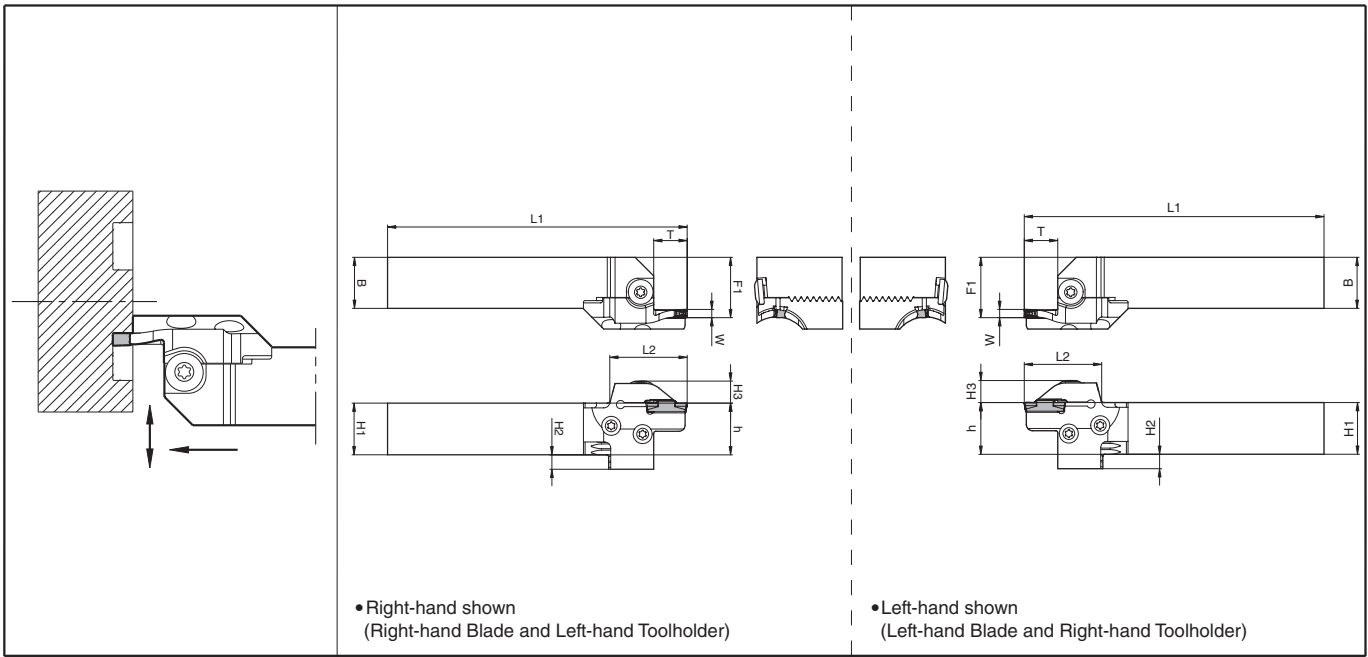


Remaining Boss Dia. ϕd

e.g.) KGDFR2020X25-3AS with $\phi 25$ as first cut towards the center, it will cause a rubbing with the toolholder cartridge if ϕd is 4.0mm.

Face Grooving Toolholders (Separate Type)

KGDF



• Right-hand shown
(Right-hand Blade and Left-hand Toolholder)

• Left-hand shown
(Left-hand Blade and Right-hand Toolholder)

Toolholder Dimensions

Shank Angle	Edge Width W (mm)	Shank Size (mm)	Max. depth of cut (mm)	Face Grooving Dia. ϕ D (mm)		Unit Description (Standard Stock Description)	Std.		Blade Description G85	Toolholder Description G25	Dimension (mm)																					
				MIN.	MAX.		R	L			H1=h	H2	H3	B	L1	L2	F1	T														
0°	20	6	6	25	30	KGDFR 2020X25-2AS	●	-	KGDFR -25-2A-C	KGDL2020-C	20	12	11.6	20				115	33		6											
				30	35		●	-							-30-2A-C																	
				35	45		●	-							-35-2A-C																	
				45	60		●	-							-45-2A-C																	
				60	80		●	-							-60-2A-C																	
				80	100		●	-							-80-2A-C																	
		100	130	●	-	-100-2A-C																										
		13	25	30		No unit description →	●	-	-25-2B-C																							
		30	35	●	-		-30-2B-C																									
		35	45	●	-		-35-2B-C																									
		45	60	●	-		-45-2B-C																									
		60	80	●	-		-60-2B-C																									
	80	100	●	-	-80-2B-C																											
	15	100	130		No unit description →	●	-	-100-2B-C																								
	25	30		No unit description →		●	-	-25-2A-C		KGDL2525-C	25	7	11.6	25																		
	30	35	●			-	-30-2A-C																									
	35	45	●			-	-35-2A-C																									
	45	60	●			-	-45-2A-C																									
	60	80	●			-	-60-2A-C																									
	80	100	●		-	-80-2A-C																										
	100	130	●	-	-100-2A-C																											
	13	25	30		No unit description →	●	-	-25-2B-C																								
	30	35	●	-		-30-2B-C																										
	35	45	●	-		-35-2B-C																										
45	60	●	-	-45-2B-C																												
60	80	●	-	-60-2B-C																												
80	100	●	-	-80-2B-C																												
100	130	●	-	-100-2B-C																												
15	100	130		No unit description →	●	-	-100-2B-C		KGDL3232-C	32	-	11.6	32																			
25	30		No unit description →		●	-	-25-2A-C																									
30	35	●			-	-30-2A-C																										
35	45	●			-	-35-2A-C																										
45	60	●			-	-45-2A-C																										
60	80	●			-	-60-2A-C																										
80	100	●		-	-80-2A-C																											
100	130	●	-	-100-2A-C																												
13	25	30		No unit description →	●	-	-25-2B-C																									
30	35	●	-		-30-2B-C																											
35	45	●	-		-35-2B-C																											
45	60	●	-		-45-2B-C																											
60	80	●	-		-60-2B-C																											
80	100	●	-		-80-2B-C																											
100	130	●	-	-100-2B-C																												

Note) 1. In case the unit description is not available (No unit description), please purchase toolholder and blade separately.

2. Dimension T : Maximum depth to which processing can be made. (If the dimension T is 20 mm or more, the maximum groove-depth of groove made by the 2-edge insert will be 18 mm.)

Applicable Inserts G75

● Toolholder Dimensions

Shank Angle	Edge Width W (mm)	Shank Size (mm)	Max. depth of cut (mm)	Face Grooving Dia. ϕ D (mm)		Unit Description (Standard Stock Description)	Std.		Blade Description ● G85	Toolholder Description ● G25	Dimension (mm)								
				MIN.	MAX.		R	L			H1=h	H2	H3	B	L1	L2	F1	T	
0°	3	□20	13	25	30	KGDF ^{R/L} 2020X25-3AS	●	●	KGDF ^{R/L} -25-3A-C	KGDF ^{R/L} -25-3A-C	20	12	11.6	20	118	36	24.5	15	
				30	40		●	●											KGDF ^{R/L} -30-3A-C
				40	50		●	●											KGDF ^{R/L} -40-3A-C
			15	50	65		●	●											KGDF ^{R/L} -50-3B-C
				65	85		●	●											KGDF ^{R/L} -65-3B-C
				85	110		●	●											KGDF ^{R/L} -85-3B-C
			22	110	145		●	●											KGDF ^{R/L} -110-3B-C
				50	65		●	●											KGDF ^{R/L} -50-3C-C
				65	85		●	●											KGDF ^{R/L} -65-3C-C
			25	85	110		●	●											KGDF ^{R/L} -85-3C-C
				110	145		●	●											KGDF ^{R/L} -110-3C-C
				25	30		●	●											KGDF ^{R/L} -25-3A-C
		□25	13	25	30	KGDF ^{R/L} 2525X25-3AS	●	●	KGDF ^{R/L} -25-3A-C	KGDF ^{R/L} -25-3A-C	25	7	11.6	25	143	36	29.5	15	
				30	40		●	●											KGDF ^{R/L} -30-3A-C
				40	50		●	●											KGDF ^{R/L} -40-3A-C
			15	50	65		●	●											KGDF ^{R/L} -50-3B-C
				65	85		●	●											KGDF ^{R/L} -65-3B-C
				85	110		●	●											KGDF ^{R/L} -85-3B-C
			22	110	145		●	●											KGDF ^{R/L} -110-3B-C
				50	65		●	●											KGDF ^{R/L} -50-3C-C
				65	85		●	●											KGDF ^{R/L} -65-3C-C
			25	85	110		●	●											KGDF ^{R/L} -85-3C-C
				110	145		●	●											KGDF ^{R/L} -110-3C-C
				25	30		●	●											KGDF ^{R/L} -25-3A-C
□32	13	25	30	No unit description →	●	●	KGDF ^{R/L} -25-3A-C	KGDF ^{R/L} -25-3A-C	32	-	11.6	32	163	36	36.5	15			
		30	40		●	●											KGDF ^{R/L} -30-3A-C		
		40	50		●	●											KGDF ^{R/L} -40-3A-C		
	15	50	65		●	●											KGDF ^{R/L} -50-3B-C		
		65	85		●	●											KGDF ^{R/L} -65-3B-C		
		85	110		●	●											KGDF ^{R/L} -85-3B-C		
	22	110	145		●	●											KGDF ^{R/L} -110-3B-C		
		50	65		●	●											KGDF ^{R/L} -50-3C-C		
		65	85		●	●											KGDF ^{R/L} -65-3C-C		
	25	85	110		●	●											KGDF ^{R/L} -85-3C-C		
		110	145		●	●											KGDF ^{R/L} -110-3C-C		
		25	35		●	●											KGDF ^{R/L} -25-4A-C		
0°	20	□20	13	25	35	KGDF ^{R/L} 2020X25-4AS	●	●	KGDF ^{R/L} -25-4A-C	KGDF ^{R/L} -25-4A-C	20	12	11.6	20	118	36	24.5	15	
				35	50		●	●											KGDF ^{R/L} -35-4B-C
				50	70		●	●											KGDF ^{R/L} -50-4B-C
			15	70	100		●	●											KGDF ^{R/L} -70-4B-C
				100	150		●	●											KGDF ^{R/L} -100-4B-C
				150	220		●	●											KGDF ^{R/L} -150-4B-C
			25	220	∞		●	●											KGDF ^{R/L} -220-4B-C
				35	50		●	●											KGDF ^{R/L} -35-4C-C
				50	70		●	●											KGDF ^{R/L} -50-4C-C
			25	70	100		●	●											KGDF ^{R/L} -70-4C-C
				100	150		●	●											KGDF ^{R/L} -100-4C-C
				150	220		●	●											KGDF ^{R/L} -150-4C-C
		25	220	∞	●	●	KGDF ^{R/L} -220-4C-C												
			25	35	●	●	KGDF ^{R/L} -25-4A-C												
			□25	13	25	35	KGDF ^{R/L} 2525X25-4AS	●	●	KGDF ^{R/L} -25-4A-C	KGDF ^{R/L} -25-4A-C	25	7	11.6	25	143	36	29.5	15
		35			50	●		●	KGDF ^{R/L} -35-4B-C										
		50			70	●		●	KGDF ^{R/L} -50-4B-C										
		15		70	100	●		●	KGDF ^{R/L} -70-4B-C										
				100	150	●		●	KGDF ^{R/L} -100-4B-C										
				150	220	●		●	KGDF ^{R/L} -150-4B-C										
		25		220	∞	●		●	KGDF ^{R/L} -220-4B-C										
				35	50	●		●	KGDF ^{R/L} -35-4C-C										
				50	70	●		●	KGDF ^{R/L} -50-4C-C										
		25		70	100	●		●	KGDF ^{R/L} -70-4C-C										
100	150			●	●	KGDF ^{R/L} -100-4C-C													
150	220			●	●	KGDF ^{R/L} -150-4C-C													
25	220	∞	●	●	KGDF ^{R/L} -220-4C-C														
	25	35	●	●	KGDF ^{R/L} -25-4A-C														
	□32	13	25	35	No unit description →	●	●	KGDF ^{R/L} -25-4A-C	KGDF ^{R/L} -25-4A-C	32	-	11.6	32	163	36	36.5	15		
35			50	●		●	KGDF ^{R/L} -35-4B-C												
50			70	●		●	KGDF ^{R/L} -50-4B-C												
15		70	100	●		●	KGDF ^{R/L} -70-4B-C												
		100	150	●		●	KGDF ^{R/L} -100-4B-C												
		150	220	●		●	KGDF ^{R/L} -150-4B-C												
25		220	∞	●		●	KGDF ^{R/L} -220-4B-C												
		35	50	●		●	KGDF ^{R/L} -35-4C-C												
		50	70	●		●	KGDF ^{R/L} -50-4C-C												
25		70	100	●		●	KGDF ^{R/L} -70-4C-C												
		100	150	●		●	KGDF ^{R/L} -100-4C-C												
		150	220	●		●	KGDF ^{R/L} -150-4C-C												
25	220	∞	●	●	KGDF ^{R/L} -220-4C-C														

Note) 1. In case the unit description is not available (No unit description), please purchase toolholder and blade separately.

2. Dimension T : Maximum depth to which processing can be made. (If the dimension T is 20 mm or more, the maximum groove-depth of groove made by the 2-edge insert will be 18 mm.)

Applicable Inserts ● G75

● : Std. Item



G

Grooving

● Toolholder Dimensions




Shank Angle	Edge Width W (mm)	Shank Size (mm)	Max. depth of cut (mm)	Face Grooving Dia. ϕ D (mm)		Unit Description (Standard Stock Description)	Std.		Blade Description ➔ G85	Toolholder Description ➔ G25	Dimension (mm)																					
				MIN.	MAX.		R	L			H1=h	H2	H3	B	L1	L2	F1	T														
0°	6	□20	15	25	35	KGDF ^{R/L} 2020X25-6BS	●	●	KGDF ^{R/L} -25-6B-C	KGD ^{1/2R} 2020-C	20	12	11.6	20					15													
				35	50		●	●												-35-6B-C												
				50	75		●	●												-50-6B-C												
				75	115		●	●												-75-6B-C												
				115	180		●	●												-115-6B-C												
				180	235		●	●												-180-6B-C												
			235	∞	●	●	-235-6B-C																									
			20	25	35	●	●	-25-6C-C	125						43	20																
				35	50	●	●	-35-6C-C																								
				50	75	●	●	-50-6C-C																								
				75	115	●	●	-75-6C-C																								
				115	180	●	●	-115-6C-C																								
				180	235	●	●	-180-6C-C																								
			25	235	∞	●	●	-235-6C-C								24.5	25															
				75	115	●	●	-75-6D-C										130	48	25												
				115	180	●	●	-115-6D-C																								
				180	235	●	●	-180-6D-C																								
				235	∞	●	●	-235-6D-C																								
				No unit description ➔																												
			32	75	115	●	●	-115-6D-C	137						55	32																
				115	180	●	●	-180-6D-C																								
				180	235	●	●	-235-6D-C																								
				235	∞	●	●	-235-6D-C																								
				No unit description ➔																												
		No unit description ➔																														
		□25	15	25	35	KGDF ^{R/L} 2525X25-6BS	●	●	KGDF ^{R/L} -25-6B-C	KGD ^{1/2R} 2525-C					25	7	11.6	25					15									
				35	50		●	●																-35-6B-C								
				50	75		●	●																-50-6B-C								
				75	115		●	●																-75-6B-C								
				115	180		●	●																-115-6B-C								
				180	235		●	●																-180-6B-C								
				235	∞		●	●											-235-6B-C													
				20	25		35	●											●	-25-6C-C	150	43	20									
					35		50	●											●	-35-6C-C												
					50		75	●											●	-50-6C-C												
					75		115	●											●	-75-6C-C												
					115		180	●											●	-115-6C-C												
			180		235	●	●	-180-6C-C																								
			25	235	∞	●	●	-235-6C-C												29.5	25											
				75	115	●	●	-75-6D-C														155	48	25								
				115	180	●	●	-115-6D-C																								
				180	235	●	●	-180-6D-C																								
				235	∞	●	●	-235-6D-C																								
				No unit description ➔																												
			32	75	115	●	●	-75-6D-C	162										55	32												
				115	180	●	●	-115-6D-C																								
				180	235	●	●	-180-6D-C																								
				235	∞	●	●	-235-6D-C																								
No unit description ➔																																
No unit description ➔																																
□32	15	25	35	KGDF ^{R/L} 2525X75-6DS	●	●	KGDF ^{R/L} -25-6B-C	KGD ^{1/2R} 3232-C	32	-	11.6	32									15											
		35	50		●	●																-35-6B-C										
		50	75		●	●																-50-6B-C										
		75	115		●	●																-75-6B-C										
		115	180		●	●																-115-6B-C										
		180	235		●	●																-180-6B-C										
		235	∞		●	●							-235-6B-C																			
		20	25		35	●							●	-25-6C-C					170	43	20											
			35		50	●							●	-35-6C-C																		
			50		75	●							●	-50-6C-C																		
			75		115	●							●	-75-6C-C																		
			115		180	●							●	-115-6C-C																		
	180		235	●	●	-180-6C-C																										
	25	235	∞	●	●	-235-6C-C								36.5					25													
		75	115	●	●	-75-6D-C														175	48	25										
		115	180	●	●	-115-6D-C																										
		180	235	●	●	-180-6D-C																										
		235	∞	●	●	-235-6D-C																										
		No unit description ➔																														
	32	75	115	●	●	-75-6D-C	182						55	32																		
		115	180	●	●	-115-6D-C																										
		180	235	●	●	-180-6D-C																										
		235	∞	●	●	-235-6D-C																										
		No unit description ➔																														
No unit description ➔																																

Note) 1. In case the unit description is not available (No unit description), please purchase toolholder and blade separately.
 2. Dimension T : Maximum depth to which processing can be made. (If the dimension T is 20 mm or more, the maximum groove-depth of groove made by the 2-edge insert will be 18 mm.)

Applicable Inserts ➔ G75

● Spare Parts (Common with separate types)

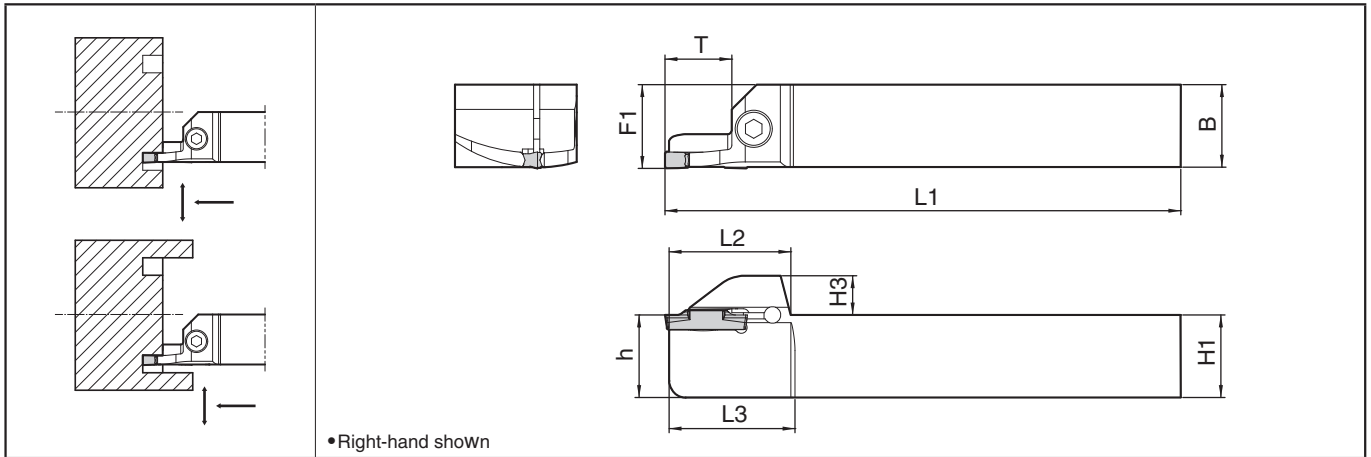
* The parts are included in the toolholder and unit.

Unit Description	Spare Parts		
	Clamp Bolt (for Insert Clamp)	Clamp Screw (for Blade)	Wrench
KGDF ^{R/L}S			
	BH6X10TR	SB-60120TR	LTW-25

● : Std. Item

Face Grooving Toolholders (Integral Type)

KGDF-Z NEW


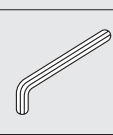


Toolholder Dimensions

Edge Width W (mm)	Shank Size (mm)	Max. depth of cut (mm)	Face Grooving Dia. ϕD (mm)		Description	Std.		Dimension (mm)							
			MIN.	MAX.		R	L	H1=h	H3	B	L1	L2	L3	F1	T
3	□20	15	50	65	KGDF ^{R/L} 2020K50-3B-Z	●	●	20	9.5	20	125	30.5	31	20.3	15
			65	85		●	●								
			85	110		●	●								
			110	145		●	●								
			110	145		●	●								
	□25		50	65	KGDF ^{R/L} 2525M50-3B-Z	●	●	25		25	150	25.3			
			65	85		●	●								
			85	110		●	●								
			110	145		●	●								
			110	145		●	●								
4	□20	15	50	70	KGDF ^{R/L} 2020K50-4B-Z	●	●	20	9.5	20	125	30.5	31	20.3	15
			70	100		●	●								
			100	150		●	●								
			100	150		●	●								
			100	150		●	●								
	□25		50	70	KGDF ^{R/L} 2525M50-4B-Z	●	●	25		25	150	25.3			
			70	100		●	●								
			100	150		●	●								
			100	150		●	●								
			100	150		●	●								
5	□20	15	50	75	KGDF ^{R/L} 2020K50-5B-Z	●	●	20	9.5	20	125	30.5	31	20.3	15
			75	115		●	●								
			115	180		●	●								
			115	180		●	●								
			115	180		●	●								
	□25		50	75	KGDF ^{R/L} 2525M50-5B-Z	●	●	25		25	150	25.3			
			75	115		●	●								
			115	180		●	●								
			115	180		●	●								
			115	180		●	●								

Applicable Inserts G75

Spare Parts

Description	Spare Parts	
	Clamp Bolt	Wrench
		
KGDF ^{R/L} ...-Z	HH5X16	LW-4

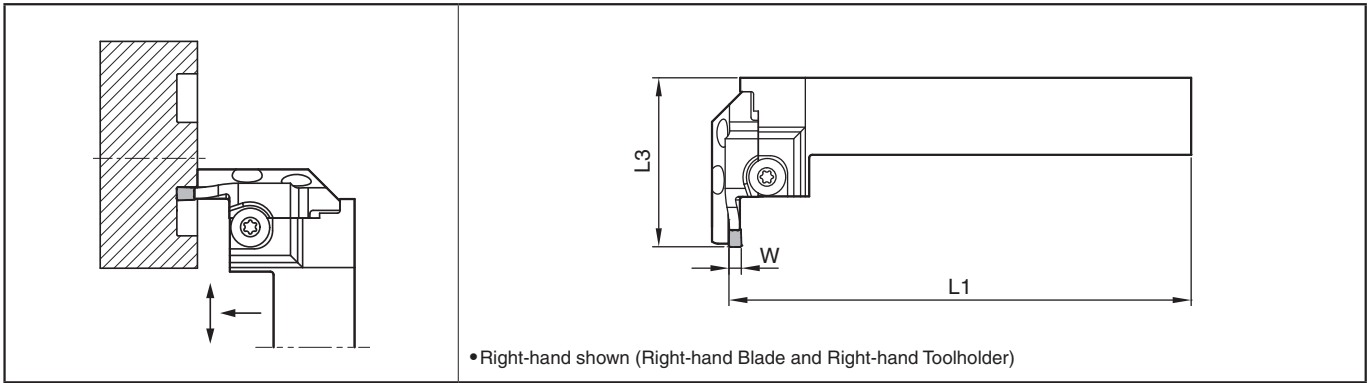
Toolholder Identification System (Integral Type)

KGDF	R	2525	M	50	3	B	Z
Series	Hand of Tool	Shank Size	Toolholder Length	Min. Face Groove Dia.	Edge Width	Grooving Depth	Toolholder Type
KGDF Face Grooving	R: Right-hand L: Left-hand	2020 : □20mm 2525 : □25mm	K : 125mm M : 150mm	50 : 50mm : 50mm 115 : 115mm	3 : 3mm 4 : 4mm 5 : 5mm	B : 15mm	Z : Integral Type

● : Std. Item

Face Grooving Toolholders (90° Separate Type)

KGDF



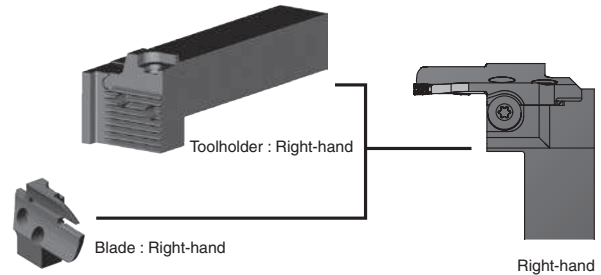
Combination of Toolholder & Blade

Shank Angle	Edge Width W (mm)	Shank Size (mm)	Max. depth of cut (mm)	Face Grooving Dia. ϕ D (mm)		Blade Description G85	Toolholder Description G25	Dimension (mm)		
				MIN.	MAX.			L1	L3	
90°	2	□20	6	25	30	KGDFR -25-2A-C	KGDSR2020-C	125	49.7	
				30	35	-30-2A-C				
				35	45	-35-2A-C				
				45	60	-45-2A-C				
				60	80	-60-2A-C				
				80	100	-80-2A-C				
			100	130	-100-2A-C					
			13	25	30	-25-2B-C				
				30	35	-30-2B-C				
				35	45	-35-2B-C				
				45	60	-45-2B-C				
				60	80	-60-2B-C				
		80		100	-80-2B-C					
		□25	6	100	130	-100-2B-C	KGDSR2525-C	150	52.7	
				25	30	-25-2A-C				
				30	35	-30-2A-C				
				35	45	-35-2A-C				
				45	60	-45-2A-C				
				60	80	-60-2A-C				
			13	80	100	-80-2A-C				
				100	130	-100-2A-C				
				25	30	-25-2B-C				
				30	35	-30-2B-C				
				35	45	-35-2B-C				
45	60			-45-2B-C						
90°	3	□20	13	25	30	KGDF% -25-3A-C	KGDS% 2020-C	125	52.7	
				30	40	-30-3A-C				
				40	50	-40-3A-C				
			15	50	65	-50-3B-C				
				65	85	-65-3B-C				
				85	110	-85-3B-C				
		22	110	145	-110-3B-C	KGDS% 2525-C			150	54.7
			50	65	-50-3C-C					
			65	85	-65-3C-C					
			85	110	-85-3C-C					
			110	145	-110-3C-C					
			13	30	40					
40	50	-40-3A-C								
50	65	-50-3B-C								
65	85	-65-3B-C								
85	110	-85-3B-C								
110	145	-110-3B-C								
50	65	-50-3C-C								
65	85	-65-3C-C								
85	110	-85-3C-C								
110	145	-110-3C-C								

Applicable Inserts G75

Shank Angle	Edge Width W (mm)	Shank Size (mm)	Max. depth of cut (mm)	Face Grooving Dia. ϕ D (mm)		Blade Description G85	Toolholder Description G25	Dimension (mm)		
				MIN.	MAX.			L1	L3	
90°	4	□20	13	25	35	KGDF% -25-4A-C	KGDS% 2020-C	125	52.7	
				35	50	-35-4B-C				
				50	70	-50-4B-C				
				15	70	100				-70-4B-C
					100	150				-100-4B-C
					150	220				-150-4B-C
			25	220	∞	-220-4B-C				
				35	50	-35-4C-C				
				50	70	-50-4C-C				
				70	100	-70-4C-C				
				100	150	-100-4C-C				
				150	220	-150-4C-C				
		□25	13	220	∞	-220-4C-C	KGDS% 2525-C	150	64.7	
				25	35	50				-35-4A-C
				35	50	-35-4B-C				
				50	70	-50-4B-C				
				70	100	-70-4B-C				
				100	150	-100-4B-C				
			25	150	220	-150-4B-C				
				220	∞	-220-4B-C				
				35	50	-35-4C-C				
				50	70	-50-4C-C				
				70	100	-70-4C-C				
				100	150	-100-4C-C				
150	220	-150-4C-C								
220	∞	-220-4C-C								

Applicable Inserts G75



- KGDF 90° type is not available as unit (Toolholder + blade). Please purchase toolholder and blade separately.
- Right-hand Blade for Right-hand Toolholder, Left-hand Blade for Left-hand Toolholder.
- The insert clamping screw (BH6X10TR), blade fixing screw (SB-60120TR) and wrench (LTW-25) which are included in the toolholder can be used.



Face Grooving Toolholders (90° Separate Type)

● Combination of Blade & Toolholder

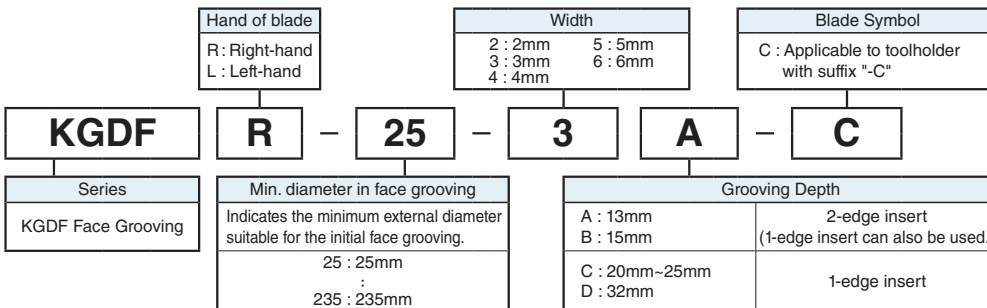
Shank Angle	Edge Width W (mm)	Shank Size (mm)	Max. depth of cut (mm)	Face Grooving Dia. φD (mm)		Blade Description G85	Toolholder Description G25	Dimension (mm)		
				MIN.	MAX.			L1	L3	
90°	5	□ 20	15	25	35	KGDF [®] /-25-5B-C	KGDS [®] /2020-C	125	54.7	
				35	50	-35-5B-C				
				50	75	-50-5B-C				
				75	115	-75-5B-C				
				115	180	-115-5B-C				
				180	235	-180-5B-C				
			235	∞	-235-5B-C					
			20	25	35	-25-5C-C		59.7		
			35	50	-35-5C-C					
			50	75	-50-5C-C					
			75	115	-75-5C-C					
			115	180	-115-5C-C					
		180	235	-180-5C-C						
		235	∞	-235-5C-C						
		25	75	115	-75-5D-C	71.7				
		115	180	-115-5D-C						
		180	235	-180-5D-C						
		235	∞	-235-5D-C						
		□ 25	15	25	35		KGDF [®] /-25-5B-C	KGDS [®] /2525-C	150	54.7
				35	50		-35-5B-C			
				50	75	-50-5B-C				
				75	115	-75-5B-C				
				115	180	-115-5B-C				
				180	235	-180-5B-C				
235	∞		-235-5B-C							
20	25		35	-25-5C-C	59.7					
35	50		-35-5C-C							
50	75		-50-5C-C							
75	115		-75-5C-C							
115	180		-115-5C-C							
180	235	-180-5C-C								
235	∞	-235-5C-C								
25	75	115	-75-5D-C	71.7						
115	180	-115-5D-C								
180	235	-180-5D-C								
235	∞	-235-5D-C								

Applicable Inserts G75

Shank Angle	Edge Width W (mm)	Shank Size (mm)	Max. depth of cut (mm)	Face Grooving Dia. φD (mm)		Blade Description G85	Toolholder Description G25	Dimension (mm)		
				MIN.	MAX.			L1	L3	
90°	6	□ 20	15	25	35	KGDF [®] /-25-6B-C	KGDS [®] /2020-C	125	54.7	
				35	50	-35-6B-C				
				50	75	-50-6B-C				
				75	115	-75-6B-C				
				115	180	-115-6B-C				
				180	235	-180-6B-C				
			235	∞	-235-6B-C					
			20	25	35	-25-6C-C		59.7		
			35	50	-35-6C-C					
			50	75	-50-6C-C					
			75	115	-75-6C-C					
			115	180	-115-6C-C					
		180	235	-180-6C-C						
		235	∞	-235-6C-C						
		25	75	115	-75-6D-C	71.7				
		115	180	-115-6D-C						
		180	235	-180-6D-C						
		235	∞	-235-6D-C						
		□ 25	15	25	35		KGDF [®] /-25-6B-C	KGDS [®] /2525-C	150	54.7
				35	50		-35-6B-C			
				50	75	-50-6B-C				
				75	115	-75-6B-C				
				115	180	-115-6B-C				
				180	235	-180-6B-C				
235	∞		-235-6B-C							
20	25		35	-25-6C-C	59.7					
35	50		-35-6C-C							
50	75		-50-6C-C							
75	115		-75-6C-C							
115	180		-115-6C-C							
180	235	-180-6C-C								
235	∞	-235-6C-C								
25	75	115	-75-6D-C	71.7						
115	180	-115-6D-C								
180	235	-180-6D-C								
235	∞	-235-6D-C								

Applicable Inserts G75

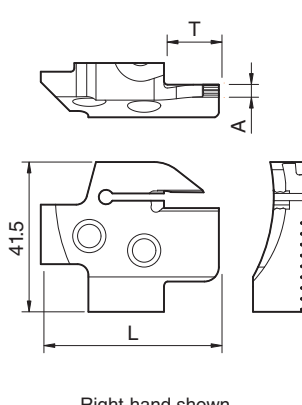
◆ Face Grooving Blade Identification System



Description
Lot No.
Example of printing of blade description

Face Grooving Blade

Blade Dimensions

Shape	Blade Description	Std.		Dimension (mm)			Face Grooving Dia. ϕ D (mm)		Edge Width (mm)	Applicable Inserts G75	Toolholder Description G25
		R	L	L	T	A	MIN.	MAX.			
		W									
 <p>Right-hand shown</p>	KGDFR	-25-2A-C	●	-	44.35	6	1.5	25	30	2	GDFM2020N-020GM
		-30-2A-C	●	-				30	35		
		-35-2A-C	●	-				35	45		
		-45-2A-C	●	-				45	60		
		-60-2A-C	●	-				60	80		
		-80-2A-C	●	-				80	100		
		-100-2A-C	●	-	100	130					
		-25-2B-C	●	-	47.35	13	1.5	25	30		
		-30-2B-C	●	-				30	35		
		-35-2B-C	●	-				35	45		
		-45-2B-C	●	-				45	60		
		-60-2B-C	●	-				60	80		
		-80-2B-C	●	-				80	100		
		-100-2B-C	●	-	100	130					
		KGDF ^{R/L}	-25-3A-C	●	●	47.35	13	2	25		
	-30-3A-C		●	●	30				40		
	-40-3A-C		●	●	40				50		
	-50-3B-C		●	●	49.35	15	50		65		
	-65-3B-C		●	●			65		85		
	-85-3B-C		●	●			85		110		
	-110-3B-C		●	●	110	145					
	-50-3C-C		●	●	56.35	22	50		65		
	-65-3C-C		●	●			65		85		
	-85-3C-C	●	●	85			110				
	-110-3C-C	●	●	59.35	25	110	145				
	KGDF ^{R/L}	-25-4A-C	●	●	49.35	15	3	25	35	4	GDFM4020N-040GM GDFM4020N-040GH GDFM4020N-040DM GDFMS4020N-040DM GDFM4020N-200R-CM
		-35-4B-C	●	●				35	50		
		-50-4B-C	●	●				50	70		
		-70-4B-C	●	●				70	100		
		-100-4B-C	●	●				100	150		
		-150-4B-C	●	●	150	220					
		-220-4B-C	●	●	220	∞					
		-35-4C-C	●	●	59.35	25		35	50		
		-50-4C-C	●	●				50	70		
		-70-4C-C	●	●				70	100		
		-100-4C-C	●	●				100	150		
	-150-4C-C	●	●	150			220				
	-220-4C-C	●	●	220			∞				
	KGDF ^{R/L}	-25-5B-C	●	●	49.35	15	4	25	35	5	GDFM5020N-040GM GDFM5020N-080GM GDFM5020N-040GH GDFM5020N-080GH GDFM5020N-040DM GDFMS5020N-040DM GDFM5020N-250R-CM
		-35-5B-C	●	●				35	50		
		-50-5B-C	●	●				50	75		
		-75-5B-C	●	●				75	115		
		-115-5B-C	●	●				115	180		
		-180-5B-C	●	●	180	235					
		-235-5B-C	●	●	235	∞					
-25-5C-C		●	●	54.35	20	25		35			
-35-5C-C		●	●			35		50			
-50-5C-C		●	●			50		75			
-75-5C-C		●	●	59.35	25	75		115			
-115-5C-C		●	●			115		180			
-180-5C-C		●	●			180		235			
-235-5C-C		●	●			235		∞			
-75-5D-C		●	●			66.35		32	75		
-115-5D-C	●	●	115				180				
-180-5D-C	●	●	180	235							
-235-5D-C	●	●	235	∞							
KGDF ^{R/L}	-25-6B-C	●	●	49.35	15	5	25	35	6	GDFM6020N-040GM GDFM6020N-080GM GDFM6020N-040GH GDFM6020N-080GH GDFM6020N-040DM GDFMS6020N-040DM GDFM6020N-300R-CM	
	-35-6B-C	●	●				35	50			
	-50-6B-C	●	●				50	75			
	-75-6B-C	●	●				75	115			
	-115-6B-C	●	●				115	180			
	-180-6B-C	●	●	180	235						
	-235-6B-C	●	●	235	∞						
	-25-6C-C	●	●	54.35	20		25	35			
	-35-6C-C	●	●				35	50			
	-50-6C-C	●	●				50	75			
	-75-6C-C	●	●	59.35	25		75	115			
	-115-6C-C	●	●				115	180			
	-180-6C-C	●	●				180	235			
	-235-6C-C	●	●				235	∞			
	-75-6D-C	●	●				66.35	32			75
-115-6D-C	●	●	115			180					
-180-6D-C	●	●	180	235							
-235-6D-C	●	●	235	∞							

● : Std. Item



Grooving

Recommended Cutting Conditions

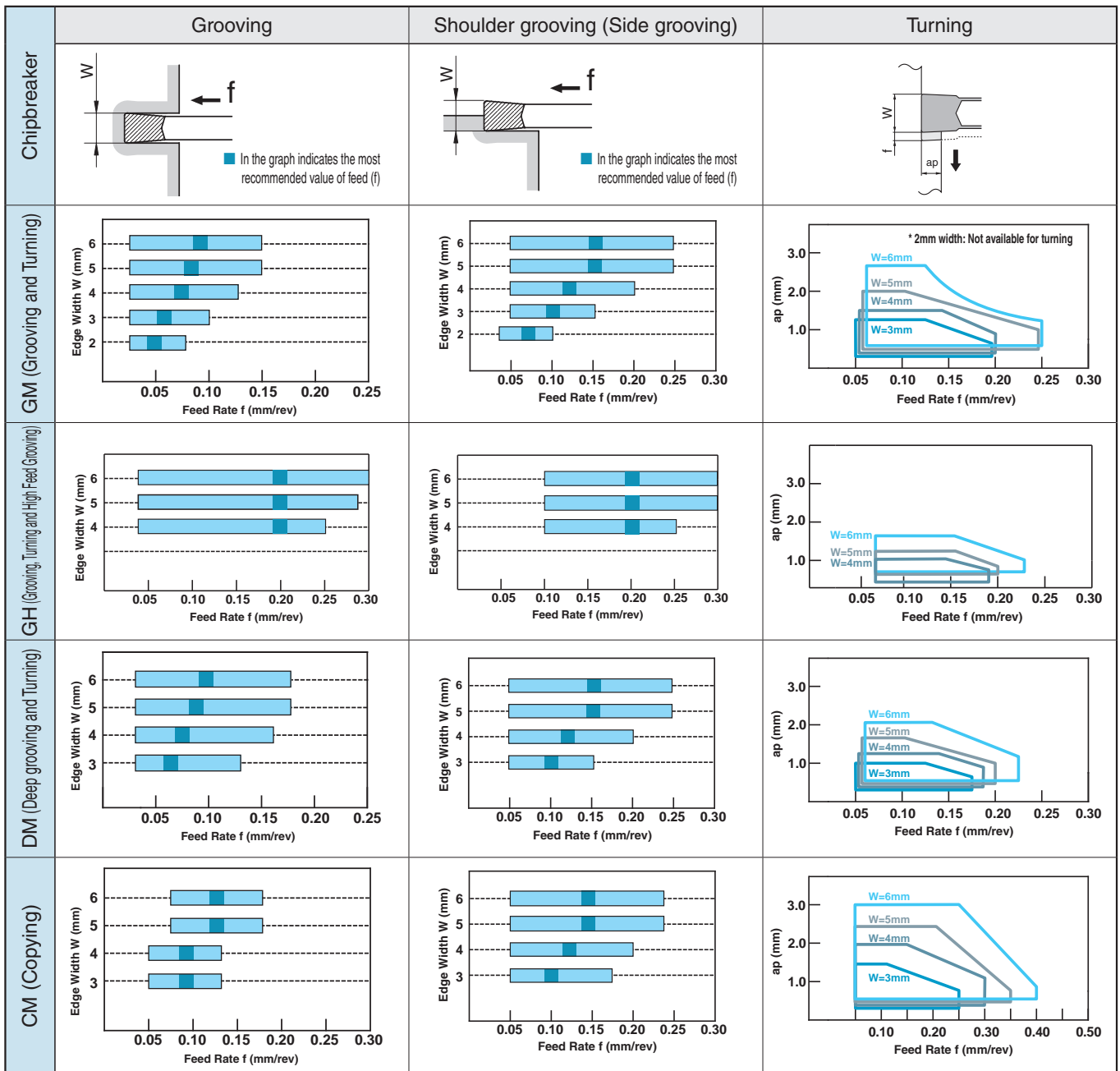
◆ Recommended Cutting Conditions (Vc)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)				Remarks
	Cermet		MEGACOAT		
	TN620	TN90	PR1225	PR1215	
Carbon Steel	☆ 60~200	☆ 80~200	★ 60~160	☆ 80~160	Coolant
Alloy Steel	☆ 60~160	☆ 70~160	★ 60~150	☆ 60~150	
Stainless Steel	-	-	★ 50~120	☆ 50~120	
Cast Iron	-	-	-	★ 80~160	

★: 1st Recommendation ☆: 2nd Recommendation

◆ Recommended Cutting Conditions (Feed Rate / ap)

[Workpiece material: S50C]



- When shoulder grooving
 - If ap is set smaller, set feed higher.
 - If ap is set larger, set feed lower.

- 1) The above values are based on the condition that the dimension T of toolholder is 15 mm or less.
- 2) If the toolholder's dimension T is over 15 mm, set the values for turning to less than 90% of those above.

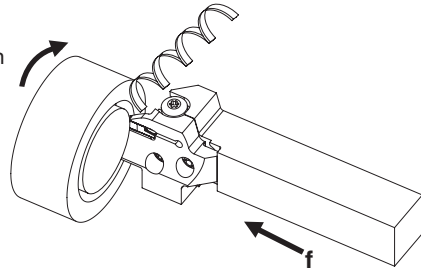
■ Guide for Face Grooving

1) Toolholder Selection

Check the range of applicable "face grooving diameter" as well as the groove width and depth.

2) Cutting conditions (Feed rate : f)

When machining on steel, set the feed rate (f) so that chips are created in a helical form in cut-off.



3) How to widen the groove (Plunge milling and Turning)

Start machining from the outside and then proceed to the inside. Chip control will be better in this way.

Plunge milling (Grooving + Side grooving)	Turning	

4) Guide for turning

A. When the cutting amount (ap) is over 0.5 mm

- (1) Perform Plunge milling.
- (2) Return the cutting by 0.1 mm.
- (3) Perform turning (Ref. to Fig.1)

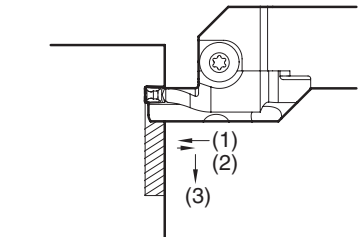
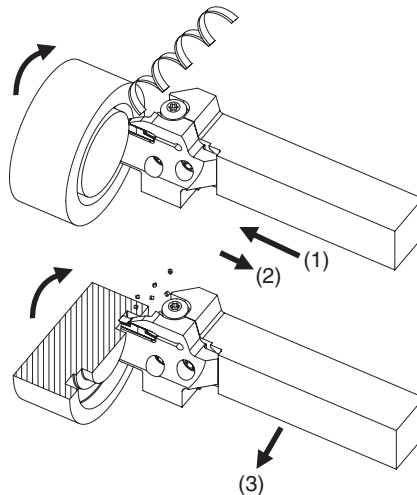


Fig.1

- When widening the face groove width (Ref. to Fig.2) Apply the "Step Turning". Then perform finishing.

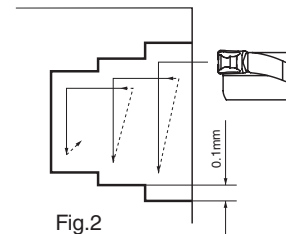


Fig.2

B. When the cutting amount (ap) is under 0.5 mm

- (1) Perform Plunge milling.
- (2) Perform turning. Machining without interruption is possible. (Ref. to Fig.3)

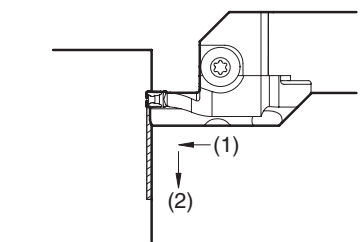
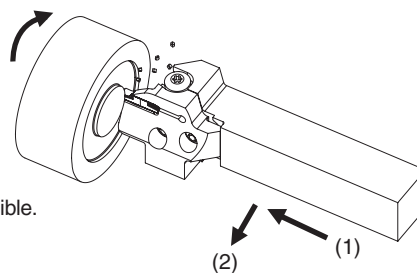
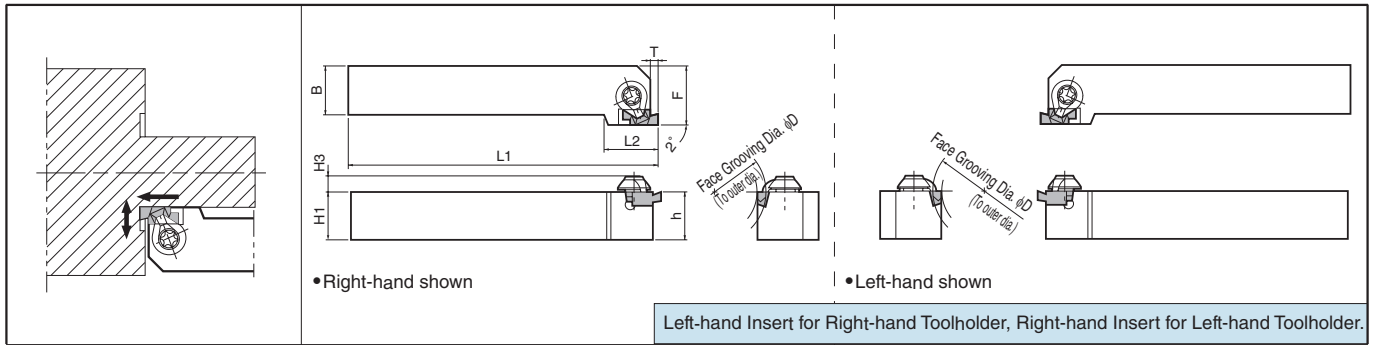


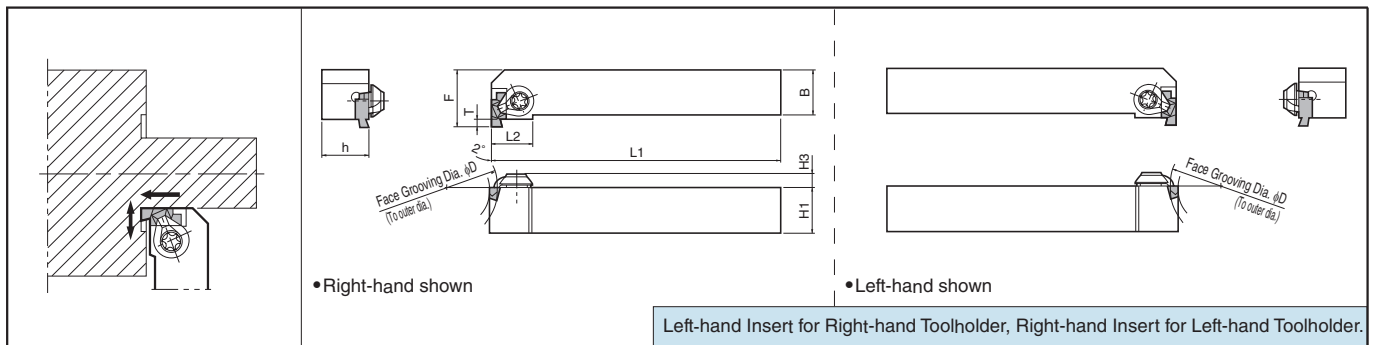
Fig.3

Small Dia. Face Grooving Toolholders [GVF-AA Insert]



GFVS-AA



GFVT-AA



Toolholder Dimensions

Description	Std.	Dimension (mm)										Face Grooving Dia. ϕD		Spare Parts		Applicable Inserts G89
		R	L	H1	h	H3	B	L1	L2	F	T	MIN.	MAX.	Clamp Set 	Wrench 	
GFVS ^{R/L} 2020K-08AA	●●	20	20	5.5	20	125	18	25	2.2	8	∞	(0)	∞	CPS-5V	FT-15	GVF ^R 100-005AA GVF ^R 300-005AA
	●●	25	25													
GFVT ^{R/L} 2020K-08AA	●●	20	20	5.5	20	125	14	25	2.2	8	∞	(0)	∞	CPS-5V	FT-15	GVF ^R 100-005AA GVF ^R 300-005AA
	●●	25	25													

Note 1. Dimension T shows available grooving depth.

2. The value () of Face Grooving Dia. (ϕD MAX.) is the maximum outer diameter value after the initial groove between MIN.-MAX. (It is possible to widen the groove to infinity ∞).

The value () of Face Grooving Dia. (ϕD MIN.) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between MIN.-MAX.

G

Grooving

External

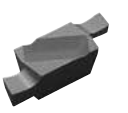
Internal

Face

Grooving Inserts

Applicable Inserts

Description	(mm)			P	M	K	N	S	H	Classification of usage
	A	L	H							
GVF^{R/L} 100-...AA	4.3	12	4.5	●	○					●: Continuous-Light Interruption / 1st Choice ○: Continuous-Light Interruption / 2nd Choice ●: Continuous / 1st Choice ○: Continuous / 2nd Choice
200-...AA										
300-...AA										

Insert	Description	Dimension (mm)			MEGACOAT		PVD Coated Carbide		Carbide		Applicable Toolholders	Ref. to Page for Applicable Toolholders
		W	B	r _ε	PR1225		PR930		KW10			
					R	L	R	L	R	L		
	GVF^{R/L} 100-005AA	1.00	2.2	0.05	●	●	●	●	●	●	GFVS ^{L/R} ...08AA GFVT ^{L/R} ...08AA	G88
	200-005AA	2.00			●	●	●	●	●	●		
	300-005AA	3.00			●	●	●	●	●	●		

· Dimension B shows available grooving depth.

· GVF^{R/L}...005AA inserts are not compatible with GVF^{R/L}...○○○AA (Ref. to Page G95) inserts because their Side Relief Angle is 10°.

Face Grooving Diameter of GFVS-AA (also GFVT-AA)

Description	Face Grooving Dia. φD		Applicable Inserts
	MIN.	MAX.	
GFVS^{R/L} 2020K-08AA	8	∞	GVF ^{L/R} 100-005AA
2525M-08AA			
GFVT^{R/L} 2020K-08AA	(0)	(∞)	GVF ^{L/R} 300-005AA
2525M-08AA			

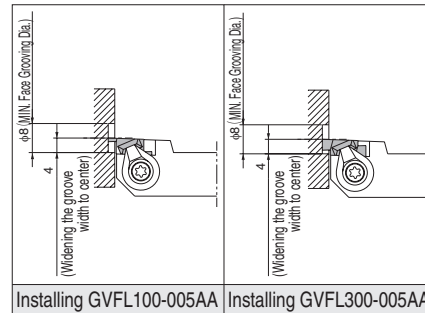
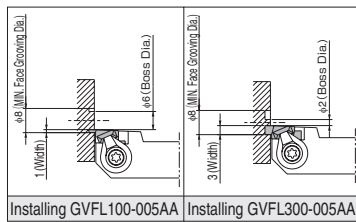
● It is available to infinity ∞ in case of machining the first groove bigger than MIN.

● When machining towards the outer diameter then there is no MAX. limit to the further groove machining.

● When machining the initial groove on the face at MIN. (φ8) ● When widening the groove width to inner diameter.

If the initial groove is made smaller than this, the toolholder interferes with the workpiece.

For machining up to the center of the workpiece regardless of insert width.



Recommended Cutting Conditions (GFVS-AA / GFVT-AA)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)			Grooving	Turning*		Remarks
	MEGACOAT	PVD Coated Carbide	Carbide		ap (mm)	f (mm/rev)	
	PR1225	PR930	KW10				
Carbon steel / Alloy steel	★50-100	☆50-100		0.01~0.05	Max.0.5	0.01~0.05	Coolant
Stainless Steel	★50-80	☆50-80		0.01~0.03	Max.0.3	0.01~0.02	
Non-ferrous Metals			★-200	0.01~0.08	Max.0.5	0.01~0.08	

* ap has to be set for less than corner-R(r_c) when turning of edge width 1.0 mm (GVF^{R/L}100-005AA).

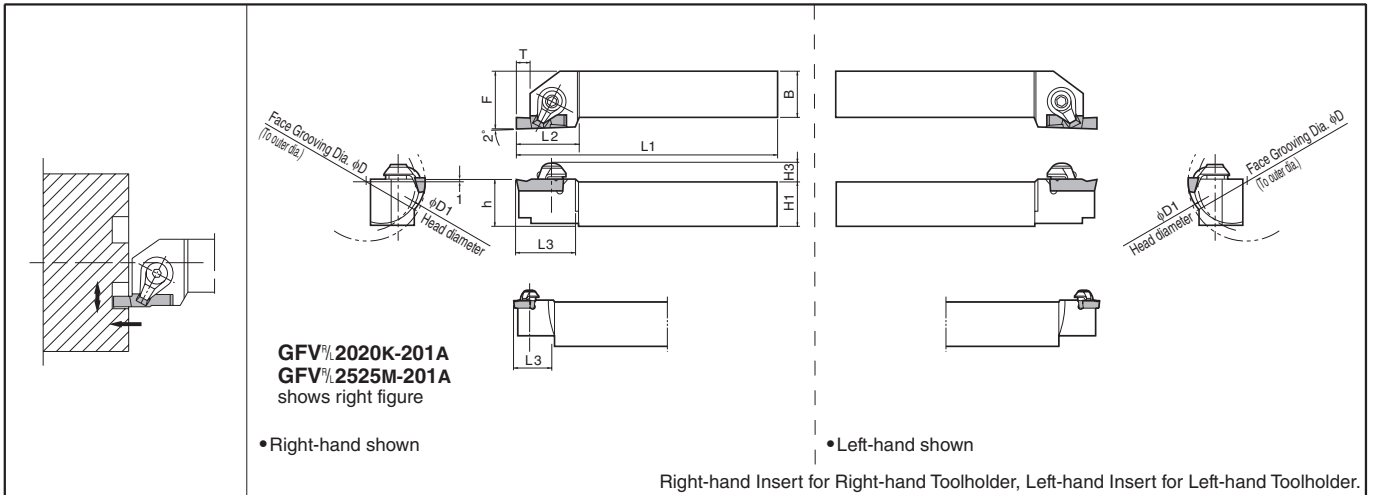
★ : 1st Recommendation ☆ : 2nd Recommendation

● : Std. Item

Inserts are sold in 10 piece boxes.

Face Grooving Toolholders [GVF Insert]

GVF



Toolholder Dimensions

Description	Std.	Dimension (mm)											Face Grooving Dia. ϕD		Spare Parts		Applicable Inserts ➔ G95	
		R	L	H1	h	H3	B	L1	L2	L3	F	T	$\phi D1$	MIN.	MAX.	Clamp Set		Wrench
GVF% 2020K-201A 2525M-201A	●●		20	21	6.5	20	125	20	19	25	2.2	40	20	∞	CPS-5V	-	FT-15	GVF% 200~340-020A GVF% 200~...~300~...AR
GVF% 2020K-351B 2525M-351B	●●		20	21		20	125	28	26	25	4.6		35	35	50			GVF% 250~350-020B GVF% 300-150BR
2020K-352B 2525M-352B	●●		20	21		20	125	28	26	25	5.1		(25)	(∞)				GVF% 400~490-020B GVF% 400-200BR
2020K-501B 2525M-501B	●●		20	21		20	125	28	26	25	4.6		50	50	70			GVF% 250~350-020B GVF% 300-150BR
2020K-502B 2525M-502B	●●		20	21	8.0	20	125	28	26	25	5.1		(25)	(∞)	-	CPS-6V	LW-3	GVF% 400~490-020B GVF% 400-200BR
2020K-701B 2525M-701B	●●		20	21		20	125	28	26	25	4.6		70	70	100			GVF% 250~350-020B GVF% 300-150BR
2020K-702B 2525M-702B	●●		20	21		20	125	28	26	25	5.1		(25)	(∞)				GVF% 400~490-020B GVF% 400-200BR
GVF% 2525M-501C 2525M-502C	●●										6.6	50	50	70				GVF% 350~450-040C GVF% 500~600-040C
2525M-701C 2525M-702C	●●								33		6.6	70	70	100				GVF% 350~450-040C GVF% 500~600-040C
2525M-1001C 2525M-1002C	●●									32	6.6	100	100	150				GVF% 350~450-040C GVF% 500~600-040C
2525M-1501C 2525M-1502C	●●		25	26	9.5	25	150	35		35	6.6	150	150	250				GVF% 350~450-040C GVF% 500~600-040C
	●●										8.1	(25)	(∞)					GVF% 350~450-040C GVF% 500~600-040C

Note 1. Dimension T shows available grooving depth.

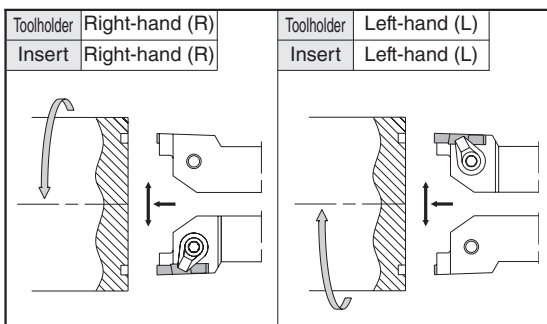
2. $\phi D1$ shows toolholder head diameter to L3.

3. The value () of Face Grooving Dia. (ϕD MAX.) is the maximum outer diameter value after the initial groove between MIN.-MAX. (It is possible to widen the groove to infinity ∞).

The value () of Face Grooving Dia. (ϕD MIN.) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between MIN.-MAX.

4. Standard toolholders are designed with the edge position 1.0mm above the center. When using non-standard toolholders, set the edge position 1.0mm above the center.

Selection of Toolholder & Insert



● : Std. Item

◆ Face Grooving Diameter of GFV

(1) e.g.) GFV^{R/L}....-201A

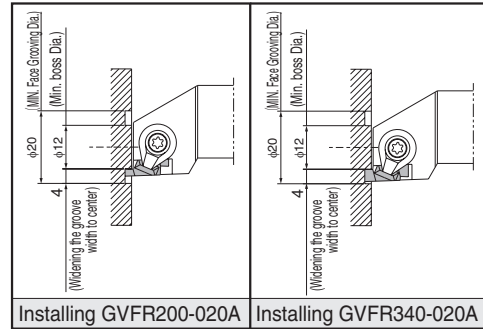
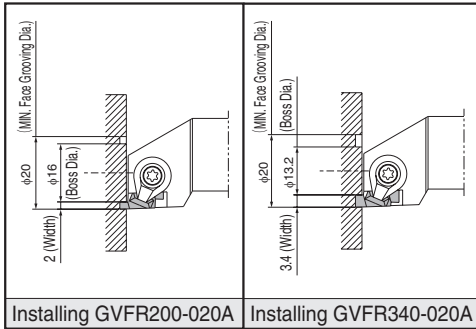
Description	Face Grooving Dia. ϕD		Applicable inserts
	MIN.	MAX.	
GFV ^{R/L} 2020K-201A 2525M-201A	20 (12)	∞ (∞)	GFV ^{R/L} 200~340-020A GFV ^{R/L} 200~...~300~...AR

- It is available to infinity ∞ in case of machining the first groove bigger than MIN.
- When machining towards the outer diameter then there is no MAX. limit to the further groove machining.

- When machining the initial groove on the face at MIN. $\phi 20$.
- When widening the groove width to inner diameter.

If the initial groove is made smaller than this, the toolholder interferes with the workpiece.
Boss Dia. depends on insert width.

Face groove diameter ϕD MIN. (12) is the limit; the toolholder interferes with the workpiece in case of smaller than $\phi 12$.
The toolholder interferes with the workpiece when closer to the center.



(2) e.g.) GFV^{R/L}....-351B/352B (same as GFV^{R/L}....-○○○B or GFV^{R/L}....-○○○C)

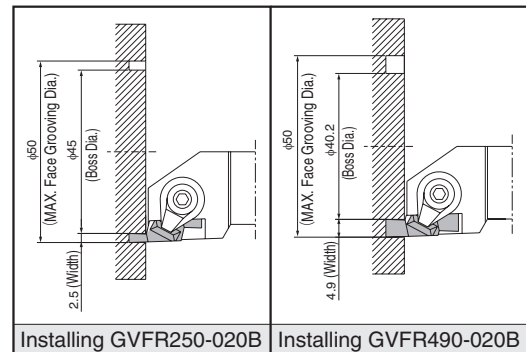
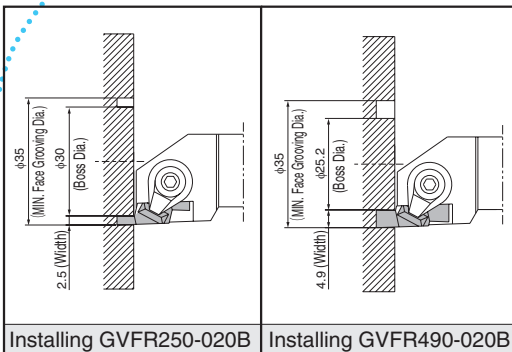
Description	Face Grooving Dia. ϕD		Applicable Inserts
	MIN.	MAX.	
GFV ^{R/L} 2020K-351B 2525M-351B 2020K-352B 2525M-352B	35 (25)	50 (∞)	GFV ^{R/L} 250~350-020B GFV ^{R/L} 300-150BR GFV ^{R/L} 400~490-020B GFV ^{R/L} 400-200BR

- It is possible to widen the groove to infinity ∞ when machining the initial groove within MIN.-MAX. and then widening to outer diameter.

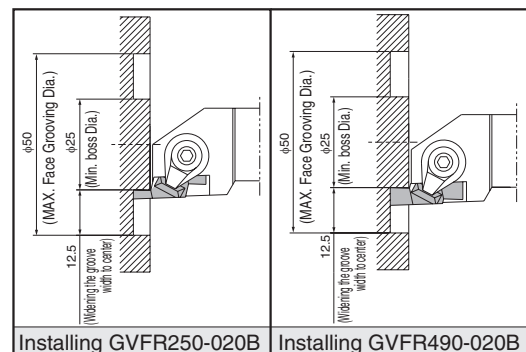
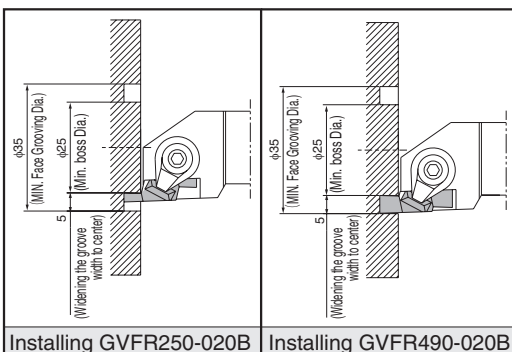
- When machining the initial groove on the face at MIN. $\phi 35$
- When machining the initial groove on the face at MAX. $\phi 50$.

If the initial groove is made smaller than this, the toolholder interferes with the workpiece.
Boss Dia. depends on insert width.

If the initial groove is made smaller than this, the toolholder interferes with the workpiece.
Boss Dia. depends on insert width.



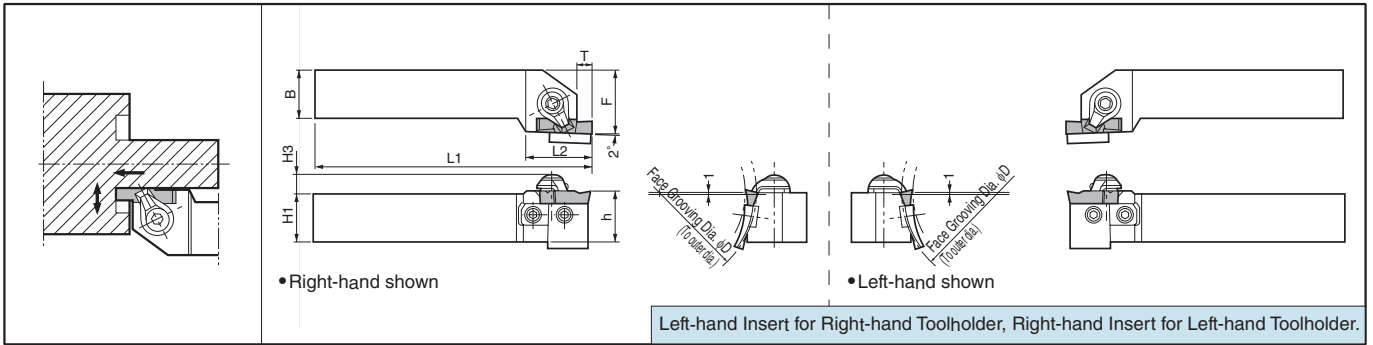
- When widening the groove width to inner diameter.
Face Grooving Dia. ϕD MIN. ($\phi 25$ Boss Dia.) is the limitation regardless of insert width, even widening the groove width to the center from the initial groove at ϕD MIN. ($\phi 35$) or ϕD MAX. ($\phi 50$).
The toolholder interferes with the workpiece when closer to the center.



Face Grooving Toolholders [GVF Insert]

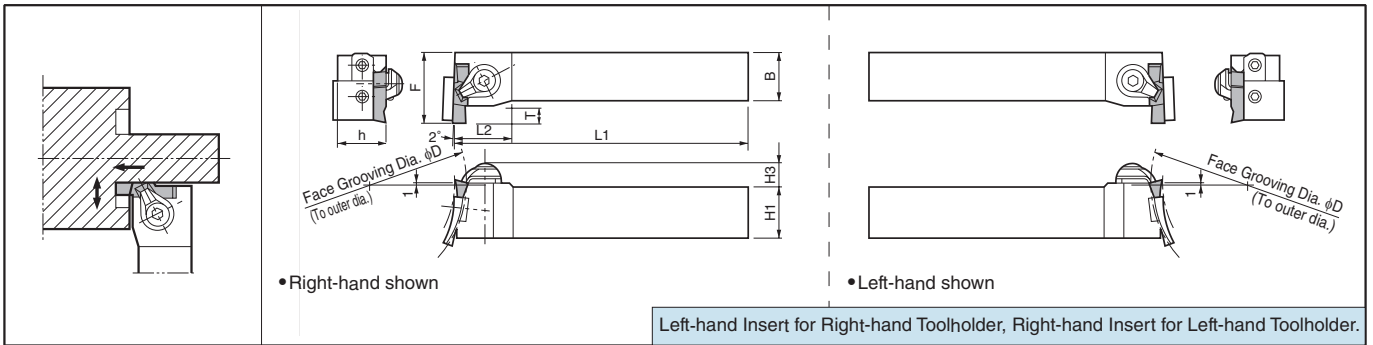
GFVS

This toolholder can machine various face grooving diameters by replacing the blade.



GFVT

This toolholder can machine various face grooving diameters by replacing the blade.



◆ Selection of Toolholder & Insert

GFVS				GFVT			
Toolholder	Right-hand (R)	Toolholder	Left-hand (L)	Toolholder	Right-hand (R)	Toolholder	Left-hand (L)
Insert	Left-hand (L)	Insert	Right-hand (R)	Insert	Left-hand (L)	Insert	Right-hand (R)

● Combination of Base-Holder & Blade



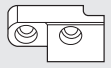



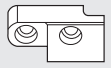



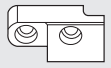



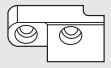



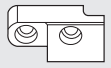



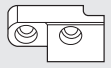

Toolholder Description (Stamped below)	Std.		Blade Description	Toolholder Description (Unit Description)	Example of installation (GFVS)	How to refer to the face grooving toolholder and blade
	R	L				
GFVS ^{R/L} 2020K-HB GFVT ^{R/L} 2020K-HB	●	●	SF ^{R/L} -351B	GFVS ^{R/L} 2020K -351B		Q: Though "GFVSR2525M-HC" is marked on the face grooving toolholder, the size of cutting dia. is unknown. How could it be found out? A: Take off the blade. Description of the blade is listed on the back of the blade. Using the description, check the description of the toolholder in the catalog. If "SFR-1001C" is integrated to "GFVSR2525M-HC", the description of the toolholder is "GVFSR2525M-1001C"
	●	●	-352B	GFVT ^{R/L} 2020K -352B		
			-501B	-501B		
			-502B	-502B		
			-701B	-701B		
			-702B	-702B		
GFVS ^{R/L} 2525M-HB GFVT ^{R/L} 2525M-HB	●	●	SF ^{R/L} -351B	GFVS ^{R/L} 2525M -351B		
	●	●	-352B	GFVT ^{R/L} 2525M -352B		
			-501B	-501B		
			-502B	-502B		
			-701B	-701B		
			-702B	-702B		
GFVS ^{R/L} 2525M-HC GFVT ^{R/L} 2525M-HC	●	●	SF ^{R/L} -501C	GFVS ^{R/L} 2525M -501C		
	●	●	-502C	GFVT ^{R/L} 2525M -502C		
			-701C	-701C		
			-702C	-702C		
			-1001C	-1001C		
			-1002C	-1002C		
		-1501C	-1501C			
		-1502C	-1502C			

• Right-hand Blade for Right-hand Toolholder, Left-hand Blade for Left-hand Toolholder.

• Installation of GFVT type is also pursuing example of installation of GFVS type.

● : Std. Item

● Toolholder Dimensions

Description	Std.		Dimension (mm)									Face Grooving Dia. φD		Spare Parts				Applicable Inserts ➔ G95								
	R	L	H1	h	H3	B	L1	L2	F	T	MIN.	MAX.	Clamp Set 	Wrench 	Blade 	Bolt 										
																										
GFVS ^{φ/L} 2020K-351B 2525M-351B 2020K-352B 2525M-352B 2020K-501B 2525M-501B 2020K-502B 2525M-502B 2020K-701B 2525M-701B 2020K-702B 2525M-702B	●	●	20	21	8.0	20	125	30	25	5.1	35	50					HH4X12	GVF#250~350-020B								
	●	●	25	26		25	150	32	32	(4.6)								(25)	(∞)	SF ^{φ/L} -351B	GVF#300-150BR					
	●	●	20	21		20	125	30	25	5.1	50	70						SF ^{φ/L} -352B	GVF#400-490-020B							
	●	●	25	26		25	150	32	32	(5.1)								(25)	(∞)	SF ^{φ/L} -501B	GVF#400-200BR					
	●	●	20	21		20	125	30	25	5.1	70	100						SF ^{φ/L} -502B	GVF#250~350-020B							
	●	●	25	26		25	150	32	32	(4.6)								(25)	(∞)	SF ^{φ/L} -701B	GVF#300-150BR					
	●	●	20	21		20	125	30	25	5.1	70	100						SF ^{φ/L} -702B	GVF#400-490-020B							
	●	●	25	26		25	150	32	32	(4.6)								(25)	(∞)	SF ^{φ/L} -702B	GVF#400-200BR					
	●	●	20	21		20	125	30	25	5.1	70	100						SF ^{φ/L} -702B	GVF#400-490-020B							
	●	●	25	26		25	150	32	32	(5.1)								(25)	(∞)	SF ^{φ/L} -702B	GVF#400-200BR					
GFVS ^{φ/L} 2525M-501C 2525M-502C 2525M-701C 2525M-702C 2525M-1001C 2525M-1002C 2525M-1501C 2525M-1502C	●	●	25	26	9.5	25	150	32	32	8.1(6.6)	50	70					HH4X12	GVF#350-450-040C								
	●	●								8.1(8.1)	(25)	(∞)						SF ^{φ/L} -502C	GVF#500-600-040C							
	●	●								8.1(6.6)	70	100						SF ^{φ/L} -701C	GVF#350-450-040C							
	●	●								8.1(8.1)	(25)	(∞)						SF ^{φ/L} -702C	GVF#500-600-040C							
	●	●								8.1(6.6)	100	150						SF ^{φ/L} -1001C	GVF#350-450-040C							
	●	●								8.1(8.1)	(25)	(∞)						SF ^{φ/L} -1002C	GVF#500-600-040C							
	●	●								8.1(6.6)	150	250						SF ^{φ/L} -1501C	GVF#350-450-040C							
	●	●								8.1(8.1)	(25)	(∞)						SF ^{φ/L} -1502C	GVF#500-600-040C							
GFVT ^{φ/L} 2020K-351B 2525M-351B 2020K-352B 2525M-352B 2020K-501B 2525M-501B 2020K-502B 2525M-502B 2020K-701B 2525M-701B 2020K-702B 2525M-702B	●	●	8.0			20	125	22	30	5.1	35	50					HH4X12	GVF#250~350-020B								
	●	●																25	26	25	150	25	35	(4.6)	(25)	(∞)
	●	●									20	21						20	125	22	30	5.1	50	70	SF ^{φ/L} -352B	GVF#400-490-020B
	●	●									25	26						25	150	25	35	(5.1)			(25)	(∞)
	●	●									20	21						20	125	22	30	5.1	70	100	SF ^{φ/L} -502B	GVF#250~350-020B
	●	●									25	26						25	150	25	35	(4.6)			(25)	(∞)
	●	●									20	21						20	125	22	30	5.1	70	100	SF ^{φ/L} -702B	GVF#400-490-020B
	●	●									25	26						25	150	25	35	(4.6)			(25)	(∞)
	●	●									20	21						20	125	22	30	5.1	70	100	SF ^{φ/L} -702B	GVF#400-490-020B
	●	●									25	26						25	150	25	35	(5.1)			(25)	(∞)
GFVT ^{φ/L} 2525M-501C 2525M-502C 2525M-701C 2525M-702C 2525M-1001C 2525M-1002C 2525M-1501C 2525M-1502C	●	●	25	26	9.5	25	150	27	38	8.1(6.6)	50	70					HH4X12	GVF#350-450-040C								
	●	●								8.1(8.1)	(25)	(∞)						SF ^{φ/L} -502C	GVF#500-600-040C							
	●	●								8.1(6.6)	70	100						SF ^{φ/L} -701C	GVF#350-450-040C							
	●	●								8.1(8.1)	(25)	(∞)						SF ^{φ/L} -702C	GVF#500-600-040C							
	●	●								8.1(6.6)	100	150						SF ^{φ/L} -1001C	GVF#350-450-040C							
	●	●								8.1(8.1)	(25)	(∞)						SF ^{φ/L} -1002C	GVF#500-600-040C							
	●	●								8.1(6.6)	150	250						SF ^{φ/L} -1501C	GVF#350-450-040C							
	●	●								8.1(8.1)	(25)	(∞)						SF ^{φ/L} -1502C	GVF#500-600-040C							

- Note 1. [Dimension T shows the distance from the toolholder to the cutting edge. The grooving depth is the mentioned in ().]
2. The value () of Face Grooving Dia. (φD MAX.) is the maximum outer diameter value after the initial groove between MIN.-MAX. (It is possible to widen the groove to infinity ∞).
The value () of Face Grooving Dia. (φD MIN.) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between MIN.-MAX.
3. Standard toolholders are designed with the edge position 1.0mm above the center.
When using non-standard toolholders, set the edge position 1.0mm above the center.
4. GFVS and GFVT are composed of a base-holder and a blade.
If the blade should be damaged, replace it with a new blade as listed in the left table.
(e.g.) GFVSR2020K-HB + SFR-351B = GFVSR2020K-351B
(e.g.) GFVTR2020K-HB + SFR-351B = GFVTR2020K-351B



Face Grooving Toolholders

Blade Dimensions

Shape	Description	Std.	Dimension (mm)				Face Grooving Dia. ϕD		Applicable Inserts	Applicable Toolholders		
			R	L	L	H	T	W			MIN.	MAX.
<p>Stamped side</p> <p>Top shape of 501C, 701C, 1001C, 1501C</p>	SF ^{R/L} -351B	● ●	30.5	11	4.7	2.0	35	50	GVF ^{1/2} _R 250~350-020B GVF ^{1/2} _R 300-150BR GVF ^{1/2} _R 400~490-020B GVF ^{1/2} _R 400-200BR	GFV(S/T) ^{R/L} ○○○○□ -○○○B (Toolholder Stamp GFV(S/T) ^{R/L} ○○○○□-HB)		
	-352B	● ●										
	SF ^{R/L} -501B	● ●	35	15	7.5	2.0	50	70			GVF ^{1/2} _R 250~350-020B GVF ^{1/2} _R 300-150BR GVF ^{1/2} _R 400~490-020B GVF ^{1/2} _R 400-200BR	GFV(S/T) ^{R/L} ○○○○□ -○○○C (Toolholder Stamp GFV(S/T) ^{R/L} ○○○○□-HC)
	-502B	● ●										
	SF ^{R/L} -701B	● ●	35	15	7.5	2.8	50	70	GVF ^{1/2} _R 250~350-020B GVF ^{1/2} _R 300-150BR GVF ^{1/2} _R 400~490-020B GVF ^{1/2} _R 400-200BR	GFV(S/T) ^{R/L} ○○○○□ -○○○C (Toolholder Stamp GFV(S/T) ^{R/L} ○○○○□-HC)		
	-702B	● ●										
	SF ^{R/L} -501C	● ●	35	20	7.5	4.3	50	70			GVF ^{1/2} _R 350~450-040C GVF ^{1/2} _R 500~600-040C	GFV(S/T) ^{R/L} ○○○○□ -○○○C (Toolholder Stamp GFV(S/T) ^{R/L} ○○○○□-HC)
	-502C	● ●										
	SF ^{R/L} -701C	● ●	35	23	7.5	2.8	100	150	GVF ^{1/2} _R 350~450-040C GVF ^{1/2} _R 500~600-040C	GFV(S/T) ^{R/L} ○○○○□ -○○○C (Toolholder Stamp GFV(S/T) ^{R/L} ○○○○□-HC)		
	-702C	● ●										
	SF ^{R/L} -1001C	● ●	35	23	7.5	4.3	100	150			GVF ^{1/2} _R 350~450-040C GVF ^{1/2} _R 500~600-040C	GFV(S/T) ^{R/L} ○○○○□ -○○○C (Toolholder Stamp GFV(S/T) ^{R/L} ○○○○□-HC)
	-1002C	● ●										
	SF ^{R/L} -1501C	● ●	35	23	7.5	2.8	150	250	GVF ^{1/2} _R 350~450-040C GVF ^{1/2} _R 500~600-040C	GFV(S/T) ^{R/L} ○○○○□ -○○○C (Toolholder Stamp GFV(S/T) ^{R/L} ○○○○□-HC)		
	-1502C	● ●										

• Right-hand shown

• Right-hand Blade for Right-hand Toolholder,
Left-hand Blade for Left-hand Toolholder.

Face Grooving Diameter of GFVS / GFVT

e.g.) GFVS^{R/L}.....351B / 352B

(same as GFVS^{R/L}...-○○○B, ...-○○○C \rightarrow G93

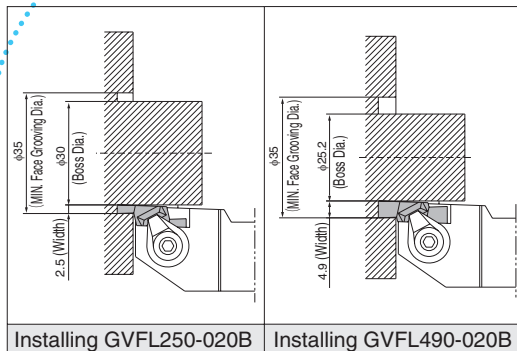
GFVT^{R/L}...-○○○B, ...-○○○C \rightarrow G93)

Description	Face Grooving Dia. ϕD		Applicable Inserts
	MIN.	MAX.	
GFVS ^{R/L} 2020K-351B	35 (25)	50 (∞)	GVF ^{1/2} _R 250~350-020B
2525M-351B			GVF ^{1/2} _R 300-150BR
2020K-352B			GVF ^{1/2} _R 400~490-020B
2525M-352B			GVF ^{1/2} _R 400-200BR

• It is possible to widen the groove to infinity ∞ when machining the initial groove within MIN.-MAX. and then widening to outer diameter.

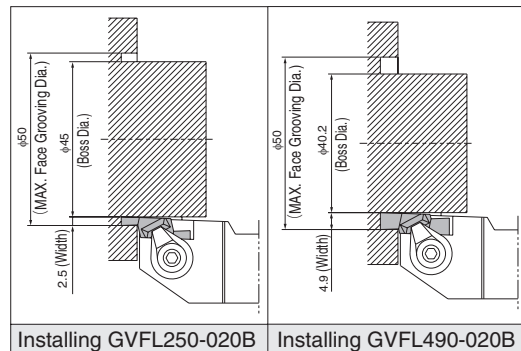
• When machining the initial groove on the face at MIN. $\phi 35$

If the initial groove is made smaller than this, the toolholder interferes with the workpiece. Boss Dia. depends on insert width.



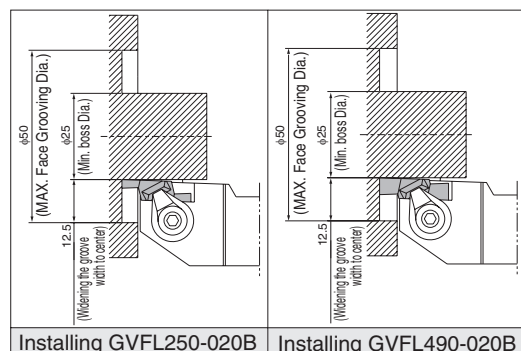
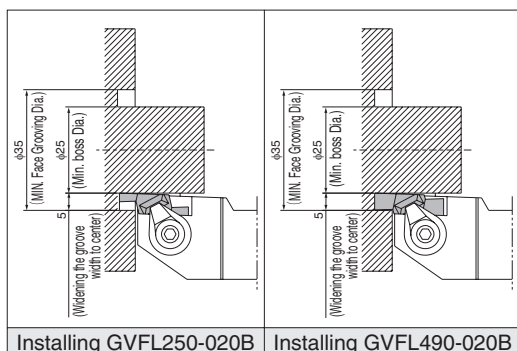
• When machining the initial groove on the face at MAX. $\phi 50$.

If the initial groove is made larger than this, the toolholder interferes with the workpiece. Boss Dia. depends on insert width.



• When widening the groove width to inner diameter.

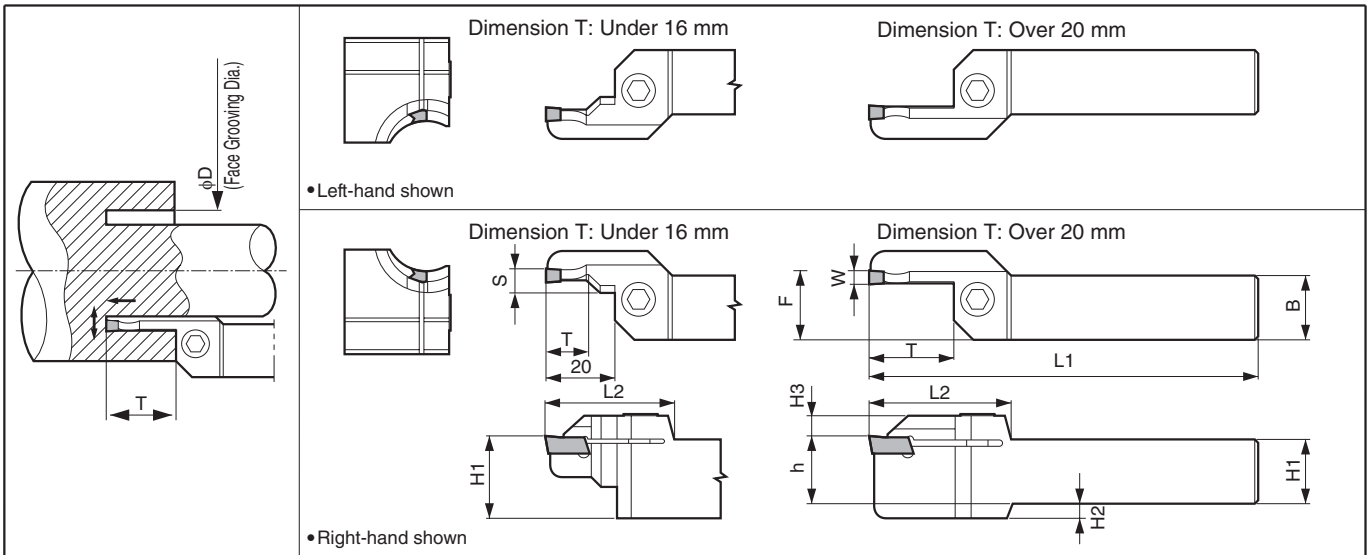
Face Grooving Dia. ϕD MIN. ($\phi 25$ Boss Dia.) is the limitation regardless of insert width, even widening the groove width to the center from the initial groove at ϕD MIN. ($\phi 35$) or ϕD MAX. ($\phi 50$). The toolholder interferes with the workpiece when closer to the center.





● : Std. Item

Face Grooving Toolholders

KFMS (Will be switched to KGDF ⚙️ G74~G80)



Toolholder Dimensions

Description	Std.		Dimension (mm)										Edge Width (mm)	Face Grooving Dia. ϕD		Spare Parts		
	R	L	H1-h	H2	H3	B	L1	L2	F	S	T	W	MIN.	MAX.	Clamp Bolt	Wrench		
	 																	
KFMS ^{R/L} 2020K2530-3 2020K3040-3 2020K4050-3 2020K5065-3 2020K6585-3 2020K85110-3 2020K110145-3 2525M2530-3 2525M3040-3 2525M4050-3 2525M5065-3 2525M6585-3 2525M85110-3 2525M110145-3	●							39		6.1	13	3	25	30	HH5X20	LW-4		
	●							39		6.1	13		30	40				
	●							41	20.7		22		40	50				
	●		20	-	10	20	125	41	20.7		22		50	65				
	●							44		-	25		65	85				
	●							44			25		85	110				
	●			5				44			25		110	145				
	●	●						39		6.1	13		25	30				
	●	●						39		6.1	13		30	40				
	●	●						41	25.7		22		40	50				
KFMS ^{R/L} 2020K2535-4 2020K3550-4 2020K5070-4 2020K70100-4 2020K100150-4 2020K150220-4 2020K220800-4 2525M2535-4 2525M3550-4 2525M5070-4 2525M70100-4 2525M100150-4 2525M150220-4 2525M220800-4	●							39		7.1	12	4	25	35	HH5X20	LW-4		
	●							39		7.1	12		35	50				
	●							44	20.7		25		50	70				
	●		20	-	10	20	125	44	20.7		25		70	100				
	●							44		-	25		100	150				
	●							44			25		150	220				
	●							44			25		220	∞				
	●	●						39		7.1	12		25	35				
	●	●						39		7.1	12		35	50				
	●	●						44	25.7		25		50	70				
KFMS ^{R/L} 2525M70100-4 2525M100150-4 2525M150220-4 2525M220800-4	●	●	25	-	10	25	150		25.7		25	70	100	HH5X25	LW-4			
	●	●						44		-	25	100	150					
	●	●						44			25	150	220					
	●	●						44			25	220	∞					
	●	●						44			25	220	∞					
	●	●						44			25	220	∞					

● : Std. Item

● Toolholder Dimensions

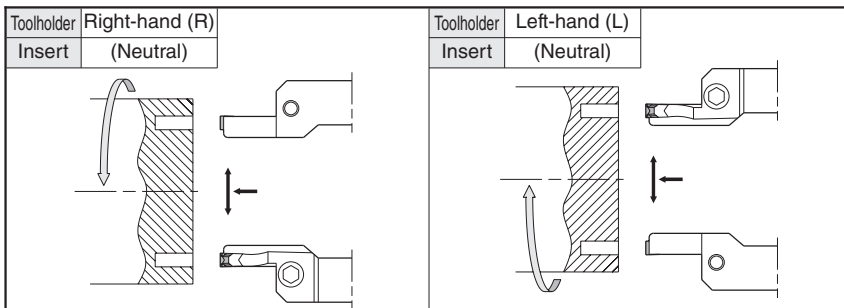
Description	Std.		Dimension (mm)										Edge Width (mm)	Face Grooving Dia. ϕD		Spare Parts			
	R	L	H1-h	H2	H3	B	L1	L2	F	S	T	W	MIN.	MAX.	Clamp Bolt	Wrench			
KFMS ^{R/L} 2020K2535-5 2020K3550-5 2020K5075-5 2020K75115-5 2020K115180-5 2020K180235-5 2020K235800-5	●							39				20		25	35	HH5X20	LW-4		
	●			-	10									35	50				
	●													50	75				
	●		20			20	125		20.7 (21.2)	-		25		75	115				
	●			5	10			44						115	180				
	●													180	235				
2525M2535-5 2525M3550-5 2525M5075-5 2525M75115-5 2525M115180-5 2525M180235-5 2525M235800-5	●●							39				20		25	35	HH5X25	LW-4		
	●●													35	50				
	●●													50	75				
	●●		25		-	10	25	150	25.7 (26.2)	-		32		75	115				
	●●													115	180				
	●●								51					180	235				
													235	∞					

Dimension T shows available grooving depth.

Face Grooving Dia. ϕD : The diameter range of the initial groove.

For KFMS^{R/L}....5 toolholder can hold a 6mm width insert. () value shows the dimension of a 6mm width insert.

◆ Selection of Toolholder & Insert



■ Applicable Inserts (mm)

Description	L	H
FMM30-03 FMM60-04	12	3.5
FMN3 FMN6	12	3.5

	P	M	K	N	S	H	Classification of usage												
	Carbon steel / Alloy steel	Stainless Steel	Cast Iron	Non-ferrous Metals	Titanium Alloys	Hard materials (~40HRC) Hard materials (40HRC~)													
							●	●	○	●	○	●	○	●	○	●	○	●	○

Insert	Description	Dimension (mm)			Cermert TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PVD Coated Carbide PR930	PVD Coated Carbide PR905	Carbide KW10	Applicable Toolholders
		W	r ϵ	M							
	FMM 30-03	3.0	0.3	2.0	●	●	●	●	●	●	KFMS ^{R/L} ...3
	FMM 40-04	4.0		2.6	●	●	●	●	●	●	KFMS ^{R/L} ...4
	FMM 50-04	5.0	0.4	3.4	●	●	●	●	●	●	KFMS ^{R/L} ...5
	FMM 60-04	6.0		4.0	●	●	●	●	●	●	
	FMN 3	3.0		2.0	●	●	●	●	●	●	KFMS ^{R/L} ...3
	FMN 4	4.0	0.25	2.6	●	●	●	●	●	●	KFMS ^{R/L} ...4
	FMN 5	5.0		3.4	●	●	●	●	●	●	KFMS ^{R/L} ...5
	FMN 6	6.0		4.0	●	●	●	●	●	●	

FMN type inserts are only for Deep Grooving and not applicable for Turning.

Recommended Cutting Conditions **G103**

◆ Limit of Turning toward Center

Turning towards the Center causes the toolholder to interfere with the groove wall depending on the initial cut's diameter.

Description	ϕD				Remaining Boss Dia. ϕd
	25	26	27	28 and over	
KFMS ^{R/L} 2020K2530-3	4	2	0	0	
KFMS ^{R/L} 2525M2530-3	4	2	0	0	
KFMS ^{R/L} 2020K2535-4	6	3	0	0	
KFMS ^{R/L} 2525M2535-4	6	3	0	0	
KFMS ^{R/L} 2020K2535-5	7	4	1	1	
KFMS ^{R/L} 2525M2535-5	*(5)	*(2)	*(0)	*(0)	(No remaining Boss)

e.g.) KFMS^R 2525M2530-3 with $\phi 25$ as first cut towards the center, it will cause a rubbing with the toolholder cartridge if ϕd is 4.0mm.

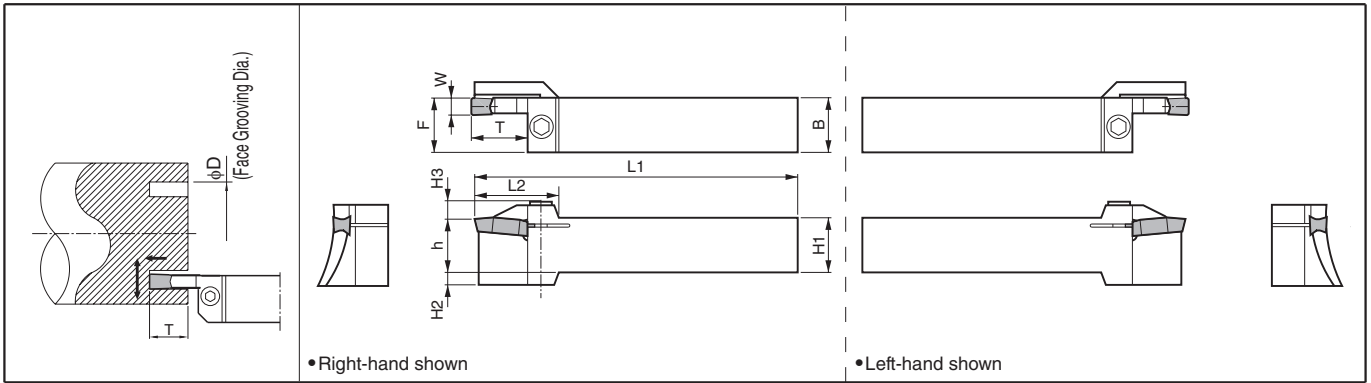
*() value shows the Dimension using FMM60-04 Insert.

● : Std. Item

Inserts are sold in 10 piece boxes.

Face Grooving Toolholders

KFMS-8



Toolholder Dimensions

Description	Std.		Dimension (mm)									Edge Width (mm)	Face Grooving Dia. ϕD		Spare Parts		
	R	L	H1-h	H2	H3	B	L1	L2	F	T	W		MIN.	MAX.	Clamp Bolt	Wrench	
KFMS^{R/L} 2525M5464-8	●	●		-				41				8	54 (0)	64 (∞)	HH6X25	LW-5	
2525M6382-8	●	●	25	2.4	9						63 (0)		82 (∞)				
2525M80115-8	●	●		6	8	25	150			26	25		80 (0)	115 (∞)			
2525M105160-8	●	●					40				105 (0)		160 (∞)				
2525M155510-8	●	●	25	6	8	25	150		43	26	25	8	155 (0)	510 (∞)			
3232P155510-8	●		32	-		32	170			33							


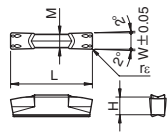

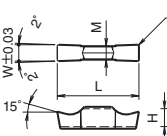

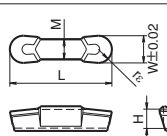
• Dimension T shows available grooving depth.

• The value () of Face Grooving Dia. (ϕD MAX.) is the maximum outer diameter value after the initial groove between MIN.-MAX. (It is possible to widen the groove to infinity ∞).
 The value () of Face Grooving Dia. (ϕD MIN.) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between MIN.-MAX..

Applicable Inserts

Description	L (mm)	H (mm)
GMM 8030-080MW	30	5.5
GMG 8030-050MG		
GMGA 8030-400R		

	P Carbon steel / Alloy steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metals	S Titanium Alloys	H Hard materials (~40HRC)	H Hard materials (40HRC-)	Classification of usage			
	☺	☺	☺	☺	☺	☺	☺	●	☺	●	☺
								●	☺	●	☺
								●	☺	●	☺
								●	☺	●	☺
								●	☺	●	☺
								●	☺	●	☺

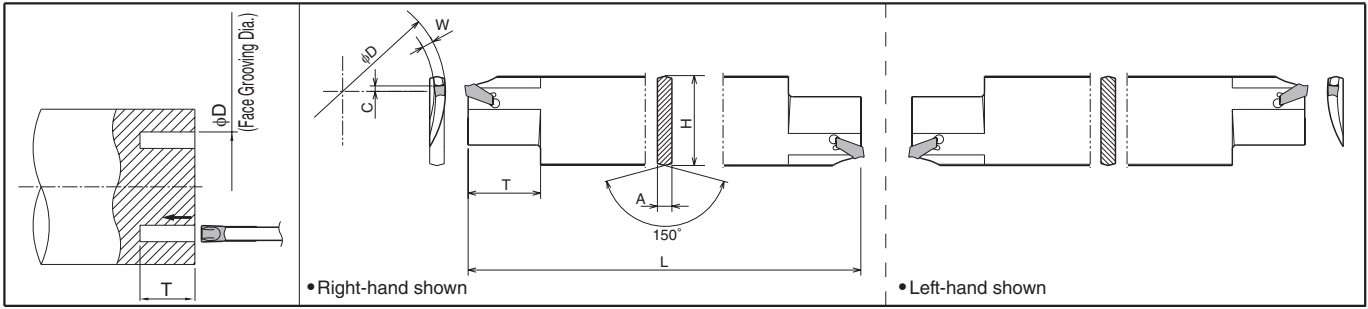
Insert	Description	Dimension (mm)			Cermet	CVD Coated Carbide	PVD Coated Carbide			Carbide	Applicable Toolholders
		W	r_ϵ	M			TN90	CR9025	PR915		
 Chip Control Oriented / M Class		GMM 8030-080MW	8.0	0.8	6.0	●	●	●	●	●	KFMS ^{R/L} ...8
 Sharp-Cutting Oriented / Precision Class Ground Chipbreaker		GMG 8030-050MG	8.0	0.5	6.0	●	●	●	●	●	
 Sharp-Cutting Oriented / Precision Class Full-R / Copying		GMGA 8030-400R	8.0	4.0	6.0					●	

• If using a full-R insert with KFMS-8 type toolholder, you need to modify the corner of insert adapter of toolholder.

Recommended Cutting Conditions **G105**

Face Grooving Blade

KFTB-S



Blade Dimensions

Description	Std.		Dimension (mm)							Edge Width	Face Grooving Dia. φD		Spare Parts Releasing Wrench	Applicable Inserts	Applicable Blocks H27
	R	L	*H	L	A	T	C	W	MIN.		MAX.				
KFTB ^{R/L} 65100-4S 90150-4S 150250-4S 250800-4S	●	●	32	150	5.2	25	4		4.0	65	100	LTK-5	FTK4	KTKTB20-32 25-32 32-32	
	●	●				30	0			90	150				
	●	●			3.2		140			250					
	●	●					230			∞					
KFTB ^{R/L} 90150-5S 150250-5S 250800-5S	●	●	32	150	5.2	30	0		5.0	90	150		FTK5	KTKTBF25-32 32-32	
	●	●				32	0			150	250				
	●	●			4.0	38									
	●	●					250			∞					

· Dimension T shows available grooving depth.

· Face Grooving Dia. φD: The diameter range of the initial groove.

· The insert has Self-Clamping system and it is not suitable for tight tolerance grooves (tolerance±0.05mm).

· KFTB^{R/L}65100-4S toolholder is designed with the edge position 4mm above the Center.

*Dimension H shows virtual apex distance.

Applicable Inserts

Material	Classification of usage
P Carbon steel / Alloy steel	●: Continuous-Light Interruption / 1st Choice
M Stainless Steel	○: Continuous-Light Interruption / 2nd Choice
K Cast Iron	●: Continuous / 1st Choice
N Non-ferrous Metals	○: Continuous / 2nd Choice
S Titanium Alloys	
H Hard materials (~40HRC)	
H Hard materials (40HRC-)	

Insert	Description	Dimension (mm)		Applicable Toolholders				
		W	rε	TN90 CVD Coated Carbide	CR9025 PVD Coated Carbide	PR660 PVD Coated Carbide	PR930 PVD Coated Carbide	KW10 Carbide
	FTK 4	4.0	0.25	●	●	○	●	●
	FTK 5	5.0	0.25	●	●	○	●	●

Recommended Cutting Conditions ● G104

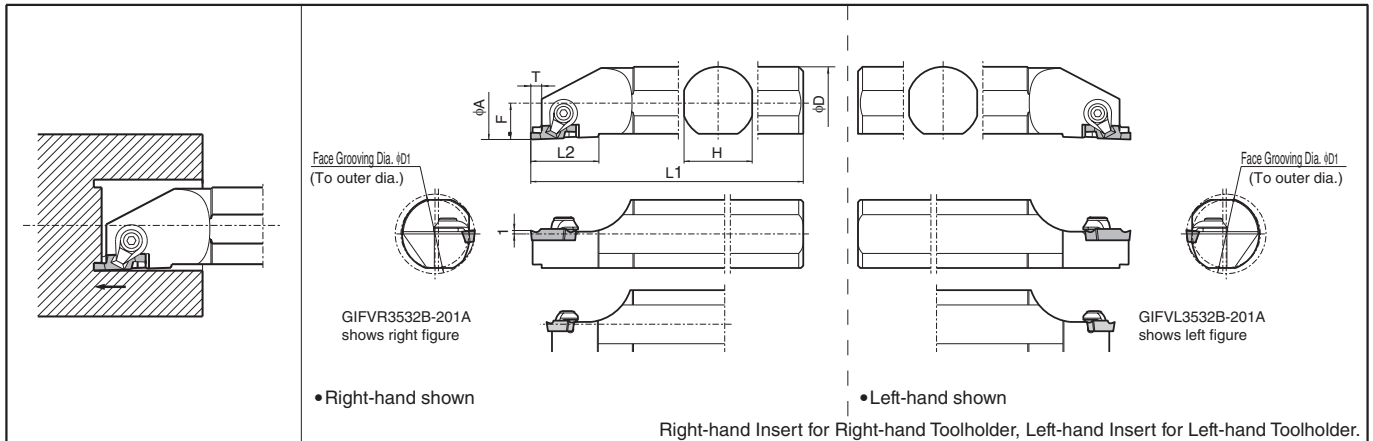
Selection of Blade and Insert

Combination of Blade + KTKTB				Combination of Blade + KTKTBF			
Blade	Right-hand (R)	Blade	Left-hand (L)	Blade	Right-hand (R)	Blade	Left-hand (L)
Insert	Neutral	Insert	Neutral	Insert	Neutral	Insert	Neutral

● : Std. Item
○ : Check Availability



GIFV



Toolholder Dimensions

Description	Std.		Dimension (mm)							Face Grooving Dia. $\phi D1$		Spare Parts				Applicable Inserts ➔ G95
	R	L	ϕA	ϕD	H	L1	L2	F	T	MIN.	MAX.	Clamp Set		Wrench		
GIFV^{R/L} 3532B-201A	●	●	35					23	2.2	35 (12)	∞	CPS-5V	-	FT-15	-	GVF ^{R/L} ...-...A GVF ^{R/L} ...-...AR
GIFV^{R/L} 3532B-351B	●	●	35					30	4.6	35 (25)	50 (∞)	CPS-6V	-	LW-3	-	GVF ^{R/L} 250-350-020B GVF ^{R/L} 300-150BR
3532B-352B	●	●		5.1	35 (25)	50 (∞)	GVF ^{R/L} 400-490-020B GVF ^{R/L} 400-200BR									
5032B-501B	●	●		4.6	50 (25)	70 (∞)			GVF ^{R/L} 250-350-020B GVF ^{R/L} 300-150BR							
5032B-502B	●	●	50	32	30	250	16	5.1	50 (25)	70 (∞)	-	-	-	-	GVF ^{R/L} 400-490-020B GVF ^{R/L} 400-200BR	
GIFV^{R/L} 5032B-501C	●	●	50					35	6.6	50 (25)	70 (∞)	CPS-8V	-	LW-4	-	GVF ^{R/L} 350-450-040C
5032B-502C	●	●		8.1	50 (25)	70 (∞)	GVF ^{R/L} 500-600-040C									

Note 1. Dimension T shows available grooving depth.
 2. Standard toolholders are designed with the edge position 1.0mm above the center.

Face Grooving Dia. $\phi D1$ depends on the application.

Applications	Description	Face Grooving Dia. $\phi d1$		Face Grooving Dia. $\phi D1$		Remarks
		(MIN.)	(MAX.)	MIN.	MAX. (MAX.)	
	GIFV^{R/L} 3532B-201A			∞		-
	GIFV^{R/L} 3532B-351B			35	50	
	3532B-352B					
	5032B-501B					
	5032B-502B					
	GIFV^{R/L} 5032B-501C 5032B-502C			50	70	
	GIFV^{R/L} 3532B-201A	12		∞		If $\phi D2 \geq 58-2W$, the Face Grooving Dia. can be expanded to $\phi d1$ (MIN.) toward the Center. W = Edge Width
	GIFV^{R/L} 3532B-351B			35	50	
	3532B-352B					
	5032B-501B	25		50	70	
	5032B-502B					
	GIFV^{R/L} 5032B-501C 5032B-502C			50	70	
	GIFV^{R/L} 3532B-201A	12		∞		-
	GIFV^{R/L} 3532B-351B			35	50	
	3532B-352B					
	5032B-501B	25		50	70	
	5032B-502B					
	GIFV^{R/L} 5032B-501C 5032B-502C			50	70	

The value () of Face Grooving Dia. ($\phi D1$ MAX.) is the maximum outer diameter value after the initial groove between MIN.-MAX. (It is possible to widen the groove to infinity ∞)
 The value () of Face Grooving Dia. ($\phi d1$ MIN.) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between MIN.-MAX.

● : Std. Item

Recommended Cutting Conditions

◆ GBA inserts (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)											(1) f for Grooving (mm/rev) (2) f for Turning (mm/rev) (3) ap for Turning (mm)					Remarks
	MC		Cermet		MEGA	PVD Coated Carbide		Carbide	CBN	PCD	GBA○○%L 033~100-...	GBA○○%L 125~200-...	GBA○○%L 230~300-...	GBA○○%L 330~400-...	GBA○○%L 400~480-...		
	PV7040	TN620	TC40N	TN90	PR1215	PR930	PR1115	PR905	KW10	KBN510						KBN925	
Carbon Steel	☆ 150-240	★ 80-220	☆ 150-220	☆ 150-220	★ 80-200	☆ 80-180	☆ 80-180	-	-	-	(1) 0.03-0.08 (2) Not recom. (3) Not recom.	(1) 0.04-0.09 (2) 0.04-0.09 (3) Max. 0.3	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.8		
Alloy Steel	☆ 130-220	★ 80-200	☆ 130-200	☆ 130-200	★ 80-180	☆ 80-160	☆ 80-160	-	-	-	(1) 0.03-0.07 (2) Not recom. (3) Not recom.	(1) 0.04-0.08 (2) 0.04-0.08 (3) Max. 0.3	(1) 0.05-0.09 (2) 0.05-0.09 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.8		
Stainless Steel	-	-	-	☆ 70-150	☆ 60-150	☆ 60-130	★ 60-130	-	-	-	(1) 0.03-0.07 (2) Not recom. (3) Not recom.	(1) 0.04-0.08 (2) 0.04-0.08 (3) Max. 0.3	(1) 0.05-0.09 (2) 0.05-0.09 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.8		
Cast Iron	-	-	-	-	-	-	-	★ 80-180	☆ 60-120	★ 150-400	-	(1) 0.03-0.08 (2) Not recom. (3) Not recom.	(1) 0.04-0.09 (2) 0.04-0.09 (3) Max. 0.3	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.8		
Aluminum	-	-	-	-	-	-	-	-	★ 150-400	-	★ 150-2,000	(1) 0.05-0.12 (2) Not recom. (3) Not recom.	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.5	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8		
Brass	-	-	-	-	-	-	-	-	★ 150-300	-	★ 200-800	(1) 0.05-0.12 (2) Not recom. (3) Not recom.	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.8	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8		
Hard materials	-	-	-	-	-	-	-	-	-	★ 80-120	-	(1) 0.02-0.05 (2) Not recom. (3) Not recom.	(1) 0.03-0.07 (2) 0.01-0.04 (3) Max. 0.1	-	-		

* Above cutting condition is for external grooving. Set both cutting speed and feed 10% lower for internal grooving. ★ :1st Recommendation ☆ :2nd Recommendation
MC indicates MEGACOAT Cermet. MEGA indicates MEGACOAT

◆ GBA inserts (GM Chipbreaker)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)					(1) f for Grooving (mm/rev) (2) f for Turning (mm/rev) (3) ap for Turning (mm)			Remarks		
	Cermet		MEGACOAT			GBA43%L 140-010GM	GBA43%L 150-020GM	GBA43%L 175-020GM~ 230-020GM		GBA43%L 250-030GM~ 350-030GM	GBA43%L 400-040GM
	TN620	PR1215									
Carbon Steel	★ 80-240	☆ 80-220	(1) 0.03-0.1 (2) 0.03-0.08 (3) Max. 0.2	(1) 0.03-0.12 (2) 0.03-0.08 (3) Max. 0.3	(1) 0.03-0.12 (2) 0.03-0.09 (3) Max. 0.3	(1) 0.04-0.15 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.15 (2) 0.05-0.1 (3) Max. 0.8				
Alloy Steel	★ 80-220	☆ 80-200	(1) 0.03-0.1 (2) 0.03-0.08 (3) Max. 0.2	(1) 0.03-0.12 (2) 0.03-0.08 (3) Max. 0.3	(1) 0.03-0.12 (2) 0.03-0.09 (3) Max. 0.3	(1) 0.04-0.15 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.15 (2) 0.05-0.1 (3) Max. 0.8				
Stainless Steel	-	★ 60-150	(1) 0.03-0.1 (2) 0.03-0.08 (3) Max. 0.2	(1) 0.03-0.1 (2) 0.03-0.08 (3) Max. 0.3	(1) 0.03-0.1 (2) 0.03-0.09 (3) Max. 0.3	(1) 0.04-0.12 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.04-0.12 (2) 0.05-0.1 (3) Max. 0.8				

* Above cutting condition is for external grooving. Set both cutting speed and feed 20% lower for internal grooving.

◆ GBA inserts (MY Chipbreaker)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)								(1) f for Grooving (mm/rev) (2) f for Turning (mm/rev) (3) ap for Turning (mm)					Remarks
	Cermet		MEGA	PVD Coated Carbide		Carbide	CBN	PCD	GBA43%L 175-020MY~ 200-020MY	GBA43%L 230-020MY~ 265-030MY	GBA43%L 300-030MY	GBA43%L 330-030MY~ 350-030MY	GBA43%L 400-040MY	
	TN6020	TC40N	PR1215	PR930	PR1115	KW10	KBN510	KPD001 (KPD010)						
Carbon Steel	☆ 150-220	-	★ 80-200	☆ 80-200	☆ 80-200	-	-	-	(1) 0.03-0.08 (2) 0.03-0.08 (3) Max. 0.3	(1) 0.04-0.09 (2) 0.04-0.09 (3) Max. 0.3	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.8	
Alloy Steel	☆ 130-200	-	★ 80-180	☆ 80-180	☆ 80-180	-	-	-	(1) 0.03-0.07 (2) 0.03-0.1 (3) Max. 0.3	(1) 0.04-0.08 (2) 0.04-0.08 (3) Max. 0.3	(1) 0.05-0.09 (2) 0.05-0.09 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.8	
Stainless Steel	☆ 70-150	-	☆ 60-150	☆ 60-150	★ 60-150	-	-	-	(1) 0.03-0.07 (2) 0.03-0.1 (3) Max. 0.3	(1) 0.04-0.08 (2) 0.04-0.08 (3) Max. 0.3	(1) 0.05-0.09 (2) 0.05-0.09 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.8	

* Above cutting condition is for external grooving. Set both cutting speed and feed 10% lower for internal grooving. ★ :1st Recommendation ☆ :2nd Recommendation
MEGA indicates MEGACOAT

◆ GB inserts (Ground Chipbreaker) will be switched to GBA.

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)								(1) f for Grooving (mm/rev) (2) f for Turning (mm/rev) (3) ap for Turning (mm)					Remarks
	Cermet			PVD Coated Carbide		Carbide	CBN	PCD	GB○○%L 050~100	GB○○%L 125~200	GB○○%L 230~300	GB○○%L 330~400	GB○○%L 400~480	
	TN90	TC40N	TC60M	PR630	PR930	KW10	KBN510	KPD001 (KPD010)						
Carbon Steel	-	☆ 150-220	☆ 100-150	☆ 80-200	★ 80-180	-	-	-	(1) 0.03-0.08 (2) Not recom. (3) Not recom.	(1) 0.04-0.09 (2) 0.04-0.09 (3) Max. 0.3	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.8	
Alloy Steel	-	☆ 130-200	☆ 80-130	☆ 80-180	★ 80-160	-	-	-	(1) 0.03-0.07 (2) Not recom. (3) Not recom.	(1) 0.04-0.08 (2) 0.04-0.08 (3) Max. 0.3	(1) 0.05-0.09 (2) 0.05-0.09 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.8	
Stainless Steel	-	-	☆ 60-100	☆ 60-150	★ 60-130	-	-	-	(1) 0.03-0.07 (2) Not recom. (3) Not recom.	(1) 0.04-0.08 (2) 0.04-0.08 (3) Max. 0.3	(1) 0.05-0.09 (2) 0.05-0.09 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.8	
Cast Iron	-	-	-	-	-	★ 60-100	-	-	(1) 0.03-0.08 (2) Not recom. (3) Not recom.	(1) 0.04-0.09 (2) 0.04-0.09 (3) Max. 0.3	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.8	
Aluminum	-	-	-	-	-	★ 150-400	-	★ 150-2,000	(1) 0.05-0.12 (2) Not recom. (3) Not recom.	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.5	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.8	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	
Brass	-	-	-	-	-	★ 150-300	-	★ 200-800	(1) 0.05-0.12 (2) Not recom. (3) Not recom.	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.5	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.8	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	

★ :1st Recommendation ☆ :2nd Recommendation



Grooving

Recommended Cutting Conditions

◆ TGF inserts (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)							(1) f for Grooving (mm/rev) (2) f for Turning (mm/rev) (3) ap for Turning (mm)				Remarks
	Cermet		PVD Coated Carbide		Carbide	CBN	PCD	TGF32 [°] / _L 033~050-005	TGF32 [°] / _L 075~095-010	TGF32 [°] / _L 100~145-010	TGF32 [°] / _L 150~250-010	
	TC40N	PR1215	PR930	PR1115	KW10	KBN510	KPD001 (KPD010)					
Carbon Steel	☆ 150-220	★ 80-180	☆ 80-180	☆ 80-180	-	-	-	(1) 0.01-0.05 (2) Not recom. (3) Not recom.	(1) 0.02-0.07 (2) Not recom. (3) Not recom.	(1) 0.03-0.08 (2) 0.03-0.06 (3) Max. 0.2	(1) 0.03-0.08 (2) 0.03-0.06 (3) Max. 0.2	Coolant
Alloy Steel	☆ 130-200	★ 80-160	☆ 80-160	☆ 80-160	-	-	-	(1) 0.01-0.04 (2) Not recom. (3) Not recom.	(1) 0.02-0.06 (2) Not recom. (3) Not recom.	(1) 0.03-0.07 (2) 0.02-0.05 (3) Max. 0.2	(1) 0.03-0.07 (2) 0.02-0.05 (3) Max. 0.2	
Stainless Steel	-	☆ 60-130	☆ 60-130	★ 60-130	-	-	-	(1) 0.01-0.04 (2) Not recom. (3) Not recom.	(1) 0.02-0.06 (2) Not recom. (3) Not recom.	(1) 0.03-0.07 (2) 0.02-0.05 (3) Max. 0.2	(1) 0.03-0.07 (2) 0.02-0.05 (3) Max. 0.2	
Cast Iron	-	-	-	-	★ 60-100	-	-	(1) 0.01-0.05 (2) Not recom. (3) Not recom.	(1) 0.02-0.07 (2) Not recom. (3) Not recom.	(1) 0.03-0.08 (2) 0.03-0.06 (3) Max. 0.2	(1) 0.03-0.08 (2) 0.03-0.06 (3) Max. 0.2	
Aluminum	-	-	-	-	★ 150-400	-	★ 150-2,000	(1) 0.01-0.05 (2) Not recom. (3) Not recom.	(1) 0.02-0.07 (2) Not recom. (3) Not recom.	(1) 0.03-0.08 (2) 0.03-0.06 (3) Max. 0.2	(1) 0.03-0.08 (2) 0.03-0.06 (3) Max. 0.2	
Brass	-	-	-	-	★ 150-300	-	★ 200-800	(1) 0.01-0.04 (2) Not recom. (3) Not recom.	(1) 0.02-0.06 (2) Not recom. (3) Not recom.	(1) 0.03-0.07 (2) 0.02-0.05 (3) Max. 0.2	(1) 0.03-0.07 (2) 0.02-0.05 (3) Max. 0.2	

MEGA indicates MEGACOAT.

★ :1st Recommendation ☆ :2nd Recommendation

◆ TG inserts (Ground Chipbreaker) will be switched to GBA.

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)							f (mm/rev)					Remarks					
	Cermet		PVD Coated Carbide		Carbide	CBN	PCD	TG○○ [°] / _L 075~095	TG○○ [°] / _L 125~200	TG○○ [°] / _L 230~300	TG○○ [°] / _L 330~400	TG○○ [°] / _L 430~450						
	TN60	TC40N	TC60M	PR630	PR930	KW10	KBN510							KPD001 (KPD010)				
Carbon Steel	★ 150-220	-	-	-	-	-	-	-	-	-	-	-	0.03-0.07	0.03-0.08	0.05-0.1	0.05-0.12	0.05-0.12	Coolant
Alloy Steel	★ 130-200	-	-	-	-	-	-	-	-	-	-	-	0.02-0.06	0.03-0.07	0.05-0.09	0.05-0.1	0.05-0.1	Coolant

* Above cutting condition is for external grooving. Set both cutting speed and feed 10% lower for internal grooving.

★ :1st Recommendation ☆ :2nd Recommendation

◆ GH inserts (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)							(1) f for Grooving (mm/rev) (2) f for Turning (mm/rev) (3) ap for Turning (mm)				Remarks	
	Cermet		PVD Coated Carbide	Carbide	Ceramic			GH 40~50...	GH 55~70...	GH 75~80...	GH 100~120...		
	TN90	TC40N	TC60M	PR930	KW10	A65	A66N						PT600M
Carbon Steel	☆ 150-220	☆ 150-220	☆ 100-150	★ 80-180	-	-	-	-	(1) 0.07-0.2 (2) 0.07-0.15 (3) Max. 1.0	(1) 0.07-0.2 (2) 0.07-0.15 (3) Max. 1.0	(1) 0.1-0.25 (2) 0.1-0.2 (3) Max. 1.5	(1) 0.15-0.3 (2) 0.15-0.25 (3) Max. 2.0	Coolant
Alloy Steel	☆ 130-200	☆ 130-200	☆ 80-130	★ 80-160	-	-	-	-	(1) 0.07-0.18 (2) 0.07-0.13 (3) Max. 1.0	(1) 0.07-0.18 (2) 0.07-0.13 (3) Max. 1.0	(1) 0.1-0.23 (2) 0.1-0.18 (3) Max. 1.5	(1) 0.15-0.27 (2) 0.15-0.22 (3) Max. 2.0	
Stainless Steel	☆ 70-150	-	☆ 60-100	★ 60-130	-	-	-	-	(1) 0.07-0.16 (2) 0.07-0.13 (3) Max. 1.0	(1) 0.07-0.16 (2) 0.07-0.13 (3) Max. 1.0	(1) 0.1-0.21 (2) 0.1-0.18 (3) Max. 1.5	(1) 0.15-0.25 (2) 0.15-0.22 (3) Max. 2.0	
Cast Iron	-	-	-	-	★ 60-100	☆ 150-300	☆ 150-300	☆ 150-300	KW10 (1) 0.07-0.2 (2) 0.07-0.15 (3) Max. 1.0 A65/A66N (1) 0.03-0.07 (2) Not recom. (3) Not recom.	KW10 (1) 0.07-0.2 (2) 0.07-0.15 (3) Max. 1.0 A65/A66N (1) 0.03-0.07 (2) Not recom. (3) Not recom.	KW10 (1) 0.1-0.25 (2) 0.1-0.2 (3) Max. 1.5 A65/A66N (1) 0.05-0.09 (2) Not recom. (3) Not recom.	KW10 (1) 0.15-0.3 (2) 0.15-0.25 (3) Max. 2.0 A65/A66N (1) 0.05-0.09 (2) Not recom. (3) Not recom.	
Aluminum	-	-	-	-	★ 150-400	-	-	-	(1) 0.07-0.2 (2) 0.07-0.15 (3) Max. 1.0	(1) 0.07-0.2 (2) 0.07-0.15 (3) Max. 1.0	(1) 0.1-0.25 (2) 0.1-0.2 (3) Max. 1.5	(1) 0.15-0.3 (2) 0.15-0.25 (3) Max. 2.0	
Brass	-	-	-	-	★ 150-300	-	-	-	(1) 0.07-0.2 (2) 0.07-0.15 (3) Max. 1.0	(1) 0.07-0.2 (2) 0.07-0.15 (3) Max. 1.0	(1) 0.1-0.25 (2) 0.1-0.2 (3) Max. 1.5	(1) 0.15-0.3 (2) 0.15-0.25 (3) Max. 2.0	
Hard materials	-	-	-	-	-	☆ 40-80	☆ 40-80	☆ 40-80	(1) 0.02-0.05 (2) 0.01-0.03 (3) Max. 0.1	(1) 0.02-0.05 (2) 0.01-0.03 (3) Max. 0.2	(1) 0.02-0.05 (2) 0.01-0.04 (3) Max. 0.2		

* Above cutting condition is for external grooving. Set both cutting speed and feed 10% lower for internal grooving.

★ :1st Recommendation ☆ :2nd Recommendation

◆ GHU Inserts (Molded Chipbreaker)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)							(1) f for Grooving (mm/rev) (2) f for Turning (mm/rev) (3) ap for Turning (mm)				Remarks
	Cermet		CVD Coated Carbide	PVD Coated Carbide	Ceramic			GHU 40-20	GHU 50-20	GHU 60-20		
	TN60	TC40N	TC60M	CR9025	PR630	PR930	A65				A66N	
Carbon Steel	☆ 130-200	-	-	☆ 80-180	-	-	-	-	(1) 0.06-0.12 (2) 0.05-0.1 (3) Max. 1.0	(1) 0.06-0.12 (2) 0.05-0.1 (3) Max. 1.0	(1) 0.06-0.15 (2) 0.05-0.12 (3) Max. 1.5	Coolant
Alloy Steel	☆ 100-180	-	-	☆ 80-160	-	-	-	-	(1) 0.06-0.12 (2) 0.05-0.1 (3) Max. 1.0	(1) 0.06-0.12 (2) 0.05-0.1 (3) Max. 1.0	(1) 0.06-0.15 (2) 0.05-0.12 (3) Max. 1.5	
Stainless Steel	-	-	-	☆ 60-130	-	-	-	-	(1) 0.06-0.1 (2) 0.05-0.08 (3) Max. 0.8	(1) 0.06-0.1 (2) 0.05-0.08 (3) Max. 0.8	(1) 0.06-0.12 (2) 0.05-0.1 (3) Max. 1.2	

* Above cutting condition is for external grooving. Set both cutting speed and feed 10% lower for internal grooving.

★ :1st Recommendation ☆ :2nd Recommendation

G

Grooving

◆ GA Inserts (Molded Chipbreaker)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)								(1) f for Grooving (mm/rev) (2) f for Turning (mm/rev) (3) ap for Turning (mm)			Remarks
	Cermet				CVD Coated Carbide	PVD Coated Carbide		Carbide	GA 30	GA 40	GA 50	
	TN60	TN90	TC40N	TC60M	CR9025	PR630	PR930	KW10				
Carbon Steel	☆ 130-200	-	-	-	★ 80-180	-	-	-	(1) 0.06~0.18 (2) 0.05~0.15 (3) Max. 0.8	(1) 0.06~0.21 (2) 0.05~0.17 (3) Max. 1.0	(1) 0.06~0.25 (2) 0.05~0.2 (3) Max. 1.3	Coolant
Alloy Steel	☆ 100-180	-	-	-	★ 80-160	-	-	-	(1) 0.06~0.15 (2) 0.05~0.12 (3) Max. 0.3	(1) 0.06~0.18 (2) 0.05~0.15 (3) Max. 0.5	(1) 0.06~0.22 (2) 0.05~0.18 (3) Max. 0.8	
Stainless Steel	-	-	-	-	★ 60-130	-	-	-	(1) 0.06~0.1 (2) 0.05~0.08 (3) Max. 0.8	(1) 0.06~0.1 (2) 0.05~0.08 (3) Max. 0.8	(1) 0.06~0.12 (2) 0.05~0.1 (3) Max. 1.2	

★ :1st Recommendation ☆ :2nd Recommendation

◆ GIA Inserts (Molded Chipbreaker)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)								(1) f for Grooving (mm/rev) (2) f for Turning (mm/rev) (3) ap for Turning (mm)			Remarks
	Cermet				CVD Coated Carbide	PVD Coated Carbide		Carbide	GIA 30	GIA 40	GIA 50	
	TN60	TN90	TC40N	TC60M	CR9025	PR630	PR930	KW10				
Carbon Steel	☆ 60-120	-	-	-	★ 60-120	-	-	-	(1) 0.04~0.08 (2) 0.02~0.08 (3) Max. 0.3	(1) 0.04~0.09 (2) 0.02~0.08 (3) Max. 0.4	(1) 0.05~0.1 (2) 0.05~0.08 (3) Max. 0.5	Coolant
Alloy Steel	☆ 60-100	-	-	-	★ 60-100	-	-	-	(1) 0.04~0.07 (2) 0.02~0.07 (3) Max. 0.3	(1) 0.04~0.07 (2) 0.02~0.07 (3) Max. 0.4	(1) 0.05~0.08 (2) 0.05~0.08 (3) Max. 0.5	
Stainless Steel	-	-	-	-	★ 60-80	-	-	-	(1) 0.04~0.07 (2) 0.02~0.07 (3) Max. 0.3	(1) 0.04~0.07 (2) 0.02~0.07 (3) Max. 0.4	(1) 0.05~0.08 (2) 0.05~0.08 (3) Max. 0.5	

★ :1st Recommendation ☆ :2nd Recommendation

◆ PSG-S (Tip-Bars)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)				PSG05	PSG06 PSG07 PSG08	Remarks
	PVD Coated Carbide		Carbide				
	PR930		KW10				
Carbon Steel	★ 30-100				~0.03	-0.05	Coolant
Stainless Steel	★ 30-80				~0.02	-0.03	
Non-ferrous Metals			★ ~300		~0.05	-0.08	

★ :1st Recommendation

Note for using the grooving tip-bars PSG-S type

How to Install

Small dia. internal grooving requires accurate installation because an error of insert height or angle can affect the machining precision. When installing, set the cutting edge higher than the center line as shown in the Table 1. The cutting edge of all the PSG-S type tip-bars is designed to be higher than the center line. (L4 of Tip-Bars dimension)

■ FMM / FMN

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)						Face Grooving (FMM / FMN)			Turning (FMM)			Remarks
	Cermet		CVD Coated Carbide	PVD Coated Carbide		Carbide	Edge Width (mm)			Edge Width (mm)			
	TN90	CR9025	PR915	PR930	PR905	KW10	3.0	4.0	5.0 / 6.0	3.0	4.0	5.0 / 6.0	
Carbon Steel	☆ 100-220	☆ 80-200	☆ 80-200	★ 80-200	-	-	0.03~0.05	0.03~0.08	0.05~0.10	0.05~0.10	0.05~0.25	0.10~0.30	Coolant
Alloy Steel	☆ 80-200	☆ 70-180	☆ 70-180	★ 70-180	-	-	0.03~0.05	0.03~0.08	0.05~0.10	0.05~0.10	0.05~0.25	0.10~0.30	
Stainless Steel	☆ 70-160	☆ 60-150	★ 60-150	☆ 60-150	-	-	0.03~0.05	0.03~0.08	0.05~0.10	0.05~0.10	0.05~0.25	0.10~0.30	
Cast Iron	-	-	-	-	★ 80-180	☆ 70-150	0.03~0.05	0.03~0.08	0.05~0.10	0.05~0.10	0.05~0.25	0.10~0.30	
Aluminum	-	-	-	-	-	★ 200-500	0.03~0.05	0.03~0.08	0.05~0.10	0.05~0.10	0.05~0.25	0.10~0.30	
Brass	-	-	-	-	-	★ 100-200	0.03~0.05	0.03~0.08	0.05~0.10	0.05~0.10	0.05~0.25	0.10~0.30	

Set the feed rate 1/100 of edge width on the first groove and check chip evacuation.

FMN type Inserts are only for Deep Grooving, and when used for turning, set to ap=0.2mm and under.

★ :1st Recommendation ☆ :2nd Recommendation

◆ Ref. to the notes below for turning conditions.

ap and f of FMM

	Recommended Cutting Conditions	
ap (MAX.) (mm)	under 50% of Edge Width	·ap ≤ 0.5w
f (MAX.) (mm/rev)	under 3~5% of Edge Width	·f ≤ [0.03(Min.) ~ 0.05(Max.)]w

ap x f should be as follows.

Load(mm) \ Edge Width(mm)	3.0	4.0	5.0	6.0
ap x f	~0.09	~0.14	~0.25	~0.36

·apxf ≤ 0.01w²



G
Grooving

Recommended Cutting Conditions

◆ GV Inserts (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)						(1) f for Grooving (mm/rev) (2) f for Turning (mm/rev) (3) ap for Turning (mm)					Remarks		
	Cermet			MEGACOAT	PVD Coated Carbide	Carbide	GV ⁵ /L 100-300...SS 100-300...S	GV ⁵ /L 145-185...B	GV ⁵ /L 200-280...B	GV ⁵ /L 300-400...B				
	TN90	TC40N	TC60M	PR1225	PR930	KW10	GV ⁵ /L 100-340...A 200-300...AR		GV ⁵ /L 200-100BR	GV ⁵ /L 300-150BR	GV ⁵ /L 280-300...C		GV ⁵ /L 340-400...C	GV ⁵ /L 430-500...C
Carbon Steel	☆ 120-180	☆ 120-180	☆ 80-120	★ 80-160	☆ 80-140	-	(1) 0.03-0.08 (2) 0.03-0.08 (3) Max. 0.3	(1) 0.03-0.08 (2) 0.03-0.08 (3) Max. 0.3	(1) 0.04-0.09 (2) 0.04-0.09 (3) Max. 0.3	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.04-0.09 (2) 0.04-0.09 (3) Max. 0.3	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.5	
Alloy Steel	☆ 100-160	☆ 100-160	☆ 80-100	★ 80-140	☆ 80-120	-	(1) 0.03-0.07 (2) 0.03-0.1 (3) Max. 0.3	(1) 0.03-0.07 (2) 0.03-0.1 (3) Max. 0.3	(1) 0.04-0.08 (2) 0.04-0.08 (3) Max. 0.3	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.04-0.08 (2) 0.04-0.08 (3) Max. 0.3	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	
Stainless Steel	☆ 70-130	-	☆ 60-100	★ 60-130	☆ 60-110	-	(1) 0.03-0.07 (2) 0.03-0.1 (3) Max. 0.3	(1) 0.03-0.07 (2) 0.03-0.1 (3) Max. 0.3	(1) 0.04-0.08 (2) 0.04-0.08 (3) Max. 0.3	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.04-0.08 (2) 0.04-0.08 (3) Max. 0.3	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	
Cast Iron	-	-	-	-	-	★ 60-100	(1) 0.03-0.08 (2) 0.03-0.08 (3) Max. 0.3	(1) 0.03-0.08 (2) 0.03-0.08 (3) Max. 0.3	(1) 0.04-0.09 (2) 0.04-0.09 (3) Max. 0.3	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.04-0.09 (2) 0.04-0.09 (3) Max. 0.3	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.5	
Aluminum	-	-	-	-	-	★ 150-300	(1) 0.05-0.12 (2) 0.05-0.12 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.12 (3) Max. 0.5	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.5	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.5	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	
Brass	-	-	-	-	-	★ 100-250	(1) 0.05-0.12 (2) 0.05-0.12 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.12 (3) Max. 0.5	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.5	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.5	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	

* Use MEGACOAT, PVD coated grade or carbide for turning with edge width 1mm (GV⁵/L100SS / 100S / 100A)

★ :1st Recommendation ☆ :2nd Recommendation

◆ GVF Inserts (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)							(1) f for Grooving (mm/rev) (2) f for Turning (mm/rev) (3) ap for Turning (mm)					Remarks
	Cermet				MEGACOAT	PVD Coated Carbide	Carbide	GVF ⁵ /L 200-340...A	GVF ⁵ /L 250-350...B	GVF ⁵ /L 400-490...B	GVF ⁵ /L 350-450...C	GVF ⁵ /L 500-600...C	
	TN60	TN90	TC40N	TC60M	PR1225	PR930	KW10	GVF ⁵ /L 200-100AR ~300-150AR	GVF ⁵ /L 300-150BR	GVF ⁵ /L 400-200BR			
Carbon Steel	-	☆ 150-220	☆ 150-220	☆ 100-150	★ 80-200	☆ 80-180	-	(1) 0.03-0.08 (2) 0.03-0.08 (3) Max. 0.3	(1) 0.04-0.09 (2) 0.04-0.09 (3) Max. 0.3	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.8	
Alloy Steel	-	☆ 130-200	☆ 130-200	☆ 80-130	★ 80-180	☆ 80-160	-	(1) 0.03-0.07 (2) 0.03-0.1 (3) Max. 0.3	(1) 0.04-0.08 (2) 0.04-0.08 (3) Max. 0.3	(1) 0.05-0.09 (2) 0.05-0.09 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.8	
Stainless Steel	-	☆ 70-150	-	☆ 60-100	★ 80-150	☆ 60-130	-	(1) 0.03-0.07 (2) 0.03-0.1 (3) Max. 0.3	(1) 0.04-0.08 (2) 0.04-0.08 (3) Max. 0.3	(1) 0.05-0.09 (2) 0.05-0.09 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.8	
Cast Iron	-	-	-	-	-	-	★ 60-100	(1) 0.03-0.08 (2) 0.03-0.08 (3) Max. 0.3	(1) 0.04-0.09 (2) 0.04-0.09 (3) Max. 0.3	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.1 (3) Max. 0.8	
Aluminum	-	-	-	-	-	-	★ 150-400	(1) 0.05-0.12 (2) 0.05-0.12 (3) Max. 0.5	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.5	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.8	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	
Brass	-	-	-	-	-	-	★ 150-300	(1) 0.05-0.12 (2) 0.05-0.12 (3) Max. 0.5	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.5	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.8	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	(1) 0.08-0.15 (2) 0.08-0.15 (3) Max. 0.8	

Apply a sufficient amount of coolant.

The ap should be under 0.5mm if a good surface finish is required.

★ :1st Recommendation ☆ :2nd Recommendation

◆ FTK

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)					Edge Width (mm)				Remarks
	Cermet	CVD Coated Carbide	PVD Coated Carbide	Carbide		4.0	5.0			
	TN90	CR9025	PR660	PR930	KW10	f (mm/rev)				
Carbon Steel	☆ 120-200	★ 80-180	☆ 60-130	☆ 60-130	-	0.05~0.15	0.05~0.15			
Alloy Steel	☆ 100-160	★ 70-150	☆ 60-130	☆ 60-130	-	0.05~0.15	0.05~0.15			
Stainless Steel	☆ 80-150	☆ 60-140	★ 50-120	☆ 50-120	-	0.05~0.15	0.05~0.15			
Cast Iron	-	-	-	-	★ 50-100	0.10~0.30	0.10~0.30			
Aluminum	-	-	-	-	★ 200-450	0.05~0.25	0.05~0.25			
Brass	-	-	-	-	★ 100-200	0.05~0.25	0.05~0.25			

★ :1st Recommendation ☆ :2nd Recommendation

◆ GMN Inserts (CBN / PCD)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)		(1) f for Grooving (mm/rev) (2) f for Turning (mm/rev) (3) ap for Turning (mm)				Remarks		
	CBN		PCD		GMN2	GMN3		GMN4 GMN5	GMN6
	KBN510 KBN525		KPD001 (KPD010)						
Aluminum	-	-	★ 150-2,000	-	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.8	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.8	(1) 0.08-0.18 (2) 0.08-0.18 (3) Max. 0.8	(1) 0.10-0.20 (2) 0.10-0.20 (3) Max. 0.8	
Brass	-	-	★ 200-800	-	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.5	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.8	(1) 0.08-0.18 (2) 0.08-0.18 (3) Max. 0.8	(1) 0.10-0.20 (2) 0.10-0.20 (3) Max. 0.8	
Cast Iron	★ 150-400	-	-	-	(1) 0.04-0.09 (2) 0.04-0.09 (3) Max. 0.3	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.5	(1) 0.05-0.12 (2) 0.05-0.12 (3) Max. 0.5	(1) 0.05-0.15 (2) 0.05-0.15 (3) Max. 0.8	
Hard materials	★ 80-120	-	-	-	(1) 0.02-0.05 (2) 0.01-0.03 (3) Max. 0.1	(1) 0.03-0.07 (2) 0.01-0.05 (3) Max. 0.2	(1) 0.03-0.08 (2) 0.03-0.08 (3) Max. 0.3	(1) 0.05-0.1 (2) 0.05-0.1 (3) Max. 0.4	

★ :1st Recommendation

G

Grooving

Recommended Cutting Conditions

GMG / GMM / GMN / GMGA

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)						Grooving				Turning				Remarks
	Cermet		CVD Coated Carbide		PVD Coated Carbide		Carbide		Edge Width W (mm)						
	TN90	CR9025	PR915	PR930	PR905	KW10	2.0~3.0	4.0	5.0	6.0 / 8.0	2.0~3.0	4.0	5.0	6.0 / 8.0	
							f (mm/rev)				f (mm/rev)				
Carbon Steel	☆ 100-220	☆ 80-200	☆ 80-200	★ 80-200	-	-	0.05-0.15	0.10-0.25	0.15-0.35	0.20-0.35	0.10-0.20	0.15-0.30	0.20-0.40	0.25-0.40	
Alloy Steel	☆ 80-200	☆ 70-180	☆ 70-180	★ 70-180	-	-	0.05-0.15	0.10-0.25	0.15-0.35	0.20-0.35	0.10-0.20	0.15-0.30	0.20-0.40	0.25-0.40	
Stainless Steel	☆ 70-160	☆ 60-150	★ 60-150	☆ 60-150	-	-	0.05-0.15	0.10-0.20	0.15-0.35	0.20-0.35	0.10-0.20	0.15-0.25	0.20-0.40	0.25-0.40	
Cast Iron	-	-	-	-	★ 100-200	☆ 70-150	0.05-0.20	0.10-0.30	0.15-0.40	0.20-0.40	0.10-0.25	0.15-0.35	0.20-0.45	0.25-0.45	
Aluminum	-	-	-	-	-	★ 200-500	0.05-0.20	0.08-0.25	0.10-0.25	0.12-0.30	0.10-0.20	0.10-0.25	0.10-0.25	0.15-0.30	
Brass	-	-	-	-	-	★ 100-200	0.05-0.15	0.08-0.20	0.10-0.25	0.12-0.30	0.10-0.20	0.10-0.25	0.10-0.25	0.15-0.30	

◆ Ref. to the notes below for turning conditions.

★ :1st Recommendation ☆ :2nd Recommendation

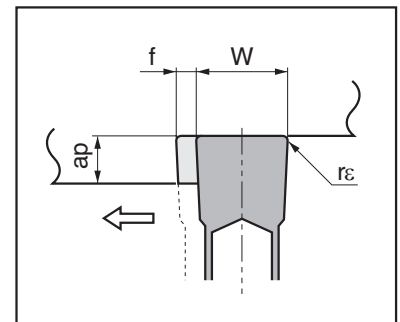
(1) When using KGM Toolholder

	Recommended Cutting Conditions	
ap (MAX.) (mm)	under 80% of Edge Width	·ap ≤ 0.8W
f (MAX.) (mm/rev)	under 10% of Edge Width	·f ≤ 0.1W

(ap) × (f) shall not exceed 1/2 of ap (MAX.) × f (MAX.)

Load(mm)	Edge Width(mm)	2.0~2.5	3.0	4.0	5.0	6.0	8.0
ap × f		~0.20	~0.36	~0.64	~1.00	~1.44	~2.56

$$\cdot ap \times f \leq \frac{1}{2} \times 0.8W \times 0.1W = 0.04W^2$$



(2) When using KGM-T Toolholder (Deep grooving type)

Use 90% of KGM conditions

(3) When using KGMM / KGMS / KFMS-8 Toolholder

	Recommended Cutting Conditions	
ap (MAX.) (mm)	under 50% of Edge Width	·ap ≤ 0.5W
f (MAX.) (mm/rev)	under 4% of Edge Width	·f ≤ 0.04W

should be as follows. (under 50% of KGM)

Load(mm)	Edge Width(mm)	2.0~2.5	3.0	4.0	5.0	6.0	8.0
ap × f		~0.10	~0.18	~0.32	~0.50	~0.72	~1.28

·apxf ≤ 0.02W²

(4) When using KIGM Toolholder

	Recommended Cutting Conditions	
ap (MAX.) (mm)	under 70% of Edge Width	·ap ≤ 0.7W
f (MAX.) (mm/rev)	under 8% of Edge Width	·f ≤ 0.08W

should be as follows. (under 70% of KGM)

Load(mm)	Edge Width(mm)	3.0	4.0	5.0
ap × f		~0.25	~0.44	~0.70

·apxf ≤ 0.04W²

GMG / GMM / GMGA 8030 (Face Grooving)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)						Face Grooving		Turning		Remarks
	Cermet		CVD Coated Carbide		PVD Coated Carbide		Carbide		Edge Width W (mm)		
	TN90	CR9025	PR915	PR930	PR905	KW10	8.0		8.0		
Carbon Steel	☆ 100-220	☆ 80-160	☆ 80-160	★ 80-160	-	-	0.1~0.2		0.1~0.25		
Alloy Steel	☆ 80-160	☆ 70-160	☆ 70-160	★ 70-160	-	-	0.1~0.2		0.1~0.25		
Stainless Steel	☆ 70-140	☆ 60-130	★ 60-130	☆ 60-130	-	-	0.1~0.2		0.1~0.25		
Cast Iron	-	-	-	-	★ 80-180	☆ 70-130	0.1~0.3		0.1~0.35		
Aluminum	-	-	-	-	-	★ 200-300	0.08~0.25		0.08~0.30		
Brass	-	-	-	-	-	★ 100-150	0.08~0.25		0.08~0.30		

★ :1st Recommendation ☆ :2nd Recommendation



Guide for External Grooving

Point (I) (Turning after Grooving)

1) Grooving Depth Over 0.5mm: For roughing (Refer to Fig.1)

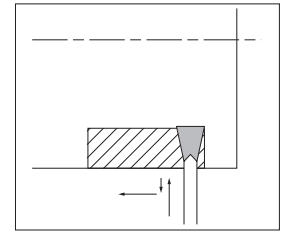
Before turning, pull the tool back about 0.1mm after grooving, instead of turning subsequent to grooving.

(Failure to pull the tool back before traverse machining will result in an unbalanced load applied on only one side of the cutting edge.)

2) Grooving Depth under 0.5mm: For finishing (Refer to Fig.2)

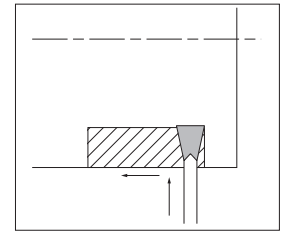
Turning subsequent to grooving is possible because shallow groove depths relate a small load on the cutting edge.

(Retention time is not necessary.)



Before turning, pull the tool back about 0.1mm after grooving.
(Grooving Depth Over 0.5mm: At roughing)

Fig.1



Turning subsequent to grooving
(Grooving Depth under 0.5mm: At finishing)

Fig.2

Point (II)

1) When widening the groove width (Refer to Fig.3), apply the "Step Turning."

2) The widened groove and side walls should be finished last.

(For better chip control, ap over 0.5mm is recommended.)

Note) If the workpiece is not supported at the center, reduce the feed rate when grooving towards center.

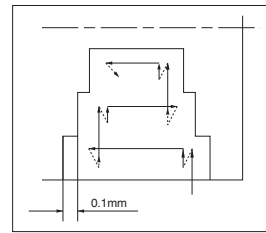


Fig.3

G

Grooving

Guide for Face Grooving

<Toolholder Selection>

(1) Choose the best tool depending on the groove width.

The Cutting Dia. ϕD listed in the catalog indicates the depth of the first plunge of face grooving as shown in Fig.1.



(2) Confirm Grooving Depth (dimension T)



(3) It is recommended to install the toolholder in the reverse position. (Fig. 2)

(This will provide smooth chip flow and chip clearance.)

<Guide for turning>

Turning direction should be from the outer diameter to the inner diameter as shown in Fig.3. This improves chip evacuation.

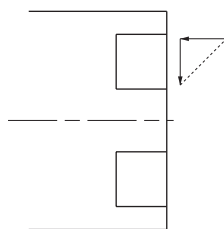


Fig.3

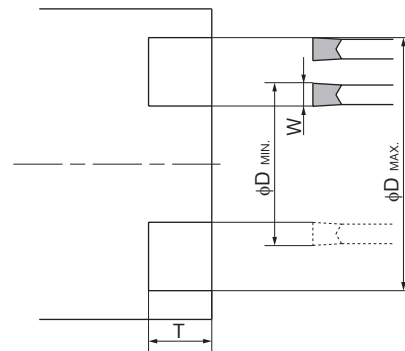


Fig.1

Toolholder	Right-hand (R)	Toolholder	Left-hand (L)
	Insert		Insert

Fig.2 Toolholder's Hand and Rotation

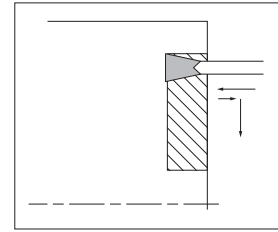
■ Guide for Face Grooving (Continued)

● Point (I) (Turning after Grooving)

1) Grooving Depth Over 0.5mm: For roughing (Refer to Fig.4)

Before turning, pull the tool back about 0.1mm after grooving, instead of turning subsequent to grooving.

(Failure to pull the tool back before traverse machining will result in an unbalanced load applied on only one side of the cutting edge.)



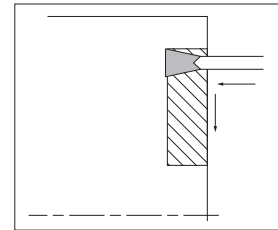
Before turning, pull the tool back about 0.1mm after grooving.
(Grooving Depth Over 0.5mm: At roughing)

Fig.4

2) Grooving Depth under 0.5mm: For finishing (Refer to Fig.5)

Turning subsequent to grooving is possible because shallow groove depths relate a small load on the cutting edge.

(Retention time is not necessary.)



Turning subsequent to grooving
(Grooving Depth under 0.5mm: At finishing)

Fig.5

● Point (II)

1) When widening the groove width. (Ref. to Fig.6)

Apply the "Step Turning"

2) The widened groove and side walls should be finished last.

(For better chip control, ap over 0.5mm is recommended.)

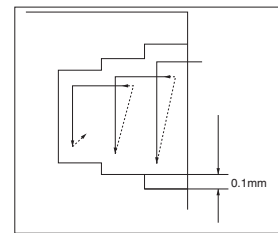


Fig.6

● Trouble shooting

Trouble	Countermeasures
Whitish trace remains at the groove bottom.	<p>(1) Increase the cutting speed for finishing process only. (This can handle most of the cases.) If the method is not successful, try (2) as follows.</p> <p>(2) Check the insert edge's parallelness. Adjustment: Apply the insert edge to the workpiece face and adjust the toolholder within the angle of $\pm 5^\circ$. (Fig.7)</p> <p style="text-align: right;">Fig.7</p>
Chips are entangled.	<p>(1) Install the toolholder in the reverse position. Adjust the coolant flow to the cutting edge.</p> <p>(2) When widening the groove, do not machine one deep groove. Instead, repeat shallow grooving and turning.</p>
Insert cracks when turning.	Reverse the facing direction.
Groove is not straight.	<p>Check the edge's parallelness. Decrease the feed rate.</p>

Guide for Grooving

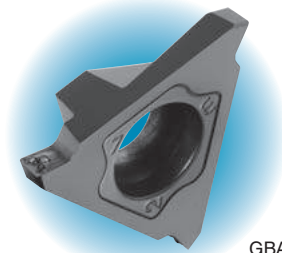
● Guide for Grooving with Cermet Insert (Steel)

1. Set the f under 0.12mm/rev (0.05~0.10mm/rev normally).
2. Coolant is recommended.
3. Set the cutting speed $V_c=150\sim 220\text{m/min}$.
4. Set the toolholder overhang as short as possible.

● How to Improve Surface Finish (when surface roughness below $3\mu\text{m Rz}$ is required)

1. Increase the cutting speed ($V_c=220\text{m/min MAX.}$)
2. Program retention time at the groove bottom.
3. Apply a light hone to the cutting edge by hand lapper.

● Chip Control of Grooving Insert with Molded Chipbreaker

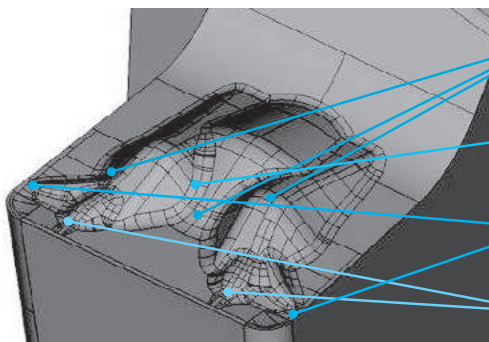


GBA GM Chipbreaker

1. Good chip control to cover wide application range stable chip control at high cutting speed, covering wide range of feed rate
2. Improved chip control and excellent surface finish
Superior chip control performance and MEGACOAT PR1215 realizes the excellent surface quality
3. Chip control improvement at automated production line.
(prevent frequent machine stop)

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Multi Bump Design



Center bump and dent squeeze and control chips

Helps modifying chip shape

Stable chip control at shoulder grooving and chamfering

Front bump: Stabilize chip control at low feed rate

Smooth chip control due to optimum bump layout on the chipbreaker

■ Alternative Toolholder Reference Table for Grooving Toolholder

Description	Conventional Toolholder			Alternative Toolholder			Ref. to Page	
	Overall length (mm)	Spare Parts			Description	Overall length (mm)		Remarks
		Clamp Screw	Wrench	Wrench				
KTGF ^{®/L} 1010K-16F	125	SB-4070TRW	FT-8	-	KTGF ^{®/L} 1010JX-16F	120	G14	
1212M-16F	150				1212JX-16F	120		
1616M-16F	150				1616JX-16F	120		
KGM ^{®/L} 0810K-1.5-125	125	SE-40120TR	-	LTW-15S	-	-	No replacement	
1010K-1.5-125	125				KGM ^{®/L} 1010JX-1.5	120		
1212M-1.5-150	150				1212JX-1.5	120		
KGM ^{®/L} 0810K-2-125	125	SE-40120TR	-	LTW-15S	-	-	No replacement	
1010K-2-125	125				KGM ^{®/L} 1010JX-2	120	G34	
1212M-2-150	150				1212JX-2	120		
KGM ^{®/L} 1616M-2-150	150	SE-50125TR	-	LTW-20	1616JX-2	120		
KGM ^{®/L} 1010K-2.5-125	125	SE-40120TR	-	LTW-15S	KGM ^{®/L} 1010JX-2.5	120	G34	
1212M-2.5-150	150				1212JX-2.5	120		
1616M-2.5-150	150				1616JX-2.5	120		
KGM ^{®/L} 1616M-3-150	150	SE-50125TR	-	LTW-20	KGM ^{®/L} 1616JX-3	120		

Note) The corresponding alternative toolholder may be different from the conventional toolholder in insert clamping system or insert size.
Make sure of their specifications by referring to the catalog or other documents.

Grooving



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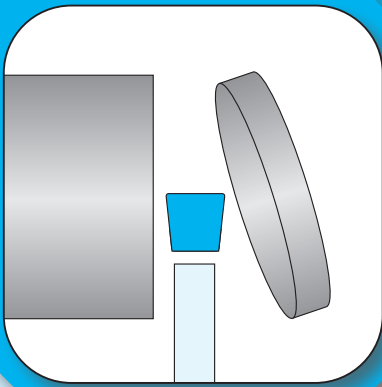
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Cut-Off

H1~H30



H

Product Lineup **H2**

Guide for Cut-Off **H3**

Summary of Cut-Off **H4~H5**

Cut-Off Toolholders (for small diameter cut-off) **H6~H11**



KTKF Lateral side screw clamp toolholder **H8**

KTKFS (for sub spindle tooling) Lateral side screw clamp toolholder **H10**

Cut-Off Toolholders (for 2-edge insert , KGD) **H12~H19**



KGD (for automatic lathe) Integral Toolholder **H14**

KGDS (for sub spindle tooling) Integral Toolholder **H15**

KGD Integral Toolholder **H16**

KGD-S Separate Toolholder **H17**

Cut-Off Toolholders (for 2-edge insert , KGM) **H20~H24**



KGM (for automatic lathe) Integral Toolholder **H22**

KGM Integral Toolholder **H22**

KGM-T Integral Toolholder **H23**

Cut-Off Toolholders (for 1-edge insert) **H25~H28**



KTKB-SS / KTKB-S Blade **H26**

KTKTB / KTKTBF Toolblock **H27**

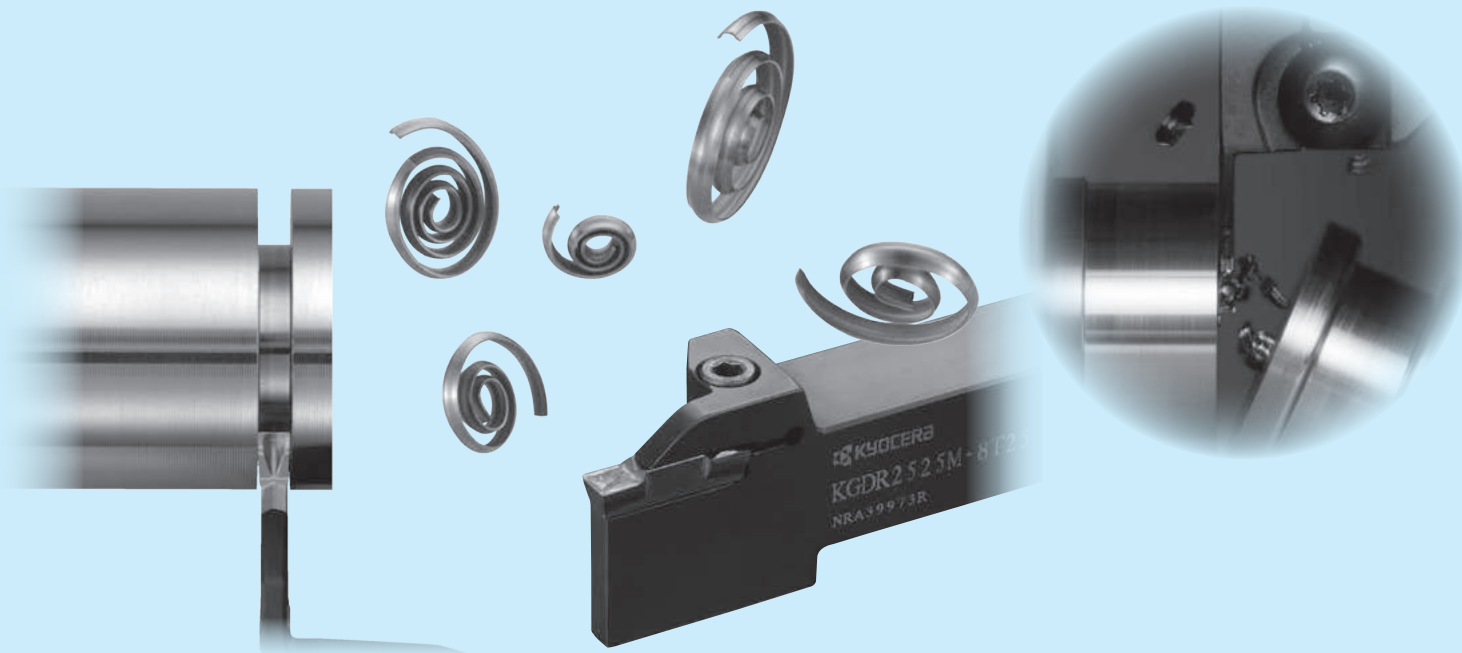
KTKH-S Integral Toolholder **H28**

Technical Information **H29**



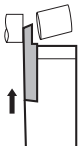
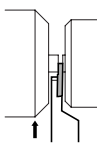
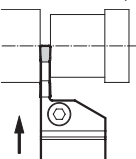
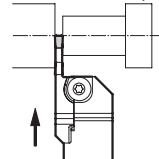
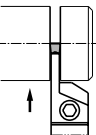
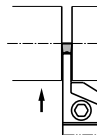
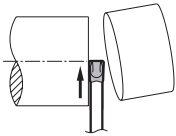
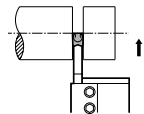
Recommended Cutting Conditions **H29**

Alternative Toolholder Reference Table for Cut-off Toolholder **H30**



Product Lineup







Product Lineup

For Small Diameter Cut-Off	For Automatic Lathe Cut-off Dia. $\phi 5 \sim \phi 12$ ~ $\phi 6$	KTKF (H8)  Edge Width: 0.5~2.0mm		For sub spindle tooling Cut-off Dia. $\phi 6 \sim \phi 12$ $\phi 14 \sim \phi 16$	KTKFS (H10)  Edge Width: 1.0~2.0mm
	KGD	Bolt Clamp Cut-off Dia. $\phi 12 \sim \phi 50$	KGD (H14)  Edge Width: 1.3~4.0mm	KGD-S (H17)  Edge Width: 2.0~4.0mm	For sub spindle tooling Cut-off Dia. ~ $\phi 24$
KGM	Bolt Clamp Cut-off Dia. $\phi 18 \sim \phi 60$	KGM (H22)  Edge Width: 1.5~4.0mm, 3~8mm	KGM-T (H23)  Edge Width: 2.0~6.0mm		
KTKB KTKH (1-edge)	Toolholder Type Cut-off Dia. $\phi 30 \sim \phi 79$	KTKH-S (H28)  Edge Width: 2.2~5.1mm		Blade type Cut-off Dia. $\phi 32 \sim \phi 120$	KTKB-S(S) (H26)  Edge Width: 1.6~9.6mm

H

Cut-off

Cut-Off Tools

Series Name	Shape	Advantage	Applications
For Small Diameter Cut-Off		<ol style="list-style-type: none"> 1) Insert clamp is side screw type from lateral side 2) 2-edge insert 3) Max. Cut-off Dia. : $\phi 16$ 	<ol style="list-style-type: none"> 1) For cut-off and grooving of small workpieces 2) For automatic lathe, small machine
KGD		<ol style="list-style-type: none"> 1) Insert is clamped from top side 2) 1-edge and 2-edge inserts available 3) Integral type and separate type are available 4) Max. Cut-off Dia. : $\phi 50$ 	<ol style="list-style-type: none"> 1) PM Chipbreaker ... For Cut-Off 2) PH Chipbreaker ... For Cut-Off (High Feed Rate) For Grooving 3) PG Chipbreaker ... For Cut-Off (for automatic lathe) Sharp-Cutting Oriented 4) PF Chipbreaker ... For Cut-Off (for automatic lathe) Low feed 5) PQ Chipbreaker ... For Cut-Off (for automatic lathe) Medium feed
KGM		<ol style="list-style-type: none"> 1) Insert is clamped from top side 2) 1-edge and 2-edge inserts available 3) Max. Cut-off Dia. : $\phi 60$ 	<ol style="list-style-type: none"> 1) For cut-off and grooving of small workpieces 2) For automatic lathe, small machine 3) TMR-Chipbreaker provides stable chip control up to high feed rate ranges
KTKB KTKH		<ol style="list-style-type: none"> 1) Self-Clamping System Tap the insert lightly with a plastic hammer to set it in the pocket 2) 1-edge insert 3) Blade type and Integral Shank type 4) Max. Cut-off Dia. : $\phi 120$ 	<ol style="list-style-type: none"> 1) For cut-off and deep grooving 2) Standard chipbreaker is general cut-off type Feed rate: over 0.1mm/rev <p>P-Chipbreaker is for cut-off at low feed rates Feed rate: 0.03~0.08mm/rev</p>  

Guide for Cut-Off

Tool Selection

		For Small Diameter Cut-Off	KGD	KGM	KTKB / KTKH
Insert	1. Insert's Edge Number 1-edge Insert...For Larger Dia. Workpiece (Max. $\phi 120$) 2-edge Insert...For Smaller Dia. Workpiece Cost per corner is reduced	-	-	-	✓
	2. Use a neutral angle insert if there is no limit to the finished shape.	TKF...S TKF...NB TKFS...S	GDM GDMS	GMM	TKN
	3. Use an angled insert to reduce the size of the remaining boss.	TKF...DR	GDM- ^{R/L} (● Fig. 2)	GMM- ^{R/L} (● Fig. 2)	TK ^{R/L} (● Fig. 1)
	4. Use a sharp-cornered lead-angled insert to make the remaining boss much smaller when machining small parts and thin parts.	TKF...DR	-	GMM- ^{R/L} (● Fig. 2)	-
	5. Use the minimum width insert suitable for the machining.	✓	✓	✓	✓
Toolholder	1. Use a suitable toolholder (blade) for the workpiece dia.	✓	✓	✓	✓
	2. Use a more rigid toolholder (blade).	✓	✓	✓	✓
	3. Use a back clamp toolholder if there is no space for clamping tools from top side (automatic lathe).	✓	-	-	-

How to select cut-off inserts with / without lead angle (including sharp corner)

1. Use a neutral angle insert if there is no limit to the finished shape.
2. Use an angled insert to reduce the size of the remaining boss.
3. Use a sharp-cornered lead-angled insert to make the remaining boss much smaller when machining small parts and thin parts.

Hand of Lead Angle	N (Neutral)	R (Right-hand)	L (Left-hand)
	· Angled (θ) insert can reduce the burr size when cutting off. · When using a larger lead angle (θ), cutting force becomes smaller, but the feed rate should be reduced.		

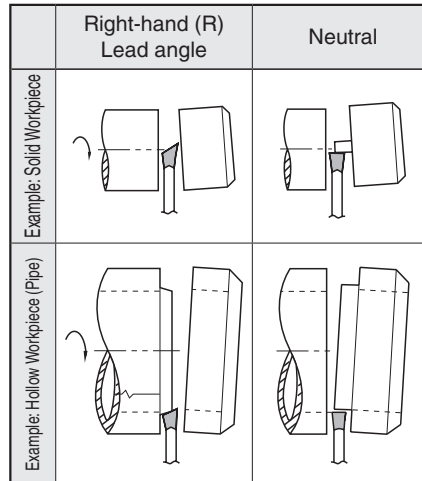


Fig.1

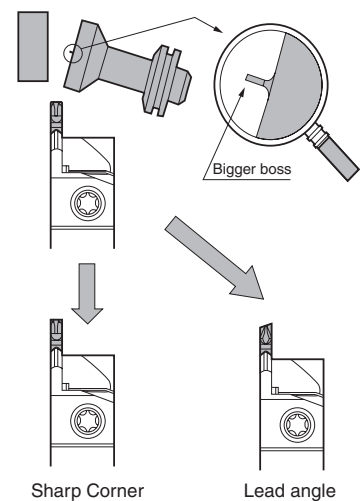


Fig.2

Caution

1. For TKN and TK^{R/L}, set the cutting edge height 0.1~0.2mm above the center height (Fig. 3)
For other toolholders, set the cutting edge to the center height.
 2. Be sure to perform wet processing. Apply enough coolant to the cutting edge.
 3. Keep a constant rate during processing so that optimum product life will be achieved.
 4. Cut off as close to the chuck as possible.
 5. Lower the feed rate to 1/2 to 1/3 at the near center to prevent impact caused by machining.
- Overuse of insert and toolholder (blade) may cause insert breakage and toolholder (blade) damage.
 - Do not rework the insert and toolholder (blade) to prevent damage.
 - Clean the insert pocket well with compressed air when replacing insert.

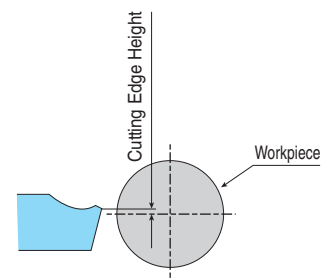


Fig.3 (TKN,TK^{R/L})

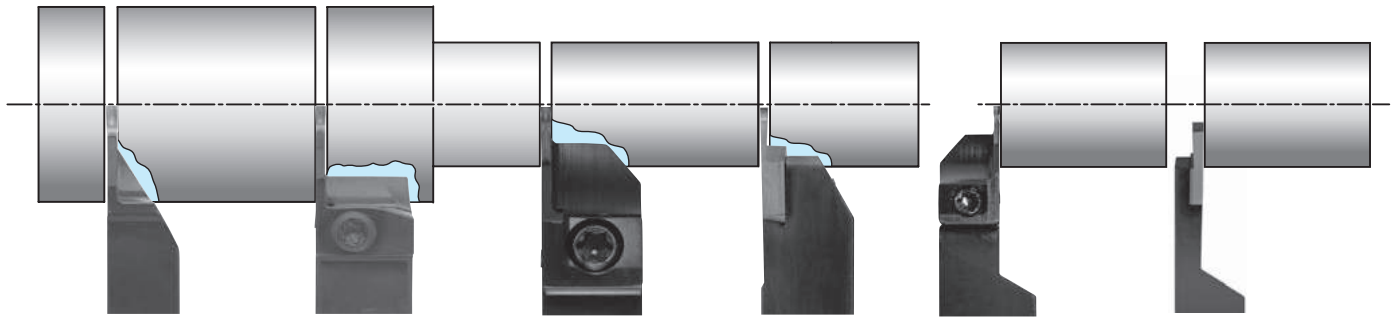
H

Cut-off

Summary of Cut-Off

Small Dia Cut-Off ~φ45

Small Shank



KTKH-S	KGM	KGD	KTKF	KGDS	KTKFS
Cut-off Dia.:~φ45	Cut-off Dia.:~φ32	Cut-off Dia.:~φ42	Cut-off Dia.:~φ16	Cut-off Dia.:~φ24	Cut-off Dia.:~φ16
Shank:□10~25	Shank:□10~16	Shank:□10~20	Shank:□10~20	Shank:□16	Shank:□10~12
Edge Width:2.2~4.1	Edge Width:1.5~4.0	Edge Width:1.3~4.0	Edge Width:0.5~2.0	Edge Width:1.3~3.0	Edge Width:1.0~2.0
Self Clamp	Top Clamp	Top Clamp	Lateral Side Clamp	Top Clamp	Lateral Side Clamp



**For KTKF
KTKFS**

2-edge

Low cutting force

Chipbreaker for General Cut-Off

Chipbreaker for Low Feed Cut-Off

2-edge

Sharp Cutting PG Chipbreaker

Low Feed PF Chipbreaker

Medium Feed PQ Chipbreaker

(15° Lead Angle) (15° Lead Angle) (15° Lead Angle)

Chipbreaker edge shape	Cut-off (Self Clamp) H25		
	General Cut-Off		Low Feed Cut-Off
	Chamfer + Honed	Sharp Edge	R honed

KTKH-S H28 (Self Clamp)

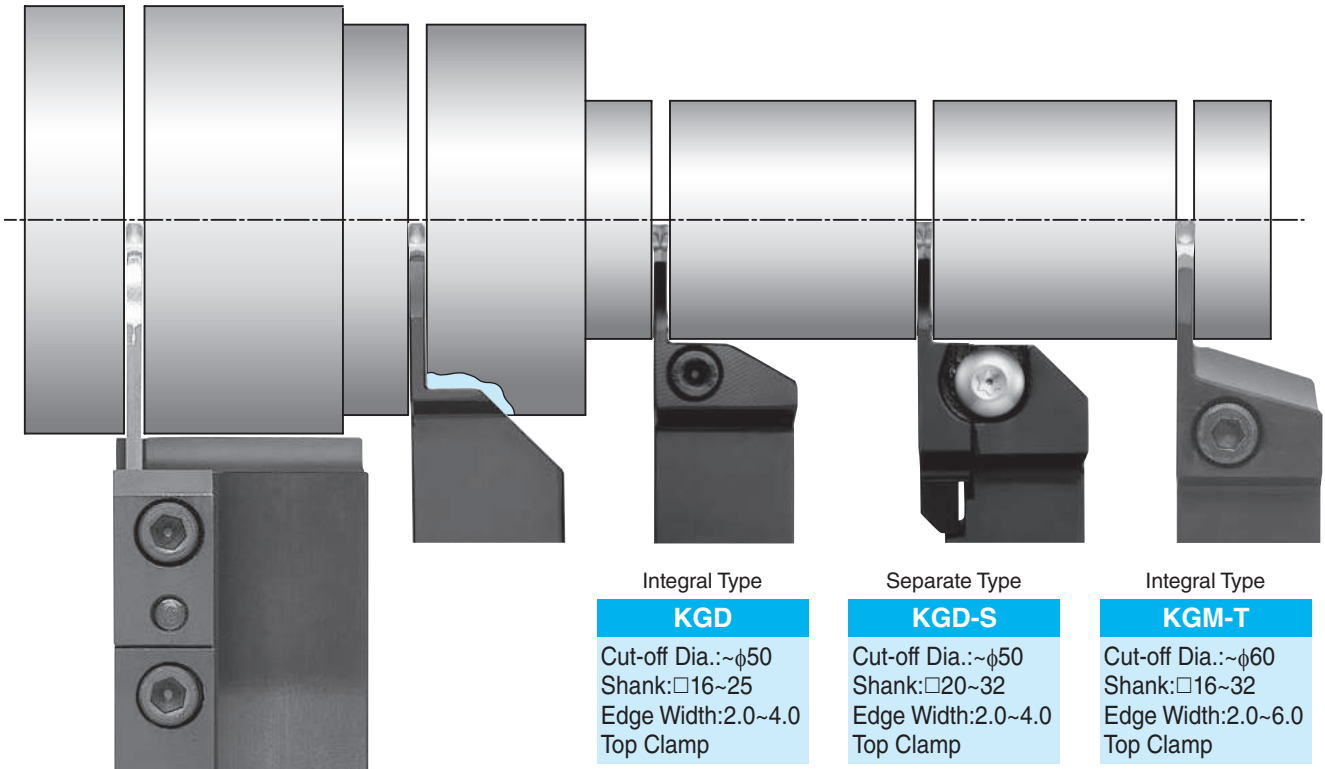
KGD H14 (Top Clamp)

KTKF H8 (Lateral Side Clamp)

H

Cut-off

General Cut-Off $\sim\phi 120$



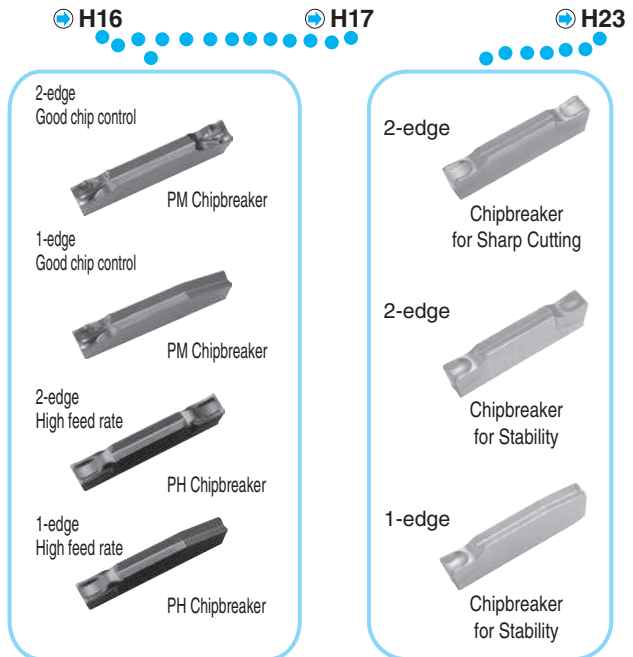
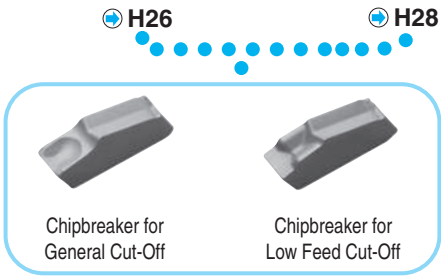
Integral Type
KGD
Cut-off Dia.: $\sim\phi 50$
Shank: $\square 16\sim 25$
Edge Width: 2.0~4.0
Top Clamp

Separate Type
KGD-S
Cut-off Dia.: $\sim\phi 50$
Shank: $\square 20\sim 32$
Edge Width: 2.0~4.0
Top Clamp

Integral Type
KGM-T
Cut-off Dia.: $\sim\phi 60$
Shank: $\square 16\sim 32$
Edge Width: 2.0~6.0
Top Clamp

Blade + Toolblock
KTKB
Cut-off Dia.: $\sim\phi 120$
Shank: $\square 16\sim 32$
Edge Width: 1.6~9.6
Self Clamp

Integral Type
KTKH-S
Cut-off Dia.: $\sim\phi 79$
Shank: $\square 20\sim 25$
Edge Width: 3.1~5.1
Self Clamp



Blade + Toolblock	Separate Type	Integral Type		
 KTKB H26	 KGD-S H17	 KTKH-S H28	 KGD H16	 KGM H22, H23

H



Cut-off



Cut-Off Inserts (for small diameter)

TKF

Applicable Inserts (TKF12)

Classification of usage		P	Carbon steel / Alloy steel						
	Continuous-Light Interruption / 1st Choice	M	Stainless Steel						
	Continuous / 1st Choice	K	Cast Iron						
	Continuous / 2nd Choice	N	Non-ferrous Metals						

Insert Handed Insert shows Right-hand	Description	Dimension (mm)							Angle	MEGACOAT NANO		MEGACOAT		PVD Coated Carbide		DLC Coated Carbide		Carbide								
		W	φD _{max}	r _ε	T	H	φd	θ		PR1425		PR1535		PR1225		PR1025		PDL025		KW10						
										R	L	R	L	R	L	R	L	R	L	R	L					
 Right lead angle	TKF12 ^{R/L} 050-S-16DR	0.5	5	0.03	3	8.7	5	16°	●	●	●	●	●	●	●	●	●	●	●	●						
	070-S-16DR	0.7	8						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	100-S-16DR	1.0	12						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	125-S-16DR	1.25							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	150-S-16DR	1.5							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	200-S-16DR	2.0							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
 0°	TKF12 ^{R/L} 050-S	0.5	5	0.03	3	8.7	5	0°	●	●	●	●	●	●	●	●	●	●	●	●						
	070-S	0.7	8						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	100-S	1.0	12						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	125-S	1.25							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	150-S	1.5							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	200-S	2.0							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
 Right lead angle / Tough Edge	TKF12 ^{R/L} 100-T-16DR	1.0	12	0.08	3	8.7	5	16°	●	●	●	●	●	●	●	●	●	●	●							
	150-T-16DR	1.5							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	200-T-16DR	2.0							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
 Tough Edge	TKF12 ^{R/L} 100-T	1.0	12	0.08	3	8.7	5	0°	●	●	●	●	●	●	●	●	●	●	●							
	150-T	1.5							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	200-T	2.0							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
 Right lead angle Without Chipbreaker	TKF12 ^{R/L} 050-NB-20DR	0.5	5	0	3	8.7	5	20°	●	●	●	●	□	□	●	●	●	●	●							
	070-NB-20DR	0.7	8						●	●	●	●	□	□	●	●	●	●	●	●	●	●	●			
	100-NB-20DR	1.0	12						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	150-NB-20DR	1.5							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	200-NB-20DR	2.0							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
 Without Chipbreaker	TKF12 ^{R/L} 050-NB	0.5	5	0	3	8.7	5	0°	●	●	●	●	□	□	●	●	●	●	●							
	070-NB	0.7	8						●	●	●	●	□	□	●	●	●	●	●	●	●	●	●			
	100-NB	1.0	12						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	150-NB	1.5							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	200-NB	2.0							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		

Lead angle shows the angle when installed in toolholder.

As Fig. 1 of H8 shows, the cut-off diameter of the insert is indicated when the top of the cut-off edge progresses 1mm from the center.

Inserts Identification System (Ref. to Table.1)

TKF 12 R 050 — S — 16D R

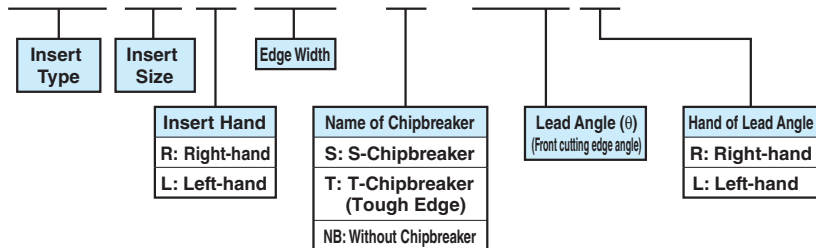


Table 1

Toolholder	Right-hand	Toolholder	Left-hand
Insert	Right-hand	Insert	Left-hand
Lead Angle	Right-hand	Lead Angle	Right-hand

● : Std. Item
□ : Deleted from the next catalogue

● Applicable Inserts (TKF16)

Classification of usage	P	Carbon steel / Alloy steel						
●:Continuous-Light Interruption / 1st Choice	M	Stainless Steel						
○:Continuous-Light Interruption / 2nd Choice	K	Cast Iron						
●:Continuous / 1st Choice	N	Non-ferrous Metals						
○:Continuous / 2nd Choice								

Insert Handed Insert shows Right-hand	Description	Dimension (mm)							Angle	MEGACOAT NANO		MEGACOAT		PVD Coated Carbide		DLC Coated Carbide		Carbide		Ref. to Page for Applicable Toolholders		
		W	φD _{max}	r _e	T	H	φd	θ		PR1425		PR1535		PR1225		PR1025		PDL025			KW10	
										R	L	R	L	R	L	R	L	R	L		R	L
 Right lead angle	TKF16 ^{R/L} /L 150-S-16DR	1.5	16	0.05	4	9.5	5	16°	●	●	●	●	●	●	●	●	●	●	●	●		
	200-S-16DR	2.0							●	●	●	●	●	●	●	●	●	●	●	●	●	●
 Right lead angle	TKF16 ^{R/L} /L 150-S	1.5	16	0.05	4	9.5	5	0°	●	●	●	●	●	●	●	●	●	●	●	●		
	200-S	2.0							●	●	●	●	●	●	●	●	●	●	●	●	●	●
 Right lead angle / Tough Edge	TKF16 ^{R/L} /L 150-T-16DR	1.5	16	0.08	4	9.5	5	16°	●	●	●	●	●	●	●	●	●	●	●	●		
	200-T-16DR	2.0							●	●	●	●	●	●	●	●	●	●	●	●	●	●
 Tough Edge	TKF16 ^{R/L} /L 150-T	1.5	16	0.08	4	9.5	5	0°	●	●	●	●	●	●	●	●	●	●	●	●		
	200-T	2.0							●	●	●	●	●	●	●	●	●	●	●	●	●	●
 Right lead angle Without Chipbreaker	TKF16 ^{R/L} /L 150-NB-20DR	1.5	16	0	4	9.5	5	20°	●	●	●	●	●	●	●	●	●	●	●	●		
	200-NB-20DR	2.0							●	●	●	●	●	●	●	●	●	●	●	●	●	●
 Without Chipbreaker	TKF16 ^{R/L} /L 150-NB	1.5	16	0	4	9.5	5	0°	●	●	●	●	●	●	●	●	●	●	●	●		
	200-NB	2.0							●	●	●	●	●	●	●	●	●	●	●	●	●	●

· Lead angle shows the angle when installed in toolholder.

· As Fig.1 of H8 shows, the cut-off diameter of the insert is indicated when the top of the cut-off edge progresses 1mm from the center.

● Descriptions of Chipbreaker Edge Shape

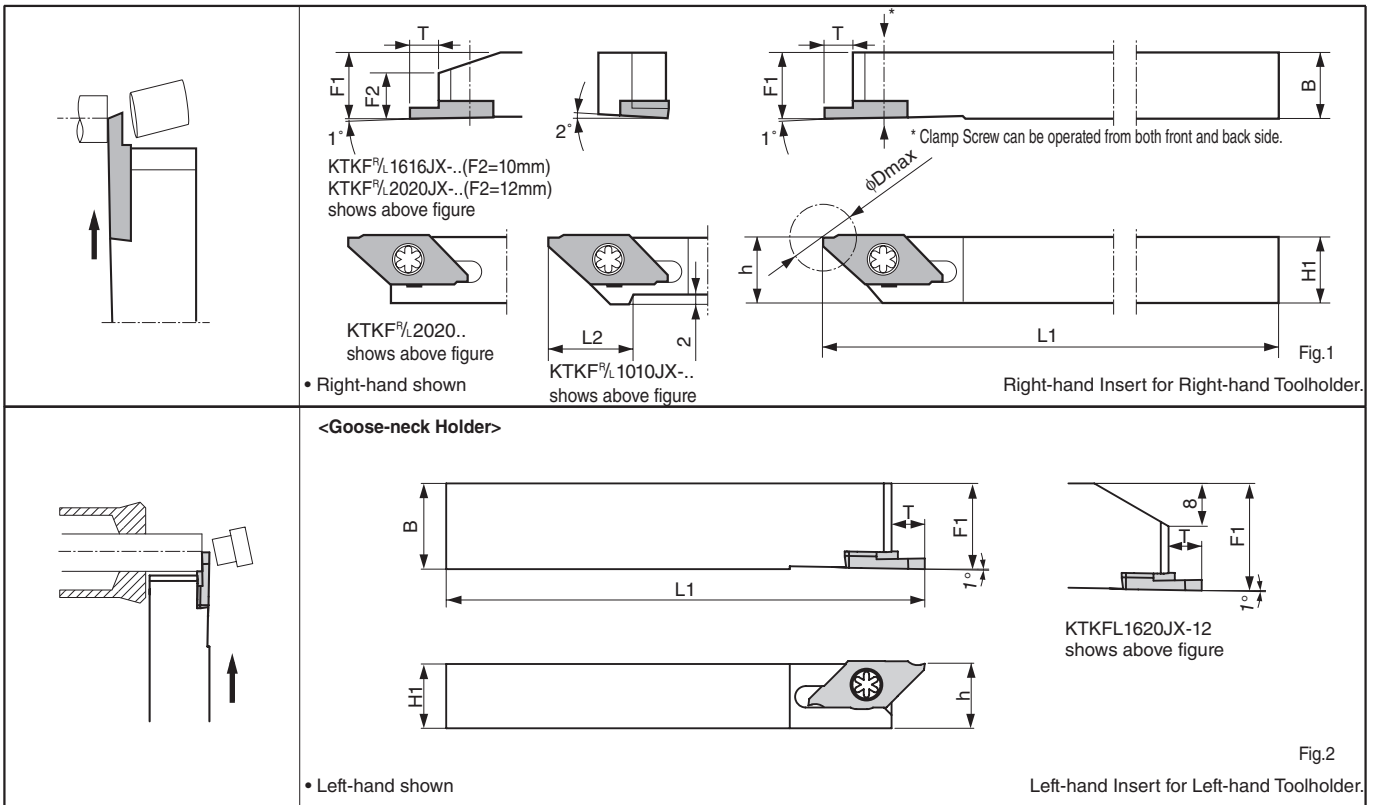
Edge Shape	S-Chipbreaker		T-Chipbreaker (Tough Edge)		NB (Without Chipbreaker)	
	α	Description	α	Description	α	Description
	15°	TKF12...S	12°	TKF...T TKF...T-16DR	0°	TKF...NB TKF...NB-20DR
	20°	TKF16...S TKF16...S-16DR				
	25°	TKF12...S-16DR				

● : Std. Item

Inserts are sold in 10 piece boxes.

Cut-Off Toolholders (for small diameter)

KTKF (For small diameter cut-off)



Toolholder Dimensions

Description	Std.		Dimension (mm)						Drawing	Spare Parts		Applicable Inserts ● H6,H7
	R	L	H1=h	B	L1	L2	F1	T		Clamp Screw	Wrench	
KTKF ^{R/L} 1010JX-12 1212JX-12 1616JX-12 NEW 2020JX-12	●	●	10	10	120	15	10	6	Fig.1	SB-4590TRWN	LTW-10S	TKF12 ^{R/L} ...
	●	●	12	12		-	12					
	●	●	16	16		-	16					
	●	●	20	20		-	20					
KTKF ^{R/L} 1010JX-16 1212JX-16 1616JX-16 NEW 2020JX-16	●	●	10	10	120	20	10	8	Fig.1	SB-4590TRWN	LTW-10S	TKF16 ^{R/L} ...
	●	●	12	12		-	12					
	●	●	16	16		-	16					
	●	●	20	20		-	20					
KTKF ^{R/L} 1212F-12 1212F-16	●	●	12	12	85	-	12	6	Fig.2	SB-4590TRWN	LTW-10S	TKF12 ^{R/L} ...
	●	●						8				TKF16 ^{R/L} ...
KTKFL 1216JX-12 1620JX-12		●	12	16	120	-	16	6	Fig.2	SB-4590TRWN	LTW-10S	TKF12L...
		●	16	20			20					TKF16L...

Dimension T shows the distance from the Toolholder to the cutting edge. ● H6,H7 for the actual cut-off diameter.

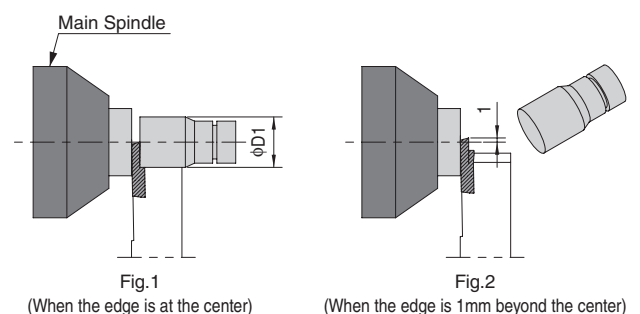
Recommended Cutting Conditions ● H29

Note: Cut-off diameter of -12 type toolholder (ϕD_{max}) depends on the insert width.

How to Use

1) When using Main Spindle only

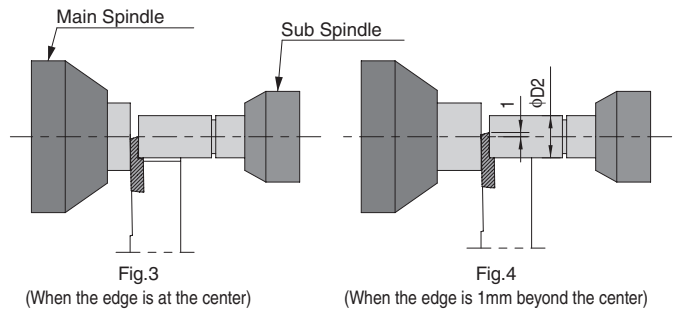
Workpiece maximum $\phi D1$ (Fig.1)= ϕD_{max}
Even if the cutting edge runs beyond the center line, the insert does not contact the workpiece, since the workpiece falls off.
(The clearance between the insert and the workpiece is 0.2mm)



● : Std. Item

2) When using both Main and Sub spindles

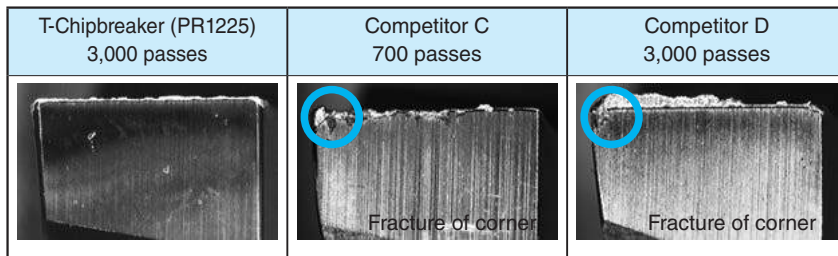
In this case, when the cutting edge runs beyond the center line, the insert will contact the workpiece, since the workpiece does not fall off.
 e.g.) When the cutting edge is programmed to run 1mm beyond the center.
 Workpiece maximum, $\phi D2$ (Fig.4) [$\phi D_{max} - 1mm \times 2$] (mm)
 (The clearance between the insert and the workpiece is 0.2mm)



Tough Edge, T-Chipbreaker

Fracture resistance comparison (Interruption)

Cutting Edge (Front Relief Surface)



	1,000 passes	2,000 passes	3,000 passes
Tough Edge, T-Chipbreaker (PR1225)	→		
Competitor C	→ X		
Competitor D	→ X		

<Cutting Conditions>

- Vc=80m/min
- f=0.05mm/rev
(At Cut-off: 0.015mm/rev)
- Wet
- Workpiece material: SK4

Workpiece (with flat cuts on two sides)
 ·TKF12R200-T-16DR (PR1225)

Compared to Comp. C and D, Tough Edge "T-Chipbreaker" achieves superior fracture resistance in interrupted machining.

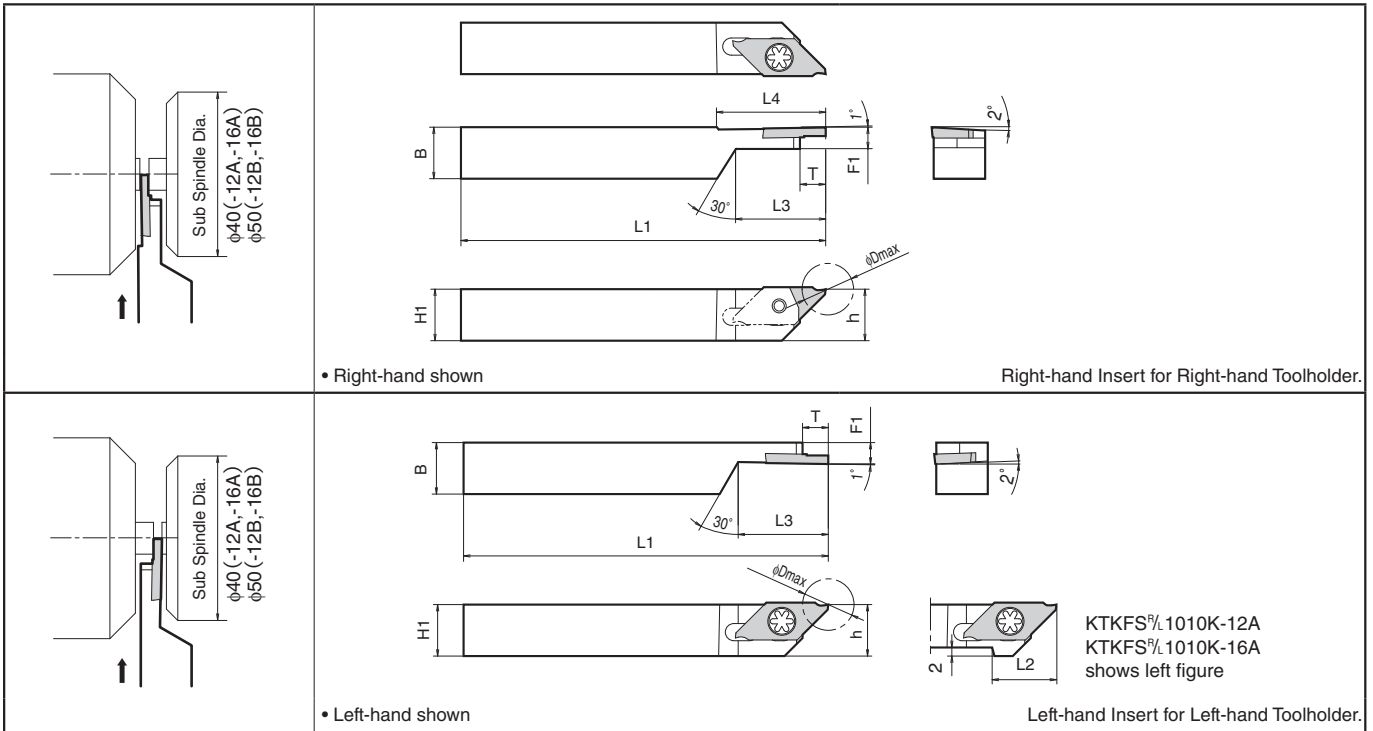
How to select edge prep.

Troubleshooting



Problems	Countermeasures	Countermeasures						
		Lead Angle (θ)		Edge Width		Name of Chipbreaker		
		Neutral (0°)	Yes	Narrower	Wider	S	T	NB
Insert Fracture	Insert Fracture Prevention	Effective			Effective		Effective	Effective
Long cutting time	Cutting time reduction	Effective			Effective		Effective	Effective
Entangled chips	Prevention of chip entanglement	Effective		Effective		Effective		
Large boss remain	Small boss remain		Effective	Effective		Effective		
Ring Remain (Hollow Workpiece)	Prevention of Ring Remain		Effective	Effective		Effective		
Deformation of Hollow Workpiece (pipe)	Preventing deformation		Effective	Effective		Effective		

Cut-Off Toolholders (for sub spindle tooling)

KTKFS (for sub spindle tooling)



Toolholder Dimensions

Description	Std.		Cut-off Dia.	Dimension (mm)									Spare Parts		Applicable Inserts ● H11
	R	L		φDmax	H1-h	B	L1	L2	L3	*L4	F1	T			
KTKFS [®] /L 1010K-12A 1212F-12A 1212K-12B	●	●	6~12	10	10	120	15	22	26	5	6	SB-4050TRN	LTW-10S	TKFS12 [®] /L	
	●	●		12	12	85	-								
	●	●		120	-	26									
KTKFS [®] /L 1010K-16A 1212F-16A 1212K-16B	●	●	14~16	10	10	120	20	22	30	5	8	SB-4050TRN	LTW-10S	TKFS16 [®] /L	
	●	●		12	12	85	-								
	●	●		120	-	26									


Dimension T shows the distance from the Toolholder to the cutting edge. ● H10 for the actual cut-off diameter.

Recommended Cutting Conditions ● H11

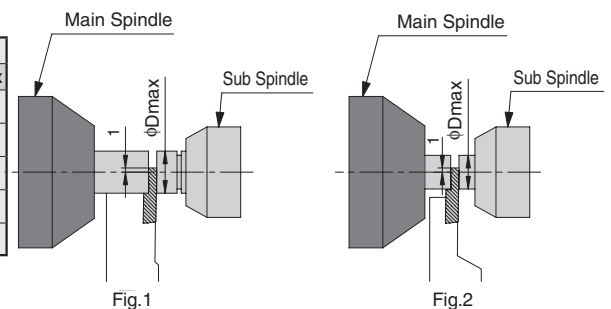
* Cut-off diameter (φDmax) depends on the insert width.

* Only Right-hand is available for L4 dimension.

TKFS (for small diameter cut-off)

Insert Handed insert shows Left-Hand	Description	Dimension (mm)	
		W	φDmax
	TKFS12 [®] /L 100-S	1.0	6
	150-S	1.5	9
	200-S	2.0	12
	TKFS16 [®] /L 150-S	1.5	14
	200-S	2.0	16

Notes) As Fig.2 shows, the cut-off diameter of the insert is indicated when the top of the cutting edge progresses 1mm from the center.



● As Fig.1 shows, use KTKFL (Left-hand) for the distance between main spindle and sub spindle.

● As Fig.2 shows, KTKFS is recommended for small diameters and for the short distance between the main spindle and sub spindle.

● : Std. Item

● Applicable Inserts

Classification of usage	P	Carbon steel / Alloy steel	☉	☉	☉	☉	
☉: Continuous-Light Interruption / 1st Choice	M	Stainless Steel	☉	☉	☉	☉	
☉: Continuous-Light Interruption / 2nd Choice	K	Cast Iron					☉
●: Continuous / 1st Choice	N	Non-ferrous Metals					☉
○: Continuous / 2nd Choice							

Insert Handed insert shows Left-Hand	Description	Dimension (mm)							Angle	MEGACOAT NANO		MEGACOAT		PVD Coated Carbide		Carbide							
		W	φD max	r _e	T	H	φd	θ		PR1425		PR1535		PR1225		PR1025		KW10					
										R	L	R	L	R	L	R	L	R	L				
	TKFS12 ^{R/L}	100-S	1.0	6	0.05	2.2	8.7	4.4	0°	●	●	●	●	●	●	●	●	●	●				
		150-S	1.5	9						●	●	●	●	●	●	●	●	●	●	●	●	●	●
		200-S	2.0	12						●	●	●	●	●	●	●	●	●	●	●	●	●	●
	TKFS16 ^{R/L}	150-S	1.5	14	0.05	2.2	9.5	4.4	0°	●	●	●	●	●	●	●	●	●	●				
		200-S	2.0	16						●	●	●	●	●	●	●	●	●	●	●	●	●	

· As Fig.2 (H10) of shows, the cut-off diameter of the insert is indicated when the top of the cutting edge progresses 1mm from the center.
 · Lead angle shows the angle when installed in toolholder.

◆ Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)					TKFS12			TKFS16		Remarks
	MEGACOAT NANO		MEGACOAT	PVD Coated Carbide	Carbide	Edge Width (mm)			Edge Width (mm)		
	PR1425	PR1535	PR1225	PR1025	KW10	1.0	1.5	2.0	1.5	2.0	
						f (mm/rev)			f (mm/rev)		
Carbon Steel	★70~170	☆70~150	☆70~150	☆60~130	-	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	Coolant
Alloy Steel	★70~170	☆70~150	☆70~150	☆60~130	-	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	
Stainless Steel	☆60~140	★60~120	☆60~120	☆50~100	-	0.01~0.02	0.01~0.02	0.01~0.03	0.01~0.02	0.01~0.03	
Cast Iron	-	-	-	-	★50~100	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	
Aluminum	-	-	-	-	★200~450	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	
Brass	-	-	-	-	★100~200	0.01~0.04	0.01~0.04	0.01~0.04	0.01~0.04	0.01~0.04	

★ : 1st Recommendation ☆: 2nd Recommendation

■ KTKF / KTKFS Selection Reference

● KTKF

- Both Right-hand and Left-hand types are applicable to gang tool post.
- Basically Left-hand type is used for cut-off operation using a sub spindle.

KTKFR (Right-hand toolholder)	KTKFL (Left-hand toolholder)
<ul style="list-style-type: none"> <1st. Recommendation> Use insert with lead angle to remove boss. · Not using sub spindle · Cut-off operation near main spindle side 	<ul style="list-style-type: none"> <1st. Recommendation> Use insert without lead angle. · Using sub spindle · Cut-off operation near sub spindle side

● KTKFS

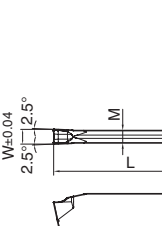
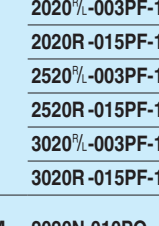
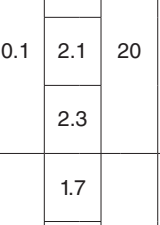
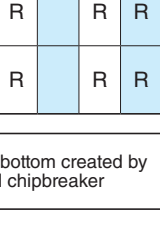

- When machining workpiece with small diameter, use KTKFS to reduce overhang distance from the main spindle.

KTKFSR (Right-hand toolholder)	KTKFSL (Left-hand toolholder)
<ul style="list-style-type: none"> <How to select> Hand of Toolholder • Long workpiece and more rigidity • Cut-off operation near main spindle side 	<ul style="list-style-type: none"> <How to select> Hand of Toolholder • Short workpiece and less rigidity • Cut-off operation near sub spindle side
<ul style="list-style-type: none"> <How to select> L3 dimension • Sub Spindle Dia. φ40→22(A type) φ50→26(B type) 	<ul style="list-style-type: none"> <How to select> L3 dimension • Sub Spindle Dia. φ40→22(A type) φ50→26(B type)

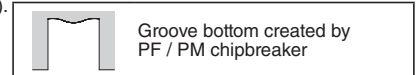
Cut-Off Inserts

GDM / GDG

Classification of usage	P	Carbon steel / Alloy steel	☺	●	☺		
● : Continuous-Light Interruption / 1st Choice	M	Stainless Steel	●	☺	☺		
☺ : Continuous-Light Interruption / 2nd Choice	N	Non-ferrous Metals				●	☺
● : Continuous / 1st Choice							
☺ : Continuous / 2nd Choice							

Insert	Description	Dimension (mm)					Angle	MEGACOAT NANO	MEGACOAT	DLC Coated Carbide	Carbide	Ref. to Page for Applicable Toolholders		
		Edge Width(W)	Tolerance	r _e	M	L	H	θ	PR1535	PR1225	PR1215		PDL025	GW15
 Handed Insert shows Right-hand	GDM 1316N-003PF	1.3	±0.04	0.03	1.0	16	3.7	-	●	●	●			H14 H15
	GDM 1316N-015PF	1.3	±0.04	0.15	1.0	16	3.7	-	●	●	●			
	GDM 1516N-003PF	1.5	±0.04	0.03	1.2	16	3.7	-	●	●	●			H14 H15
	GDM 1516N-015PF	1.5	±0.04	0.15	1.2	16	3.7	-	●	●	●			
	GDM 2020N-003PF	2.0	±0.04	0.03	1.7	20	4.3	-	●	●	●			H14 H15 H16 H17
	GDM 2020N-015PF	2.0	±0.04	0.15	1.7	20	4.3	-	●	●	●			
	GDM 2520N-003PF	2.5	±0.04	0.03	2.1	20	4.3	-	●	●	●			H14 H15 H16 H17
	GDM 2520N-015PF	2.5	±0.04	0.15	2.1	20	4.3	-	●	●	●			
	GDM 3020N-003PF	3.0	±0.04	0.03	2.3	20	4.3	-	●	●	●			H14 H15 H16 H17
	GDM 3020N-015PF	3.0	±0.04	0.15	2.3	20	4.3	-	●	●	●			
 15° Lead Angle	GDM 1316%-003PF-15D	1.3	±0.04	0.03	1.0	16	3.7	15°	●	●	●			H14 H15
	GDM 1516%-003PF-15D	1.5	±0.04	0.03	1.2	16	3.7	15°	●	●	●			
	GDM 1516R-015PF-15D	1.5	±0.04	0.15	1.2	16	3.7	15°	R	R	R			H14 H15
	GDM 2020%-003PF-15D	2.0	±0.04	0.03	1.7	20	4.3	15°	●	●	●			
	GDM 2020R-015PF-15D	2.0	±0.04	0.15	1.7	20	4.3	15°	R	R	R			H14 H15 H16 H17
	GDM 2520%-003PF-15D	2.5	±0.04	0.03	2.1	20	4.3	15°	●	●	●			
	GDM 2520R-015PF-15D	2.5	±0.04	0.15	2.1	20	4.3	15°	R	R	R			H14 H15 H16 H17
	GDM 3020%-003PF-15D	3.0	±0.04	0.03	2.3	20	4.3	15°	●	●	●			
	GDM 3020R-015PF-15D	3.0	±0.04	0.15	2.3	20	4.3	15°	R	R	R			H14 H15 H16 H17
	GDM 2020N-010PQ	2.0	±0.03	0.1	1.7	20	4.3	-	●	●	●			
GDM 2520N-010PQ	2.5	±0.03	0.1	2.1	20	4.3	-	●	●	●			H14 H15 H16 H17	
GDM 3020N-010PQ	3.0	±0.03	0.1	2.3	20	4.3	-	●	●	●				
 15° Lead Angle	GDM 2020R-010PQ-15D	2.0	±0.03	0.1	1.7	20	4.3	15°	R	R	R			H14 H15 H16 H17
	GDM 2520R-010PQ-15D	2.5	±0.03	0.1	2.1	20	4.3	15°	R	R	R			
	GDM 3020R-010PQ-15D	3.0	±0.03	0.1	2.3	20	4.3	15°	R	R	R			
 Cut-Off / Low Cutting Force	GDG 2020N-005PG	2.0	±0.02	0.05	1.7	20	4.3	-	●	●		●	●	H14 H15 H16 H17
	GDG 2520N-005PG	2.5	±0.02	0.05	2.1	20	4.3	-	●	●		●	●	
	GDG 3020N-005PG	3.0	±0.02	0.05	2.3	20	4.3	-	●	●		●	●	
 15° Lead Angle	GDG 2020R-005PG-15D	2.0	±0.02	0.05	1.7	20	4.3	15°	R	R		R	R	H14 H15 H16 H17
	GDG 2520R-005PG-15D	2.5	±0.02	0.05	2.1	20	4.3	15°	R	R		R	R	
	GDG 3020R-005PG-15D	3.0	±0.02	0.05	2.3	20	4.3	15°	R	R		R	R	

Note 1. Using the PF / PM chipbreaker (for cut-off) for grooving cannot create a flat bottom (Ref. to the right figure).



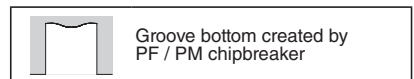
Groove bottom created by PF / PM chipbreaker

GDM / GDMS

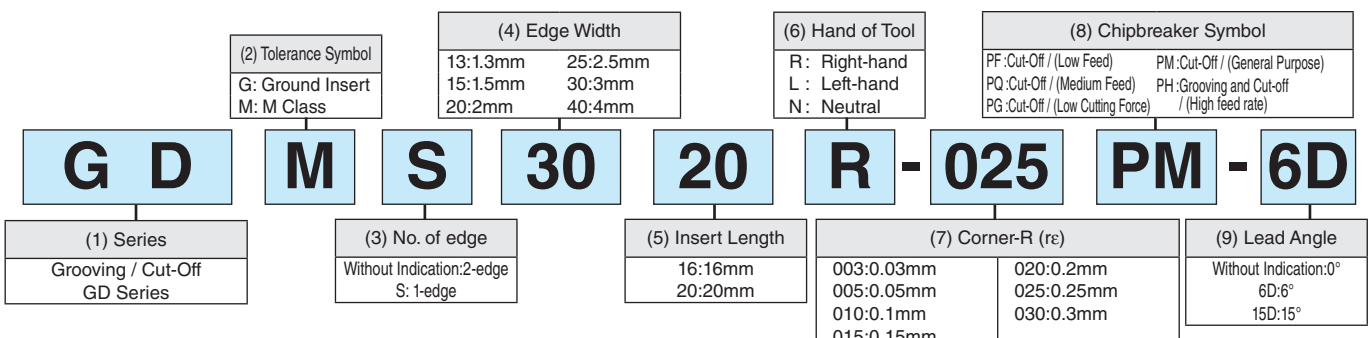
Classification of usage	P	Carbon steel / Alloy steel	☺	☹	☺
☹ : Continuous-Light Interruption / 1st Choice ☺ : Continuous-Light Interruption / 2nd Choice	M	Stainless Steel	●	☺	☺
● : Continuous / 1st Choice ○ : Continuous / 2nd Choice	N	Non-ferrous Metals			

Insert	Description	Dimension (mm)					Angle	MEGACOAT			Ref. to Page for Applicable Toolholders	
		Edge Width(W)	Tolerance	re	M	L	H	θ	PR1535	PR1225		PR1215
Cut-Off / General Purpose Handed Insert shows Right-hand 6° Lead Angle 1-edge 6° Lead Angle 1-edge	GDM 2020N-020PM 2520N-020PM 3020N-025PM 4020N-030PM	2.0	±0.03	0.2	1.5	20	4.3	-	●	●	●	H14 H15 H16 H17
		2.5		0.2	1.95							
		3.0		0.25	2.3							
		4.0		0.3	3.3							
	GDM 2020R-020PM-6D 2520R-020PM-6D 3020R-025PM-6D	2.0	±0.03	0.2	1.5	20	4.3	6°	R	R	R	H14 H15 H16 H17
		2.5		0.2	1.95							
		3.0		0.25	2.3							
		4.0		0.3	3.3							
	GDMS 2020N-020PM 3020N-025PM 4020N-030PM	2.0	±0.03	0.2	1.5	20	4.3	-	●	●	●	H14 H16 H17
		3.0		0.25	2.3							
		4.0		0.3	3.3							
		4.0		0.3	3.3							
GDMS 2020R-020PM-6D 3020R-025PM-6D 4020R-030PM-6D	2.0	±0.03	0.2	1.5	20	4.3	6°	R	R	R	H14 H15 H16 H17	
	3.0		0.25	2.3								
	4.0		0.3	3.3								
	4.0		0.3	3.3								
Grooving and Cut-off / High feed rate 1-edge	GDM 2020N-020PH 3020N-030PH 4020N-030PH	2.0	±0.03	0.2	1.5	20	4.3	-	●	●	●	H14 H15 H16 H17
		3.0		0.3	2.3							
		4.0		0.3	3.3							
	GDMS 2020N-020PH 3020N-030PH 4020N-030PH	2.0	±0.03	0.2	1.5	20	4.3	-	●	●	●	H14 H15 H16 H17
		3.0		0.3	2.3							
		4.0		0.3	3.3							

Note) 1. Using the PF / PM chipbreaker (for cut-off) for grooving cannot create a flat bottom (Ref. to the right figure). Recommended Cutting Conditions ☺ H18,H19



Inserts Identification System



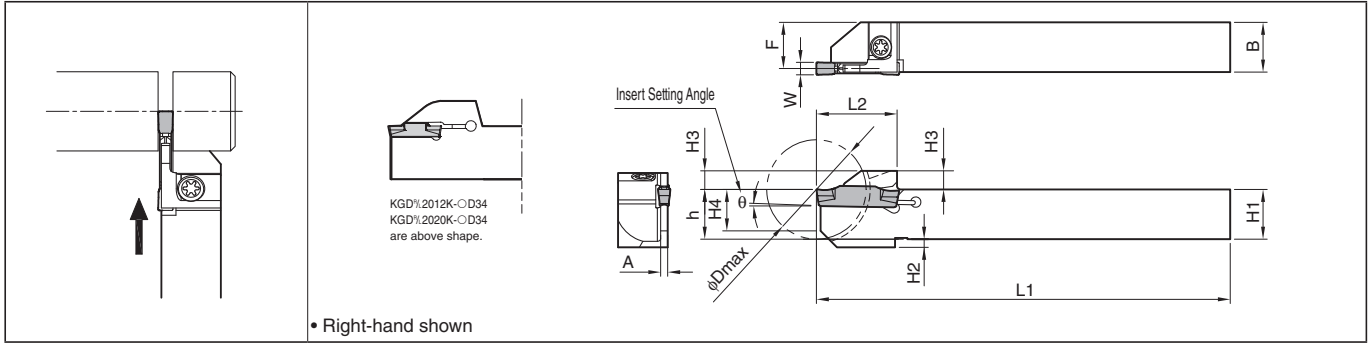
● : Std. Item
R : Std. Item (Right-hand Only)

Inserts are sold in 10 piece boxes.

Cut-Off Toolholders

KGD (for automatic lathe)

Edge Width: 1.3~4.0mm



Toolholder Dimensions

Description	Std.		Cut-off Dia.	Dimension (mm)									Angle	Edge Width W(mm)		Spare Parts	
	R	L		ϕD_{max}	H1=h	H2	H3	H4	B	L1	L2	F		A	θ	MIN.	MAX.
KGD% 1010JX-1.3D16 1010JX-1.3 1212F-1.3D16 1212JX-1.3D16 1212F-1.3 1212JX-1.3	●	●	16	10	2	5.5	8	10	120	18	9.9	1.0	5°	1.3	1.3	SB-40120TR	LTW-15S
	●	●	20								9.5						
	●	●	16	12	2	5.5	10	12	120	19.5	11.9	1.2	1.6	2.0	3.0	SB-40120TR	LTW-15S
	●	●	24								85						
	●	●	16								120						
	●	●	24								85						
●	●	24	12	2	5.5	10	12	120	19.5	11.5	1.2	1.6	2.0	3.0	SB-40120TR	LTW-15S	
●	●	16								120							
●	●	24	12	2	5.5	10	12	120	19.5	11.4	1.2	1.6	2.0	3.0	SB-40120TR	LTW-15S	
●	●	16								85							
●	●	24	12	2	5.5	10	12	120	19.5	11.4	1.2	1.6	2.0	3.0	SB-40120TR	LTW-15S	
●	●	16								120							
KGD% 1010JX-2 1212F-2 1212JX-2 1616JX-2 2012K-2D34 2020K-2D34	●	●	20	10	2	5.5	8	10	120	18	9.2	1.6	1°	2.0	3.0	SB-40120TR	LTW-15S
	●	●	24								85						
	●	●	24	12	2	5.5	10	12	120	19.5	11.2	1.6	1°	2.0	3.0	SB-40120TR	LTW-15S
	●	●	32								120						
	●	●	32	16	-	9.5	20	12	125	32.5	15.2	1.6	0°	2.0	3.0	HH5X16	LW-4
	●	●	34								20						
●	●	34	20	-	9.5	20	12	125	32.5	11.2	1.6	0°	2.0	3.0	HH5X16	LW-4	
●	●	34								20							
●	●	34	20	-	9.5	20	12	125	32.5	19.2	1.6	0°	2.0	3.0	HH5X16	LW-4	
●	●	34								20							
KGD% 1010JX-2.4 1212F-2.4 1212JX-2.4 1616JX-2.4 2012K-2.4D34 2020K-2.4D34	●	●	20	10	2	5.5	8	10	120	18	9	2.0	1°	2.4	3.0	SB-40120TR	LTW-15S
	●	●	24								85						
	●	●	24	12	2	5.5	10	12	120	19.5	11	2.0	1°	2.4	3.0	SB-40120TR	LTW-15S
	●	●	32								120						
	●	●	32	16	-	9.5	20	12	125	32.5	15	2.0	0°	2.4	3.0	HH5X16	LW-4
	●	●	34								20						
●	●	34	20	-	9.5	20	12	125	32.5	19	2.0	0°	2.4	3.0	HH5X16	LW-4	
●	●	34								20							
KGD% 1212JX-3 1616JX-3 1616JX-3D38 1913K-3D38 2012JX-3D42 2012JX-3D51 2020JX-3D42 2020JX-3D51	●	●	24	12	2	5.5	8	10	120	19.5	10.8	2.4	1°	3.0	3.0	SB-40120TR	LTW-15S
	●	●	32														
	●	●	32	16	-	5.5	10	16	120	24.5	14.8	2.4	1°	3.0	4.0	SB-40120TR	LTW-15S
	●	●	38														
	●	●	38	19	-	8	13	13	125	29	11.8	2.4	1°	3.0	4.0	SE-50125TR	LTW-20
	●	●	42														
	●	●	42	20	-	8.5	14	12	120	31	10.8	2.4	1°	3.0	4.0	SE-50125TR	LTW-20
	●	●	51														
●	●	51	20	-	8	14	20	120	31	18.8	2.4	1°	3.0	4.0	SE-50125TR	LTW-20	
●	●	42															20
●	●	51	20	-	8.5	14	20	120	36	18.8	2.4	1°	3.0	4.0	SE-50125TR	LTW-20	
●	●	51															20

Note) 1. 4mm width Insert can be installed in KGD% 1212JX-3, but is not recommended due to the toolholder's rigidity.

Recommended Cutting Conditions H18, H19

2. Recommended tightening torque of clamp screw

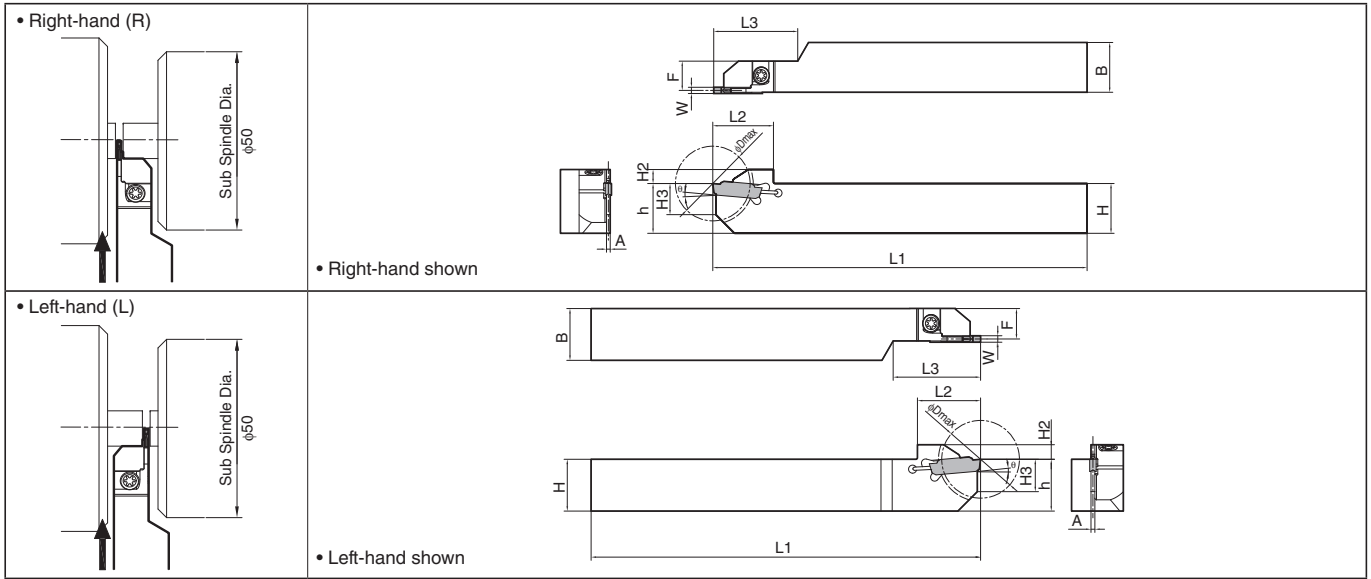
2.0N·m (SB-40120TR), 2.5N·m (SE-50125TR), 6.5N·m (HH5X16)

3. When machining the material greater than $\phi 36$ mm with KGD%...-3D38, KGD%...-3D42 and KGD%...-3D51 toolholders, please use 1-edge inserts.



Maximum workpiece diameter for 2-edge inserts is $\phi 36$ mm.

● : Std. Item

KGDS (for sub spindle tooling)



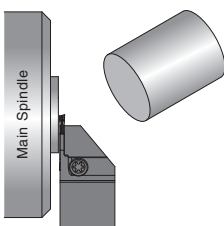
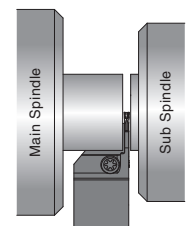
Toolholder Dimensions

Description	Std.		Cut-off Dia. φDmax	Dimension (mm)								Angle θ	Edge Width W (mm)		Spare Parts		
	R	L		H=h	H2	H3	B	L1	L2	L3	F		A	MIN.	MAX.	Clamp Screw 	Wrench 
	KGDS^{φL} 1616JX-1.3B	●	●	24	16	5.5	10	16	120	19.5	27	9.50	1.0	5°	1.3		
1616JX-1.5B	●	●	9.40									1.2	1.5		1.5		
1616JX-2B	●	●	9.20									1.6	1°		2.0	3.0	

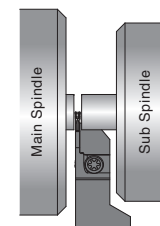
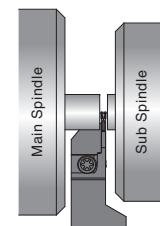
Recommended Cutting Conditions **H18,H19**

KG D / KGDS Selection Reference

KG D

Standard type	
<ul style="list-style-type: none"> Both Right-hand and Left-hand types are applicable to gang tool post. Basically Left-hand type is used for cut-off operation using a sub spindle. 	
KGDR (Right-hand toolholder)	KGDL (Left-hand toolholder)
	
<p><1st. Recommendation> Use insert with lead angle to remove boss.</p> <ul style="list-style-type: none"> Not using sub spindle Cut-off operation near main spindle side 	<p><1st. Recommendation> Use insert without lead angle.</p> <ul style="list-style-type: none"> Using sub spindle Cut-off operation near sub spindle side

KGDS

Sub spindle type	
<ul style="list-style-type: none"> When machining workpiece with small diameter, use KGDS to reduce overhang distance from the main spindle. 	
KGDSR (Right-hand toolholder)	KGDSL (Left-hand toolholder)
	
<ul style="list-style-type: none"> Long workpiece and more rigidity Cut-off operation near main spindle side 	<ul style="list-style-type: none"> Short workpiece and less rigidity Cut-off operation near sub spindle side

Toolholder Identification System (for automatic lathe)

KG D
KGDS

R	1616	JX	3	D38
1.3	B			
Toolholder Hand	Shank Size	Toolholder Length	Applicable Inserts	Others
R: Right-hand L: Left-hand	16×16mm	120mm	GDM / GDMS Edge Width: 1.3mm	B: For sub spindle tooling

● : Std. Item

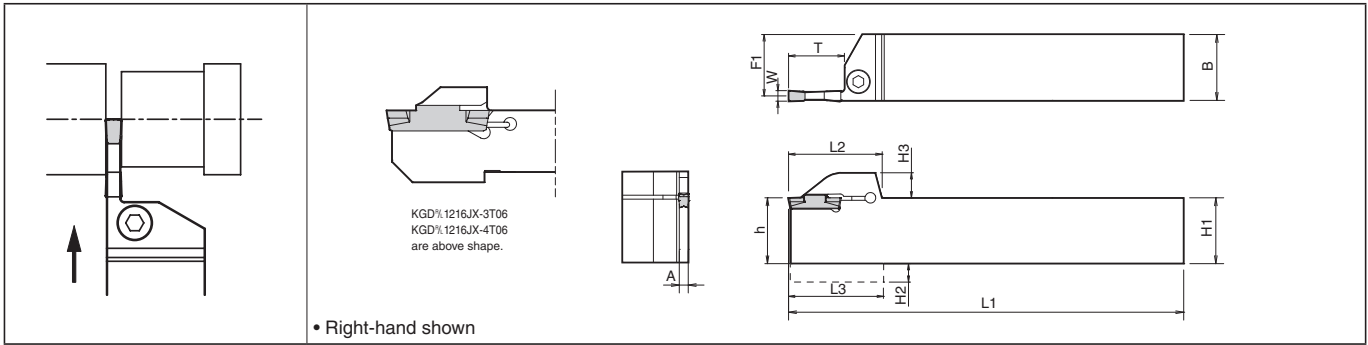
H



Cut-off

Grooving / Cut-Off Toolholders

KGD (Integral Type)



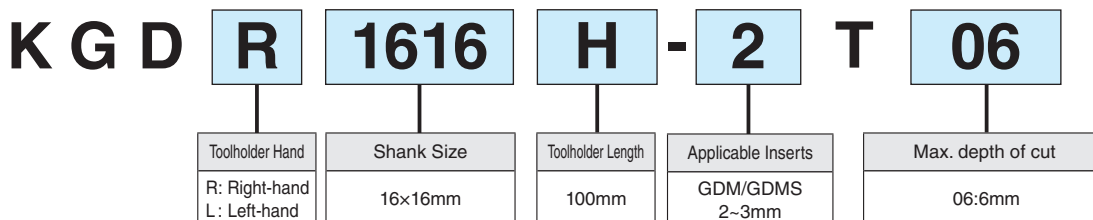
Toolholder Dimensions

Width (mm)	Max. depth of cut (mm)	Description	Std.		Dimension (mm)										Edge Width W(mm)		Spare Parts						
			R	L	H1=h	H2	H3	B	L1	L2	L3	F1	A	T	MIN.	MAX.	Clamp Bolt	Wrench					
2	6	KGD% 1616H-2T06	●	●	16	4.0	9.5	16	100	27.7	28.0	15.2	1.7	6	2.0	3.0	HH5X16	LW-4					
		2020K-2T06	●	●	20	-		20	125	28.0	-	19.2							6				
		2525M-2T06	●	●	25	-		25	150	-	24.2												
	10	KGD% 1616H-2T10	●	●	16	4.0		16	100	30.2	30.5	15.2							10				
		2020K-2T10	●	●	20	-		20	125	30.5	-	19.2								10			
		2525M-2T10	●	●	25	-		25	150	-	24.2												
	17	KGD% 1616H-2T17	●	●	16	4.0		16	100	31.2	31.5	15.2		17									
			2012K-2T17	●	●	20		-	12	125	-	11.2											
		2020K-2T17	●	●	20	-		20	125	32.5	-	19.2											
		2525M-2T17	●	●	25	-		25	150	-	24.2												
	2.4	17	KGD% 2012K-2.4T17	●	●	20		-	12	125	32.5	-		11.0			2.0		17	2.4	3.0	HH5X16	LW-4
			2020K-2.4T17	●	●	20		-	20	125	-	19.0											
3	6	KGD% 1216JX-3T06	●	●	12	2.0	5.5	16	120	19.5	19	14.8	2.4	6	3.0	4.0	SE-50125TR	LTW-20					
		1616H-3T06	●	●	16	4.0	16	100	27.7	28.0	14.8	6											
		2020K-3T06	●	●	20	-	20	125	28.0	-	18.8												
		2525M-3T06	●	●	25	-	25	150	-	23.8													
	10	KGD% 1616H-3T10	●	●	16	4.0	16	100	30.2	30.5	14.8	2.4	10										
		2020K-3T10	●	●	20	-	20	125	30.5	-	18.8												
		2525M-3T10	●	●	25	-	25	150	-	23.8													
		KGD% 1616H-3T20	●	●	16	4.0	16	100	34.2	34.5	14.8			20									
	2012K-3T20	●	●	20	-	12	125	34.5	-	10.8													
	2020K-3T20	●	●	20	-	20	125	-	18.8														
	2525M-3T20	●	●	25	-	25	150	35.5	23.8														
	4	6	KGD% 1216JX-4T06	●	●	12	2.0	5.5	16	120	19.5	19	14.3	3.4			6	4.0	5.0	SE-50125TR	LTW-20		
KGD% 2020K-4T10			●	●	20	-	20	125	30.5	-	18.3	10											
2525M-4T10		●	●	25	-	25	150	-	23.3														
10		KGD% 2020K-4T20	●	●	20	-	9.5	20	125	34.5	-	18.3	3.4	20									
			2525M-4T20	●	●	25	-	25	150	35.5	23.3												
25		KGD% 2525M-4T25	●	●	25	-	9.5	25	150	40.5	-	23.3	25										
			2525M-4T25	●	●	25	-	25	150	40.5	23.3												

Note) 1. Dimension T : Maximum depth to which processing can be made. (If the dimension T is 20 mm or more, the maximum groove-depth of groove made by the 2-edge insert will be 18 mm.)
 2. Recommended tightening torque of clamp bolt : 6.5N·m(HH5×○○), 2.5N·m(SE-50125TR)
 3. Above toolholders are applicable to external grooving, too.

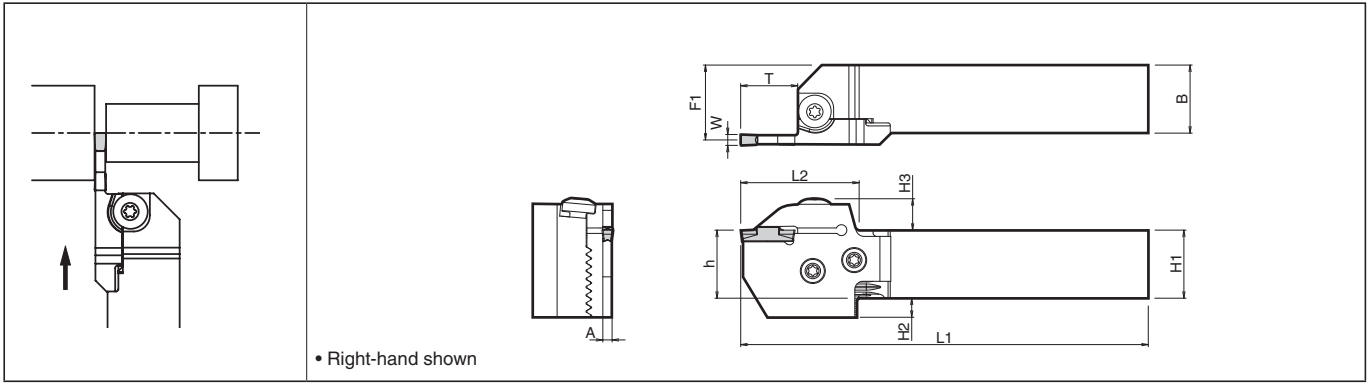
Recommended Cutting Conditions H18,H19

Toolholder Identification System (Integral Type)



● : Std. Item

KGD-S (0° separate type)



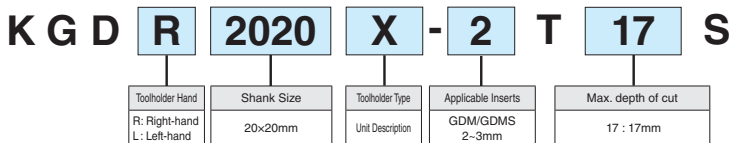
Toolholder Dimensions (Blade + Toolholder)

Shank Angle	Width (mm)	Max. depth of cut (mm)	Shank Size (mm)	Unit Description (Standard Stock Description)	Std.		Blade Description G25	Toolholder Description G25	Dimension (mm)										Edge Width W(mm)		
					R	L			H1-h	H2	H3	B	L1	L2	L3	F1	A	T	MIN.	MAX.	
0°	2	17	□20	KGD% 2020X-2T17S	●	●	KGD% -2T17-C	KGD% 2020-C	20	12	11.6	-	20	122	40	23.4	1.7	17	2.0	3.0	
			□25	2525X-2T17S	●	●		KGD% 2525-C	25	7			25	147							28.4
			□32	No unit description →		●		●	KGD% 3232-C	32			-	32							167
	3	10	□20	KGD% 2020X-3T10S	●	●	KGD% -3T10-C	KGD% 2020-C	20	12			20	115	33	23.0	2.4	10	3.0	4.0	
			□25	2525X-3T10S	●	●		KGD% 2525-C	25	7			25	140							28.0
			□32	3232X-3T10S	●	●		KGD% 3232-C	32	-			32	160							35.0
		20	□20	KGD% 2020X-3T20S	●	●	KGD% -3T20-C	KGD% 2020-C	20	12			20	125	43	23.0	20				
			□25	2525X-3T20S	●	●		KGD% 2525-C	25	7			25	150				28.0			
			□32	3232X-3T20S	●	●		KGD% 3232-C	32	-			32	170				35.0			
	4	10	□20	KGD% 2020X-4T10S	●	●	KGD% -4T10-C	KGD% 2020-C	20	12			20	115	33	22.5	10				
			□25	2525X-4T10S	●	●		KGD% 2525-C	25	7			25	140				27.5			
			□32	3232X-4T10S	●	●		KGD% 3232-C	32	-			32	160				34.5			
		20	□20	KGD% 2020X-4T20S	●	●	KGD% -4T20-C	KGD% 2020-C	20	12			20	125	43	22.5	3.4	20	4.0	5.0	
			□25	2525X-4T20S	●	●		KGD% 2525-C	25	7			25	150							27.5
			□32	3232X-4T20S	●	●		KGD% 3232-C	32	-			32	170							34.5
		25	□20	KGD% 2020X-4T25S	●	●	KGD% -4T25-C	KGD% 2020-C	20	12			20	130	48	22.5	25				
			□25	2525X-4T25S	●	●		KGD% 2525-C	25	7			25	155				27.5			
			□32	3232X-4T25S	●	●		KGD% 3232-C	32	-			32	175				34.5			

Recommended Cutting Conditions H18,H19

- Note) 1. When using the toolholder in normal mounting position, the lower jaw of toolholder may interfere with the tool presetter.
 2. The toolholder and blade descriptions are printed on the toolholder body. (Unit description is not printed.)
 KGD-S: Right-hand Blade for Right-hand Toolholder, Left-hand Blade for Left-hand Toolholder.
The toolholder is applicable for all blade with suitable hand.
 3. In case the unit description is not available (No unit description), please purchase toolholder and blade separately.
 4. Dimension T : Maximum depth to which processing can be made. (If the dimension T is 20 mm or more, the maximum depth of groove made by the 2-edge insert will be 18 mm.)
 5. Recommended tightening torque of clamp bolt for insert: 6.5N·m (Groove width 2 ~ 4mm)
 6. Above toolholders are applicable to external grooving, too.

Toolholder Identification System (Separate type / Unit Description)



Spare Parts (Common with separate types)

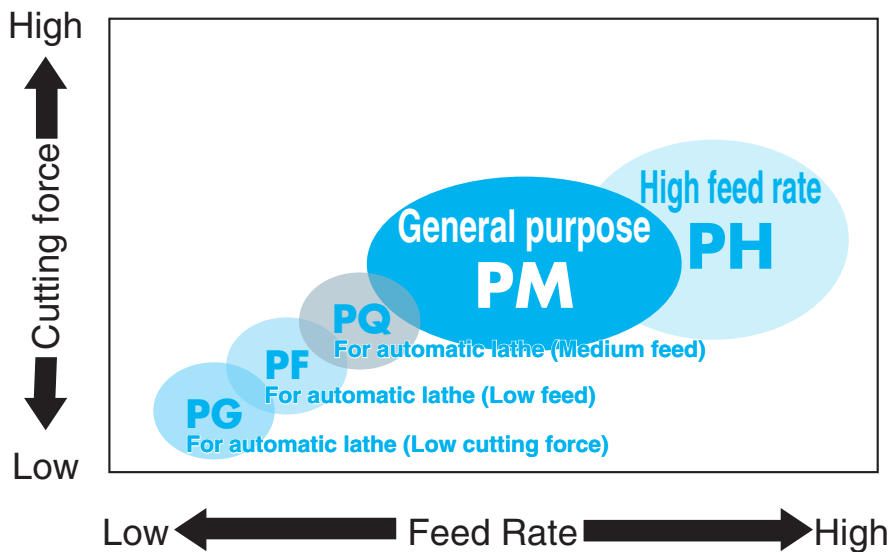
* The parts are included in the toolholder and unit.

Unit Description	Spare Parts		
	Clamp Bolt (for Insert Clamp)	Clamp Screw (for Blade)	Wrench
KGD%.....S	BH6X10TR	SB-60120TR	LTW-25

KGD Recommended Cutting Conditions

Application Map

Cut-Off



H



Cut-off

Recommended Cutting Conditions (PF / PQ / PG Chipbreaker)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)			f (mm/rev)						Remarks
				PF (rε=0.03)			PF (rε=0.15)			
	MEGACOAT NANO	MEGACOAT		Edge Width W (mm)			Edge Width W (mm)			
PR1535	PR1225	PR1215	1.3/1.5	2.0	2.5/3.0	1.5	2.0	2.5/3.0		
Carbon Steel	☆ 70~150	★ 70~150	☆ 70~180	0.01~0.04	0.02~0.06	0.02~0.08	0.01~0.05	0.03~0.08	0.04~0.10	Coolant
Alloy Steel	☆ 70~150	★ 70~150	☆ 70~180							
Stainless Steel	★ 60~120	☆ 60~120	☆ 60~150	0.01~0.03	0.01~0.04	0.01~0.05	0.01~0.04	0.03~0.07	0.04~0.08	
Cast Iron	-	-	★ 80~200	0.01~0.05	0.02~0.07	0.03~0.08	0.01~0.06	0.03~0.09	0.04~0.10	

★: 1st Recommendation ☆: 2nd Recommendation

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)					f (mm/rev)				Remarks
						PQ		PG		
	MEGACOAT NANO	MEGACOAT		DLC Coated Carbide	Carbide	Edge Width W (mm)		Edge Width W (mm)		
PR1535	PR1225	PR1215	PDL025	GW15	2.0	2.5/3.0	2.0	2.5/3.0		
Carbon Steel	☆ 70~150	★ 70~150	☆ 70~180	-	-	0.03~0.1	0.04~0.12	0.01~0.04	0.01~0.05	Coolant
Alloy Steel	☆ 70~150	★ 70~150	☆ 70~180	-	-					
Stainless Steel	★ 60~120	☆ 60~120	☆ 60~150	-	-	0.02~0.07	0.02~0.08	0.01~0.03	0.01~0.04	
Cast Iron	-	-	★ 80~200	-	☆ 50~100	0.04~0.1	0.04~0.12	0.01~0.04	0.01~0.05	
Aluminum	-	-	-	★ 200~500	☆ 200~450	-	-	0.01~0.05	0.01~0.06	
Brass	-	-	-	-	★ 100~200	-	-	0.01~0.07	0.01~0.08	

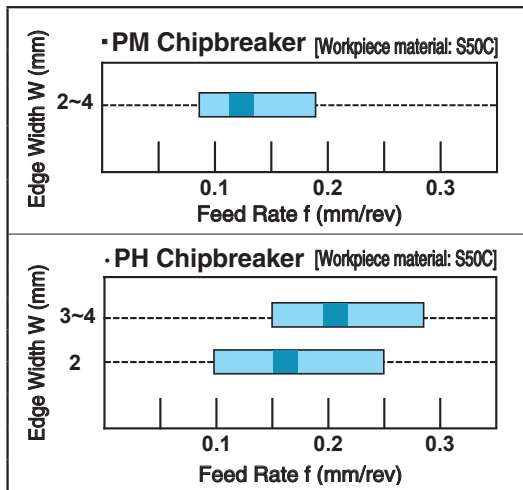
★: 1st Recommendation ☆: 2nd Recommendation

● Recommended Cutting Conditions (PM / PH Chipbreaker)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)			f (mm/rev)			Remarks
				PM	PH		
	MEGACOAT NANO	MEGACOAT		Edge Width W (mm)	Edge Width W (mm)		
	PR1535	PR1225	PR1215	2~4	2	3~4	
Carbon Steel	☆ 80~200	★ 80~200	☆ 100~200	0.08~0.18	0.10~0.25	0.15~0.28	Coolant
Alloy Steel	☆ 70~180	★ 70~180	☆ 80~180				
Stainless Steel	★ 60~150	☆ 60~150	☆ 60~150	0.06~0.12	0.05~0.12	0.08~0.15	
Cast Iron	-	-	★ 100~200	0.08~0.18	0.10~0.25	0.15~0.28	

★: 1st Recommendation ☆: 2nd Recommendation

◆ Example of feed



■ in the graph indicates the most recommended value of feed (f)

◆ Caution (Cut-Off)












1. Be sure to perform wet processing. Apply enough coolant to the cutting edge.
2. Keep a constant rate during processing so that optimum product life will be achieved.
3. Cut-off as close to the chuck as possible.
4. Lower the feed rate to 1/2 to 1/3 at the near center to prevent impact caused by machining.



Cut-Off Inserts

GMM / GMN / GM^{R/L}

Classification of usage	P	Carbon steel / Alloy steel	○	☺	●	☺	●	
● : Continuous-Light Interruption / 1st Choice	M	Stainless Steel		☺	●	☺	●	
☺ : Continuous-Light Interruption / 2nd Choice	K	Cast Iron						●
● : Continuous / 1st Choice	N	Non-ferrous Metals						●
○ : Continuous / 2nd Choice								

Insert	Description	Dimension (mm)					Angle	Cermat		CVD Coated Carbide		PVD Coated Carbide			Carbide	Ref. to Page for Applicable Toolholders	
		W	r _e	L	H	M		TN90	CR9025	PR915	PR930	PR1115	KW10				
 Sharp-Cutting 2-edge Handed Insert shows Right-hand	GMM 1520-MT	1.5	0/0.05	20	4.3	1.2	-				●	●	●	●	H22		
	2020-MT	2.0	0/0.05			1.5		●	●	●	●					H22	
	2520-MT	2.5	0/0.05			1.9		●	●	●	●					H23	
	3020-MT	3.0	0/0.05			2.3		●	●	●	●						
 Sharp-Cutting 2-edge Without Chipbreaker	GMM 1520-NB	1.5	0/0.05	20	4.3	1.2	-				●	●	●	●	H22		
	2020-NB	2.0	0/0.05			1.5		●	●	●	●						
	2520-NB	2.5	0/0.05			1.9		●	●	●	●						
	3020-NB	3.0	0/0.05			2.3		●	●	●	●						
 Stability Oriented 2-edge Neutral	GMM 2020-TK	2.0	0.20	20	4.3	1.5	-			●	●	●	●	●			
	2520-TK	2.5	0.20			1.9		●	●	●	●	●	●	●	●		
	3020-TK	3.0	0.25			2.3		●	●	●	●	●	●	●	●		
 High Feed Rate 2-edge	GMM 2020-TMR	2.0	0.20	20	4.3	1.5	-					●	●	●	H22		
	2520-TMR	2.5	0.20			1.9						●	●	●	●	H23	
	3020-TMR	3.0	0.25			2.3							●	●	●		
 Stability Oriented 1-edge Shows GMN2.2	GMN 2-TK	2.0	0.20	20	4.3	1.5	-			●	●	●	●	●			
	3-TK	3.0	0.25			2.3		●	●	●	●	●	●	●	●		
	4-TK	4.0	0.30			3.3		●	●	●	●	●	●	●	●		
 Sharp-Cutting 1-edge Shows GMN2.2	GMN 2.2	2.2	0.17	20	4.3	1.8	-	●	●		●	●	●	●			
	3	3.0	0.20			2.3		●	●		●	●	●	●	●		
	4	4.0	0.25			3.3		●	●		●	●	●	●	●		
	5	5.0	0.80			4.2		●	●		●	●	●	●	●		
	6	6.0	0.80			5.2		●	●		●	●	●	●	●		
 Sharp-Cutting 2-edge Lead Angle	GMM 1520 ^{R/L} -MT-15D	1.5	0/0.05	20	4.3	1.2	15°				●	●	●	●	●	H22	
	2020 ^{R/L} -MT-15D	2.0	0/0.05			1.5		●	●	●	●	●	●	●	●	●	
	2520 ^{R/L} -MT-15D	2.5	0/0.05			1.9		●	●	●	●	●	●	●	●	●	
	3020 ^{R/L} -MT-15D	3.0	0/0.05			2.3		●	●	●	●	●	●	●	●	●	
	 Stability Oriented 2-edge	GMM 2020R-TK-8D	2.0	0.20	20	4.3	1.5	8°			●	●	●	●	●		
		2520R-TK-8D	2.5	0.20			1.9		●	●	●	●	●	●	●	●	
		3020R-TK-8D	3.0	0.25			2.3		●	●	●	●	●	●	●	●	
	 High Feed Rate 2-edge	GMM 2020R-TMR-6D	2.0	0.20	20	4.3	1.5	6°					●	●	●	H22	
		2520R-TMR-6D	2.5	0.20			1.9						●	●	●	●	H23
		3020R-TMR-6D	3.0	0.25			2.3							●	●	●	
	 Stability Oriented 1-edge Shows GMR2.2-8D / 15D	GMR 2-TK-8D	2.0	0.20	20	4.3	1.5	8°			□	●	●	●	●		
		3-TK-8D	3.0	0.25			2.3		□	●	●	●	●	●	●	●	
		4-TK-8D	4.0	0.30			3.3		□	●	●	●	●	●	●	●	
	 Sharp-Cutting 1-edge Shows GMR2.2-8D / 15D	GM ^{R/L} 2.2-8D	2.2	0.17	20	4.3	1.8	8°	●	●		●	●	●	●		
		2.2-15D	2.2	0.00			1.8		15°	●	●		●	●	●	●	
		3-4D	3.0	0.20			2.3		4°	●	●		●	●	●	●	
4-4D		4.0	0.25	3.3			4°		●	●		●	●	●	●		

● : Std. Item

Edge Preparation

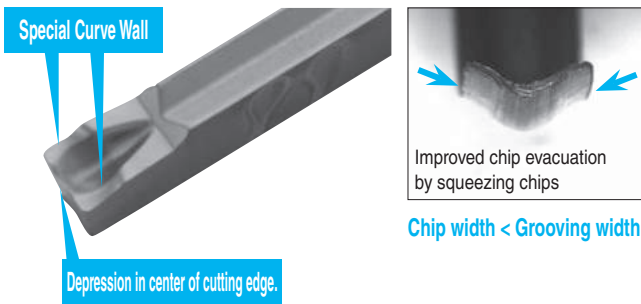
Series	MT-Chipbreaker		TK-Chipbreaker		TMR-Chipbreaker	Without Chipbreaker (NB)	
Edge Prep.	Chamfer + Honed	Chamfer + Honed	Chamfer + Honed	Sharp Edge	Chamfer + Honed	R honed	Sharp Edge
	Corner-R (r_c) = 0.05	Sharp Corner	Corner-R (r_c) = 0.2-0.3	Corner-R (r_c) = 0.2-0.3	Corner-R (r_c) = 0.2	Corner-R (r_c) = 0.05	Sharp Corner
	CR9025/PR915	PR930/KW10	CR9025/PR915	PR930/KW10	PR1115	CR9025	PR930/KW10

* Sharp Edge Spec. can reduce cutting force by 40% less than that of chamfer edge.

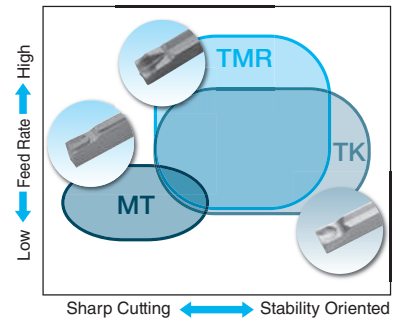
Series	Advantage
GMM-MT	Specific chipbreaker for cut-off operations requiring sharp cutting performance. Minimizes the Boss.
GMM-NB	Cutting edge is flat with non-chipbreaker. It works well for brass, etc.
GMM-TK	Stable design with chipbreaker for cut-off. Large corner-R. 2-edge for economical performance.
GMN-TK	Same chipbreaker geometry as GMM-TK. 1-edge. Wide application range.
GMN (Std.) (Without Indication)	Mainly for deep grooving, but available for groove widening and turning due to projection near side cutting edge. 1-edge and wide application range. Available for cut-off applications.

TMR-Chipbreaker

Advantages of Chipbreaker



GMM Chipbreaker MAP

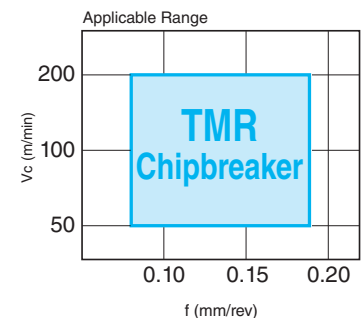


TMR-chipbreaker enables stable chip control also for high feed rates.

Good chip control even when cutting speed (spindle revolution) is increased.

(Workpiece material: SCM415, $\phi 30$, constant spindle revolution)

Description	$n=1,060\text{min}^{-1}$ ($V_c=100\text{m/min}$)		$n=2,123\text{min}^{-1}$ ($V_c=200\text{m/min}$)	
	$f=0.12\text{mm/rev}$	$f=0.18\text{mm/rev}$	$f=0.12\text{mm/rev}$	$f=0.18\text{mm/rev}$
GMM 3020-TMR (Neutral)				
GMM 3020R-TMR-6D (Lead angle)				

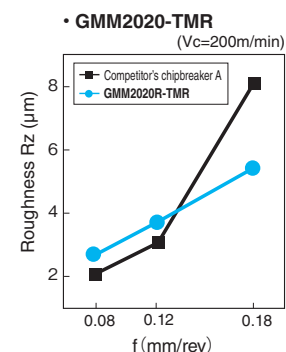
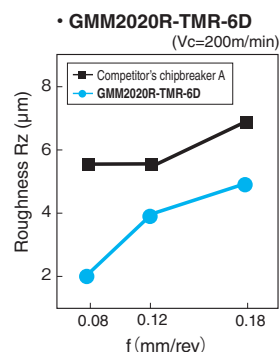


Recommended Cutting Conditions

Workpiece Material	V_c (m/min)	f (mm/rev)
Carbon Steel	60~200	0.08~0.18
Alloy Steel	60~150	
Stainless Steel	50~140	

Workpiece Surface Roughness

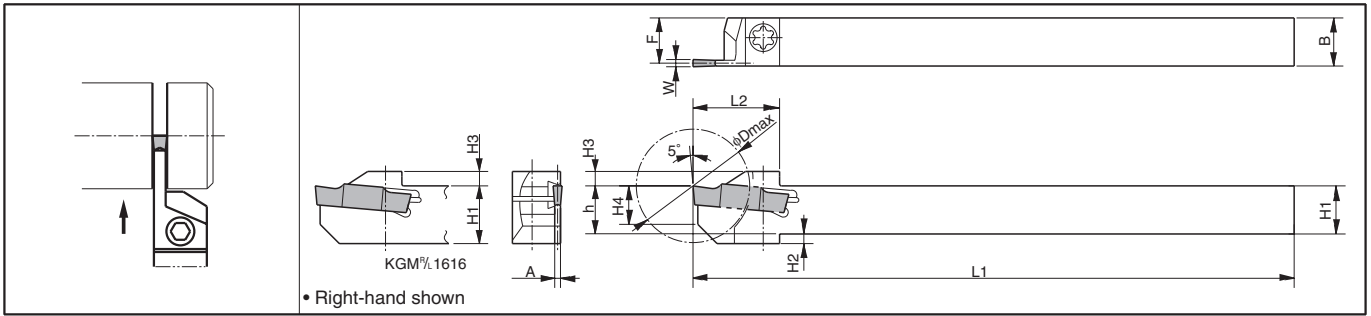
TMR-Chipbreaker provides good surface roughness on the workpiece end face at high feed rate ranges.



Cut-Off Toolholders

KGM (for automatic lathe)

Edge Width: 1.5~4.0mm

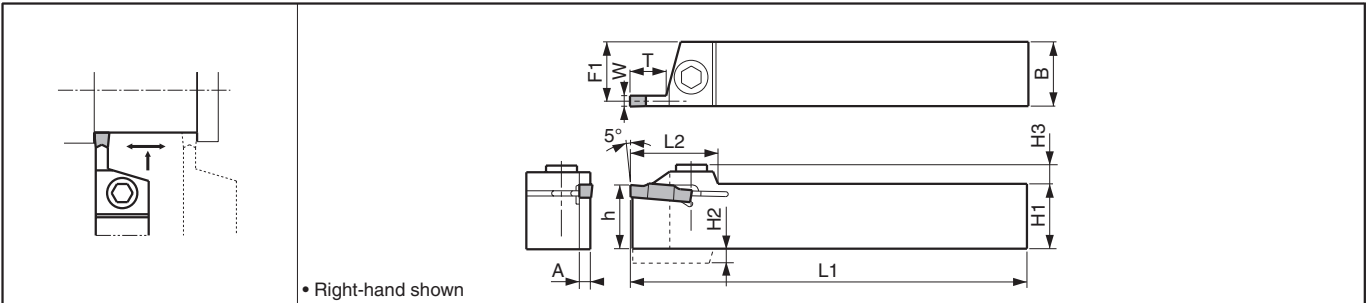


Toolholder Dimensions

Description	Std.		Cut-off Dia. ϕD_{max}	Dimension (mm)									Edge Width W(mm)		Spare Parts	
	R	L		H1-h	H2	H3	H4	B	L1	L2	F	A	MIN.	MAX.	Screw	Wrench
KGM ^{R/L} 1010JX-1.5 1212JX-1.5	●	●	20	10	2	3	8	10	120	18	9.4	1.2	1.5	2.0	SE-40120TR	LTW-15S
	●	●	25	12		4	10	12		20.5	11.4					
KGM ^{R/L} 1010JX-2 1212JX-2 1616JX-2	●	●	20	10	2	3	8	10	120	18	9.15	1.7	2.0	3.0	SE-40120TR	LTW-15S
	●	●	25	12		4	10	12		19	11.15					
	●	●	32	16		-	9	16		24.5	15.15					
KGM ^{R/L} 1010JX-2.5 1212JX-2.5 1616JX-2.5	●	●	20	10	2	3	8	10	120	18	9	2.0	2.4	3.0	SE-40120TR	LTW-15S
	●	●	25	12		4	10	12		20.5	11					
	●	●	32	16		-	9	16		25.5	15					
KGM ^{R/L} 1616JX-3	●	●	32	16	-	4	9	16	120	25.5	14.8	2.4	3.0	4.0	SE-50125TR	LTW-20
KGMR 1212F-1.5-85	●		25	12	2	4	10	12	85	19	11.4	1.2	1.5	2.0	SE-40120TR	LTW-15S
KGM ^{R/L} 1212F-2-85	●	●	25	12	2	4	10	12	85	19	11.15	1.7	2.0	3.0	SE-40120TR	LTW-15S
KGM ^{R/L} 1212F-2.5-85	●	●	25	12	2	4	10	12	85	19	11	2.0	2.4	3.0	SE-40120TR	LTW-15S

KGM

Edge Width: 3.0~8.0mm



Toolholder Dimensions

Description	Std.		Dimension (mm)										Edge Width W(mm)		Spare Parts					
	R	L	H1-h	H2	H3	B	L1	L2	F1	A	T	MIN.	MAX.	Screw	Screw	Wrench	Wrench			
KGM ^{R/L} 1212H-3 1616H-3 2020K-3	●	●	12	4	6	12	100	27	10.8	2.4	9	3.0	3.0	SB-5TR	-	LTW-20	-			
	●	●	16		7	16			14.8											
	●	●	20		-	7			20									125	18.8	
KGM ^{R/L} 2525M-3 2020K-4	●	●	25	-	7	25	150	27	23.8	3.4	10	4.0	5.0	-	HH5X16	-	LW-4			
	●	●	20															20	125	18.3
KGM ^{R/L} 2525M-4 2020K-5 2525M-5	●	●	25	-	7	25	150	27	23.3	4.4	10	5.0	6.0	-	HH5X16	-	LW-4			
	●	●	20															20	125	17.8
	●	●	25															25	150	22.8
KGM ^{R/L} 3232P-5 2525M-8	●	●	32	-	10.5	32	170	40	29.8	6.0	25	8.0	8.0	-	HH5X16	-	LW-4			
	●	●	25															25	150	22.0
KGM ^{R/L} 3232P-8	●	●	32	-	-	32	170	-	29.0	-	-	8.0	8.0	-	HH6X25	-	LW-5			

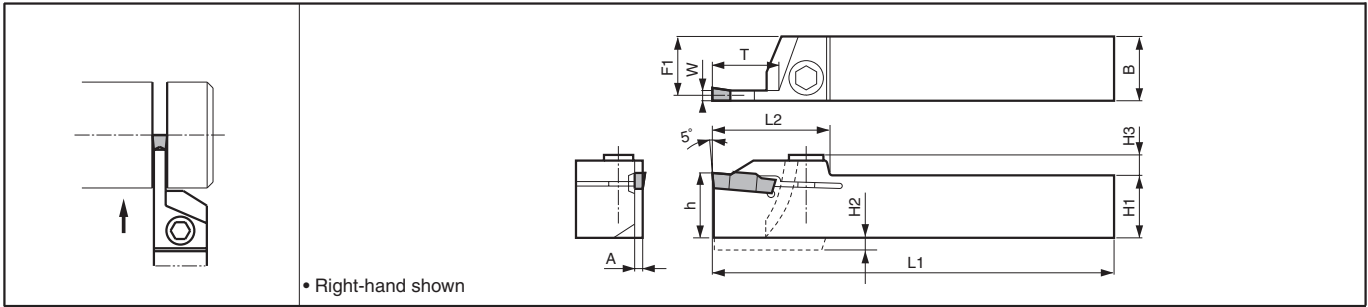
- Dimension T shows available grooving depth.

- 4mm width Insert can be installed in KGM^{R/L} 1212H-3, but is not recommended due to the toolholder's rigidity.

● : Std. Item

KGM-T

Edge Width:2.0~6.0mm



Toolholder Dimensions

Description	Std.	Dimension (mm)											Edge Width W (mm)		Spare Parts			
		R	L	H1-h	H2	H3	B	L1	L2	F1	A	T	MIN.	MAX.	Screw		Wrench	
KGM ^{R/L} 2012K-2T17 2020K-2T17 2525M-2T17	●●	20	-	7	12	125		11.15				2.0	3.0	SB-5TR	-	LTW-20	-	
	●●	20	-	7	20	125	33	19.15	1.7	17				-	HH5X16	-	LW-4	
	●●	25	-	7	25	150		24.15						-	HH5X25	-	LW-4	
KGM ^{R/L} 1616H-3T20 2012K-3T20 2020K-3T20 2525M-3T20	●●	16	4		16	100		14.8				3.0	4.0	-	HH5X16	-	LW-4	
	●●	20	-	7	12	125	36	10.8	2.4	20				SB-5TR	-	LTW-20	-	
	●●	20	-	7	20	125		18.8						-	HH5X16	-	LW-4	
	●●	25	-	7	25	150		23.8						-	HH5X25	-	LW-4	
KGM ^{R/L} 2020K-4T20 2525M-4T20 2525M-4T25	●●	20	-	7.5	20	125	36	18.3		20		4.0	5.0	-	HH5X16	-	LW-4	
	●●	25	-	7.5	25	150	41	23.3	3.4	25				-	HH5X25	-	LW-4	
	●●	25	-	7.5	25	150		23.3						-	HH5X25	-	LW-4	
KGM ^{R/L} 2525M-5T25 3232P-5T25	●●	25	-	8.5	25	150	42	22.8	4.4	25		5.0	6.0	-	HH5X25	-	LW-4	
	●●	32	-	8.5	32	170		29.8						-	HH5X25	-	LW-4	
KGM ^{R/L} 2525M-6T30	●●	25	-	9.5	25	150	45	22.4	5.2	30		6.0	6.0	-	HH5X25	-	LW-4	

• Dimension T shows the distance from the Toolholder to the cutting edge. Ref. to the Table H24 for the relationship between the available Grooving Depth and the Cutting Dia.
• When using GMG / GMM type (2-edge) insert, set the groove depth under 15mm.

Applicable Inserts

Applications Ref. to Page	G30	G30	G30	G30	G31	H20	H20	H20	H20	H20
Insert	MW	MS	MG			MT	NB	TK	TK	TK
Toolholder Description										
KGM ^{R/L} ...1.5	-	-	-	-	-	GMM1520..MT GMM2020..MT GMM1520%..MT GMM2020%..MT	GMM1520..NB GMM2020..NB	GMM2020..T GMM2020%..T	GMN2..TK GM%2..TK	-
KGM ^{R/L} ...2(T)	GMM2420..MW GMM3020..MW	GMG3020..MS GMM3020..MS	GMG2520..MG GMG3020..MG	GMG3020..R GMM3020..R	-	GMM2020..MT GMM2520..MT GMM3020..MT GMM2020%..MT GMM2520%..MT GMM3020%..MT	GMM2020..NB GMM2520..NB GMM3020..NB	GMM2020..T GMM2520..T GMM3020..T GMM2020%..T GMM2520%..T GMM3020%..T	GMN2..TK GMN3..TK GM%2..TK GM%3..TK	GMN2.2 GMN3 GM%2.2 GM%3
KGM ^{R/L} ...2.5	GMM2420..MW GMM3020..MW	GMG3020..MS GMM3020..MS	GMG2520..MG GMG3020..MG	GMG3020..R GMM3020..R	-	GMM2520..MT GMM3020..MT GMM2520%..MT GMM3020%..MT	GMM2520..NB GMM3020..NB	GMM2520..T GMM3020..T GMM2520%..T GMM3020%..T	GMN3..TK GM%3..TK	GMN3 GM%3
KGM ^{R/L} ...3(T)	GMM3020..MW GMM4020..MW	GMG3020..MS GMM3020..MS GMG4020..MS GMM4020..MS	GMG3020..MG GMG3520..MG GMG4020..MG	GMG3020..R GMM3020..R GMG4020..R GMM4020..R	-	GMM3020..MT GMM3020%..MT	GMM3020..NB	GMM3020..T GMM3020%..T	GMN3..TK GMN4..TK GM%3..TK GM%4..TK	GMN3 GMN4 GM%3 GM%4
KGM ^{R/L} ...4(T)	GMM4020..MW GMM5020..MW	GMG4020..MS GMM4020..MS GMG5020..MS GMM5020..MS	GMG4020..MG GMG5020..MG	GMG4020..R GMM4020..R GMG5020..R GMM5020..R	-	-	-	-	GMN4..TK GM%4..TK	GMN4 GMN5 GM%4
KGM ^{R/L} ...5T	GMM5020..MW GMM6020..MW	GMG5020..MS GMM5020..MS GMG6020..MS GMM6020..MS	GMG5020..MG GMG6020..MG	GMG5020..R GMM5020..R GMG6020..R GMM6020..R	GMGA6020..R	-	-	-	-	GMN5 GMN6
KGM ^{R/L} ...6T	GMM6020..MW	GMG6020..MS GMM6020..MS	GMG6020..MG	GMG6020..R GMM6020..R	GMGA6020..R	-	-	-	-	GMN6
KGM ^{R/L} ...8	GMM8030..MW	-	GMG8030..MG	-	GMGA8030..R	-	-	-	-	-

Recommended Cutting Conditions H29

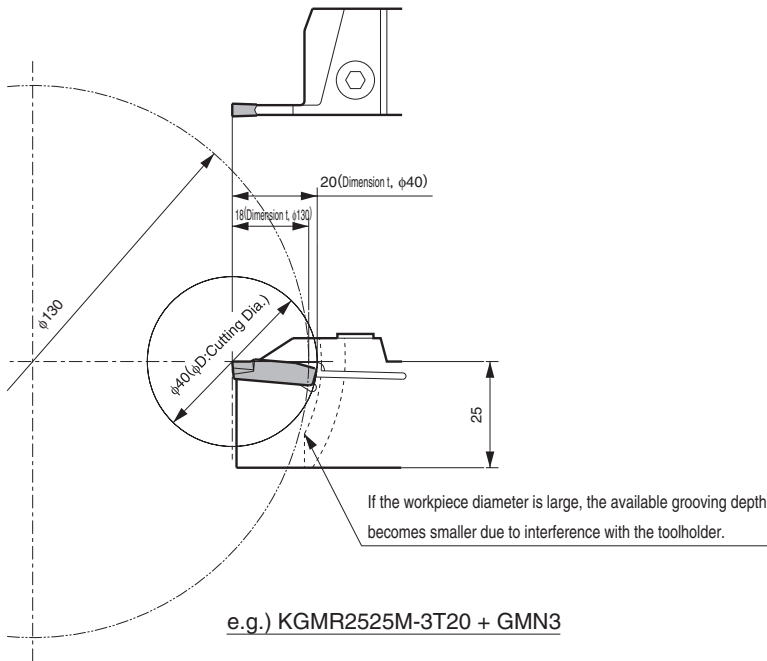
● : Std. Item



Cut-Off Toolholders

Possible cutting diameter of KGM / KGM-T type

There is a limit to available grooving depth depending on the workpiece diameter.



H

Cut-off

◆ KGM (for Automatic Lathe) Possible Cutting Dia. Table

Toolholder Description		φD(Cutting Dia.)																	
KGM ^{®/L}	0810K-1.5-125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	14	16	32
	1010□-1.5...	-	-	-	-	-	-	-	20	25	32	40	60	∞	∞	∞	∞		
	1212□-1.5...	-	-	-	-	25	26	28	32	36	40	60	100	∞	∞	∞	∞		
	0810K-2-125	-	-	-	-	-	-	-	-	-	-	-	-	10	14	16	32		
	1010□-2...	-	-	-	-	-	-	-	20	25	32	40	60	∞	∞	∞	∞		
	1212□-2...	-	-	-	-	25	26	28	50	∞	∞	∞	∞	∞	∞	∞	∞		
	1616□-2...	32	40	50	60	80	100	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞		
	1010□-2.5...	-	-	-	-	-	-	-	20	25	32	40	60	∞	∞	∞	∞		
	1212□-2.5...	-	-	-	-	25	26	28	32	36	40	60	100	∞	∞	∞	∞		
	1616□-2.5...	32	40	50	60	80	100	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞		
1616□-3...	32	40	50	60	80	100	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞			
Available Grooving Depth t (mm)		16	15	14	13	12.5	12	11	10	9	8	7	6	5	4	3	2	1	

◆ KGM-T Possible Cutting Dia. Table (GMN, GM^{®/L} when using 1-edge insert)

Toolholder Description		φD(Cutting Dia.)															
KGM ^{®/L}	2012K-2T17	-	-	-	-	-	-	-	-	66	80	130	260	∞	∞	∞	∞
	2020K-2T17	-	-	-	-	-	-	-	-	66	80	130	260	∞	∞	∞	∞
	2525M-2T17	-	-	-	-	-	-	-	-	66	80	130	260	∞	∞	∞	∞
	1616H-3T20	-	-	-	-	-	40	54	70	100	180	∞	∞	∞	∞	∞	∞
	2012K-3T20	-	-	-	-	-	40	90	130	240	∞	∞	∞	∞	∞	∞	∞
	2020K-3T20	-	-	-	-	-	40	90	130	240	∞	∞	∞	∞	∞	∞	∞
	2525M-3T20	-	-	-	-	-	40	90	130	240	∞	∞	∞	∞	∞	∞	∞
	2020K-4T20	-	-	-	-	-	40	90	130	240	∞	∞	∞	∞	∞	∞	∞
	2525M-4T20	-	-	-	-	-	40	90	130	240	∞	∞	∞	∞	∞	∞	∞
	2525M-4T25	-	-	50	140	240	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞
	2525M-5T25	-	-	50	140	240	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞
	3232P-5T25	-	-	50	280	600	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞
	2525M-6T30	100	300	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞
	Available Grooving Depth t (mm)		30	27	25	23	22	20	19	18	17	16	15	14	Under 13		

Cut-Off Inserts

TKN / TK^{R/L}

Insert		Description	Dimension (mm)		Angle	Cermet		CVD Coated Carbide	MEGACOAT NANO	PVD Coated Carbide		Carbide	Ref. to Page for Applicable Toolholders		
			W	r _ε	θ	TN620	TN90	CR9025	PR1535	PR660	PR930			KW10	
						R	L	R	L	R	L			R	L
Neutral		TKN	1.6	1.6	0.15			●	○					H26 H28	
			2	2.2	0.20	●	●	●	●	○	●	●			
			2.4	2.4	0.20	●	●	●	●	○	●	●			
			3	3.1	0.25	●	●	●	●	○	●	●			
			4	4.1	0.30	●	●	●	●	○	●	●			
			4.8	4.8	0.30			●	○						
			5	5.1	0.30			●	●	○					
			6	6.4	0.35			●	○	○			●		
			8	8.0	0.40			●	○	○					
	9	9.6	0.45			●	○	○							
	Low Feed		TKN	1.6-P	1.6	0.20			●	○	○		●	H26 H28	
				2-P	2.2	0.20	○	●	●	●	○	●	●		
3-P				3.1	0.25	○		●	●	○	●	●			
Lead Angle		TK ^{R/L}	1.6	1.6	0.15	○		●	○	○	○	○	○	H26 H28	
			2	2.2	0.20	○	●	●	●	○	○	○	○		○
			2.4	2.4	0.20	○	●	●	●	○	○	○	○		○
			3	3.1	0.25	○	●	●	●	○	○	○	○		○
			4	4.1	0.30	○	●	●	●	○	○	○	○		○
			5	5.1	0.30			●	○	○			●		
	Low Feed		TK ^{R/L}	1.6-P	1.6	0.20			●	○	○		●	H26 H28	
				2-P	2.2	0.20			●	●	○	○	●		●
				3-P	3.1	0.25	○	●	●	●	○	○	●		●

Recommended Cutting Conditions **H29**

Cut-Off Tools

Cutting Range	Chipbreaker	Advantage
General Cut-Off	Standard (Without Indication)	General cut-off type for feed rates over 0.1mm/rev Superior chip evacuation
Low feed Cut-Off	P	Chipbreaker specially designed for low feed machining on automatic lathes, etc. Chips are controlled at feed rate 0.03~0.08mm/rev

Inserts Edge Prep.

Edge Prep.	Chamfer + Honed	Sharp Edge	R honed
Std. Chipbreaker	TN90 CR9025 / PR660	PR1535 PR930 / KW10	-
P-Chipbreaker	-	-	TN620 / TN90 / CR9025 / PR1535 PR660 / PR930 / KW10

* Sharp Edge Spec. can reduce cutting force by 40% less than that of chamfer edge.

Set Up (TKN / TK^{R/L})

- Tap the insert lightly with a plastic hammer to push it into the extent that it can not be removed by hand. (Fig.1)
(Pull it to the point where it does not fall out when picked up lightly with fingers)
- Remove the insert with the supplied wrench. (Fig.2)

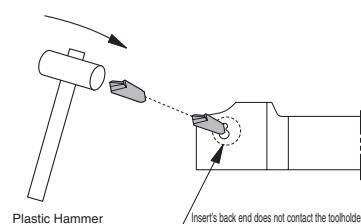


Fig.1 How to attach inserts

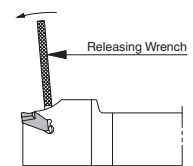


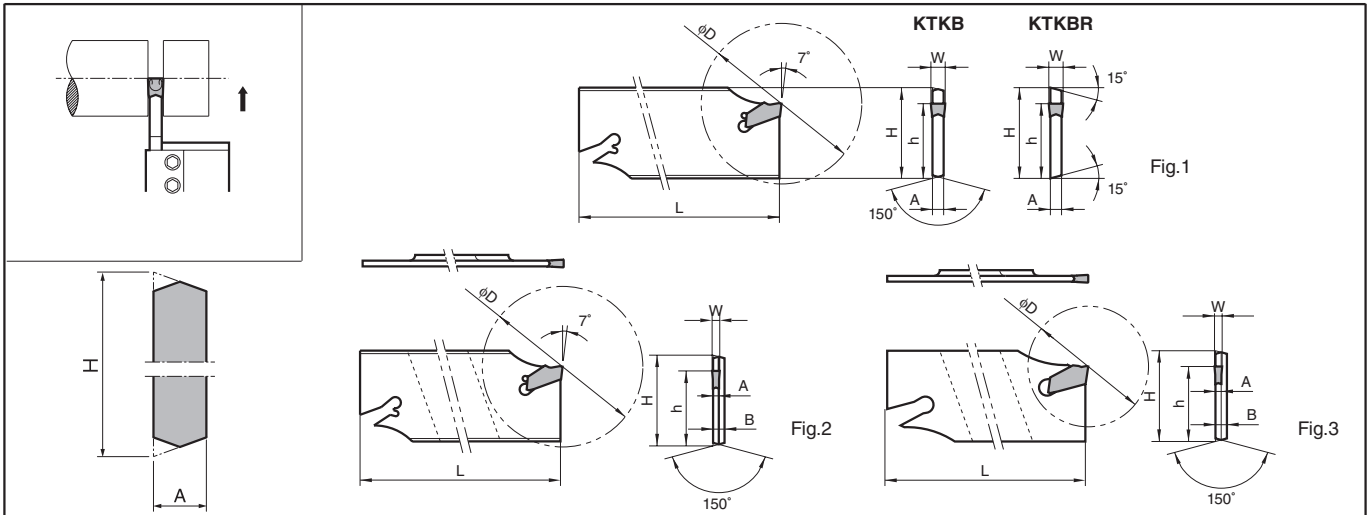
Fig.2 How to detach inserts

- : Std. Item
- : Check Availability

Inserts are sold in 10 piece boxes.

Cut-Off Blades

KTKB-SS / KTKB-S



Blade Dimensions

Description	Std.	Cut-off Dia. ϕ Dmax	Dimension (mm)						Edge Width (mm)	Drawing	Applicable Inserts \bullet H25				Applicable Blocks \bullet H27
			*H	h	B	L	A	W			Low Feed	Lead Angle	Low Feed / Lead Angle		
KTKB 19-1SS	\bullet	32	19	15.7	2.4	86	1.2	1.6	Fig.3	TKN1.6	TKN1.6-P	TK ^R /L 1.6	TK ^R /L 1.6-P	KTKTB 16-19 20-19	
KTKB 26-1SS	\bullet	35	26	21.4	2.4	110	1.2	1.6	Fig.3	TKN1.6	TKN1.6-P	TK ^R /L 1.6	TK ^R /L 1.6-P	KTKTB 16-26 20-26	
KTKB 32-1SS	\bullet	35	32	25	2.4	150	1.2	1.6	Fig.3	TKN1.6	TKN1.6-P	TK ^R /L 1.6	TK ^R /L 1.6-P	KTKTB 20-32 25-32 KTKTBF 25-32 32-32	
KTKB 19-2S	\bullet	40	19	15.7	-	86	1.8	2.2 2.4	Fig.1	TKN2 TKN2.4	TKN2-P	TK ^R /L 2 TK ^R /L 2.4	TK ^R /L 2-P	KTKTB 16-19 20-19	
KTKB 26-2S	\bullet	50	26	21.4	-	110	1.8	2.2 2.4							
KTKB 26-3S	\bullet	75					2.6	3.1		TKN3	TKN3-P	TK ^R /L 3	TK ^R /L 3-P	KTKTB 16-26 20-26	
KTKB 26-4S	\bullet	80					3.4	4.1		TKN4	-	TK ^R /L 4	-		
KTKB 26-5S	\bullet	80					4.2	4.8 5.1		TKN4.8 TKN5	-	TK ^R /L 5	-		
KTKB 32-2S	\bullet	50					32	25	-	150	1.8	2.2 2.4	Fig.2		TKN2 TKN2.4
KTKB 32-3S	\bullet	100	2.6	3.1	TKN3	TKN3-P					TK ^R /L 3	TK ^R /L 3-P			
KTKB 32-4S	\bullet	100	3.4	4.1	TKN4	-					TK ^R /L 4	-			
KTKB 32-5S	\bullet	120	4.2	4.8 5.1	TKN4.8 TKN5	-					TK ^R /L 5	-			
KTKB 32-6S	\bullet	120	5.4	6.4	TKN6	-					-	-			
KTKB ^R /L 32-8S	\bullet	120	6.8	8.0	TKN8	-					-	-			
KTKB ^R /L 32-9S	R	120	8.0	9.6	TKN9	-	-	-							

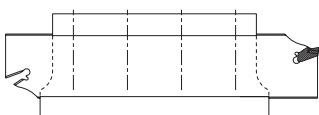
Note) 1. Suffix "-SS" means silver coating.

2. Releasing wrench is "LTK-5".

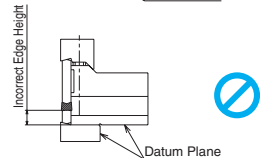
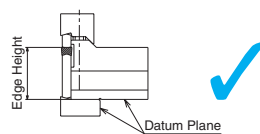
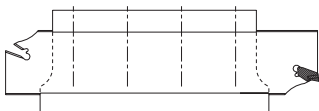
* Dimension H shows virtual apex distance.

How to install toolblock and blade.

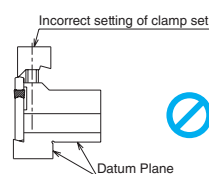
Correct way



Incorrect way



Incorrect setting of clamp set

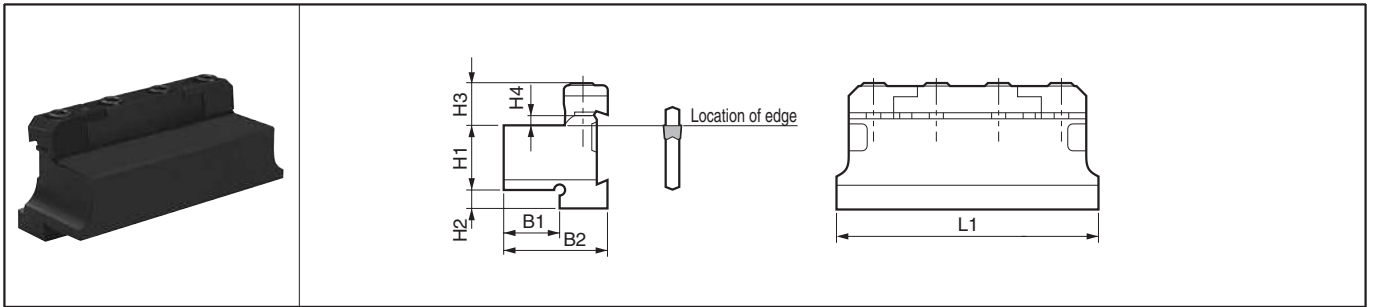


If the clamp set is mounted backward, a large gap will occur between the clamp and the toolblock, and the blade may come off during machining. Be careful when installing the clamp for safety.

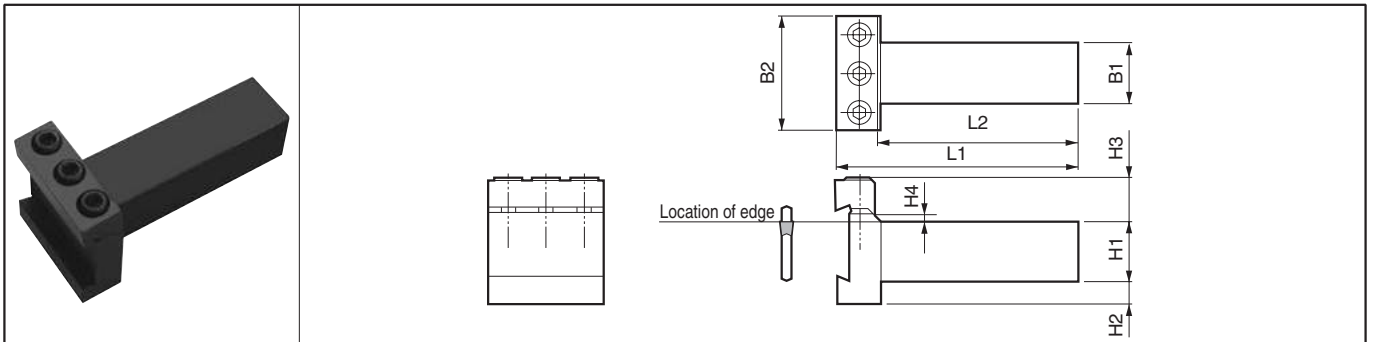
\bullet : Std. Item
R : Std. Item (Right-hand Only)

Toolblocks (for Holding Blade)

KTKTB (Separate type)



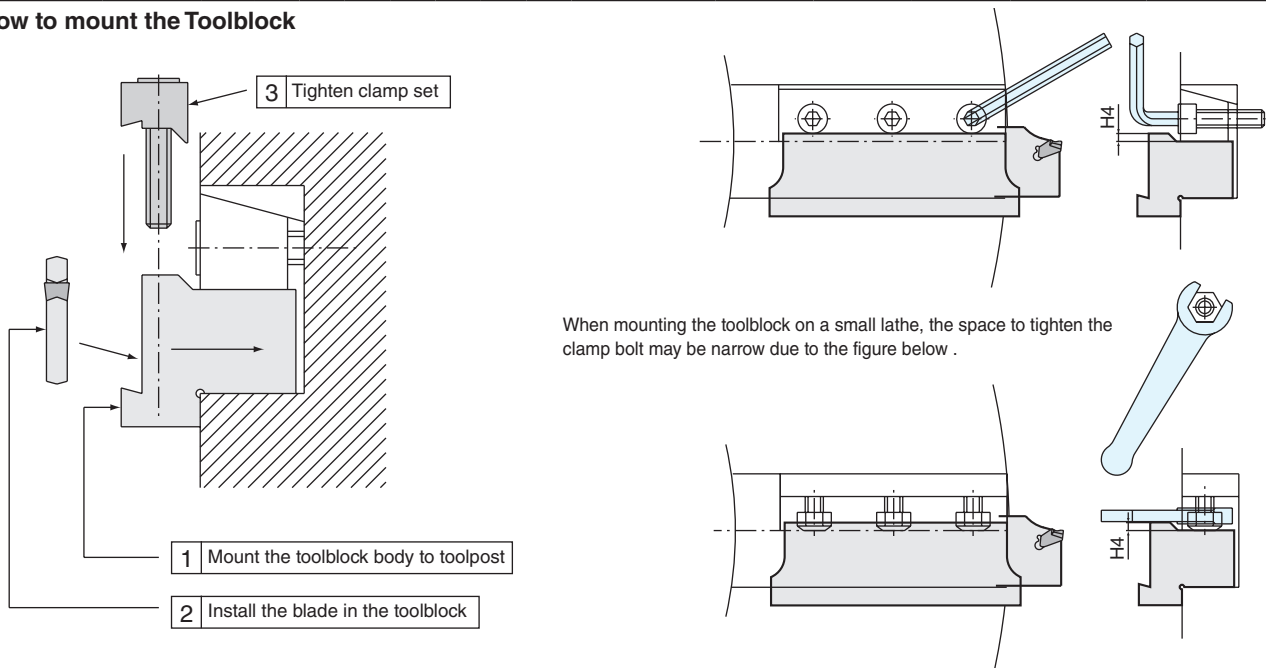
KTKTBF (Separate / Perpendicular type)



Toolblock Dimensions

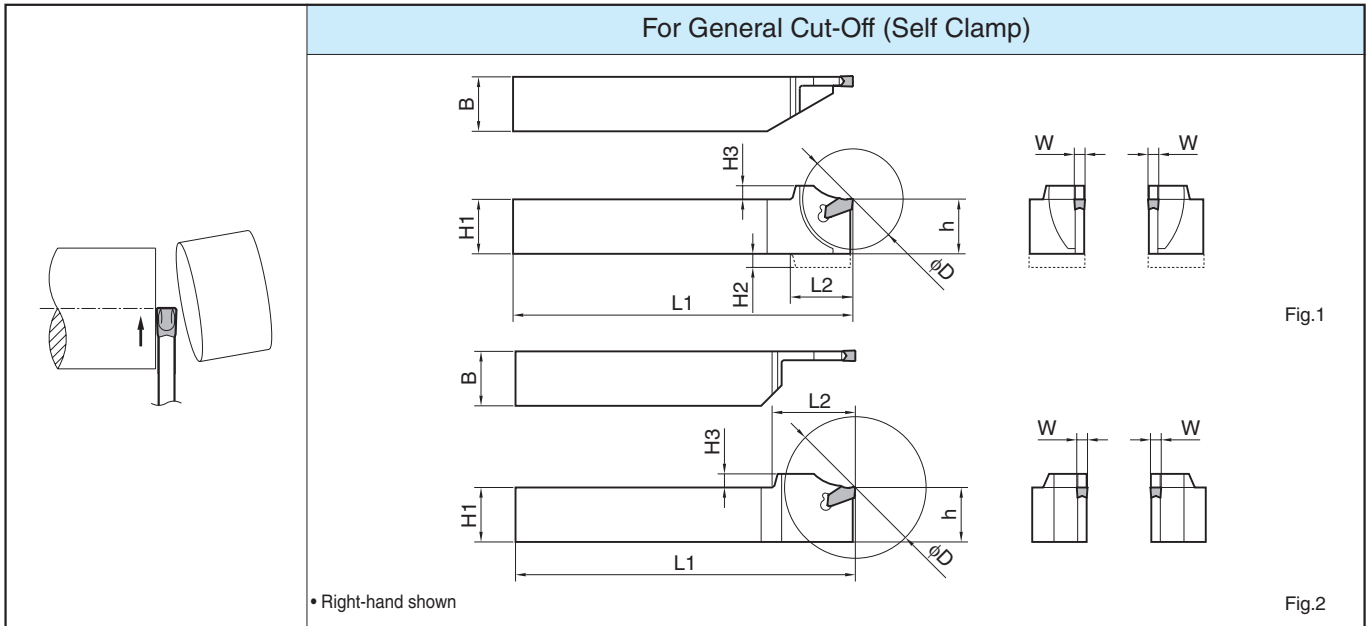
Description	Std.	Dimension (mm)										Spare Parts				Applicable Blade	
		H1	H2	H3	H4	B1	B2	L1	L2	Clamp Set		Screw	Wrench	Cut-Off	Face Grooving		
										Separate Type	Integral Type					Cut-Off	Face Grooving
KTKTB	16-19	●	16				15.5	29.5	76	-	-	BCS-1	HH5X25	LW-4	KTKB19-OS KTKB19-1SS	-	
	20-19	●	20	4	12	2	19	34	76	-	-	BCS-1	HH5X25	LW-4	KTKB19-OS KTKB19-1SS	-	
	16-26	●	16	13			15.5	31.5	86	-	BCS-2	-	HH6X30	LW-5	KTKB26-OS KTKB26-1SS	-	
	20-26	●	20	9	14	2.5	19	36	86	-	BCS-2	-	HH6X30	LW-5	KTKB26-OS KTKB26-1SS	-	
	20-32	●	20	13			19	38	100	-	BCS-3	-	HH6X30	LW-5	KTKB32-OS KTKB32-1SS	KFTB%0000-4S KFTB%0000-5S	
	25-32	●	25	8	17	3.5	23	42	110	-	BCS-4	-	HH6X30	LW-5	KTKB32-OS KTKB32-1SS KTKB%32-OS	KFTB%0000-4S KFTB%0000-5S	
KTKTBF	25-32	●	25	9.5	17	3.5	25	48	102	84.5	-	BCS-5	HH6X30	LW-5	KTKB32-OS KTKB32-1SS KTKB%32-OS	KFTB%0000-4S KFTB%0000-5S	
	32-32	●	32	2.5			32	48	117	99.5	-	BCS-5	HH6X30	LW-5	KTKB32-OS KTKB32-1SS KTKB%32-OS	KFTB%0000-4S KFTB%0000-5S	

How to mount the Toolblock



Cut-Off Toolholders (Integral Type)

KTKH-S



Toolholder Dimensions

Description	Std.		Cut-off Dia. (mm)	Dimension (mm)						Edge Width(mm)	Drawing	Spare Parts Releasing Wrench	Ref. to Page for Recommended Cutting Conditions
	R	L		ϕD_{max}	H1-h	H2	H3	B	L1				
KTKH^{R/L} 1010F-2S	●	●	30	10	5	4	10	80	18.6	2.2 2.4	Fig.1	LTK-5	H29
1212H-2S	●	●	33	12	4	5	12	100	19.8				
1612H-2S	●	●	33	16	-	3	12	100	19.8				
1616H-2S	●	●	33	16	-	3	16	100	19.8				
2012K-2S	●	●	38	20	-	4	12	125	22.8				
2020K-2S	●	●	38	20	-	4	20	125	22.8				
1612H-3S	●	●	36	16	4	4	12	100	21.7	3.1	Fig.1		
1616H-3S	●	●	36	16	4	4	16	100	21.7		Fig.1		
2012K-3S	●	●	41	20	-	5	12	125	25.3		Fig.2		
2020K-3S	●	●	52	20	-	5	20	125	31.0	4.1	Fig.1		
2525M-3S	●	●	53	25	-	5	25	150	31.5		Fig.2		
2012K-4S	●	●	44	20	-	5	12	125	26.3		Fig.1		
2020K-4S	●	●	62	20	-	5	20	125	35.0	4.1	Fig.2		
2525M-4S	●	●	68	25	-	5	25	150	38.0		Fig.2		
2525M-5S	●	●	79	25	-	5	25	150	43.5	4.8,5.1	Fig.2		
KTKH^{R/L} 2020K-3T17S	●	●	35	20	-	5	20	125	21.8	3.1 4.1	Fig.1	LTK-5	H29
2525M-3T22S	●	●	45	25	-	5	25	150	26.8				
2020K-4T22S	●	●	45	20	-	5	20	125	26.8				
2525M-4T22S	●	●	45	25	-	5	25	150	26.8				

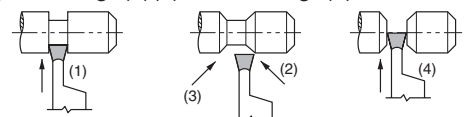
Applicable Inserts

Ref. to Page	H25			
Insert				
Toolholder Description	Low Feed	Lead Angle	Low Feed / Lead Angle	
KTKH^{R/L} ...-2...	TKN2 TKN2.4	TKN2-P	TK ^{R/L} .2 TK ^{R/L} .2.4	TK ^{R/L} .2-P
KTKH^{R/L} ...-3...	TKN3	TKN3-P	TK ^{R/L} .3	TK ^{R/L} .3-P
KTKH^{R/L} ...-4...	TKN4	-	TK ^{R/L} .4	-
KTKH^{R/L} ...-5...	TKN4.8 TKN5	-	TK ^{R/L} .5	-

Application Example of Cut-Off

1. Cut-Off after Chamfering

(1) Grooving (2)(3) Chamfering (4) Cut-Off

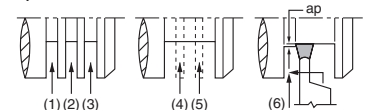


2. Wide Grooving

(1)~(5) Groove Widening

(6) Longitudinal Finishing

(Value of "ap" shall be under the value of Corner-R)



(In order to prevent both corners' unequal wear)

● : Std. Item

Recommended Cutting Conditions

Recommended Cutting Conditions (In case of using TKF12 / 16 type inserts)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)						TKF12						TKF16		Remarks
							Edge Width W (mm)						Edge Width W (mm)		
	MEGACOAT NANO	MEGACOAT	PVD Coated Carbide	DLC Coated Carbide	Carbide		0.5	0.7	1.0	1.25	1.5	2.0	1.5	2.0	
	PR1425	PR1535	PR1225	PR1025	PDL025	KW10	f (mm/rev)						f (mm/rev)		
Carbon Steel	★ 70~170 (50~140)	☆ 70~150 (50~120)	☆ 70~150 (50~120)	☆ 60~130	-	-	0.01~0.02	0.01~0.03	0.01~0.04 (0.01~0.05)	0.01~0.04	0.01~0.04 (0.02~0.1)	0.01~0.04 (0.02~0.1)	0.02~0.07 (0.02~0.1)	0.02~0.07 (0.02~0.1)	
Alloy Steel	★ 70~170 (50~140)	☆ 70~150 (50~120)	☆ 70~150 (50~120)	☆ 60~130	-	-	0.01~0.02	0.01~0.03	0.01~0.04 (0.01~0.05)	0.01~0.04	0.01~0.04 (0.02~0.1)	0.01~0.04 (0.02~0.1)	0.02~0.07 (0.02~0.1)	0.02~0.07 (0.02~0.1)	
Stainless Steel	☆ 60~140 (40~120)	★ 60~120 (40~100)	☆ 60~120 (40~100)	☆ 50~100	-	-	0.005~0.015	0.01~0.02	0.01~0.02 (0.01~0.03)	0.01~0.02	0.01~0.02 (0.01~0.05)	0.01~0.02 (0.01~0.05)	0.01~0.04 (0.01~0.05)	0.01~0.04 (0.01~0.05)	
Cast Iron	-	-	-	-	-	★ 50~100	0.01~0.03	0.01~0.04	0.01~0.05	0.01~0.05	0.01~0.05	0.01~0.05	0.02~0.08	0.02~0.08	
Aluminum	-	-	-	-	★ 200~500	☆ 200~450	0.01~0.03	0.01~0.04	0.01~0.05	0.01~0.05	0.01~0.05	0.01~0.05	0.02~0.08	0.02~0.08	
Brass	-	-	-	-	-	★ 100~200	0.01~0.03	0.01~0.04	0.01~0.06	0.01~0.06	0.01~0.06	0.01~0.06	0.02~0.1	0.02~0.1	

*(): Tough edge type (TKF..T.)

★ : 1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions (In case of using GMM-MT, GMM-TK, GMM-NB type inserts)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)					Edge Width W (mm)				Remarks
	Cermet	CVD Coated Carbide	PVD Coated Carbide	Carbide	1.5	2.0 / 2.5	3.0	4.0		
	-	CR9025	PR915	PR930	KW10	f (mm/rev)				
Carbon Steel	-	☆ 80~180	★ 60~150	☆ 60~130	-	0.01~0.04	0.02~0.15	0.03~0.20	0.08~0.30	
Alloy Steel	-	☆ 70~150	★ 60~150	☆ 60~130	-	0.01~0.04	0.02~0.15	0.03~0.20	0.08~0.30	
Stainless Steel	-	☆ 60~140	★ 50~140	☆ 50~120	-	0.01~0.03	0.02~0.10	0.03~0.15	0.08~0.25	
Cast Iron	-	-	-	-	★ 50~100	0.01~0.05	0.05~0.12	0.10~0.25	0.10~0.30	
Aluminum	-	-	-	-	★ 200~450	0.01~0.05	0.05~0.10	0.05~0.20	0.05~0.25	
Brass	-	-	-	-	★ 100~200	0.01~0.05	0.05~0.10	0.05~0.15	0.05~0.20	

*When machining Steel and Stainless Steel by Insert of PR930, decrease the Feed Rate by 20%.

★ : 1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions (In case of using TKN, TK^{R/L} type inserts)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)							Edge Width W (mm)					Remarks
	Cermet		CVD Coated Carbide	MEGACOAT NANO	PVD Coated Carbide	Carbide		1.6	2.2 / 2.4	3.1	4.1	4.8~9.6	
	TN620	TN90	CR9025	PR1535	PR660	PR930	KW10	f (mm/rev)					
Carbon Steel	☆ 60~200	☆ 120~200	★ 80~180	☆ 60~150	☆ 60~130	☆ 60~130	-	0.02~0.08	0.04~0.18	0.05~0.25	0.08~0.30	0.15~0.40	
Alloy Steel	☆ 60~160	☆ 100~160	★ 70~150	☆ 60~150	☆ 60~130	☆ 60~130	-	0.02~0.08	0.04~0.18	0.05~0.25	0.08~0.30	0.15~0.40	
Stainless Steel	☆ 60~150	☆ 80~150	☆ 60~140	★ 50~120	☆ 50~120	☆ 60~140	-	0.02~0.06	0.04~0.12	0.05~0.18	0.08~0.25	0.10~0.30	
Cast Iron	-	-	-	-	-	-	★ 50~100	0.02~0.08	0.05~0.12	0.10~0.25	0.10~0.30	0.15~0.35	
Aluminum	-	-	-	-	-	-	★ 100~450	0.02~0.10	0.05~0.10	0.05~0.20	0.05~0.25	0.10~0.25	
Brass	-	-	-	-	-	-	★ 100~200	0.02~0.10	0.05~0.10	0.05~0.15	0.05~0.20	0.10~0.25	

★ : 1st Recommendation ☆ : 2nd Recommendation



Recommended Cutting Conditions (In case of using GMM-TMR type inserts)

Workpiece Material	Vc (m/min)	f (mm/rev)	Remarks
Carbon Steel	60~200	0.08~0.18	Coolant
Alloy Steel	60~150		
Stainless Steel	50~140		





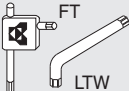
Alternative Toolholder Reference Table for Cut-off Toolholder

Alternative Toolholder Reference Table for Cut-off Toolholder (KTKF / KGM)

Conventional Toolholder					Alternative Toolholder			
Description	Overall length (mm)	Spare Parts			Description	Overall length (mm)	Remarks	Ref. to Page
		Clamp Screw 	Wrench 					
KTKF^{®/L} 1010K-12	125	SB-4590TRWN	LTW-10S		KTKF^{®/L} 1010JX-12	120		H8
KTKF^{®/L} 1212M-12	150			KTKF^{®/L} 1212JX-12	120			
KTKF^{®/L} 1616M-12	150			KTKF^{®/L} 1616JX-12	120			
KTKF^{®/L} 1010K-16	125			KTKF^{®/L} 1010JX-16	120			
KTKF^{®/L} 1212M-16	150			KTKF^{®/L} 1212JX-16	120			
KTKF^{®/L} 1616M-16	150			KTKF^{®/L} 1616JX-16	120			
KGM^{®/L} 0810K-1.5-125	125	SE-40120TR	LTW-15S		-	-	No replacement	H22
KGM^{®/L} 1010K-1.5-125	125			KGM^{®/L} 1010JX-1.5	120			
KGM^{®/L} 1212M-1.5-150	150			KGM^{®/L} 1212JX-1.5	120			
KGM^{®/L} 0810K-2-125	125	SE-40120TR	LTW-15S		-	-	No replacement	
KGM^{®/L} 1010K-2-125	125			KGM^{®/L} 1010JX-2	120			
KGM^{®/L} 1212M-2-150	150			KGM^{®/L} 1212JX-2	120			
KGM^{®/L} 1616M-2-150	150	SE-50125TR	LTW-20		KGM^{®/L} 1616JX-2	120		
KGM^{®/L} 1010K-2.5-125	125	SE-40120TR	LTW-15S		KGM^{®/L} 1010JX-2.5	120		
KGM^{®/L} 1212M-2.5-150	150			KGM^{®/L} 1212JX-2.5	120			
KGM^{®/L} 1616M-2.5-150	150	SE-50125TR	LTW-20		KGM^{®/L} 1616JX-2.5	120		
KGM^{®/L} 1616M-3-150	150	SE-50125TR	LTW-20		KGM^{®/L} 1616JX-3	120		

Note) The corresponding alternative toolholder may be different from the conventional toolholder in insert clamping system or insert size.
Make sure of their specifications by referring to the catalog or other documents.

Alternative Toolholder Reference Table for Cut-off Toolholder (KTKH-B / KTKH-S)

Conventional Toolholder					Alternative Toolholder			
Description	Cut-off Dia.	Spare Parts			Description	Cut-off Dia.	Remarks	Ref. to Page
		Releasing Wrench 	Clamp Screw 	Wrench 				
KTKH^{®/L} 0808K-1.6-125B	φ10	-	SE-40120TR	FT-15	-	-	No replacement	H22
KTKH^{®/L} 1010K-1.6-125B	φ20				KGM^{®/L} 1010JX-1.5	φ20		
KTKH^{®/L} 1212M-1.6-150B	φ25				KGM^{®/L} 1212JX-1.5	φ25		
KTKH^{®/L} 1414M-1.6-150B	φ26				-	-	No replacement	
KTKH^{®/L} 1010K-2-125B	φ20	-	SE-40120TR	FT-15	KGM^{®/L} 1010JX-2	φ20		
KTKH^{®/L} 1212M-2-150B	φ25				KGM^{®/L} 1212JX-2	φ25		
KTKH^{®/L} 1616M-2-150B	φ32				KGM^{®/L} 1616JX-2	φ32		
KTKH^{®/L} 1616M-3-150B	φ32	LTK-5	-	-	KGM^{®/L} 1616JX-3	φ32		
KTKHR 1010K-2-125S	φ30				KGMR 1010JX-2	φ20	Processing dia. is small.	
KTKH^{®/L} 1212M-2-150S	φ30				KGM^{®/L} 1212JX-2	φ25	Processing dia. is small.	
KTKH^{®/L} 1616M-2-150S	φ36				KGM^{®/L} 1616JX-2	φ32	Processing dia. is small.	
KTKH^{®/L} 1616M-3-150S	φ45				KGM^{®/L} 1616JX-3	φ32	Processing dia. is small.	

Note) The corresponding alternative toolholder may be different from the conventional toolholder in processing diameter or insert size.
Make sure of their specifications by referring to the catalog or other documents.

H

Cut-off