THE NEW VALUE FRONTIER

KYOCERA

KGD/KGDF

Improved grooving performance

Good chip control
MEGACOAT coating technology for long tool life and high efficiency machining
Comprehensive toolholder lineup

External grooving / Cut-Off

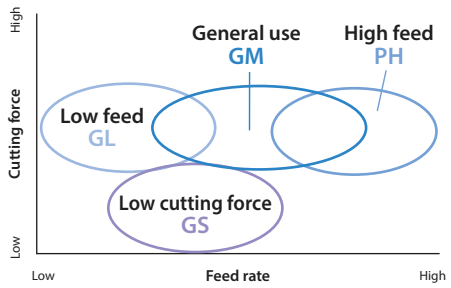
KGD

Good chip control
MEGACOAT coating technology for long tool life and high efficiency machining

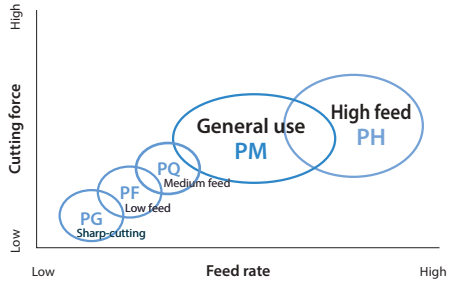
1 Wide range of chipbreakers

Application maps

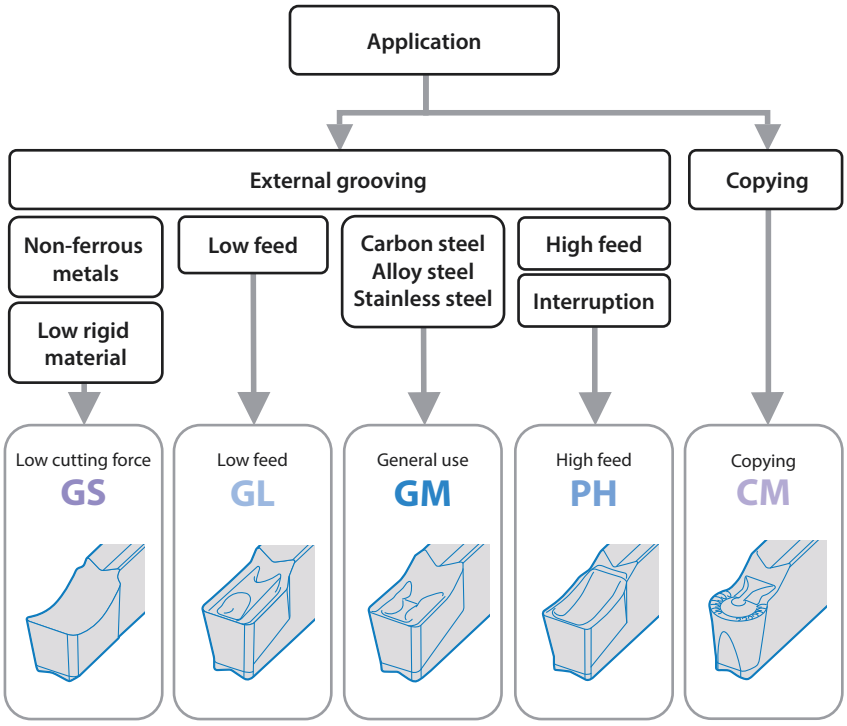
External grooving and traversing



Cut-Off



Chipbreaker selection (external)



Comparison of chip control (In-house evaluation)

Cutting conditions: Vc = 150 m/min, f = 0.15 mm/rev Workpiece : 15CrMo4

Better chip control than competitors

Reduces damage of cutting edge caused by crushing chips

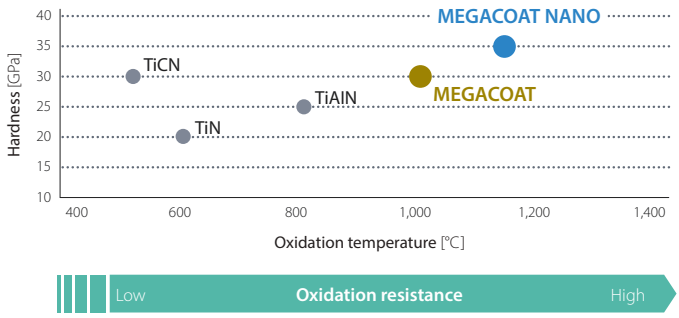
GM chipbreaker

Competitor A

Competitor B

2 MEGACOAT/MEGACOAT NANO coating technology for long tool life

Coating properties



PR1225 (MEGACOAT)
For steel grooving and cut-off

PR1215 (MEGACOAT)
Superior wear resistance
for machining cast iron

PR1535 (MEGACOAT NANO)
For machining stainless steel

3 Various toolholder lineup

Available two types of toolholder, monoblock type and seperate type.

Monoblock type

Seperate type

Monoblock type toolholder with wide lineup (for various groove width and depth)

Seperate type toolholder: Applicable for various types of grooving and cut-off, such as external and face grooving by replacing blade parts.

Monoblock type / Seperate type selection reference

Monoblock type	Seperate type
• Various toolholder lineup Available for various groove depth (shallow/medium/deep) Optimum overhang length • Available for low-rigid machine and workpiece • For small machine with limited work space automatic lathe, small lathe, etc.	• Suitable for high-mix low-volume production Suitable for grooving with various width Applicable for various groove width by replacing blades • Suitable for difficult-to-cut material Tough cutting conditions Toolholder cost reduction (replaceable blade) • Face grooving is possible by changing blade Make sure right hand/left hand

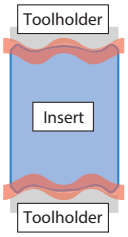
Face grooving KGDF toolholder and GDFM inserts ➡ P17

The new "W Grip" is applied for more rigid clamping and stable machining.

1. Prevent the insert from side-slip causing unstable machining and insert breakage.
2. Improved indexability accuracy.

High rigidity, reliability and clamping strength.

Insert for GDFM/GDFMS is not compatible with KGD toolholder.



W Grip

GDM/GDMS/GDG (External grooving and traversing)

Applicable inserts

Classification of usage			TN620	TN90	PR1535	PR1225	PR1215	GW15
	P	Carbon steel / Alloy steel	●	○		◐	◔	
	M	Stainless steel			◐	◔	◔	
	K	Cast iron					◐	
	N	Non-ferrous metals						◐
	S	Titanium alloy			◐			◔
	H	Hard materials (in case hardness is under 40HRC)				○		
		Hard materials (in case hardness is over 40HRC)						

◐ : Light interruption / 1st choice
◔ : Light interruption / 2nd choice
● : Continuous / 1st choice
○ : Continuous / 2nd choice

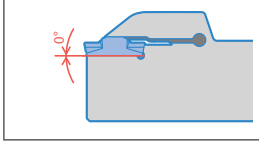
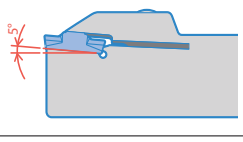
Insert		Description		Dimensions (mm) W	Tolerance	rε	M	L	H	Cermet TN620	TN90	MEGACOAT NANO PR1535	MEGACOAT PR1225	PR1215	Carbide GW15
Grooving and traversing	General use	GDM	2420N-020GM	2.4	±0.03	0.2	1.95	20	4.3	●	●	●	●	●	
			3020N-020GM	3.0			2.3			●	●	●	●	●	
			3020N-040GM			0.4				●	●	●	●	●	
			4020N-020GM	4.0		0.2	3.3			●	●	●	●	●	
			4020N-040GM			0.4				●	●	●	●	●	
			4020N-080GM			0.8				●	●	●	●	●	
			5020N-040GM	5.0	±0.04	0.4	4.2			●	●	●	●	●	
			5020N-080GM			0.8				●	●	●	●	●	
			6020N-040GM	6.0		0.4	5.2			●	●	●	●	●	
			6020N-080GM			0.8				●	●	●	●	●	
			8030N-080GM	8.0	±0.05		6.0	30	5.5			●	●	●	
	General use 1-edge	GDMS	2220N-020GM	2.2	±0.03	0.2	1.75	20	4.3	●	●	●	●	●	
			3020N-040GM	3.0		0.4	2.3			●	●	●	●	●	
			4020N-040GM	4.0			3.3			●	●	●	●	●	
			5020N-080GM	5.0	±0.04	0.8	4.2			●	●	●	●	●	
			6020N-080GM	6.0			5.2			●	●	●	●	●	
	Low feed	GDM	2420N-020GL	2.4	±0.03	0.2	1.95	20	4.3	●	●	●	●	●	
			3020N-020GL	3.0			2.3			●	●	●	●	●	
			3020N-040GL			0.4				●	●	●	●	●	
			4020N-020GL	4.0		0.2	3.3			●	●	●	●	●	
			4020N-040GL			0.4				●	●	●	●	●	
			5020N-040GL	5.0	±0.04		4.2			●	●	●	●	●	
			6020N-040GL	6.0			5.2			●	●	●	●	●	
Grooving	Low cutting force	GDG	2520N-020GS	2.5	±0.02	0.2	2.0	20	4.3	●	●	●	●	●	●
			3020N-020GS	3.0			2.3			●	●	●	●	●	●
			3520N-020GS	3.5			2.8			●	●	●	●	●	●
			4020N-040GS	4.0		0.4	3.3			●	●	●	●	●	●
			5020N-040GS	5.0			4.2			●	●	●	●	●	●
			6020N-040GS	6.0			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	●	●	●	●	●	
			4020N-200R-CM	4.0		2.0	3.3			●	●	●	●	●	
			5020N-250R-CM	5.0	±0.04	2.5	4.2	*21		●	●	●	●	●	
			6020N-300R-CM	6.0		3.0	5.2			●	●	●	●	●	
Grooving and cut-off (High feed)		GDM	2020N-020PH	2.0	±0.03	0.2	1.5	20	4.3			●	●	●	
			3020N-030PH	3.0		0.3	2.3					●	●	●	
			4020N-030PH	4.0			3.3					●	●	●	
	1-edge	GDMS	2020N-020PH	2.0	±0.03	0.2	1.5	20				●	●	●	
			3020N-030PH	3.0		0.3	2.3					●	●	●	
			4020N-030PH	4.0			3.3					●	●	●	

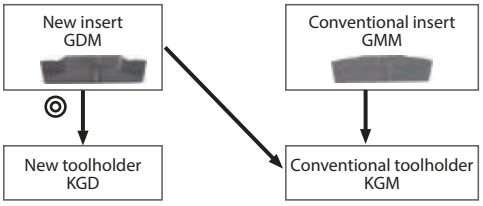
* GDM50/60-CM differes from other descriptions in length (L) to avoid interference of a toolholder with workpiece.

● : Available

* KGD / KGM compatibility

Insert setting angle of KGD / KGM toolholders

KGD…0°	Conventional tools KGM…5°
	

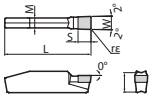
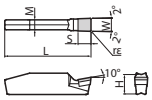


Not recommended to install conventional inserts on new toolholder.

GDGS (CBN/PCD) / GDM / GDG (Cut-Off)

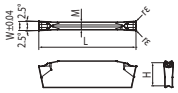
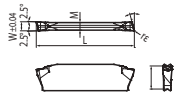
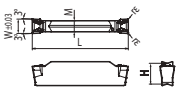
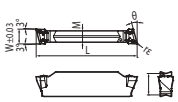
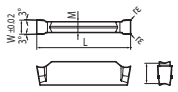
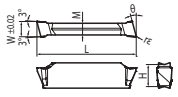
Applicable inserts

GDGS (CBN / PCD) Classification of usage					
	N	Non-ferrous metals			●
	S	Titanium alloy			●
◕ : Light Interruption / 1st choice ◔ : Light Interruption / 2nd choice ● : Continuous / 1st choice ○ : Continuous / 2nd choice	H	Hard materials (in case hardness is under 40HRC)			
		Hard materials (in case hardness is over 40HRC)	●		
		Powdered steel		●	

Insert			Description		Dimensions (mm) W	Tolerance	rε	M	L	H	S	Angle θ	MEGACOAT CBN KBN05M	CBN KBN570	PCD KPD001
Grooving	1-edge	CBN 	GDGS	2020N-020NB	2.0	±0.03	0.2	1.8	20	4.3	2.9	—	●	●	●
				3020N-020NB	3.0		0.2	2.3							●
				3020N-040NB			0.4						●	●	
				4020N-020NB	4.0		0.2	3.3							●
				4020N-040NB			0.4						●	●	
		PCD 		5020N-020NB	5.0		0.2	4.2							●
				5020N-040NB			0.4						●	●	
				6020N-020NB	6.0		0.2	5.2							●
				6020N-040NB			0.4						●	●	

● : Available

GDM / GDG (Cut-Off) Classification of usage						
	P	Carbon steel / Alloy steel	◔	◕	◔		
◕ : Light interruption / 1st choice ◔ : Light interruption / 2nd choice ● : Continuous / 1st choice ○ : Continuous / 2nd choice	M	Stainless steel	◕	◔	◔		
	N	Non-ferrous metals				◕	◔

Insert (Handed insert shows right-hand)			Description		Dimensions (mm) W	Tolerance	rε	M	L	H	Angle θ	MEGACOAT NANO PR1535	MEGACOAT PR1225	MEGACOAT PR1215	DLC Coated Carbide PDL025	Carbide GW15
Cut-Off (Low feed)			GDM	1316N-003PF	1.3	±0.04	0.03	1.0	16	3.7	—	●	●	●		
				1316N-015PF			0.15					●	●	●		
				1516N-003PF	1.5		0.03	1.2				●	●	●		
				1516N-015PF			0.15					●	●	●		
				2020N-003PF	2.0		0.03	1.7	20	4.3		●	●	●		
				2020N-015PF			0.15					●	●	●		
				2520N-003PF	2.5		0.03	2.1				●	●	●		
				2520N-015PF			0.15					●	●	●		
				3020N-003PF	3.0		0.03	2.3				●	●	●		
				3020N-015PF			0.15					●	●	●		
	15° Lead angle		GDM	1316 R/L-003PF-15D	1.3	±0.04	0.03	1.0	16	3.7	15°	●	●	●		
				1516 R/L-003PF-15D	1.5		0.03	1.2				●	●	●		
				1516R-015PF-15D			0.15					R	R	R		
				2020 R/L-003PF-15D	2.0		0.03	1.7	20	4.3		●	●	●		
				2020R-015PF-15D			0.15					R	R	R		
				2520 R/L-003PF-15D	2.5		0.03	2.1				●	●	●		
				2520R-015PF-15D			0.15					R	R	R		
				3020 R/L-003PF-15D	3.0		0.03	2.3				●	●	●		
				3020R-015PF-15D			0.15					R	R	R		
Cut-Off (Medium feed)			GDM	2020N-010PQ	2.0	±0.03	0.1	1.7	20	4.3	—	●	●	●		
				2520N-010PQ	2.5			2.1				●	●	●		
				3020N-010PQ	3.0			2.3				●	●	●		
	15° Lead angle		GDM	2020R-010PQ-15D	2.0	±0.03	0.1	1.7	20	4.3	15°	R	R	R		
				2520R-010PQ-15D	2.5			2.1				R	R	R		
				3020R-010PQ-15D	3.0			2.3				R	R	R		
Cut-Off (Low cutting force)			GDG	2020N-005PG	2.0	±0.02	0.05	1.7	20	4.3	—	●	●		●	●
				2520N-005PG	2.5			2.1				●	●		●	●
				3020N-005PG	3.0			2.3				●	●		●	●
	15° Lead angle		GDG	2020R-005PG-15D	2.0	±0.02	0.05	1.7	20	4.3	15°	R	R		R	R
				2520R-005PG-15D	2.5			2.1				R	R		R	R
				3020R-005PG-15D	3.0			2.3				R	R		R	R

PF chipbreaker has a large corner-R (rε)
Using PF chipbreaker (designed for cut-off) for grooving will not create a flat bottom (see fig.)

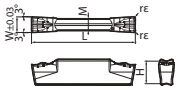
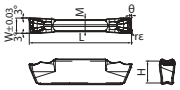
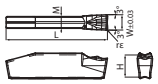
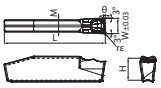
Groove bottom created by PF chipbreaker

Inserts are sold in 10 piece boxes
● : Available R : Available (Right-hand Only)

GDM/GDMS (Cut-Off)

Applicable inserts

Classification of usage					
●: Light interruption / 1st choice ○: Light interruption / 2nd choice	P	Carbon steel / Alloy steel	○	●	○
	M	Stainless steel	●	○	○
	N	Non-ferrous metals			

Insert Handed insert shows right-hand			Description		Dimensions (mm)						Angle	MEGACOAT NANO	MEGACOAT	
					W	Tolerance	rε	M	L	H	θ	PR1535	PR1225	PR1215
Cut-Off			GDM	2020N-020PM	2.0	±0.03	0.2	1.5	20	4.3	—	●	●	●
				2520N-020PM	2.5			1.95				●	●	●
				3020N-025PM	3.0		0.25	2.3				●	●	●
				4020N-030PM	4.0		0.3	3.3				●	●	●
	 6° Lead angle		GDM	2020R-020PM-6D	2.0	±0.03	0.2	1.5	20	4.3	6°	R	R	R
				2520R-020PM-6D	2.5			1.95				R	R	R
				3020R-025PM-6D	3.0		0.25	2.3				R	R	R
	 1-edge		GDMS	2020N-020PM	2.0	±0.03	0.2	1.5	20	4.3	—	●	●	●
				3020N-025PM	3.0		0.25	2.3				●	●	●
				4020N-030PM	4.0		0.3	3.3				●	●	●
	 6° Lead angle 1-edge		GDMS	2020R-020PM-6D	2.0	±0.03	0.2	1.5	20	4.3	6°	R	R	R
				3020R-025PM-6D	3.0		0.25	2.3				R	R	R
				4020R-030PM-6D	4.0		0.3	3.3				R	R	R

Using PM chipbreaker (designed for cut-off) for grooving will not create a flat bottom (see fig.)

Groove bottom created by PM chipbreaker

Inserts are sold in 10 piece boxes
●: Available R: Available (Right-hand only)

Inserts identification system

Tolerance
M: M-Class
G: G-Class

Width
13: 1.3 mm
15: 1.5 mm
20: 2 mm
25: 2.5mm
30: 3 mm
40: 4 mm

Hand of Tool
R: Right-hand
L: Left-hand
N: Neutral

Chipbreaker (External grooving / Cut-Off)
GM: Grooving and traversing
GL: Low feed
GS: Low cutting force
CM: Copying
PH: High feed
PM: Cut-Off
PF: Cut-Off (Low feed)
PQ: Cut-Off (Medium feed)
PG: Cut-Off (Low cutting force)
NB: Without chipbreaker

GD M S 30 20 N - 025 GM - 6D

Series
GD: External grooving / Cut-Off
GDF: Face grooving

No. of edges
No indication: 2-edge
S: 1-edge

Insert length
16:16 mm
20: 20 mm
30: 30 mm

Corner-R (rε)
003: 0.03 mm
015: 0.15 mm
020: 0.2 mm
025: 0.25 mm
030: 0.3 mm
150R-: 1.5 mm (Full-R)

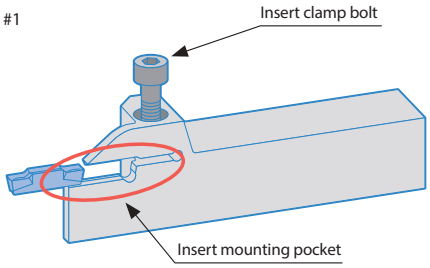
Chipbreaker (Face grooving)
GM: General use
DM: Deep grooving
CM: Copying

Lead angle
6D: 6°
15D: 15°

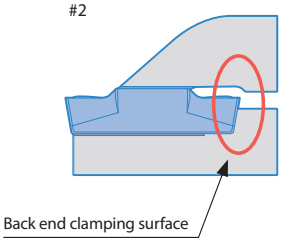
Setting the insert

1. Completely eliminate chips from the insert mounting part (see #1).
2. Put the insert into the toolholder and push until it contacts the holder's surface for fixing the insert's back end (see #1, #2).
3. Keeping the insert pushed against the toolholder's locating surface, tighten the insert clamp bolt at an appropriate torque (recommended tightening torque for clamp bolt is 6.5 N·m for HH5X○○, 8.0 N·m for HH6X25, and 2.5 N·m for SE-50125TR).
4. Make sure there is no gap between the insert and the toolholder's locating surface and that the insert is set straight (see #2, #3).

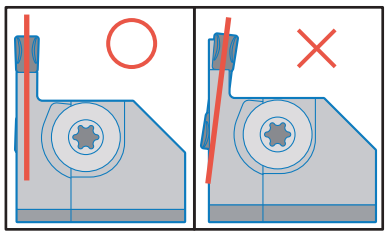
#1



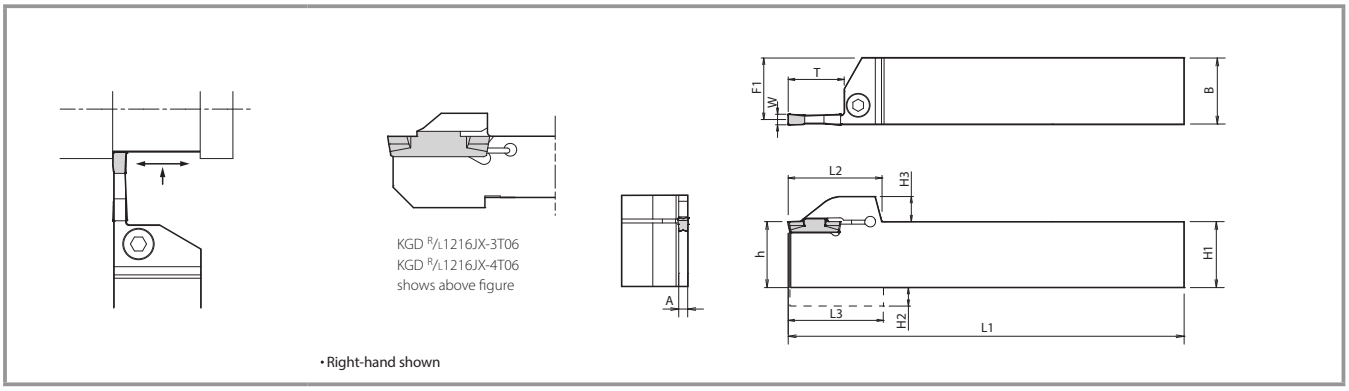
#2



#3



KGD (Monoblock type)



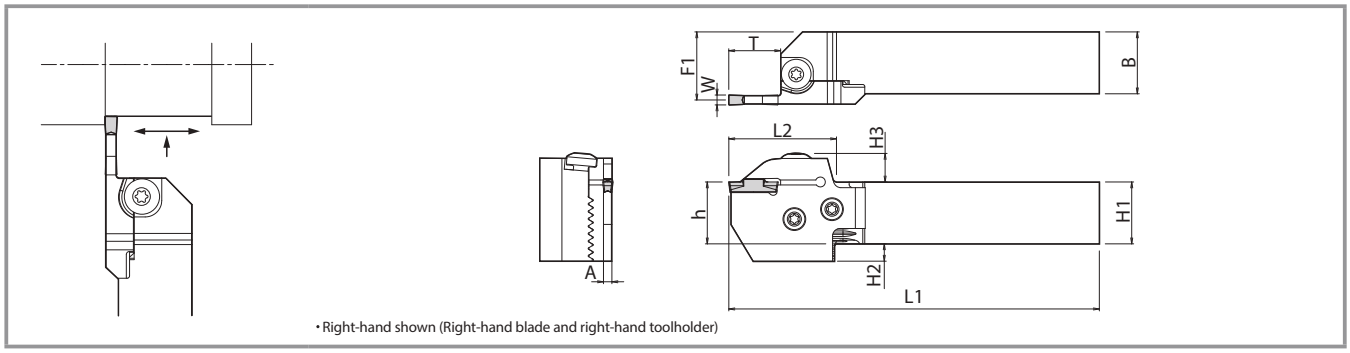
Toolholder dimensions

Width (mm)	Max. grooving depth (mm)	Description		Availability R	Availability L	Dimensions (mm) H1 = h	H2	H3	B	L1	L2	L3	F1	A	T	Insert width W (mm) MIN.	Insert width W (mm) MAX.	Spare parts: Clamp bolt	Spare parts: Wrench
2	6	KGD R/L	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						
			2525M-2T06	●	●	25			25	150			24.2					HH5X25	
	10	KGD R/L	1616H-2T10	●	●	16	4.0		16	100	30.2	30.5	15.2		10			HH5X16	
			2020K-2T10	●	●	20	—		20	125	30.5	—	19.2						
			2525M-2T10	●	●	25			25	150			24.2					HH5X25	
	17	KGD R/L	1616H-2T17	●	●	16	4.0		16	100	31.2	31.5	15.2		17			HH5X16	
			2012K-2T17	●	●	20	—		12	125	32.5	—	11.2						
			2020K-2T17	●	●				20				19.2						
			2525M-2T17	●	●	25			25	150			24.2					HH5X25	
2.4	17	KGD R/L	2012K-2.4T17	●	●	20	—	9.5	12	125	32.5	—	11.0	2.0	17	2.4	3.0	HH5X16	LW-4
			2020K-2.4T17	●	●				20				19.0						
3	6	KGD R/L	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	9.5		100	27.7	28.0						HH5X16	LW-4
			2020K-3T06	●	●	20	—		20	125	28.0	—	18.8						
			2525M-3T06	●	●	25			25	150			23.8					HH5X25	
	10	KGD R/L	1616H-3T10	●	●	16	4.0		16	100	30.2	30.5	14.8		10			HH5X16	
			2020K-3T10	●	●	20	—		20	125	30.5	—	18.8						
			2525M-3T10	●	●	25			25	150			23.8					HH5X25	
	20	KGD R/L	1616H-3T20	●	●	16	4.0		16	100	34.2	34.5	14.8		20			HH5X16	
			2012K-3T20	●	●	20	—		12	125	34.5	—	10.8						
			2020K-3T20	●	●				20				18.8						
			2525M-3T20	●	●	25			25	150	35.5		23.8					HH5X25	
4	6	KGD R/L	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
	10	KGD R/L	2020K-4T10	●	●	20	—	9.5	20	125	30.5	—	18.3		10			HH5X16	LW-4
			2525M-4T10	●	●	25			25	150			23.3					HH5X25	
	20	KGD R/L	2020K-4T20	●	●	20			20	125	34.5		18.3		20			HH5X16	
			2525M-4T20	●	●	25			25	150	35.5		23.3					HH5X25	
	25	KGD R/L	2525M-4T25	●	●	25			25	150	40.5		23.3		25				
5	10	KGD R/L	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			22.8					HH5X25	
	17	KGD R/L	2020K-5T17	●	●	20			20	125	37.5		17.8		17				
			2525M-5T17	●	●	25			25	150			22.8						
	25	KGD R/L	2525M-5T25	●	●	25			25	150	40.5		22.8		25				
6	15	KGD R/L	2525M-6T15	●	●	25	—	9.5	25	150	32.5	—	22.4	5.3	15	6.0	6.0	HH5X25	LW-4
	30	KGD R/L	2525M-6T30	●	●	25			25	150	45.5		22.4		30				
8	25	KGD R/L	2525M-8T25	●	●	25	7.0	9.5	25	150	43.3	44.2	22.0	6.0	25	8.0	8.0	HH6X25	LW-5
			3232P-8T25	●	●	32	—		32	170		—	29.0						

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 for clamp bolt is 6.5 N·m for HH5X○○, 8.0 N·m for HH6X25 and 2.5N·m for SE-50125TR.
3) Above toolholders can also be used for cut-off applications.

● : Available

KGD-S (0° Seperate type)



• Right-hand shown (Right-hand blade and right-hand toolholder)

Toolholder dimensions

Shank angle	Width	Max. grooving depth	Shank size	Unit description (Standard stock description)		Availability		Blade description ➡P10	Toolholder description ➡P10	Dimensions (mm)										Insert width W (mm)	
	(mm)	(mm)	(mm)			R	L			H1 = h	H2	H3	B	L1	L2	L3	F1	A	T	MIN.	MAX.
0°	2	17	□20	KGD R/L	2020X-2T17S	●	●	KGDR/L-2T17-C	KGDR/L2020-C	20	12	11.6	20	122	40	—	23.4	1.7	17	2.0	3.0
			□25		2525X-2T17S	●	●		KGDR/L2525-C	25	7		25	147			28.4				
			□32	No unit description ➡					KGDR/L3232-C	32	—		32	167			35.4				
	3	10	□20	KGD R/L	2020X-3T10S	●	●	KGDR/L-3T10-C	KGDR/L2020-C	20	12		20	115	33		23.0	2.4	10	3.0	4.0
			□25		2525X-3T10S	●	●		KGDR/L2525-C	25	7		25	140			28.0				
			□32		3232X-3T10S	●	●		KGDR/L3232-C	32	—		32	160			35.0				
		20	□20	KGD R/L	2020X-3T20S	●	●	KGDR/L-3T20-C	KGDR/L2020-C	20	12		20	125	43		23.0		20		
			□25		2525X-3T20S	●	●		KGDR/L2525-C	25	7		25	150			28.0				
			□32		3232X-3T20S	●	●		KGDR/L3232-C	32	—		32	170			35.0				
	4	10	□20	KGD R/L	2020X-4T10S	●	●	KGDR/L-4T10-C	KGDR/L2020-C	20	12		20	115	33		22.5	3.4	10	4.0	5.0
			□25		2525X-4T10S	●	●		KGDR/L2525-C	25	7		25	140			27.5				
			□32		3232X-4T10S	●	●		KGDR/L3232-C	32	—		32	160			34.5				
		20	□20	KGD R/L	2020X-4T20S	●	●	KGDR/L-4T20-C	KGDR/L2020-C	20	12		20	125	43		22.5		20		
			□25		2525X-4T20S	●	●		KGDR/L2525-C	25	7		25	150			27.5				
			□32		3232X-4T20S	●	●		KGDR/L3232-C	32	—		32	170			34.5				
		25	□20	KGD R/L	2020X-4T25S	●	●	KGDR/L-4T25-C	KGDR/L2020-C	20	12		20	130	48		22.5		25		
			□25		2525X-4T25S	●	●		KGDR/L2525-C	25	7		25	155			27.5				
			□32		3232X-4T25S	●	●		KGDR/L3232-C	32	—		32	175			34.5				
	5	10	□20	KGD R/L	2020X-5T10S	●	●	KGDR/L-5T10-C	KGDR/L2020-C	20	12		20	115	33		22.0	4.4	10	5.0	6.0
			□25		2525X-5T10S	●	●		KGDR/L2525-C	25	7		25	140			27.0				
			□32		3232X-5T10S	●	●		KGDR/L3232-C	32	—		32	160			34.0				
		25	□20	KGD R/L	2020X-5T25S	●	●	KGDR/L-5T25-C	KGDR/L2020-C	20	12		20	130	48		22.0		25		
			□25		2525X-5T25S	●	●		KGDR/L2525-C	25	7		25	155			27.0				
			□32		3232X-5T25S	●	●		KGDR/L3232-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.

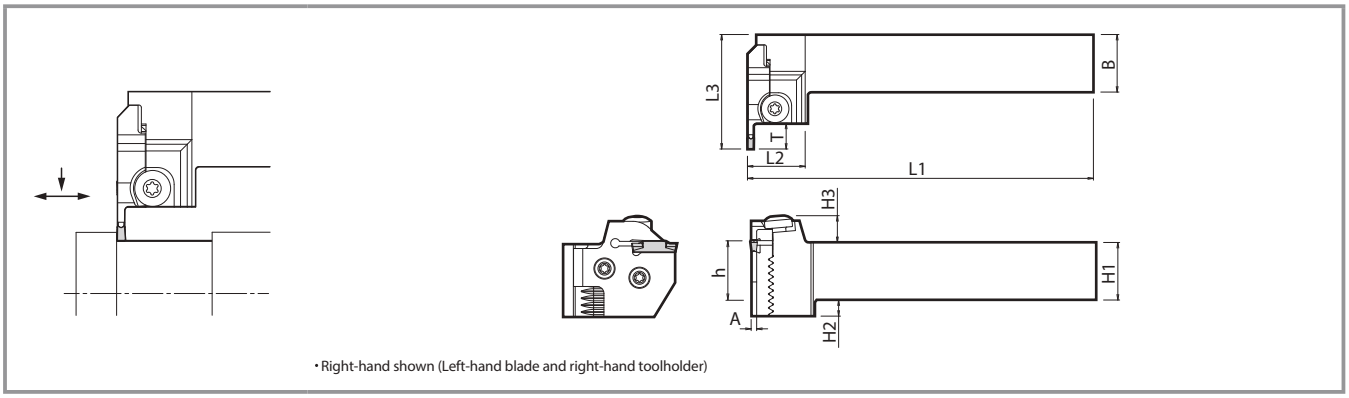
2) The toolholder and blade descriptions are printed on the toolholder body (unit description is not printed).
KGD-S: **Right-hand blade for right-hand toolholder, left-hand blade for left-hand toolholder. The toolholder is applicable for all blade with suitable hand.**

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.

● : Available

KGDS-S (90˚ Seperate type)



• Right-hand shown (Left-hand blade and right-hand toolholder)

Toolholder dimensions

Shank angle	Width (mm)	Max. grooving depth (mm)	Shank size (mm)	Blade description ➡P10	Toolholder description ➡P10	Unit description (Standard stock description)	Availability R	Availability L	Dimensions (mm) H1 = h	H2	H3	B	L1	L2	L3	F1	A	T	Insert width W (mm) MIN.	MAX.
90°	2	17	□20	KGD L/R-2T17-C	KGDS R/L2020-C	—	—	—	20	12	11.6	20	125	27.7	56.7	—	1.7	17	2.0	3.0
			□25		KGDS R/L2525-C	—	—	—	25	7		25	150							
	3	10	□20	KGD L/R-3T10-C	KGDS R/L2020-C	KGDS R/L 2020X-3T10S	●	●	20	12		20	125		49.7		2.4	10	3.0	4.0
			□25		KGDS R/L2525-C	2525X-3T10S	●	●	25	7		25	150							
		20	□20	KGD L/R-3T20-C	KGDS R/L2020-C	—	—	—	20	12		20	125		59.7			20		
			□25		KGDS R/L2525-C	—	—	—	25	7		25	150							
	4	10	□20	KGD L/R-4T10-C	KGDS R/L2020-C	—	—	—	20	12		20	125		49.7		3.4	10	4.0	5.0
			□25		KGDS R/L2525-C	—	—	—	25	7		25	150							
		20	□20	KGD L/R-4T20-C	KGDS R/L2020-C	—	—	—	20	12		20	125		59.7			20		
			□25		KGDS R/L2525-C	—	—	—	25	7		25	150							
		25	□20	KGD L/R-4T25-C	KGDS R/L2020-C	—	—	—	20	12		20	125		64.7			25		
			□25		KGDS R/L2525-C	—	—	—	25	7		25	150							
	5	10	□20	KGD L/R-5T10-C	KGDS R/L2020-C	—	—	—	20	12		20	125		49.7		4.4	10	5.0	6.0
			□25		KGDS R/L2525-C	—	—	—	25	7		25	150							
		25	□20	KGD L/R-5T25-C	KGDS R/L2020-C	—	—	—	20	12		20	125		64.7			25		
			□25		KGDS R/L2525-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.

● : Available

Toolholders identification system (External grooving, cut-off / monoblock type, seperate type)

KGD R 1616 H - 3 T 06 Monoblock type

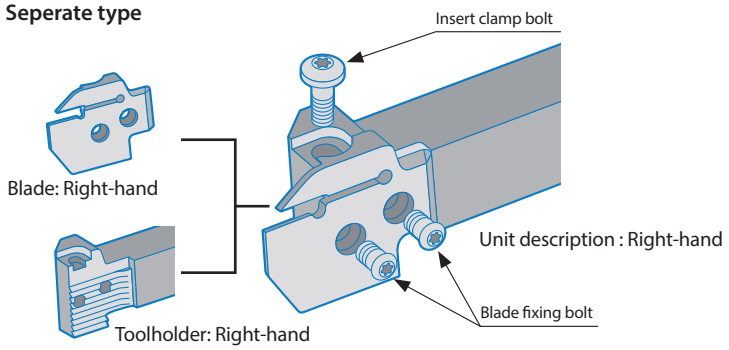
Toolholder hand	Shank size	Toolholder length	Applicable inserts	Max. grooving depth
R: Right-hand L: Left-hand	16 × 16 mm	H: 100 mm	GDM/GDMS 3 ~ 4 mm	06: 6 mm

KGD / KGDS R 2020 X - 3 T 10 S Seperate type / Unit description

Toolholder hand	Shank size	Toolholder length	Applicable inserts	Max. grooving depth
R: Right-hand L: Left-hand	20 × 20 mm	Unit description	GDM/GDMS 3 ~ 4 mm	10: 10 mm

Structure of toolholder unit (External grooving, cut-off)

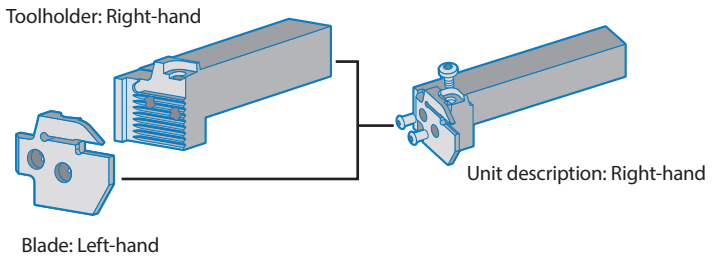
1) 0° Seperate type



Toolholder (KGD R/L ●● -C)
+
Blade (KGD R/L- ●T●● -C)

⇒ Right-hand blade for right-hand toolholder,
Left-hand blade for left-hand toolholder.

2) 90° Seperate type

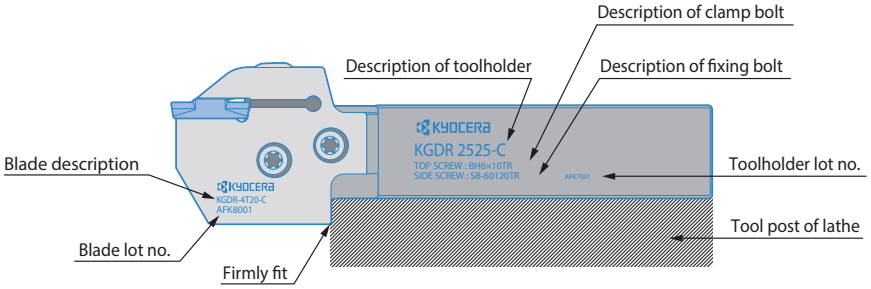


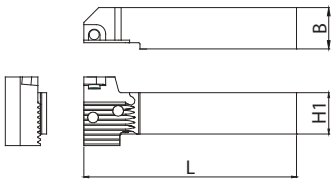
Toolholder (KGDS R/L ●● -C)
+
Blade (KGD L/R- ●T●● -C)

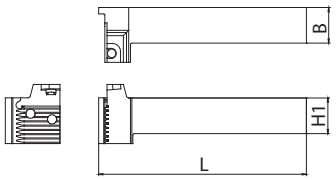
⇒ Left-hand blade for right-hand toolholder,
Right-hand blade for left-hand toolholder.

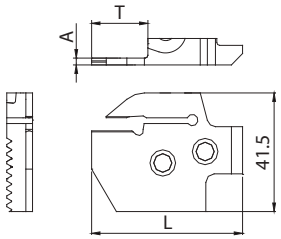
Seperate type toolholder identification system and their setting to lathe

Firmly fit the lower jaw to the tool post of the lathe.



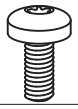
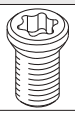
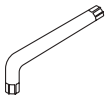
Shape of 0° type Right-hand shown	Toolholder description		Availability		Dimensions (mm)		
			R	L	L	B	H1
	KGD R/L	2020-C	●	●	104	20	20
		2525-C	●	●	129	25	25
		3232-C	●	●	149	32	32

Shape of 90° type Right-hand shown	Toolholder description		Availability		Dimensions (mm)		
			R	L	L	B	H1
	KGDS R/L	2020-C	●	●	122	20	20
		2525-C	●	●	147	25	25

Shape of blade Right-hand shown	Blade description		Availability		Dimensions (mm)		
			R	L	L	T	A
	KGD R/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	
		-5T10-C	●	●	44.2	10.2	4.4
		-5T25-C	●	●	59.2	25.2	

● : Available

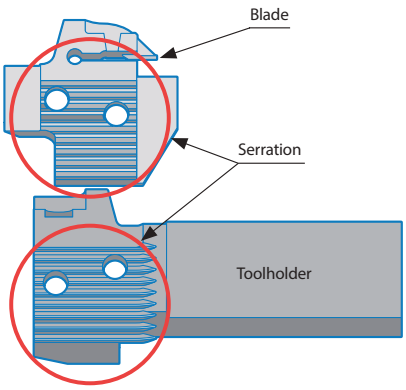
Spare parts

Spare parts		
Clamp bolt (for insert clamp)	Clamp bolt (for blade)	Wrench
		
BH6X10TR	SB-60120TR	LTW-25

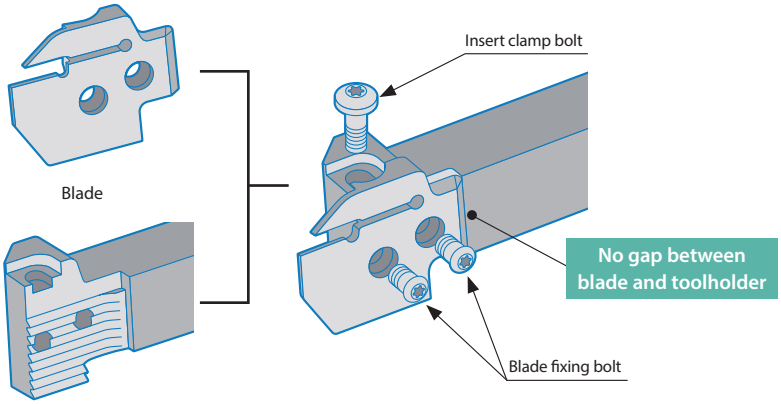
* The parts are included in the toolholder and unit.

Setting the blade (Seperate type toolholder)

1. Use compressed air or other measures to remove chips and dust from the serration part (see #1).
2. Mate and fit the serrations of the blade and toolholder, and also fit the blade end to the toolholder (see #2).
3. Tighten the blade fixing screws at an appropriate torque. You can tighten them in any order (see #2; recommended tightening torque: 8 N · m)
4. Set the insert after setting the blade.

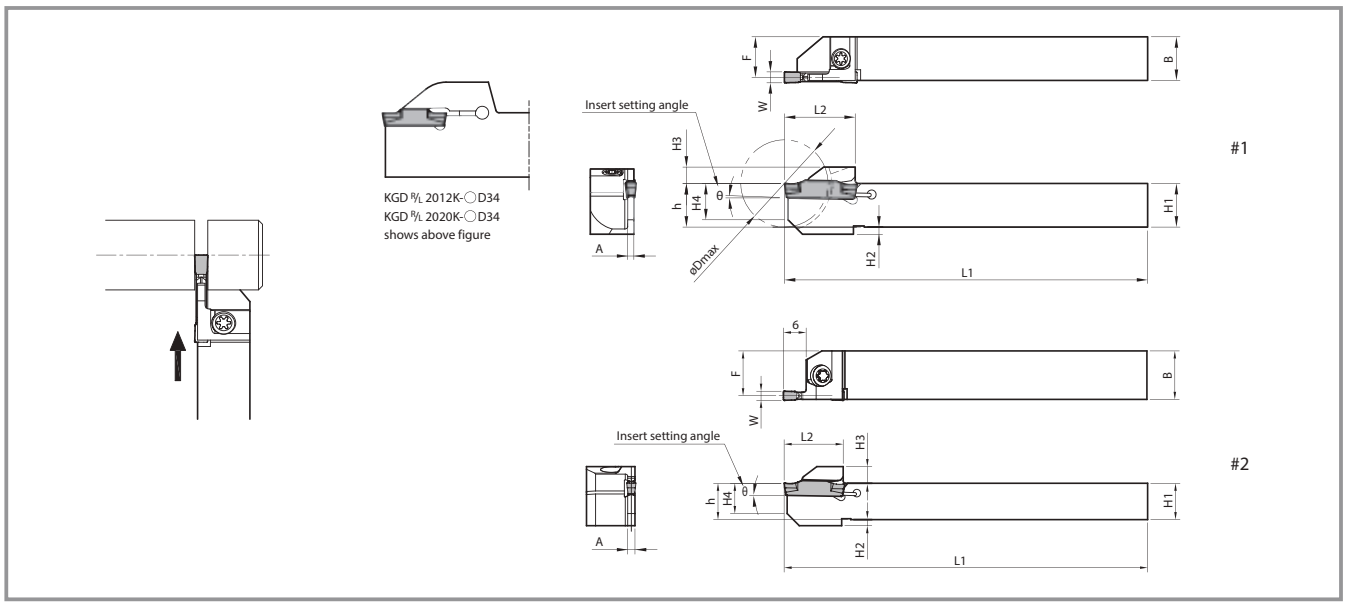


#1



#2

KGD (for automatic lathe)



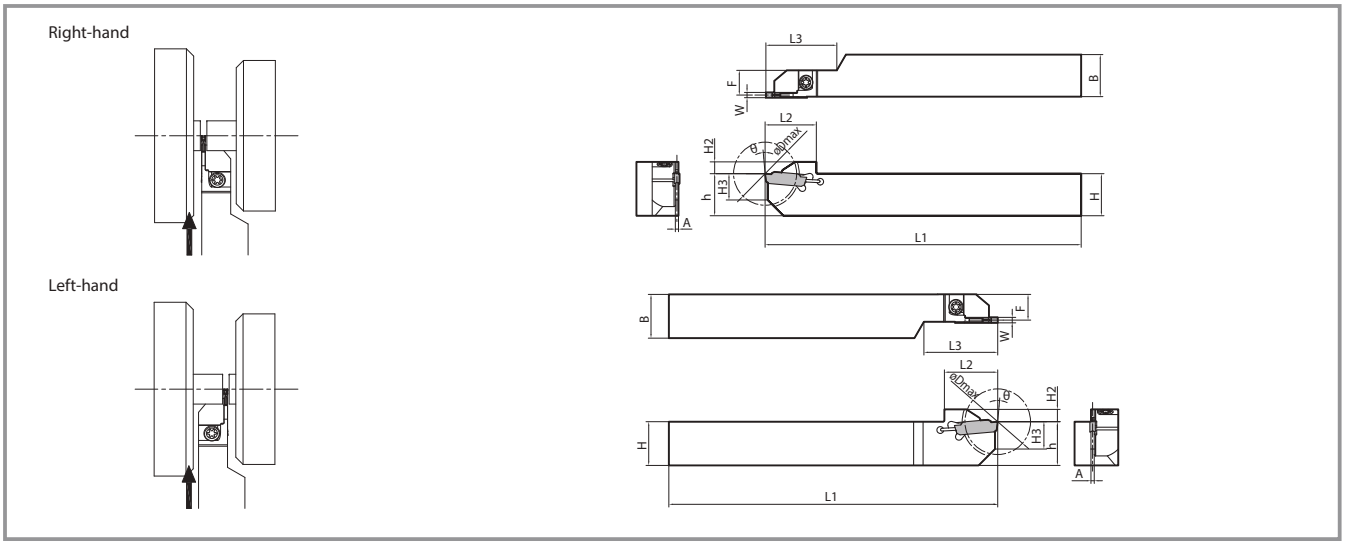
Toolholder dimensions

Description		Availability R	Availability L	Cut-Off dia. (mm) øDmax	Dimensions (mm) H1 = h	H2	H3	H4	B	L1	L2	F	A	Angle θ	Insert width W (mm) MIN.	Insert width W (mm) MAX.	Drawing	Spare parts Screw	Spare parts Wrench
KGD R/L	1010JX-1.3D16	●	●	16	10	2	5.5	8	10	120	18	9.9	1.0	5°	1.3	1.3	#1	SB-40120TR	LTW-15S
	1010JX-1.3	●	●	20								9.5							
	1212F-1.3D16	●	●	16	12			10	12	85	19.5	11.9							
	1212JX-1.3D16	●	●							120									
	1212F-1.3	●	●	24						85		11.5							
	1212JX-1.3	●	●							120									
KGD R/L	1010JX-1.5D16	●	●	16	10	2	5.5	8	10	120	18	9.7	1.2	5°	1.5	1.5	#1	SB-40120TR	LTW-15S
	1010JX-1.5	●	●	20								9.4							
	1212F-1.5D16	●	●	16	12			10	12	85	19.5	11.7							
	1212JX-1.5D16	●	●							120									
	1212F-1.5	●	●	24						85		11.4							
	1212JX-1.5	●	●							120									
KGD R/L	1010JX-2	●	●	20	10	2	5.5	8	10	120	18	9.2	1.6	1°	2.0	3.0	#1	SB-40120TR	LTW-15S
	1212F-2	●	●	24	12			10	12	85	19.5	11.2							
	1212JX-2	●	●							120									
	1616JX-2	●	●	32	16	—			16		24.5	15.2							
	2012K-2D34	●	●	34	20		9.5	20	12	125	32.5	11.2		0°				HH5X16	LW-4
	2020K-2D34	●	●						20			19.2							
KGD R/L	1010JX-2.4	●	●	20	10	2	5.5	8	10	120	18	9	2.0	1°	2.4	3.0	#1	SB-40120TR	LTW-15S
	1212F-2.4	●	●	24	12			10	12	85	19.5	11							
	1212JX-2.4	●	●							120									
	1616JX-2.4	●	●	32	16	—			16		24.5	15							
	2012K-2.4D34	●	●	34	20		9.5	20	12	125	32.5	11		0°				HH5X16	LW-4
	2020K-2.4D34	●	●						20			19							
KGD R/L	1212JX-3	●	●	24	12	2	5.5	10	12	120	19.5	10.8	2.4	1°	3.0	3.0	#1	SB-40120TR	LTW-15S
	1616JX-3	●	●	32	16	—			16		24.5	14.8				4.0			
	1616JX-3D38	●	●	38			8				29							SE-50125TR	LTW- 20
	1913K-3D38	●	●		19			13	13	125		11.8							
	2012JX-3D42	●	●	42	20			14	12	120	31	10.8							
	2012JX-3D51	●	●	51			8.5				36								
	2020JX-3D42	●	●	42			8		20		31	18.8							
	2020JX-3D51	●	●	51			8.5				36								
	1216JX-3T06	●	●	12	12	2	5.5	10	16		19.5	14.8		0°			#2		
KGD R/L	1216JX-4T06	●	●	12	12	2	5.5	10	16	120	19.5	14.3	3.4	0°	4.0	5.0	#2	SE-50125TR	LTW- 20

● : Available

Note 1) 4 mm width insert can be installed in KGDR/L1212JX-3, but is not recommended due to the toolholder's rigidity.
2) Recommended tightening torque for clamp screw is 2.0 N・m for SB-40120TR, 2.5 N・m for SE-50125TR and 6.5N・m for HH5X16.
3) When machining material greater than ø 36 mm with KGDR/L...-3D38 or KGDR/L...-3D42 or KGDR/L...-3D51 toolholders, use 1- edge inserts. Max. workpiece diameter for 2-edge inserts ø 36 mm

KGDS (Small diameter cut-off for sub spindle)

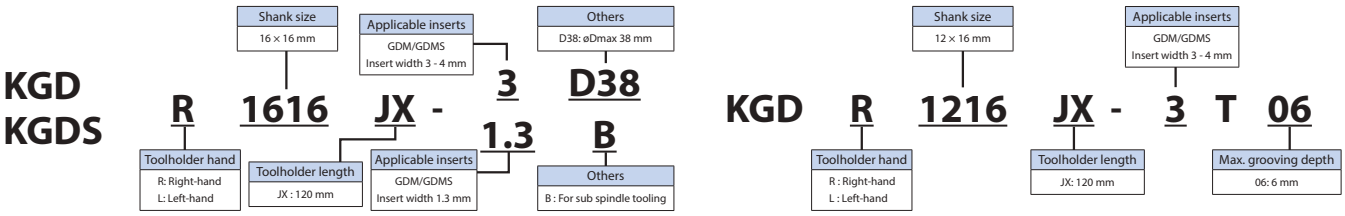


Toolholder dimensions

Description		Availability		Cut-Off dia. (mm)	Dimensions (mm)									Angle	Insert width W(mm)		Spare parts	
		R	L	øDmax	H = h	H2	H3	B	L1	L2	L3	F	A	θ	MIN.	MAX.	Screw	Wrench
KGDS R/L	1616JX-1.3B	●	●	24	16	5.5	10	16	120	19.5	27	9.5	1.0	5°	1.3	1.3	SB-40120TR	LTW-15S
	1616JX-1.5B	●	●									9.4	1.2		1.5	1.5		
	1616JX-2B	●	●									9.2	1.6	1°	2.0	3.0		

● : Available

Toolholders identification system (for automatic lathe)



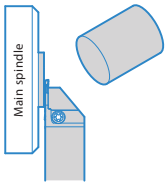
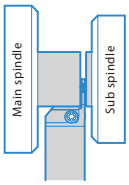
KGD / KGDS selection reference

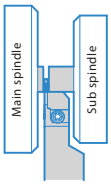
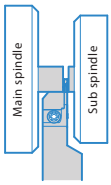
KGD Standard type

Both right-hand and left-hand types are applicable to gang tool post.
Left-hand type is recommended for cut-off operations when using a sub-spindle.

KGDS Sub spindle type

The KGDS can be used to reduce overhang distance from the main spindle when cutting off small diameter workpieces.

KGDR (Right-hand)	KGDL (Left-hand)
	
1st recommendation Use insert with lead angle to remove boss • No sub-spindle • Cut-off close to main spindle	1st recommendation Insert without lead angle • Sub-spindle use • Cut-off close to sub-spindle

KGDSR (Right-hand)	KGDSL (Left-hand)
	
• Long workpiece and more rigidity • Cut-off near main spindle	• Short workpiece and less rigidity • Cut-off near sub-spindle

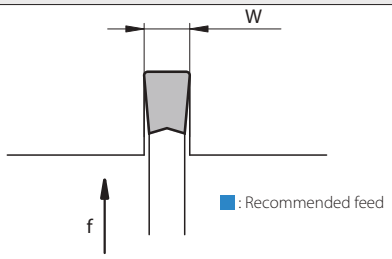
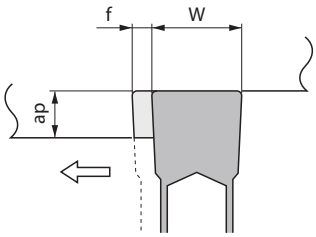
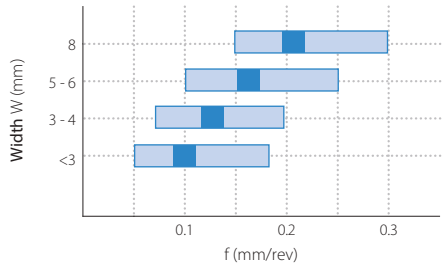
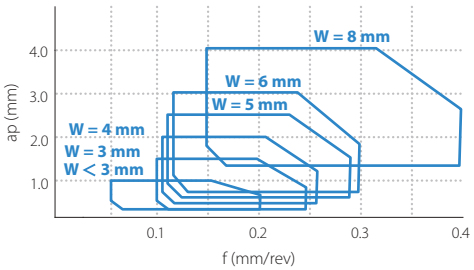
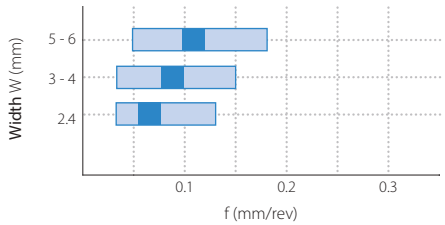
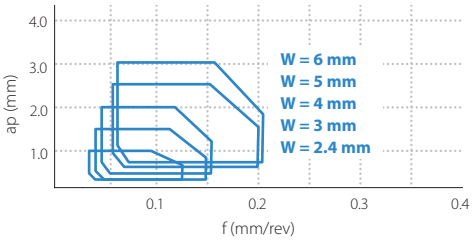
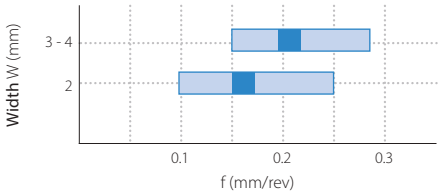
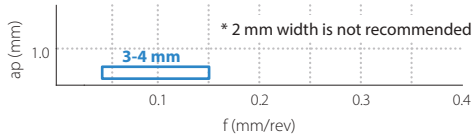
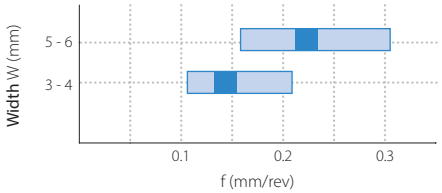
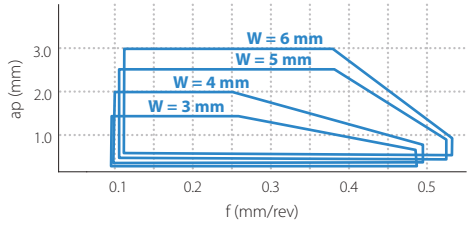
Recommended cutting conditions (External grooving)

★ 1st recommendation ☆ 2nd recommendation

Workpiece	Chipbreaker	Recommended insert grade (Vc: m/min)									Notes
		Cermet		MEGACOAT NANO	MEGACOAT		Carbide	MEGACOAT CBN	CBN	PCD	
		TN620	TN90	PR1535	PR1225	PR1215	GW15	KBN05M	KBN570	KPD001	
Carbon steel	GM	☆ 80 – 220	☆ 100 – 220	☆ 80 – 200	★ 80 – 200	☆ 100 – 200	—	—	—	—	Coolant
Alloy steel	GL	☆ 70 – 200	☆ 80 – 200	☆ 70 – 180	★ 70 – 180	☆ 80 – 180	—	—	—	—	
Stainless steel	CM	—	—	★ 60 – 150	☆ 60 – 150	☆ 60 – 150	—	—	—	—	
Cast iron	PH	—	—	—	—	★ 100 – 200	—	—	—	—	
Aluminum alloy	GS	—	—	—	—	—	☆ 200 – 500	—	—	★ 150 – 2,000	
Brass	NB	—	—	—	—	—	☆ 100 – 200	—	—	★ 200 – 800	
Hard materials	NB	—	—	—	—	—	—	★ 80 – 150	—	—	
Powdered steel		—	—	—	—	—	—	—	★ 100 – 250	—	

Recommended cutting conditions (f, ap)

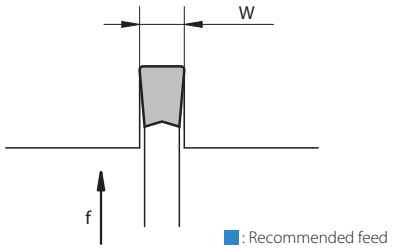
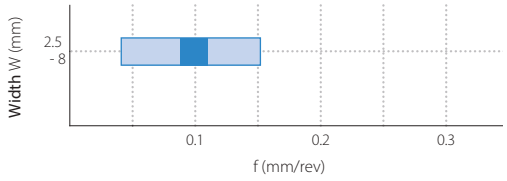
(Workpiece : C50)

Chipbreaker	Grooving	Traversing
		
GM (General use)		
GL (Low feed)		
PH (High feed)		
CM (Copying)		

1) The above values reflect a T dimension that is 17 mm or less.
2) If the toolholder is not for the 8 mm width insert and its T dimension is over 17 mm, set the values for traversing to less than 90% of recommended cutting conditions above.

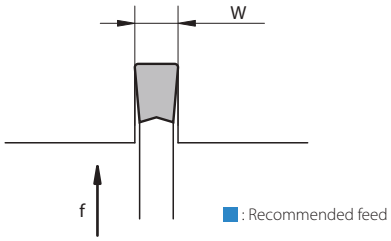
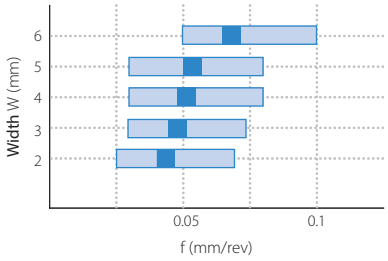
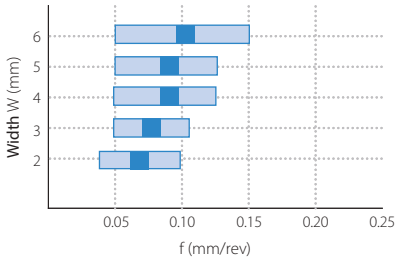
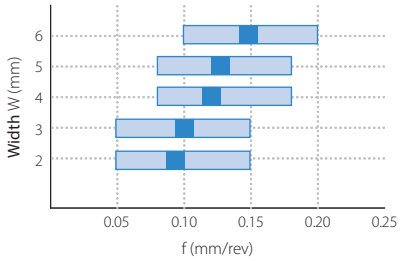
Recommended cutting conditions (External grooving)

Recommended cutting conditions (Feed rate / D.O.C.) (Workpiece : C50)

	Grooving
Chipbreaker	
GS (Low cutting force)	 * When traversing, keep D.O.C. less than the corner-R (rε)

1) The above values reflect a T dimension that is 17 mm or less.

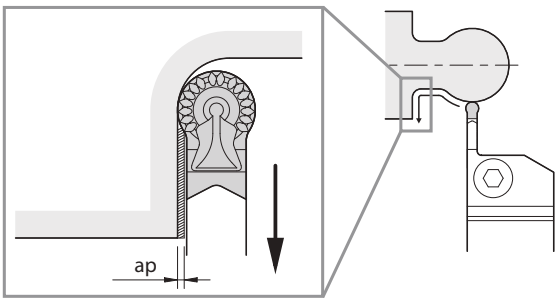
Recommended cutting conditions (Feed rate)

Workpiece	Insert grade	Grooving
		
Hard materials	KBN05M	
Powdered steel	KBN570	
Aluminum alloy / brass	KPD001	

CM Chipbreaker (Back turning)

Estimated maximum cutting amount (D.O.C.) for back turning

Description		Max. D.O.C. (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



Recommended cutting conditions (Cut-Off, PF / PQ / PG chipbreakers)

★ 1st recommendation ☆ 2nd recommendation

Workpiece	Cutting conditions (Vc: m/min)					Feed rate (f: mm/rev)										Notes
	Recommended insert grade					PF (Corner-R (rε) = 0.03)			PF(Corner-R (rε) = 0.15)			PQ		PG		
	MEGACOAT NANO	MEGACOAT		DLC Coated Carbide	Carbide	Insert width W (mm)			Insert width W (mm)			Insert width W (mm)		Insert width W (mm)		
	PR1535	PR1225	PR1215	PDL025	GW15	1.3/1.5	2.0	2.5/3.0	1.3/1.5	2.0	2.5/3.0	2.0	2.5/3.0	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	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	—	—	0.01 – 0.03	0.01 – 0.04	0.01 – 0.05	0.01 – 0.04	0.03 – 0.07	0.04 – 0.08	0.02 – 0.07	0.02 – 0.08	0.01 – 0.03	0.01 – 0.04	
Cast iron	—	—	★ 80 – 200	—	☆ 50 – 100	0.01 – 0.05	0.02 – 0.07	0.03 – 0.08	0.01 – 0.06	0.03 – 0.09	0.04 – 0.10	0.04 – 0.1	0.04 – 0.12	0.01 – 0.04	0.01 – 0.05	
Aluminum alloy	—	—	—	★ 200 – 500	☆ 200 – 450	—	—	—	—	—	—	—	—	0.01 – 0.05	0.01 – 0.06	
Brass	—	—	—	—	★ 100 – 200	—	—	—	—	—	—	—	—	0.01 – 0.07	0.01 – 0.08	

Recommended cutting conditions (Cut-Off, PM chipbreaker)

★ 1st recommendation ☆ 2nd recommendation

Workpiece	Cutting Conditions (Vc:m/min)			Feed rate (f:mm/rev)	Notes
	Recommended insert grade			PM	
	MEGACOAT NANO	MEGACOAT		Insert width W (mm)	
	PR1535	PR1225	PR1215	2.0 – 4.0	
Carbon steel	☆ 80 – 200	★ 80 – 200	☆ 100 – 200	0.08 – 0.18	Coolant
Alloy steel	☆ 70 – 180	★ 70 – 180	☆ 80 – 180		
Stainless steel	★ 60 – 150	☆ 60 – 150	☆ 60 – 150	0.06 – 0.12	
Cast iron	—	—	★ 100 – 200	0.08 – 0.18	

Machining tips

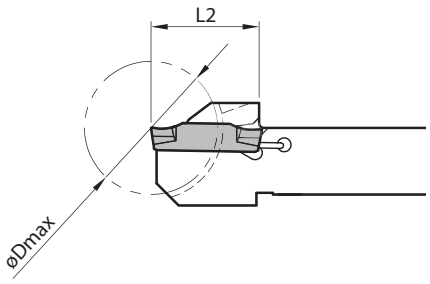
Minimum overhand length (L2) of the toolholder

Advantage 1 **Compatible with any machine setups regardless of overhang length specifications**

Advantage 2 **Minimum and optimal overhang length helps to control chattering**

Product lineup with a maximum cutting diameter of 51 mm

Note :
When machining large cutting dia. (over 36 mm) with KGDR/L....-3D38 or KGDR/L...-3D42 or KGDR/L...-3D51, please follow the instructions below.
- Use 1-edge inserts
- Maximum workpiece diameter for 2-edge inserts is ø 36 mm

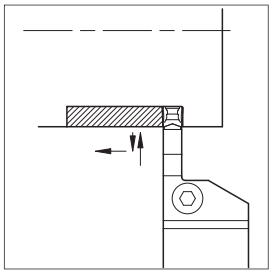


Guide for external grooving

1) Traversing after grooving

1. Grooving depths over 0.5 mm: At roughing (see #1)
   Before traversing, pull the tool back about 0.1 mm after grooving, instead of traversing subsequent to grooving (failure to pull the tool back before traverse cutting will result in an unbalanced load applied on only one side of the cutting edge).

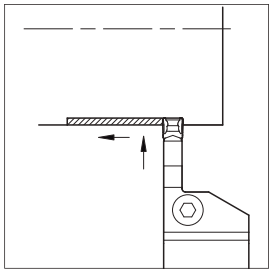
#1



Before traversing, pull the tool back about 0.1 mm after grooving (grooving depth over 0.5 mm: At roughing).

2. Grooving depths under 0.5 mm: At finishing (see #2)
   Traversing subsequent to grooving is possible because shallow groove depths relate a small load on the cutting edge (Dwell-motion is not necessary).

#2



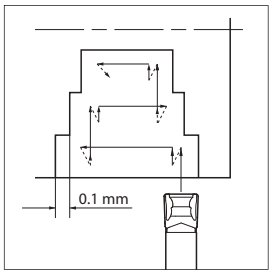
Traversing subsequent to grooving (Grooving depth under 0.5mm: At Finishing)

2) Widening the groove

1. When widening the groove width, apply the "step turning" as shown in #3

2. The widened groove and side walls should be finished last.
   For better chip control, D.O.C. over 0.5 mm is recommended. Note: If the workpiece is not supported at the center, reduce the feed rate when grooving towards center.

#3



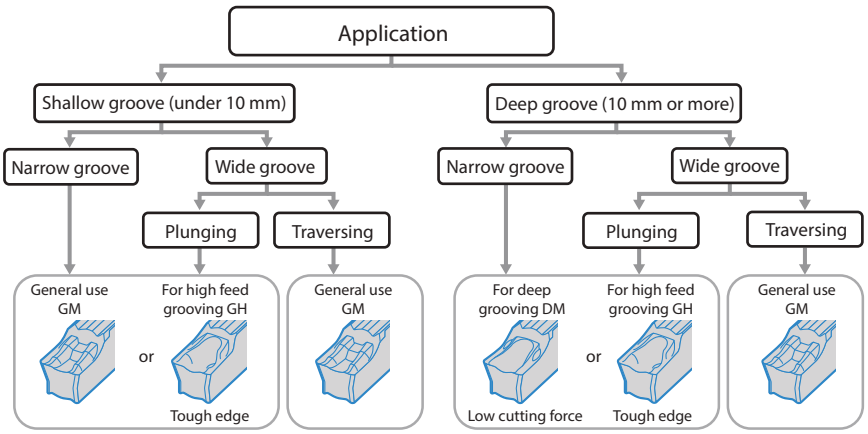
Face grooving

KGDF

Good chip control
MEGACOAT coating technology for long tool life and high efficiency machining

1 Wide range of chipbreakers available for face grooving

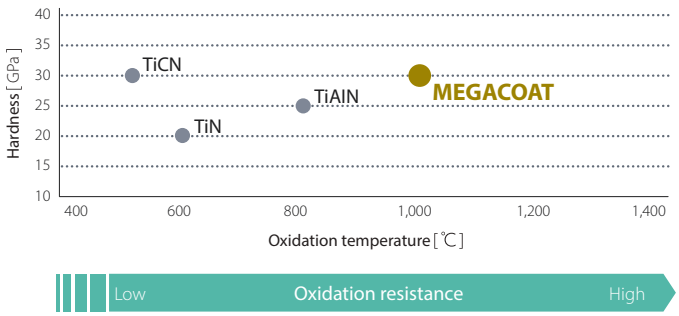
Chipbreaker selection



* 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.

2 MEGACOAT coating technology for long tool life

Coating properties



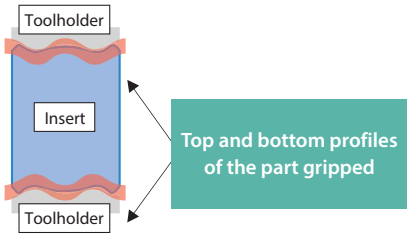
PR1225 (MEGACOAT)
1st recommendation for face grooving

PR1215 (MEGACOAT)
Superior wear resistance
1st recommendation for machining of cast iron

3 High clamping strength

Prevents abnormal machining surface and/or insert breakage resulting from slip of insert.

Improves repetitive installation accuracy of insert

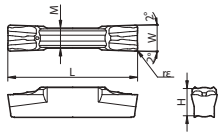
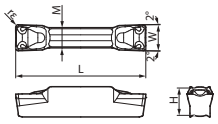
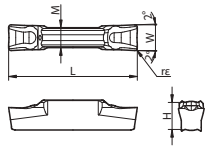
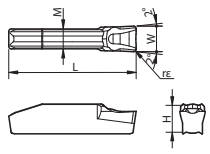
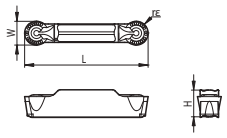


New insert clamping system "W grip"

GDFM/GDFMS (Face grooving)

Applicable inserts

Classification of usage			TN620	TN90	PR1225	PR1215
	P	Carbon steel / Alloy steel	●		◐	◔
	M	Stainless steel			◐	◔
◐ : Light interruption / 1st choice ◔ : Light interruption / 2nd choice ● : Continuous / 1st choice ○ : Continuous / 2nd choice	K	Cast iron				◐
	N	Non-ferrous metals				
	S	Titanium alloy				
	H	Hard materials (in case hardness is under 40HRC)				
		Hard materials (in case hardness is over 40HRC)				

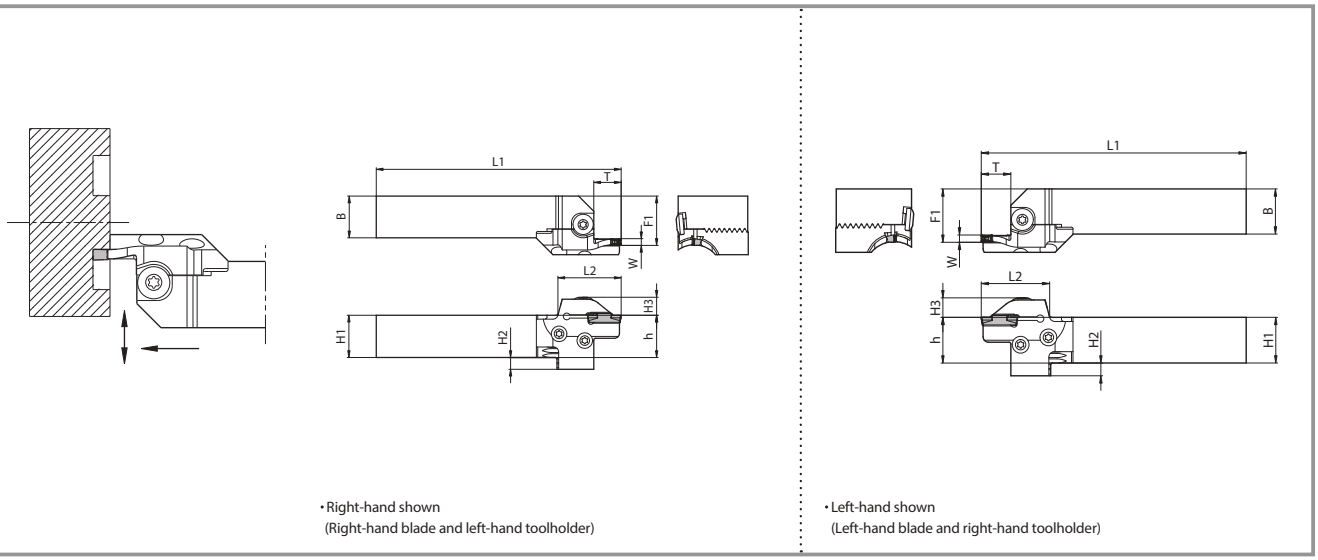
Insert			Description		Dimensions (mm)						Cermet		MEGACOAT	
					W	Tolerance	rε	M	L	H	TN620	TN90	PR1225	PR1215
Grooving and traversing			GDFM	2020N-020GM	2.0	±0.03	0.2	1.5	21	3.9		●	●	●
				3020N-030GM	3.0		0.3	2.1	20	4.3		●	●	●
				4020N-040GM	4.0		0.4	3.1		4.5		●	●	●
				5020N-040GM	5.0	±0.04		4.1				●	●	●
				5020N-080GM			0.8					●	●	●
				6020N-040GM	6.0		0.4	5.0				●	●	●
				6020N-080GM			0.8					●	●	●
Grooving and traversing (High feed)			GDFM	4020N-040GH	4.0	±0.03	0.4	3.1	20	4.5			●	●
				5020N-040GH	5.0	±0.04		4.1					●	●
				5020N-080GH			0.8						●	●
				6020N-040GH	6.0		0.4	5.0					●	●
				6020N-080GH			0.8						●	●
Deep grooving and traversing			GDFM	3020N-030DM	3.0	±0.03	0.3	2.1	20	4.3		●	●	●
				4020N-040DM	4.0		0.4	3.1		4.5		●	●	●
				5020N-040DM	5.0	±0.04		4.1				●	●	●
				6020N-040DM	6.0			5.0				●	●	●
	 1-edge		GDFMS	3020N-030DM	3.0	±0.03	0.3	2.1	20	4.3		●	●	●
				4020N-040DM	4.0		0.4	3.1		4.5		●	●	●
				5020N-040DM	5.0	±0.04		4.1				●	●	●
				6020N-040DM	6.0			5.0				●	●	●
Full-R			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	4.5	●		●	●
				5020N-250R-CM	5.0	±0.04	2.5	4.1			●		●	●
				6020N-300R-CM	6.0		3.0	5.0	*22		●		●	●

* GDFM40/50/60-CM differes from other descriptions in length (L) to avoid interference of a toolholder with workpiece.

Inserts identification system

G D F	M	S	30	20	N	-	030	DM
Series	Tolerance	No. of edges	Insert width	Insert length	Hand of tool		Corner-R(rε)	Chipbreaker
	M: M-Class	No Indication: 2-edge S: 1-edge	20: 2 mm 30: 3 mm ⋮	20: 20 mm	N: Neutral		020: 0.2 mm 030: 0.3 mm 040: 0.4 mm 150R: 1.5 mm (Full-R)	GM: Grooving and traversing DM: Grooving GH: High feed CM: Full-R

KGDF (Face grooving / Seperate type)



• Right-hand shown
(Right-hand blade and left-hand toolholder)

• Left-hand shown
(Left-hand blade and right-hand toolholder)

Toolholder dimensions

Shank angle	Insert width W	Shank size	Max. grooving depth	Face grooving dia. øD (mm)		Unit description (Standard stock description)	Availability		Blade description ➡P25	Toolholder description ➡P10	Dimensions (mm)							
	(mm)	(mm)	(mm)	MIN.	MAX.		R	L			H1 = h	H2	H3	B	L1	L2	F1	T
0°	2	□20	6	25	30	KGDFR 2020X25-2AS	●	—	KGDFR -25-2A-C	KGDL2020-C	20	12	11.6	20	115	33	24.5	6
				30	35	2020X30-2AS	●	—	-30-2A-C									
				35	45	2020X35-2AS	●	—	-35-2A-C									
				45	60	2020X45-2AS	●	—	-45-2A-C									
				60	80	2020X60-2AS	●	—	-60-2A-C									
				80	100	2020X80-2AS	●	—	-80-2A-C									
				100	130	2020X100-2AS	●	—	-100-2A-C									
			13	25	30	No unit description ➡			-25-2B-C						118	36		13
			15	30	35				-30-2B-C						120	38		15
				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									
		□25	6	25	30	KGDFR 2525X25-2AS	●	—	KGDFR -25-2A-C	KGDL2525-C	25	7	11.6	25	140	33	29.5	6
				30	35	2525X30-2AS	●	—	-30-2A-C									
				35	45	2525X35-2AS	●	—	-35-2A-C									
				45	60	2525X45-2AS	●	—	-45-2A-C									
				60	80	2525X60-2AS	●	—	-60-2A-C									
				80	100	2525X80-2AS	●	—	-80-2A-C									
				100	130	2525X100-2AS	●	—	-100-2A-C									
			13	25	30	No unit description ➡			-25-2B-C						143	36		13
			15	30	35				-30-2B-C						145	38		15
				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									
		□32	6	25	30	No unit description ➡			KGDFR -25-2A-C	KGDL3232-C	32	—	11.6	32	160	33	36.5	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				-25-2B-C						163	36		13
			15	30	35				-30-2B-C						165	38		15
				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.

● : Available
Applicable Inserts ➡ P18

KGDF (Face grooving / Seperate type)

Toolholder dimensions

Shank angle	Insert width W	Shank size	Max. grooving depth	Face grooving dia. øD (mm)		Unit description (Standard stock description)		Availability		Blade description ➡P25		Toolholder description ➡P10	Dimensions (mm)							
	(mm)	(mm)	(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	KGD L/R2020-C	20	12	11.6	20	118	36	24.5	13
				30	40		2020X30-3AS	●	●		-30-3A-C									
				40	50		2020X40-3AS	●	●		-40-3A-C									
			15	50	65		2020X50-3BS	●	●		-50-3B-C						120	38		15
				65	85		2020X65-3BS	●	●		-65-3B-C									
				85	110		2020X85-3BS	●	●		-85-3B-C									
				110	145		2020X110-3BS	●	●		-110-3B-C									
			22	50	65		2020X50-3CS	●	●		-50-3C-C						127	45		22
				65	85		2020X65-3CS	●	●		-65-3C-C									
			25	85	110		2020X85-3CS	●	●		-85-3C-C						130	48		25
				110	145		2020X110-3CS	●	●		-110-3C-C									
		□25	13	25	30	KGDF R/L	2525X25-3AS	●	●	KGDF R/L	-25-3A-C	KGD L/R2525-C	25	7	11.6	25	143	36	29.5	13
				30	40		2525X30-3AS	●	●		-30-3A-C									
				40	50		2525X40-3AS	●	●		-40-3A-C									
			15	50	65		2525X50-3BS	●	●		-50-3B-C						145	38		15
				65	85		2525X65-3BS	●	●		-65-3B-C									
				85	110		2525X85-3BS	●	●		-85-3B-C									
				110	145		2525X110-3BS	●	●		-110-3B-C									
			22	50	65		2525X50-3CS	●	●		-50-3C-C						152	45		22
				65	85		2525X65-3CS	●	●		-65-3C-C									
			25	85	110		2525X85-3CS	●	●		-85-3C-C						155	48		25
				110	145		2525X110-3CS	●	●		-110-3C-C									
		□32	13	25	30	No unit description ➡				KGDF R/L	-25-3A-C	KGD L/R3232-C	32	—	11.6	32	163	36	36.5	13
				30	40						-30-3A-C									
				40	50						-40-3A-C									
			15	50	65						-50-3B-C						165	38		15
				65	85						-65-3B-C									
				85	110						-85-3B-C									
				110	145						-110-3B-C									
			22	50	65						-50-3C-C						172	45		22
				65	85						-65-3C-C									
			25	85	110						-85-3C-C						175	48		25
				110	145						-110-3C-C									
0°	4	□20	13	25	35	KGDF R/L	2020X25-4AS	●	●	KGDF R/L	-25-4A-C	KGD L/R2020-C	20	12	11.6	20	118	36	24.5	13
			15	35	50		2020X35-4BS	●	●		-35-4B-C						120	38		15
				50	70		2020X50-4BS	●	●		-50-4B-C									
				70	100		2020X70-4BS	●	●		-70-4B-C									
				100	150		2020X100-4BS	●	●		-100-4B-C									
				150	220		2020X150-4BS	●	●		-150-4B-C									
				220	∞		2020X220-4BS	●	●		-220-4B-C									
			25	35	50		2020X35-4CS	●	●		-35-4C-C						130	48		25
				50	70		2020X50-4CS	●	●		-50-4C-C									
				70	100		2020X70-4CS	●	●		-70-4C-C									
				100	150		2020X100-4CS	●	●		-100-4C-C									
				150	220		2020X150-4CS	●	●		-150-4C-C									
				220	∞		2020X220-4CS	●	●		-220-4C-C									
		□25	13	25	35	KGDF R/L	2525X25-4AS	●	●	KGDF R/L	-25-4A-C	KGD L/R2525-C	25	7	11.6	25	143	36	29.5	13
			15	35	50		2525X35-4BS	●	●		-35-4B-C						145	38		15
				50	70		2525X50-4BS	●	●		-50-4B-C									
				70	100		2525X70-4BS	●	●		-70-4B-C									
				100	150		2525X100-4BS	●	●		-100-4B-C									
				150	220		2525X150-4BS	●	●		-150-4B-C									
				220	∞		2525X220-4BS	●	●		-220-4B-C									
			25	35	50		2525X35-4CS	●	●		-35-4C-C						155	48		25
				50	70		2525X50-4CS	●	●		-50-4C-C									
				70	100		2525X70-4CS	●	●		-70-4C-C									
				100	150		2525X100-4CS	●	●		-100-4C-C									
				150	220		2525X150-4CS	●	●		-150-4C-C									
				220	∞		2525X220-4CS	●	●		-220-4C-C									
		□32	13	25	35	No unit description ➡				KGDF R/L	-25-4A-C	KGD L/R3232-C	32	—	11.6	32	163	36	36.5	13
			15	35	50						-35-4B-C						165	38		15
				50	70						-50-4B-C									
				70	100						-70-4B-C									
				100	150						-100-4B-C									
				150	220						-150-4B-C									
				220	∞						-220-4B-C									
			25	35	50						-35-4C-C						175	48		25
				50	70						-50-4C-C									
				70	100						-70-4C-C									
				100	150						-100-4C-C									
				150	220						-150-4C-C									
				220	∞						-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.

●: Available
Applicable Inserts ➡P18

KGDF (Face grooving / Seperate type)

Toolholder dimensions

Shank angle	Insert width W	Shank size	Max. grooving depth	Face grooving dia. øD (mm)		Unit description (Standard stock description)		Availability		Blade description ➡P25		Toolholder description ➡P10	Dimensions (mm)							
	(mm)	(mm)	(mm)	MIN.	MAX.			R	L				H1 = h	H2	H3	B	L1	L2	F1	T
0°	5	□20	15	25	35	KGDF R/L	2020X25-5BS	●	●	KGDF R/L	-25-5B-C	KGD L/R2020-C	20	12	11.6	20	120	38	24.5	15
				35	50		2020X35-5BS	●	●		-35-5B-C									
				50	75		2020X50-5BS	●	●		-50-5B-C									
				75	115		2020X75-5BS	●	●		-75-5B-C									
				115	180		2020X115-5BS	●	●		-115-5B-C									
				180	235		2020X180-5BS	●	●		-180-5B-C									
				235	∞		2020X235-5BS	●	●		-235-5B-C									
			20	25	35		2020X25-5CS	●	●		-25-5C-C						125	43		20
			25	35	50		2020X35-5CS	●	●		-35-5C-C						130	48		25
				50	75		2020X50-5CS	●	●		-50-5C-C									
				75	115		2020X75-5CS	●	●		-75-5C-C									
				115	180		2020X115-5CS	●	●		-115-5C-C									
				180	235		2020X180-5CS	●	●		-180-5C-C									
				235	∞		2020X235-5CS	●	●		-235-5C-C									
			32	75	115	No unit description ➡					-75-5D-C						137	55		32
				115	180						-115-5D-C									
				180	235						-180-5D-C									
				235	∞						-235-5D-C									
		□25	15	25	35	KGDF R/L	2525X25-5BS	●	●	KGDF R/L	-25-5B-C	KGD L/R2525-C	25	7	11.6	25	145	38	29.5	15
				35	50		2525X35-5BS	●	●		-35-5B-C									
				50	75		2525X50-5BS	●	●		-50-5B-C									
				75	115		2525X75-5BS	●	●		-75-5B-C									
				115	180		2525X115-5BS	●	●		-115-5B-C									
				180	235		2525X180-5BS	●	●		-180-5B-C									
				235	∞		2525X235-5BS	●	●		-235-5B-C									
			20	25	35		2525X25-5CS	●	●		-25-5C-C						150	43		20
			25	35	50		2525X35-5CS	●	●		-35-5C-C						155	48		25
				50	75		2525X50-5CS	●	●		-50-5C-C									
				75	115	No unit description ➡					-75-5C-C									
				115	180						-115-5C-C									
				180	235						-180-5C-C									
				235	∞						-235-5C-C									
			32	75	115	KGDF R/L	2525X75-5DS	●	●		-75-5D-C						162	55		32
				115	180		2525X115-5DS	●	●		-115-5D-C									
				180	235		2525X180-5DS	●	●		-180-5D-C									
				235	∞		2525X235-5DS	●	●		-235-5D-C									
		□32	15	25	35	No unit description ➡				KGDF R/L	-25-5B-C	KGD L/R3232-C	32	—	11.6	32	165	38	36.5	15
				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						170	43		20
			25	35	50						-35-5C-C						175	48		25
				50	75						-50-5C-C									
				75	115						-75-5C-C									
				115	180						-115-5C-C									
				180	235						-180-5C-C									
				235	∞						-235-5C-C									
			32	75	115						-75-5D-C						182	55		32
				115	180						-115-5D-C									
				180	235						-180-5D-C									
				235	∞						-235-5D-C									

Note 1) In case the unit description is not available (no unit description), please purchase toolholder and blade separately. ●: Available

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 ➡P18

KGDF (Face grooving / Seperate type)

Toolholder dimensions

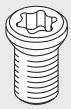
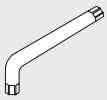
Shank angle	Insert width W	Shank size	Max. grooving depth	Face grooving dia. øD (mm)		Unit description (Standard stock description)		Availability		Blade description ➡P25		Toolholder description ➡P10	Dimensions (mm)							
	(mm)	(mm)	(mm)	MIN.	MAX.			R	L				H1 = h	H2	H3	B	L1	L2	F1	T
0°	6	□20	15	25	35	KGDF R/L	2020X25-6BS	●	●	KGDF R/L	-25-6B-C	KGD L/R2020-C	20	12	11.6	20	120	38	24.5	15
				35	50		2020X35-6BS	●	●		-35-6B-C									
				50	75		2020X50-6BS	●	●		-50-6B-C									
				75	115		2020X75-6BS	●	●		-75-6B-C									
				115	180		2020X115-6BS	●	●		-115-6B-C									
				180	235		2020X180-6BS	●	●		-180-6B-C									
				235	∞		2020X235-6BS	●	●		-235-6B-C									
			20	25	35		2020X25-6CS	●	●		-25-6C-C						125	43		20
			25	35	50		2020X35-6CS	●	●		-35-6C-C						130	48		25
				50	75		2020X50-6CS	●	●		-50-6C-C									
				75	115		2020X75-6CS	●	●		-75-6C-C									
				115	180		2020X115-6CS	●	●		-115-6C-C									
				180	235		2020X180-6CS	●	●		-180-6C-C									
				235	∞		2020X235-6CS	●	●		-235-6C-C									
			32	75	115	No unit description ➡					-75-6D-C						137	55		32
				115	180						-115-6D-C									
				180	235						-180-6D-C									
				235	∞						-235-6D-C									
		□25	15	25	35	KGDF R/L	2525X25-6BS	●	●	KGDF R/L	-25-6B-C	KGD L/R2525-C	25	7	11.6	25	145	38	29.5	15
				35	50		2525X35-6BS	●	●		-35-6B-C									
				50	75		2525X50-6BS	●	●		-50-6B-C									
				75	115		2525X75-6BS	●	●		-75-6B-C									
				115	180		2525X115-6BS	●	●		-115-6B-C									
				180	235		2525X180-6BS	●	●		-180-6B-C									
				235	∞		2525X235-6BS	●	●		-235-6B-C									
			20	25	35		2525X25-6CS	●	●		-25-6C-C						150	43		20
			25	35	50		2525X35-6CS	●	●		-35-6C-C						155	48		25
				50	75		2525X50-6CS	●	●		-50-6C-C									
				75	115	No unit description ➡					-75-6C-C									
				115	180						-115-6C-C									
				180	235						-180-6C-C									
				235	∞						-235-6C-C									
			32	75	115	KGDF R/L	2525X75-6DS	●	●		-75-6D-C						162	55		32
				115	180		2525X115-6DS	●	●		-115-6D-C									
				180	235		2525X180-6DS	●	●		-180-6D-C									
				235	∞		2525X235-6DS	●	●		-235-6D-C									
		□32	15	25	35	No unit description ➡				KGDF R/L	-25-6B-C	KGD L/R3232-C	32	—	11.6	32	165	38	36.5	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
			25	35	50						-35-6C-C						175	48		25
				50	75						-50-6C-C									
				75	115						-75-6C-C									
				115	180						-115-6C-C									
				180	235						-180-6C-C									
				235	∞						-235-6C-C									
			32	75	115						-75-6D-C						182	55		32
				115	180						-115-6D-C									
				180	235						-180-6D-C									
				235	∞						-235-6D-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.

●: Available

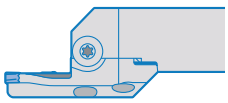
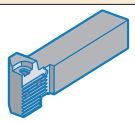
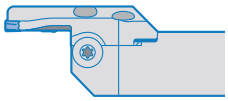
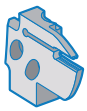
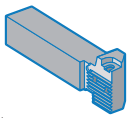
Applicable Inserts ➡P18

Spare parts (Common with seperate types)

Unit description	Spare parts		
	Clamp bolt (for insert clamp)	Clamp bolt (for blade)	Wrench
			
KGDF R/L • • • S	BH6X10TR	SB-60120TR	LTW-25

* The parts are included in the toolholder and unit.

KGDF toolholder assembly identification (Face grooving / Seperate type)

Unit description (Unit description is not printed)	Blade (Unit description is not printed)	Toolholder (Toolholder description is printed)
Left-hand : KGDFL • • • S	Left-hand : KGDFL • • • -C	Right-hand : KGDR • • • -C
 • Left-hand shown	• Left-hand shown	 • Right-hand shown
Right-hand : KGDFR • • • S	Right-hand : KGDFR • • • -C	Left-hand : KGDL • • • -C
 • Right-hand shown	 • Right-hand shown	 • Left-hand shown

- 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 bolt (BH6x10TR), blade fixing bolt (SB-60120TR) and wrench (LTW-25) which are included in the toolholder can be used.

Face grooving toolholder assembly identification system (Face grooving / Seperate type)

Hand of tool	Toolholder shank size	Toolholder length	Width	Symbol of assembly toolholder
R: Right-hand L: Left-hand	2020: □20 2525: □25	X: Special	2: 2 mm 3: 3 mm ⋮	S : Indicates the unit description

KGDF R 2020 X 25 - 3 A S

Series
KGDF Face grooving

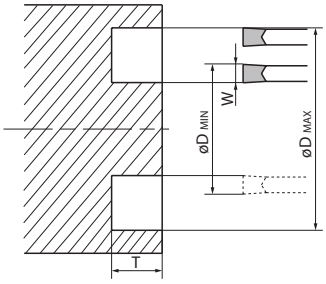
Min. diameter in face grooving	
Indicates the minimum external diameter suitable for the initial face grooving.	* For the maximum external diameter which can be applied to the initial face grooving, see the MAX. value of "face grooving dia. øD" in the dimension tables of toolholders and blades.
25: 25 mm • • 235: 235 mm	

Grooving depth	
A: 6 ~ 13 mm B: 13 ~ 15 mm	2-edge Insert (1-edge insert can also be used)
C: 20 ~ 25 mm D: 32 mm	1-edge insert

Face grooving dia. (øD)

Face grooving diameter (øD) is the suitable value for the initial grooving on the unprocessed workpiece (See #1).

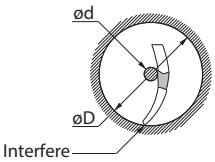
Then, you can widen it up to the center towards the inside (excluding the models listed in the below table) and towards the outside according to machine limits.



#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.



Remaining boss dia. ød

Description		øD	25	26	27	28 and over
			ød (mm)			
KGDF R/L	2020X25-3AS		4	2	0	0 (No remaining boss)
	2525X25-3AS					
KGDF R/L	2020X25-4AS		6	3	0	
	2525X25-4AS					
KGDF R/L	2020X25-5AS		7	4	1	
	2525X25-5AS					
KGDF R/L	2020X25-6AS		9	4	1	
	2525X25-6AS					

e.g.) If a groove of external diameter ø 25mm is created using KGDFR2020X25-3AS and turning is made toward the inside, a ø 4 mm portion will be left in middle due to interference of toolholder.

Face grooving blade assembly identification system

Hand of Tool
R: Right-hand L: Left-hand

Width	
2: 2 mm	5: 5 mm
3: 3 mm	6: 6 mm
4: 4 mm	

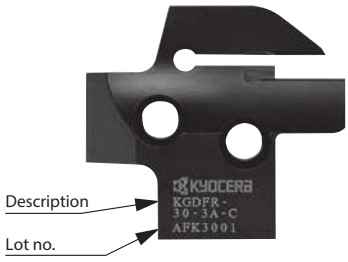
Blade symbol
C : Applicable to toolholder with suffix "-C"

KGDF R – 25 – 3 A – C

Series
KGDF Face grooving

Min. Diameter in face grooving
Indicates the minimum external diameter suitable for the initial face grooving.
25: 25 mm • • 235: 235 mm

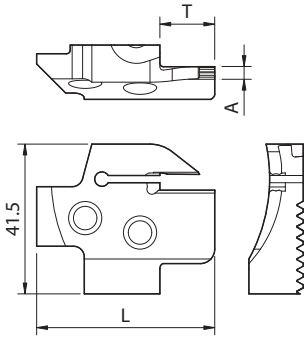
Grooving depth	
A: 13 mm B: 15 mm	2-edge Insert (1-edge insert can also be used)
C: 20 mm ~ 25 mm D: 32 mm	1-edge Insert



Example of printing of blade description

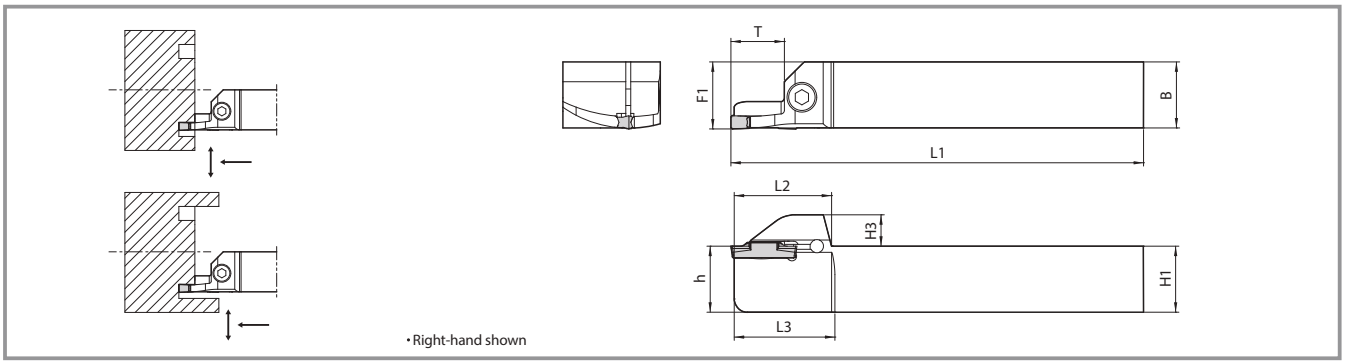
Face grooving blade

Blade dimensions

Shape	Blade description		Availability R	Availability L	Dimensions (mm) L	Dimensions (mm) T	Dimensions (mm) A	Face grooving dia. øD (mm) MIN.	Face grooving dia. øD (mm) MAX.	Insert width (mm) W	Applicable inserts ➡P18	Description of toolholder ➡P10
 Right-hand shown	KGDFR	-25-2A-C	●	—	44.35	6	1.5	25	30	2	GDFM 2020N-020GM	KGD L/R・・・・-C KGDS R/L・・・・-C
		-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		25	30			
		-30-2B-C	●	—	49.35	15		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	3	GDFM 3020N-030GM GDFM 3020N-030DM GDFMS 3020N-030DM GDFM3020N-150R-CM	
		-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	●	●	59.35	25		85	110			
		-110-3C-C	●	●				110	145			
	KGDF R/L	-25-4A-C	●	●	47.35	13	3	25	35	4	GDFM 4020N-040GM GDFM 4020N-040GH GDFM 4020N-040DM GDFMS 4020N-040DM GDFM4020N-200R-CM	
		-35-4B-C	●	●	49.35	15		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	GDFM 5020N-040GM GDFM 5020N-080GM GDFM 5020N-040GH GDFM 5020N-080GH GDFM 5020N-040DM GDFMS 5020N-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	●	●	59.35	25		35	50			
		-50-5C-C	●	●				50	75			
		-75-5C-C	●	●				75	115			
		-115-5C-C	●	●				115	180			
		-180-5C-C	●	●				180	235			
		-235-5C-C	●	●				235	∞			
		-75-5D-C	●	●	66.35	32		75	115			
		-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	GDFM 6020N-040GM GDFM 6020N-080GM GDFM 6020N-040GH GDFM 6020N-080GH GDFM 6020N-040DM GDFMS 6020N-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	●	●	59.35	25		35	50			
		-50-6C-C	●	●				50	75			
		-75-6C-C	●	●				75	115			
		-115-6C-C	●	●				115	180			
		-180-6C-C	●	●				180	235			
		-235-6C-C	●	●				235	∞			
		-75-6D-C	●	●	66.35	32		75	115			
		-115-6D-C	●	●				115	180			
		-180-6D-C	●	●				180	235			
		-235-6D-C	●	●				235	∞			

● : Available

KGDF-Z (Face grooving / Monoblock type)



Toolholder dimensions

Insert width W (mm)	Shank size (mm)	Max. grooving depth (mm)	Face grooving dia. øD (mm) MIN.	MAX.	Description		Availability R	L	Dimensions (mm) 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		2020K65-3B-Z	●	●								
			85	110		2020K85-3B-Z	●	●								
			110	145		2020K110-3B-Z	●	●								
	□25		50	65	KGDF R/L	2525M50-3B-Z	●	●	25		25	150			25.3	
			65	85		2525M65-3B-Z	●	●								
			85	110		2525M85-3B-Z	●	●								
			110	145		2525M110-3B-Z	●	●								
4	□20	15	50	70	KGDF R/L	2020K50-4B-Z	●	●	20	9.5	20	125	30.5	31	20.3	15
			70	100		2020K70-4B-Z	●	●								
			100	150		2020K100-4B-Z	●	●								
	□25		50	70	KGDF R/L	2525M50-4B-Z	●	●	25		25	150			25.3	
			70	100		2525M70-4B-Z	●	●								
			100	150		2525M100-4B-Z	●	●								
5	□20	15	50	75	KGDF R/L	2020K50-5B-Z	●	●	20	9.5	20	125	30.5	31	20.3	15
			75	115		2020K75-5B-Z	●	●								
			115	180		2020K115-5B-Z	●	●								
	□25		50	75	KGDF R/L	2525M50-5B-Z	●	●	25		25	150			25.3	
			75	115		2525M75-5B-Z	●	●								
			115	180		2525M115-5B-Z	●	●								

●: Available

Applicable Inserts ➡ P18

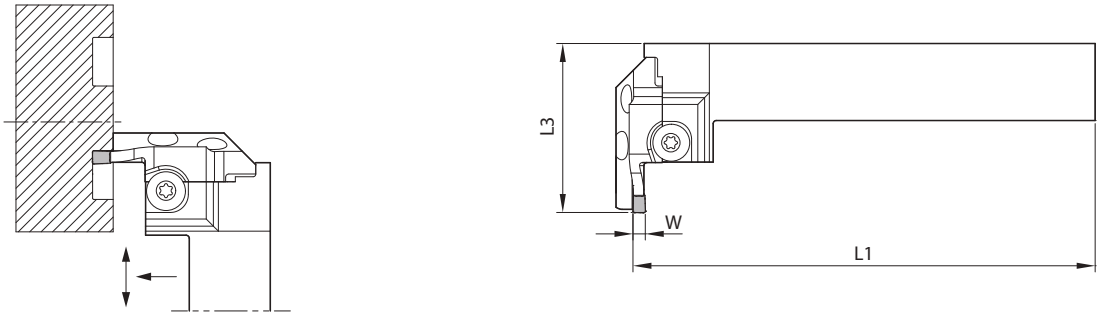
Spare parts

Description	Spare parts: Clamp bolt	Spare parts: Wrench
KGDF R/L • • • -Z	HH5 X 16	LW-4

Toolholders identification system

KGDF	R	2525	M	50	3	B	Z
Series	Hand of tool	Shank size	Toolholder length	Min. face grooving dia.	Insert width	Grooving depth	Toolholder type
KGDF face grooving	R: Right-hand L: Left-hand	2020: □20 mm 2525: □25 mm	K: 125 mm M: 150 mm	50: 50 mm ⋮ 115: 115 mm	3: 3 mm 4: 4 mm 5: 5 mm	B: 15 mm	Z: Monoblock type

KGDF (Face grooving / 90˚ seperate type)



• Right-hand shown (Right-hand blade and right-hand toolholder)

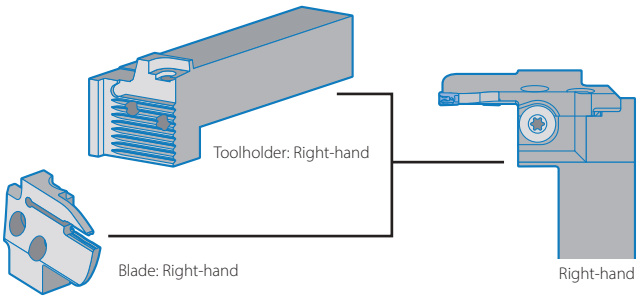
Toolholder dimensions

Shank angle	Insert width W (mm)	Shank size (mm)	Max. grooving depth (mm)	Face grooving dia. øD (mm) MIN.	MAX.	Blade description ➡P25		Toolholder description ➡P10	Dimensions (mm) 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			52.7
			15	30	35		-30-2B-C			54.7
				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			
		□25	6	25	30	KGDFR	-25-2A-C	KGDSR2525-C	150	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			52.7
			15	30	35		-30-2B-C			54.7
				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			
90°	3	□20	13	25	30	KGDF R/L	-25-3A-C	KGDS R/L2020-C	125	52.7
				30	40		-30-3A-C			
				40	50		-40-3A-C			
			15	50	65		-50-3B-C			54.7
				65	85		-65-3B-C			
				85	110		-85-3B-C			
				110	145		-110-3B-C			
			22	50	65		-50-3C-C			59.7
				65	85		-65-3C-C			
			25	85	110		-85-3C-C			61.7
				110	145		-110-3C-C			
		□25	13	25	30	KGDF R/L	-25-3A-C	KGDS R/L2525-C	150	52.7
				30	40		-30-3A-C			
				40	50		-40-3A-C			
			15	50	65		-50-3B-C			54.7
				65	85		-65-3B-C			
				85	110		-85-3B-C			
				110	145		-110-3B-C			
			22	50	65		-50-3C-C			59.7
				65	85		-65-3C-C			
			25	85	110		-85-3C-C			61.7
				110	145		-110-3C-C			

Applicable inserts ➡P18

Shank angle	Insert width W (mm)	Shank size (mm)	Max. grooving depth (mm)	Face grooving dia. øD (mm) MIN.	MAX.	Blade description ➡P25		Toolholder description ➡P10	Dimensions (mm) L1	L3
90°	4	□20	13	25	35	KGDF R/L	-25-4A-C	KGDS R/L2020-C	125	52.7
			15	35	50		-35-4B-C			54.7
				50	70		-50-4B-C			
				70	100		-70-4B-C			
				100	150		-100-4B-C			
				150	220		-150-4B-C			
				220	∞		-220-4B-C			
			25	35	50		-35-4C-C			64.7
				50	70		-50-4C-C			
				70	100		-70-4C-C			
				100	150		-100-4C-C			
				150	220		-150-4C-C			
				220	∞		-220-4C-C			
		□25	13	25	35	KGDF R/L	-25-4A-C	KGDS R/L2525-C	150	52.7
			15	35	50		-35-4B-C			54.7
				50	70		-50-4B-C			
				70	100		-70-4B-C			
				100	150		-100-4B-C			
				150	220		-150-4B-C			
				220	∞		-220-4B-C			
			25	35	50		-35-4C-C			64.7
				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 ➡P18



• KGDF 90˚ Seperate type is not available as unit (toolholder + blade).
  Blade and toolholder are available to assemble when purchasing individually.
• Right-hand blade for Right-hand toolholder, left-hand blade for left-hand toolholder.
• Insert clamp bolt (BH6x10TR), blade fixing bolt (SB-60120TR) and wrench (LTW-25) come with toolholder.

KGDF (Face grooving / 90˚ seperate type)

Toolholder dimensions

Shank angle	Insert width W (mm)	Shank size (mm)	Max. grooving depth (mm)	Face grooving dia. øD (mm) MIN.	Face grooving dia. øD (mm) MAX.	Blade description ➡P25		Toolholder description ➡P10	Dimensions (mm) L1	Dimensions (mm) L3
90°	5	□20	15	25	35	KGDF R/L	-25-5B-C	KGDS R/L2020-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
			25	35	50		-35-5C-C			64.7
				50	75		-50-5C-C			
				75	115		-75-5C-C			
				115	180		-115-5C-C			
				180	235		-180-5C-C			
				235	∞		-235-5C-C			
			32	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 R/L	-25-5B-C	KGDS R/L2525-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
			25	35	50		-35-5C-C			64.7
				50	75		-50-5C-C			
				75	115		-75-5C-C			
				115	180		-115-5C-C			
				180	235		-180-5C-C			
				235	∞		-235-5C-C			
			32	75	115		-75-5D-C			71.7
				115	180		-115-5D-C			
				180	235		-180-5D-C			
				235	∞		-235-5D-C			

Applicable inserts ➡P18

Shank angle	Insert width W (mm)	Shank size (mm)	Max. grooving depth (mm)	Face grooving dia. øD (mm) MIN.	Face grooving dia. øD (mm) MAX.	Blade description ➡P25		Toolholder description ➡P10	Dimensions (mm) L1	Dimensions (mm) L3
90°	6	□20	15	25	35	KGDF R/L	-25-6B-C	KGDS R/L2020-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
			25	35	50		-35-6C-C			64.7
				50	75		-50-6C-C			
				75	115		-75-6C-C			
				115	180		-115-6C-C			
				180	235		-180-6C-C			
				235	∞		-235-6C-C			
			32	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 R/L	-25-6B-C	KGDS R/L2525-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
			25	35	50		-35-6C-C			64.7
				50	75		-50-6C-C			
				75	115		-75-6C-C			
				115	180		-115-6C-C			
				180	235		-180-6C-C			
				235	∞		-235-6C-C			
			32	75	115		-75-6D-C			71.7
				115	180		-115-6D-C			
				180	235		-180-6D-C			
				235	∞		-235-6D-C			

Applicable inserts ➡P18

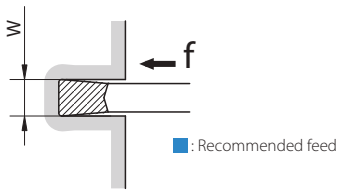
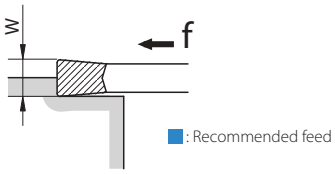
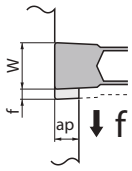
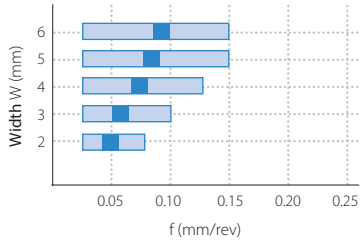
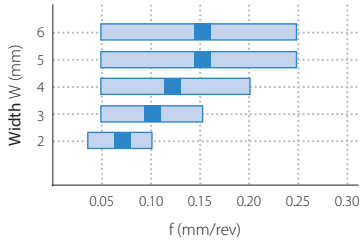
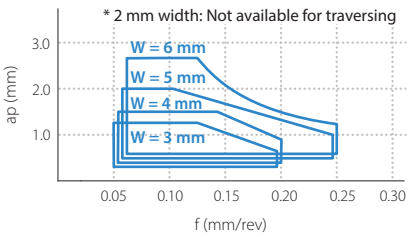
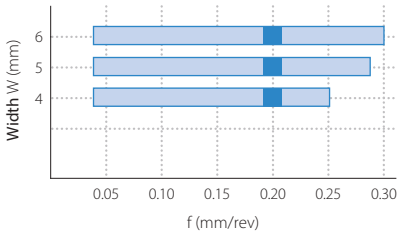
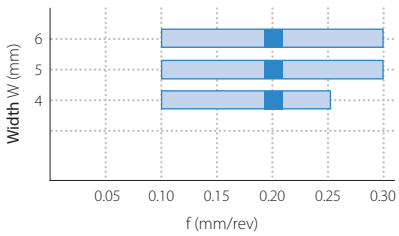
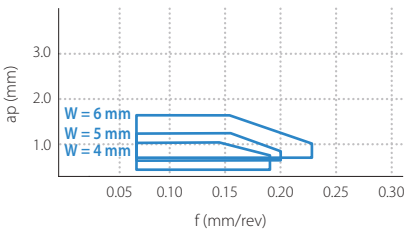
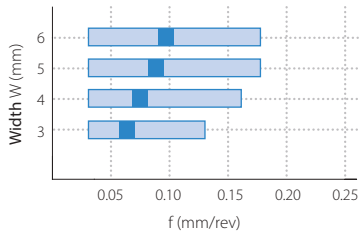
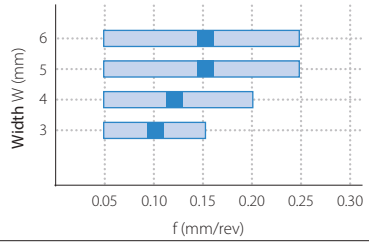
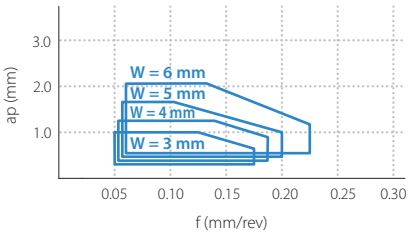
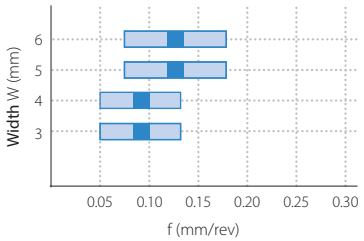
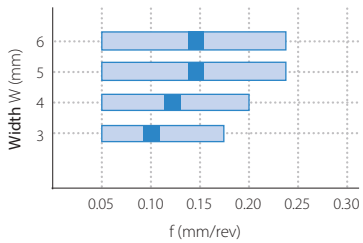
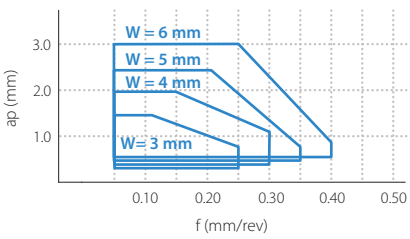
Recommended cutting conditions (Face grooving)

★ 1st recommendation ☆ 2nd recommendation

Workpiece	Recommended insert grade (Vc: m/min)				Notes
	Cermet		MEGACOAT carbide		
	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	

Recommended cutting conditions (f, ap)

(Workpiece : C50)

Chipbreaker	Grooving	Shoulder grooving (Side grooving)	Traversing
			
GM (Grooving and traversing)			
GH (Grooving, traversing and high feed grooving)			
DM (Deep grooving and traversing)			
CM (Copying)			

When shouldering,
- If D.O.C. is set smaller, set feed higher.
- If D.O.C. is set larger, set feed lower.

1) The above values reflect a T dimension that is 15 mm or less.
When T dimension is over 17 mm, set the values for traversing to less than 90% of recommended cutting conditions above.

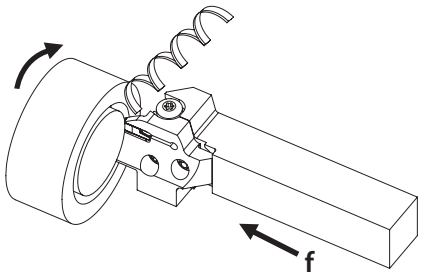
Guide for face grooving

1 Toolholder selection

Check the range of applicable "face grooving diameter" as well as the groove width and depth.

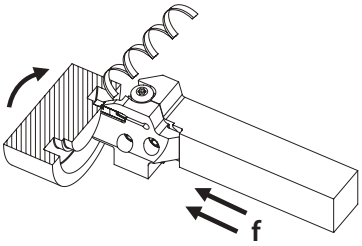
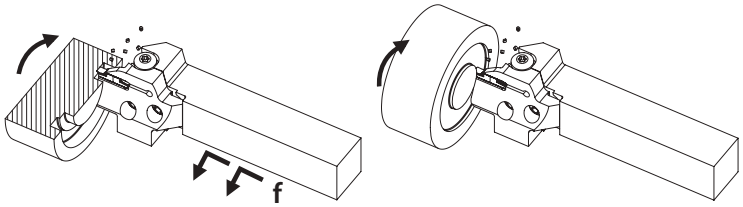
2 Cutting conditions (Feed rate: f)

When machining steel, set the feed rate (f) so that chips are created in a helical form when plunging.



3 Expanding groove width (Plunging and traversing)

Start machining from the outside and then proceed to the inside. Chip control will be better in this way.

Plunging (Grooving + side grooving)	Traversing
	

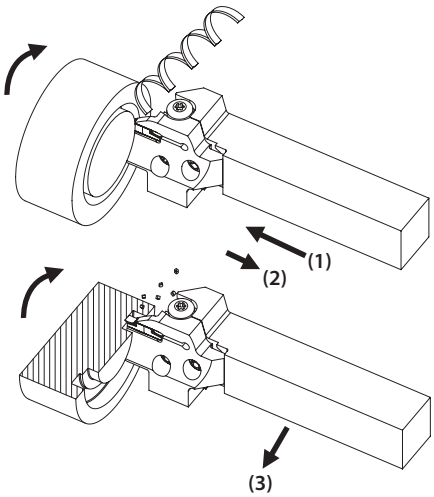
4 Guide for traversing

A. When the cutting amount (D.O.C.) is over 0.5 mm

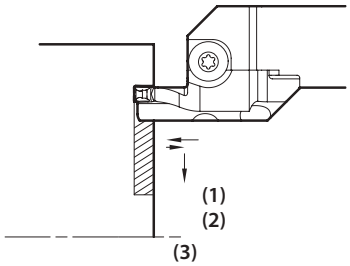
(1) Plunging

(2) Return the cutting by 0.1mm
(Failure to pull the tool back before traverse cutting will result in an unbalanced load applied on only one side of the cutting edge.)

(3) Perform traversing (see #1)

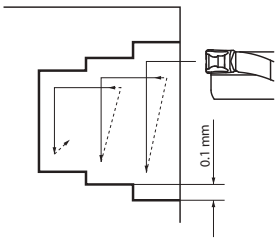


#1



When widening the face groove width (see #2)
Apply the "step turning". Then perform finishing.

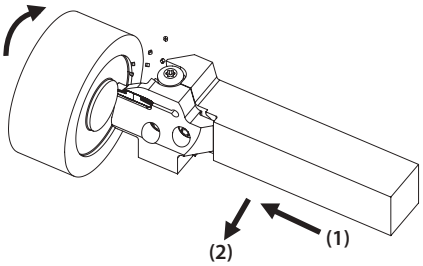
#2



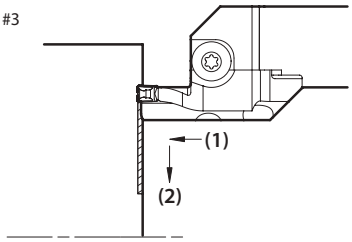
B. When the cutting amount (D.O.C.) is under 0.5 mm

(1) Plunging

(2) Perform traversing
Machining without interruption is possible (see #3).



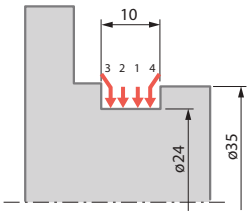
#3



Case studies

Gear 17Cr3 (Grooving)

Vc = 113 ~ 164 m/min
f = 0.06 mm/rev
Wet
GDM4020N-040GM (PR1225)
KGDL2525X-3T10S



Tool life

GM chipbreaker (PR1225)	**1500** pcs/edge	x6
Competitor C (PVD coated carbide)	**250** pcs/edge	

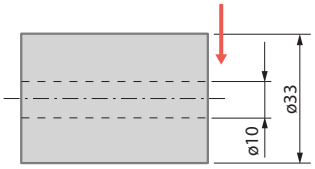
KGD-type and GM chipbreaker (PR1225) improved tool life to 6 times of competitor C.
No burned chips and good chip control.

GM Chipbreaker Competitor C

(User evaluation)

Sleeve C45+Pb (Cut-off)

Vc = 103 m/min
f = 0.12 mm/rev
Wet
GDM3020N-025PM (PR1225)
KGDL2525X-3T20S



Tool life

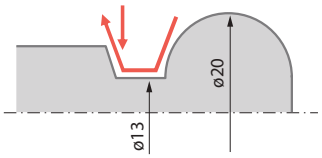
PM chipbreaker (PR1225)	**250** pcs/edge , capable of further machining	
Competitor D (PVD coated carbide)	**250** pcs/edge , with chipping	

KGD-type and PM chipbreaker (PR1225) showed good edge condition after machining same number of workpieces as competitor D.
Available for further machining (competitor D caused chipping).

(User evaluation)

Ball Stud 34CrMo4 (Copying)

Vc = 100 ~ 160 m/min
ap = 0.3 mm
f = 0.15 ~ 0.25 mm/rev
Wet
GDM3020N-150R-CM (PR1225)
KGDR2020X-3T10S



Tool life

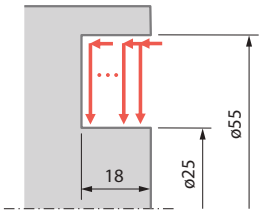
CM chipbreaker (PR1225)	**800** pcs/edge	x2
Conventional A	**400** pcs/edge	

Resolve issues such as chip-bite and tangled chips due to its surperior chip evacuation performance
⇒ Resolve breakage of edge caused by chips.
doubled tool life by reducing damage on the edge.

(User evaluation)

Piston 34CrMo4 (Face grooving)

Vc = 150 m/min
ap = 1, 1.8 mm (Traversing)
f = 0.05 mm/rev (Grooving)
0.1, 0.15 mm/rev (Traversing)
Wet
GDFM4020N-040GM
(PR1225)
KGDFL2525X50 - 4CS



Tool life

GM chipbreaker (PR1225)	**40** pcs/edge , capable of further machining	
Conventional B	**40** pcs/edge	

KGDF+GM chipbreaker improved chip evacuatoin compared to conventional B (Resolved frequent breakage of toolholder).
Smaller wear on the edge provided by MEGACOAT make the tool life longer (Lower running cost by longer tool life).

(User evaluation)

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