

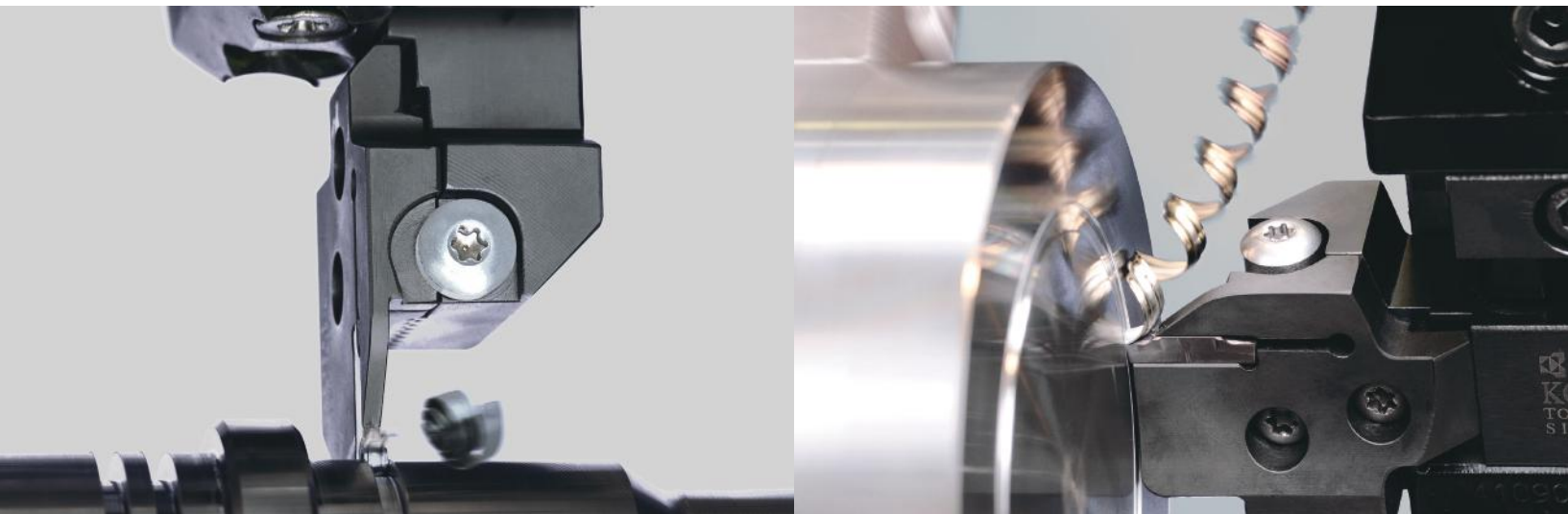
THE NEW VALUE FRONTIER



Grooving / Cut-Off | **KGD/KGDF**

Grooving / Cut-Off

KGD/KGDF



Improved Grooving Performance with Expansive Lineup of Chipbreakers and Toolholders

Good chip control

MEGACOAT coating technology for long tool life and high efficiency machining

Comprehensive Toolholder Lineup



KGD

Good chip control

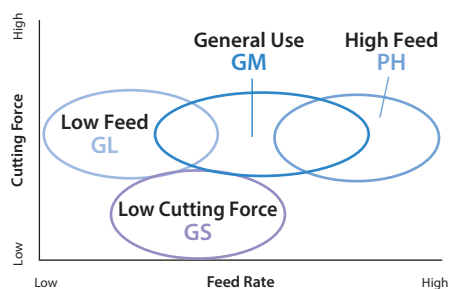
MEGACOAT coating technology for long tool life and high efficiency machining

1 Wide Range of Chipbreakers

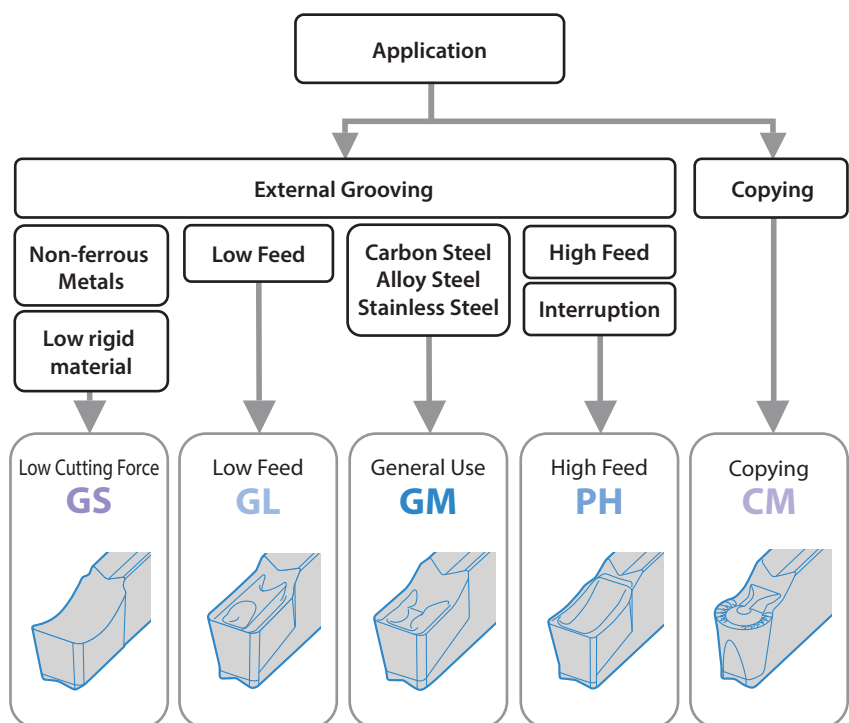
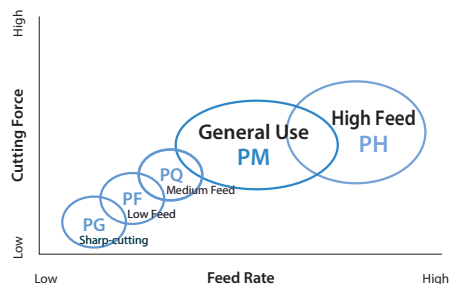
Application Maps

Chipbreaker Selection(External)

External Grooving and Traversing



Cut-Off



Comparison of Chip Control (In-house Evaluation)

Cutting Conditions : $V_c = 150 \text{ m/min}$, $f = 0.15 \text{ mm/rev}$ Workpiece : SCM415

Better chip control than competitors

Reduces damage of cutting edge caused by crushing chips

GM Chipbreaker



Competitor A



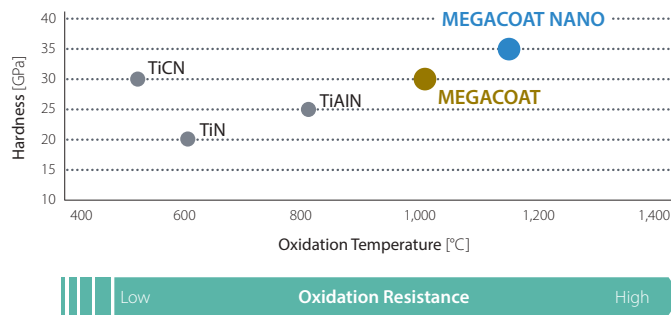
Competitor B



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 of cast iron

PR1535(MEGACOAT NANO)
For machining of stainless steel

3

Various Toolholder Lineup

Available two types of toolholder, Integral type and SwitchBlade type.

Integral Type



SwitchBlade Type



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

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

Integral type / SwitchBlade type Selection Reference

Integral Type	SwitchBlade 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

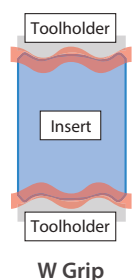


The new "W Grip" is applied for more rigid clamping and stable machining.

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.



GDM/GDMS/GDG (External Grooving and Traversing)

Applicable Inserts

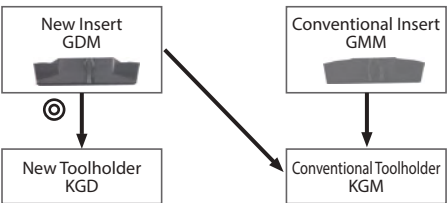
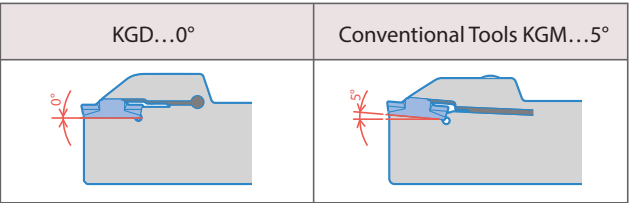
Insert			Classification of usage		P Carbon Steel / Alloy Steel											
					M Stainless Steel											
			● : Light Interruption / 1st Choice ⊖ : Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice		K Cast Iron											
					N Non-ferrous Metals											
					S Titanium Alloy											
					H Hard materials (In case hardness is under 40HRC)											
					H Hard materials (In case hardness is over 40HRC)											
Insert			Description		Dimensions(mm)						Cermet		MEGACOAT NANO	MEGACOAT		Carbide
					W	fe	M	L	H		TN620	TN90	PR1535	PR1225	PR1215	GW15
Grooving and Traversing	General Use		GDM	2420N-020GM	2.4	±0.03	0.2	1.95	20	4.3	●	●	●	●	●	
				3020N-020GM	3.0		0.4	2.3			●	●	●	●	●	
				3020N-040GM	3.0		0.4	2.3			●	●	●	●	●	
				4020N-020GM	4.0		0.2				●	●	●	●	●	
				4020N-040GM	4.0		0.4	3.3			●	●	●	●	●	
				4020N-080GM	4.0		0.8				●	●	●	●	●	
				5020N-040GM	5.0	±0.04	0.4	4.2			●	●	●	●	●	
				5020N-080GM	5.0		0.8				●	●	●	●	●	
				6020N-040GM	6.0		0.4	5.2			●	●	●	●	●	
				6020N-080GM	6.0		0.8				●	●	●	●	●	
				8030N-080GM	8.0	±0.05	0.8	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		0.4	3.3			●	●	●	●	●	
				5020N-080GM	5.0	±0.04	0.8	4.2			●	●	●	●	●	
				6020N-080GM	6.0		0.8	5.2			●	●	●	●	●	
Grooving and Traversing	Low Feed		GDM	2420N-020GL	2.4	±0.03	0.2	1.95	20	4.3	●	●	●	●	●	
				3020N-020GL	3.0		0.4	2.3			●	●	●	●	●	
				3020N-040GL	3.0		0.4	2.3			●	●	●	●	●	
				4020N-020GL	4.0		0.2				●	●	●	●	●	
				4020N-040GL	4.0		0.4	3.3			●	●	●	●	●	
				5020N-040GL	5.0	±0.04	0.4	4.2			●	●	●	●	●	
				6020N-040GL	6.0		0.4	5.2			●	●	●	●	●	
	Low Cutting Force		GDG	2520N-020GS	2.5	±0.02	0.2	2.0	20	4.3	●	●	●	●	●	●
				3020N-020GS	3.0		0.2	2.3			●	●	●	●	●	●
				3520N-020GS	3.5		0.2	2.8			●	●	●	●	●	●
				4020N-040GS	4.0		0.4	3.3			●	●	●	●	●	●
				5020N-040GS	5.0		0.4	4.2			●	●	●	●	●	●
				6020N-040GS	6.0		0.4	5.2			●	●	●	●	●	●
Grooving and Traversing	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			●	●	●	●	●	
				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		0.3	3.3					●	●	●	
			GDMS	2020N-020PH	2.0	±0.03	0.2	1.5					●	●	●	
				3020N-030PH	3.0		0.3	2.3					●	●	●	
				4020N-030PH	4.0		0.3	3.3					●	●	●	

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

● : Standard Stock

* KGD / KGM Combinations

Insert Setting Angle of KGD / KGM Toolholders



Not recommended to install conventional inserts on new toolholder.

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

Applicable Inserts

Applicable Inserts			GDGS (CBN / PCD) Classification of usage		N Non-ferrous Metals																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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GDM/GDMS (Cut-Off)

Applicable Inserts

Applicable Inserts			Classification of usage		P	Carbon Steel / Alloy Steel								
			: Light Interruption / 1st Choice : Light Interruption / 2nd Choice		M	Stainless Steel								
					N	Non-ferrous Metals								
Insert			Description		Dimensions(mm)				Angle	MEGACOAT NANO	MEGACOAT			
Handed Insert shows Right-hand					W	rε	M	L	H	θ	PR1535	PR1225	PR1215	
			Tolerance											
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				●	●	●
			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
			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				●	●	●
			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

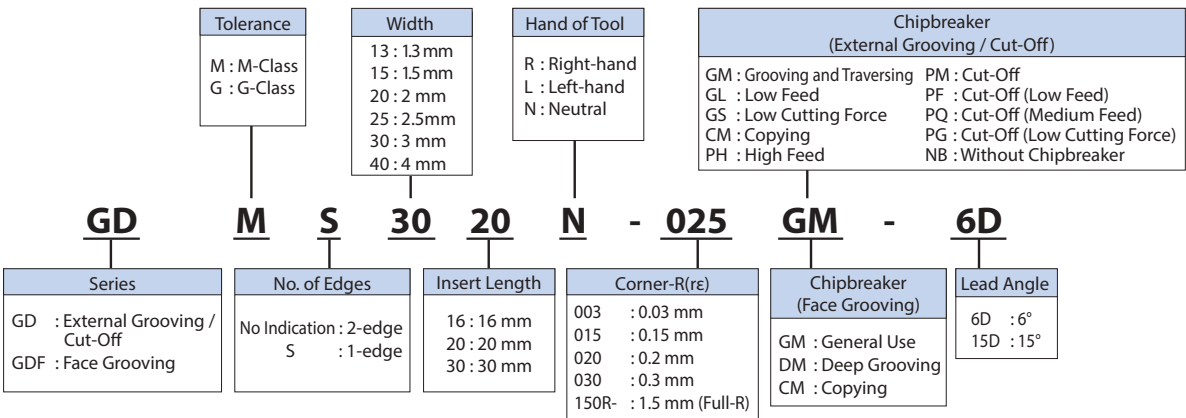
Using PM chipbreaker (designed for cut-off) for grooving will not create a flat bottom (See Fig.)



Groove bottom created by PM chipbreaker

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

Inserts Identification System



Setting the Insert

1. Completely eliminate chips from the insert mounting part. (see Fig.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 Fig.1, Fig.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 6.5N·m for HH5X○○, 8.0N·m for HH6X25, and 2.5N·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 Fig.2, Fig.3)

Fig.1

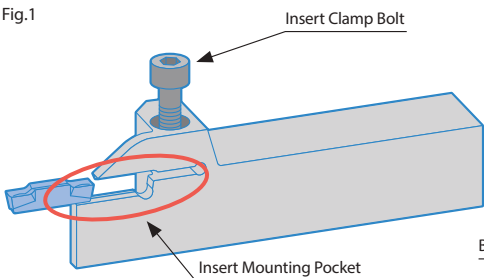


Fig.2

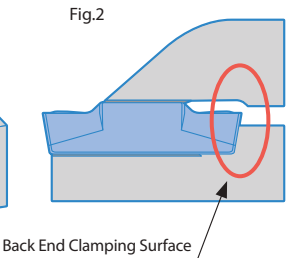
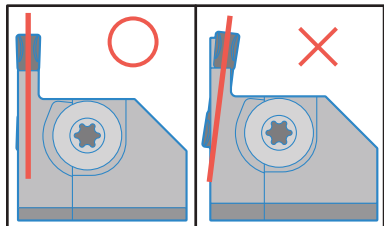
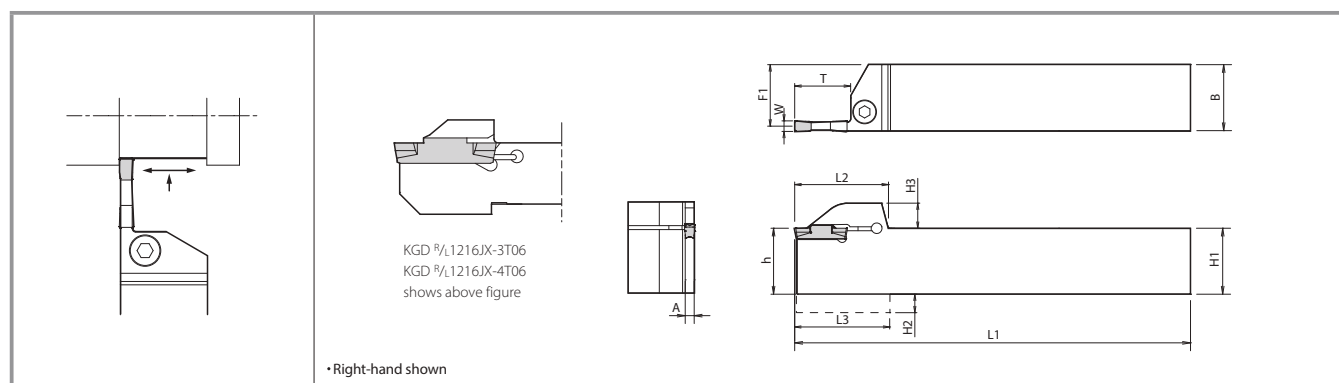


Fig.3



KGD (Integral Type)

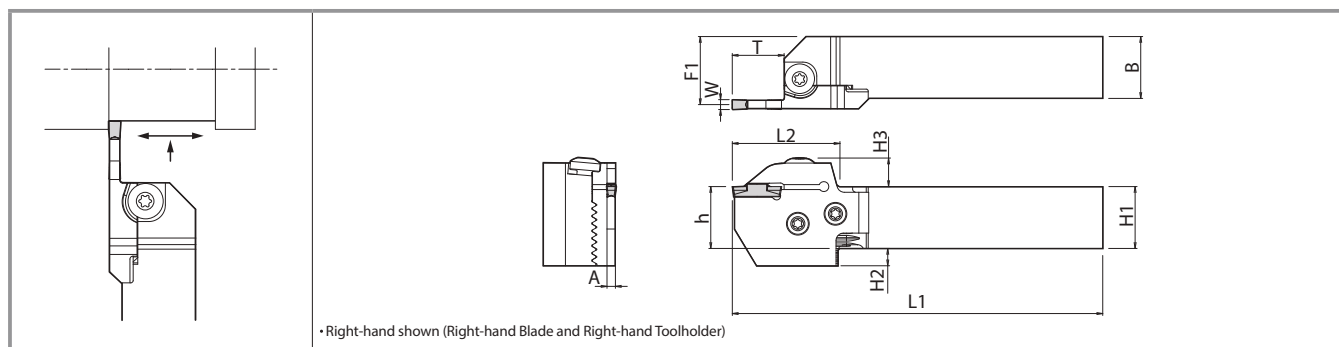


Toolholder Dimensions

Width (mm)	Max. Grooving Depth (mm)	Description		Stock		Dimensions (mm)											Insert Width W(mm)		Spare Parts	
																			Clamp Bolt	Wrench
				R	L	H1=h	H2	H3	B	L1	L2	L3	F1	A	T	MIN.	MAX.			
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								
	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								
	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			24.2								
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	9.5	16	120	19.5	19	14.8	2.4	6	3.0	4.0	SE-50125TR	LW-20	
			1616H-3T06	●	●	16	4.0		16	100	27.7	28.0	18.8							
			2020K-3T06	●	●	20	—		20	125	28.0	—	23.8							
			2525M-3T06	●	●	25	—		25	150		23.8								
	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								
			2525M-3T10	●	●	25	—		25	150	23.8									
	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			23.8								
4	6	KGD ^R /L	1216JX-4T06	●	●	12	2.0	9.5	16	120	19.5	19	14.3	3.4	6	4.0	5.0	SE-50125TR	LW-20	
			2020K-4T10	●	●	20	—		20	125	30.5	—	18.3							
	2525M-4T10	●	●	25	25	150			23.3											
	10	KGD ^R /L	2020K-4T20	●	●	20			20	125	34.5	—	18.3		20			HH5X16		
			2525M-4T20	●	●	25			25	150	35.5	23.3								
	25	KGD ^R /L	2525M-4T25	●	●	25			25	150	40.5	23.3	25		HH5X25					
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									
	17	KGD ^R /L	2020K-5T17	●	●	20	20			125	37.5	—	17.8	17		HH5X25				
			2525M-5T17	●	●	25	25			150		22.8								
	25	KGD ^R /L	2525M-5T25	●	●	25	25			150	40.5	22.8	25							
			2525M-5T25	●	●	25	25			150	40.5	22.8								
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 20mm or more, the maximum groove-depth of groove made by the 2-edge insert will be 18mm. ● : Standard Stock
 2) Recommended tightening torque for clamp bolt is 6.5N · m for HH5X16, 8.0N · m for HH6X25 and 2.5N · m for SE-50125TR
 3) Above toolholders can also be used for cut-off applications.

KGD-S (0° SwitchBlade Type)



Toolholder Dimensions

Shank Angle	Width (mm)	Max. Grooving Depth (mm)	Shank Size (mm)	Unit Description (Standard Stock Description)	Stock		Blade Description ➡ P10	Toolholder Description ➡ P10	Dimensions(mm)											Insert Width W(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	●	●	KGD ^{R/L} -2T17-C	KGD ^{R/L} 2020-C	20	12	11.6	20	122	40	—	23.4	1.7	17	2.0	3.0	
			☐ 25	2525X-2T17S	●	●		KGD ^{R/L} 2525-C	25	7		25	147			28.4					
			☐ 32	No Unit Description ➡					KGD ^{R/L} 3232-C	32		—	32			167					35.4
	3	10	☐ 20	KGD ^{R/L} 2020X-3T10S	●	●	KGD ^{R/L} -3T10-C	KGD ^{R/L} 2020-C	20	12	11.6	20	115	33	—	23.0	2.4	10	3.0	4.0	
			☐ 25	2525X-3T10S	●	●		KGD ^{R/L} 2525-C	25	7		25	140			28.0					
			☐ 32	3232X-3T10S	●	●		KGD ^{R/L} 3232-C	32	—		32	160			35.0					
		20	☐ 20	KGD ^{R/L} 2020X-3T20S	●	●	KGD ^{R/L} -3T20-C	KGD ^{R/L} 2020-C	20	12		20	125	43	—	23.0					
			☐ 25	2525X-3T20S	●	●		KGD ^{R/L} 2525-C	25	7		25	150			28.0					
			☐ 32	3232X-3T20S	●	●		KGD ^{R/L} 3232-C	32	—		32	170			35.0					
	4	10	☐ 20	KGD ^{R/L} 2020X-4T10S	●	●	KGD ^{R/L} -4T10-C	KGD ^{R/L} 2020-C	20	12	11.6	20	115	33	—	22.5	3.4	10	4.0	5.0	
			☐ 25	2525X-4T10S	●	●		KGD ^{R/L} 2525-C	25	7		25	140			27.5					
			☐ 32	3232X-4T10S	●	●		KGD ^{R/L} 3232-C	32	—		32	160			34.5					
		20	☐ 20	KGD ^{R/L} 2020X-4T20S	●	●	KGD ^{R/L} -4T20-C	KGD ^{R/L} 2020-C	20	12		20	125	43	—	22.5					
			☐ 25	2525X-4T20S	●	●		KGD ^{R/L} 2525-C	25	7		25	150			27.5					
			☐ 32	3232X-4T20S	●	●		KGD ^{R/L} 3232-C	32	—		32	170			34.5					
		25	☐ 20	KGD ^{R/L} 2020X-4T25S	●	●	KGD ^{R/L} -4T25-C	KGD ^{R/L} 2020-C	20	12		20	130	48	—	22.5	25				
			☐ 25	2525X-4T25S	●	●		KGD ^{R/L} 2525-C	25	7		25	155			27.5					
			☐ 32	3232X-4T25S	●	●		KGD ^{R/L} 3232-C	32	—		32	175			34.5					
	5	10	☐ 20	KGD ^{R/L} 2020X-5T10S	●	●	KGD ^{R/L} -5T10-C	KGD ^{R/L} 2020-C	20	12		11.6	20	115	33	—	22.0	4.4	10	5.0	6.0
			☐ 25	2525X-5T10S	●	●		KGD ^{R/L} 2525-C	25	7			25	140			27.0				
			☐ 32	3232X-5T10S	●	●		KGD ^{R/L} 3232-C	32	—			32	160			34.0				
		25	☐ 20	KGD ^{R/L} 2020X-5T25S	●	●	KGD ^{R/L} -5T25-C	KGD ^{R/L} 2020-C	20	12			20	130	48	—	22.0				
			☐ 25	2525X-5T25S	●	●		KGD ^{R/L} 2525-C	25	7			25	155			27.0				
			☐ 32	3232X-5T25S	●	●		KGD ^{R/L} 3232-C	32	—			32	175			34.0				

Note 1) When using the toolholder in normal mounting position, the lower jaw of toolholder may interfere with the tool presetter.

● : Standard Stock

2) The toolholder and blade descriptions are printed on the toolholder body. (Unit description is not printed.)

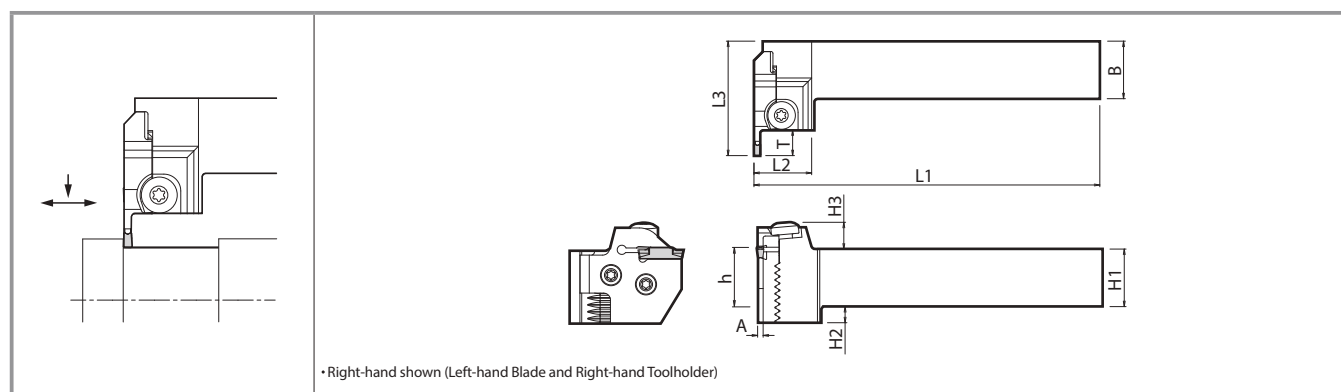
KGD-S: Right-hand Blade for Right-hand Toolholder, Left-hand Blade for Left-hand Toolholder.

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 20mm or more, the maximum groove-depth of groove made by the 2-edge insert will be 18mm.

KGDS-S (90° SwitchBlade Type)



Toolholder Dimensions

Shank Angle	Width (mm)	Max. Grooving Depth (mm)	Shank Size (mm)	Blade Description → P10	Toolholder Description → P10	Unit Description (Standard Stock Description)	Stock	Dimensions (mm)														Insert Width W(mm)	
								R	L	H1=h	H2	H3	B	L1	L2	L3	F1	A	T	MIN.	MAX.		
90°	2	17	□ 20	KGDS ^R /L2020-C	KGDS ^R /L2020-C	—	—	—	20	12			20	125		56.7		1.7	17	2.0	3.0		
			□ 25	KGDS ^R /L2525-C	KGDS ^R /L2525-C	—	—	—	25	7			25	150									
	3	10	□ 20	KGDS ^R /L2020-C	KGDS ^R /L 2020X-3T10S	—	●	●	20	12			20	125		49.7			10				
			□ 25	KGDS ^R /L2525-C	2525X-3T10S	—	●	●	25	7			25	150				2.4		3.0	4.0		
		20	□ 20	KGDS ^R /L2020-C	KGDS ^R /L2020-C	—	—	—	20	12			20	125		59.7			20				
			□ 25	KGDS ^R /L2525-C	KGDS ^R /L2525-C	—	—	—	25	7			25	150									
	4	10	□ 20	KGDS ^R /L2020-C	KGDS ^R /L2020-C	—	—	—	20	12			20	125		49.7			10				
			□ 25	KGDS ^R /L2525-C	KGDS ^R /L2525-C	—	—	—	25	7			25	150									
		20	□ 20	KGDS ^R /L2020-C	KGDS ^R /L2020-C	—	—	—	20	12			20	125		59.7		3.4	20	4.0	5.0		
			□ 25	KGDS ^R /L2525-C	KGDS ^R /L2525-C	—	—	—	25	7			25	150									
		25	□ 20	KGDS ^R /L2020-C	KGDS ^R /L2020-C	—	—	—	20	12			20	125		64.7			25				
			□ 25	KGDS ^R /L2525-C	KGDS ^R /L2525-C	—	—	—	25	7			25	150									
	5	10	□ 20	KGDS ^R /L2020-C	KGDS ^R /L2020-C	—	—	—	20	12			20	125		49.7		4.4	10	5.0	6.0		
			□ 25	KGDS ^R /L2525-C	KGDS ^R /L2525-C	—	—	—	25	7			25	150									
		25	□ 20	KGDS ^R /L2020-C	KGDS ^R /L2020-C	—	—	—	20	12			20	125		64.7			25				
			□ 25	KGDS ^R /L2525-C	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 20mm or more, the maximum groove-depth of groove made by the 2-edge insert will be 18mm.

● : Standard Stock

Toolholders Identification System(External Grooving, Cut-Off / Integral Type, SwitchBlade Type)

KGD

R

1616

H

-

3

T

06

(Integral 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

(SwitchBlade 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° SwitchBlade Type

Insert Clamp Bolt

Blade : Right-hand

Toolholder : Right-hand

Unit Description : Right-hand

Blade Fixing Bolt

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° SwitchBlade Type

Toolholder : Right-hand

Blade : Left-hand

Unit Description : Right-hand

Toolholder (KGDS ^R/_L ●● -C)

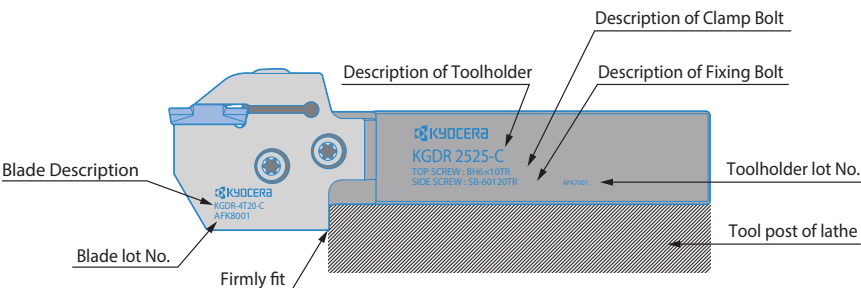
+

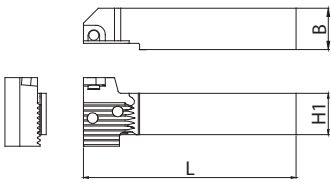
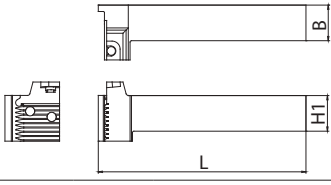
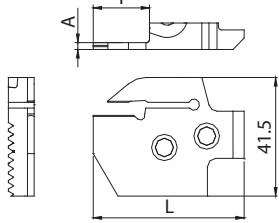
Blade (KGD ^L/_R -●T●● -C)

⇒Left-hand Blade for Right-hand Toolholder,
Right-hand Blade for Left-hand Toolholder.

SwitchBlade Type Toolholder Identification System and Their Setting to Lathe

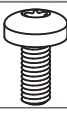
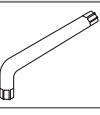
Firmly fit the lower jaw to the tool post of the lathe.



Shape of 0° type Right-hand shown	Toolholder Description	Stock		Dimensions(mm)		
		R	L	L	B	H1
	KGDR _{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	Stock		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	Stock		Dimensions(mm)		
		R	L	L	T	A
	KGDR _{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	
	-4T20-C	●	●	54.2	20.2	3.4
	-4T25-C	●	●	59.2	25.2	
	-5T10-C	●	●	44.2	10.2	4.4
	-5T25-C	●	●	59.2	25.2	

● : Standard Stock

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 (SwitchBlade Type Toolholder)

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

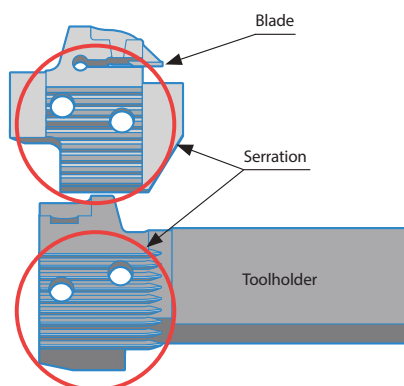


Fig.1

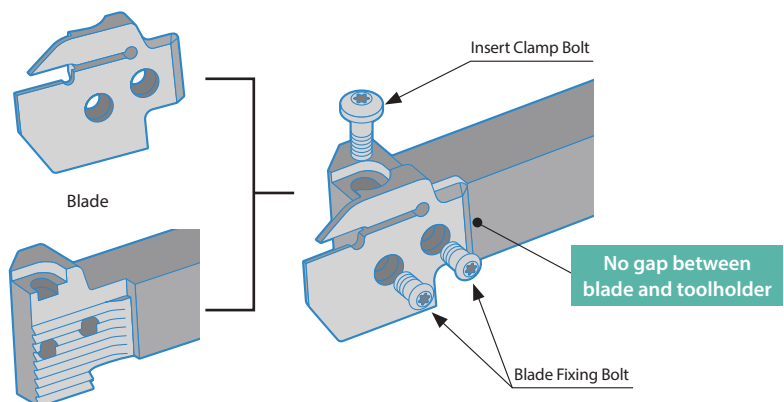
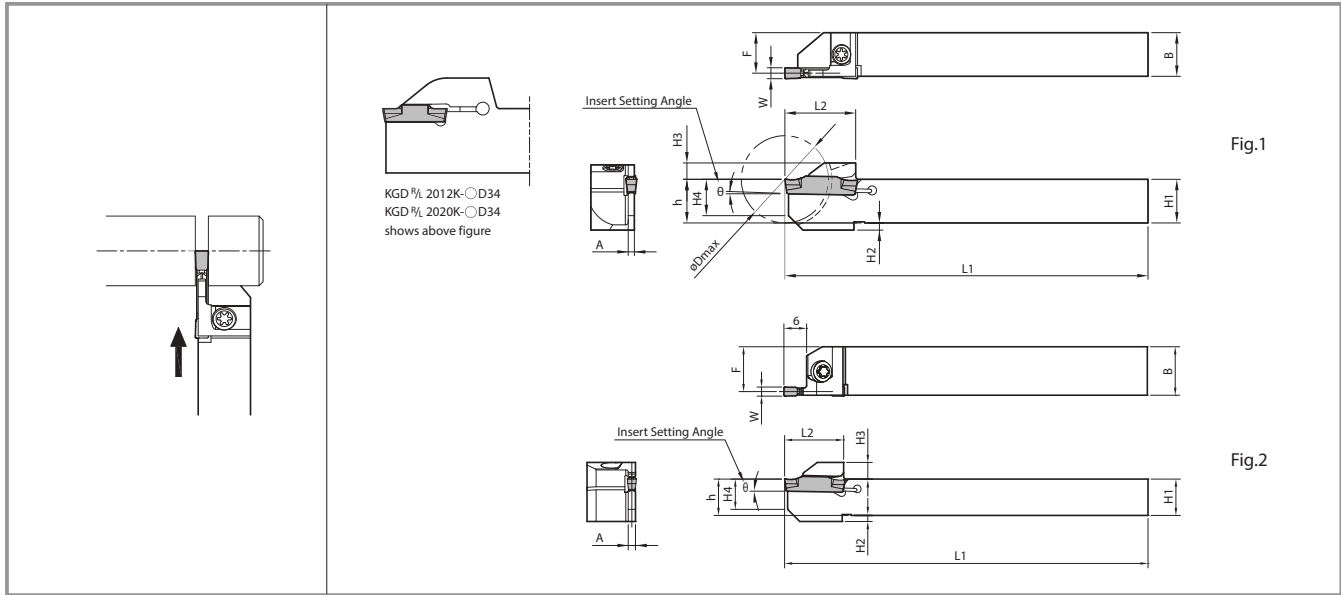


Fig.2

KGD (for Automatic Lathe)

Toolholder Dimensions



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

Note 1) 4mm 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 2.0N·m for SB-40120TR, 2.5N·m for SE-50125TR and 6.5N·m for HH5X16.

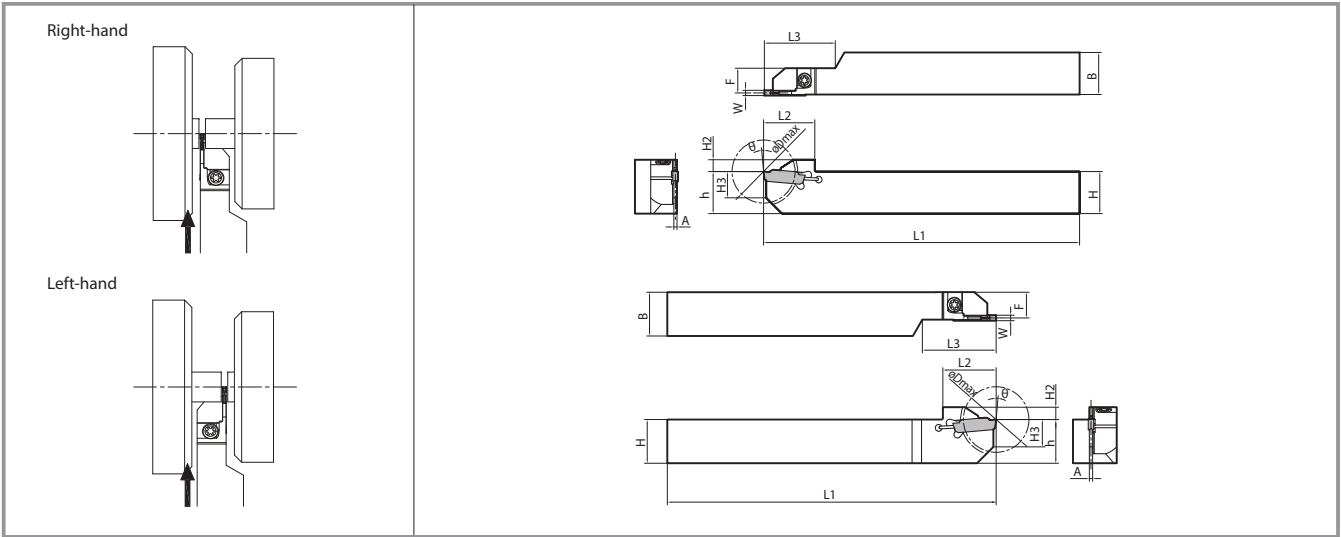
3) When machining material greater than ø36mm with KGDR/L...-3D38 or KGDR/L...-3D42 or KGDR/L...-3D51 toolholders, use 1°-edge inserts.

Max. workpiece diameter for 2-edge inserts ø36mm

● : Standard Stock

KGDS (Small Diameter Cut-Off for Sub Spindle)

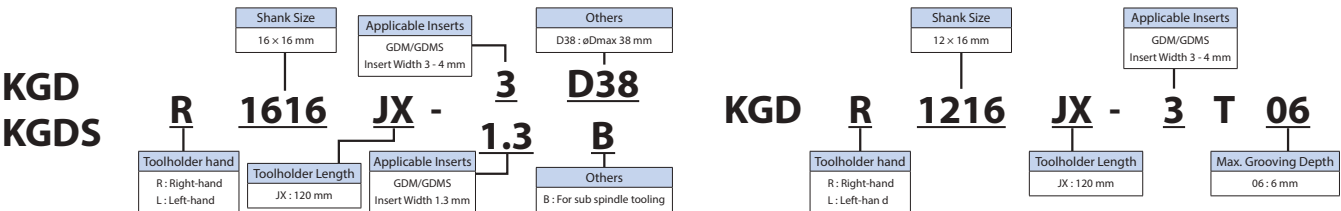
Toolholder Dimensions



Description		Stock		Cut-Off Dia. (mm)	Dimensions(mm)								Angle	Insert Width W(mm)		Spare Parts		
																Screw	Wrench	
		R	L		øDmax	H=h	H2	H3	B	L1	L2	L3		F	A	θ	MIN.	MAX.
KGDS $\frac{R}{L}$	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		

● : Standard Stock

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.

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

KGDS Sub Spindle Type

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

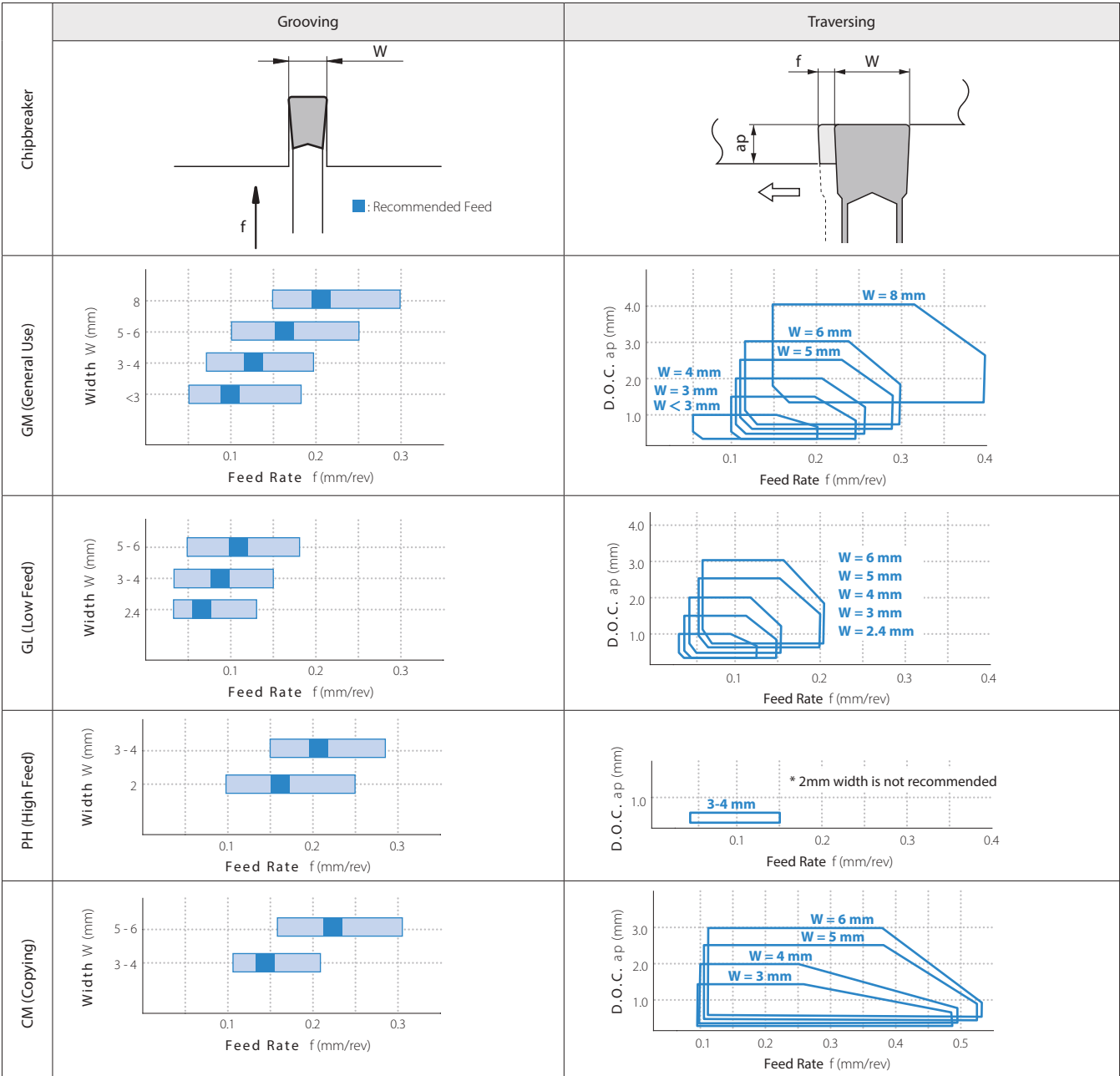
KGDSR (Right-hand)	KGDSL (Left-hand)
• Long workpiece and more rigidity • Cut-off near main spindle	• Short workpiece and less rigidity • Cut-off near sub-spindle

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 (Feed Rate / D.O.C.)

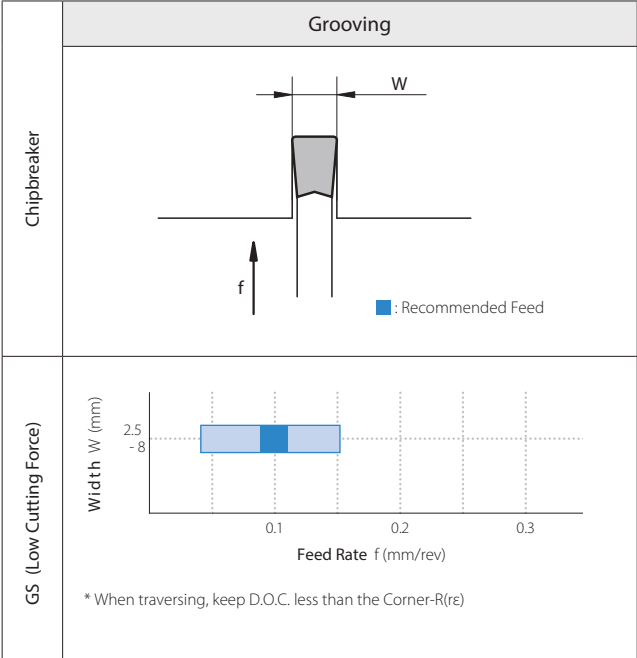
(Workpiece : S50C)



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

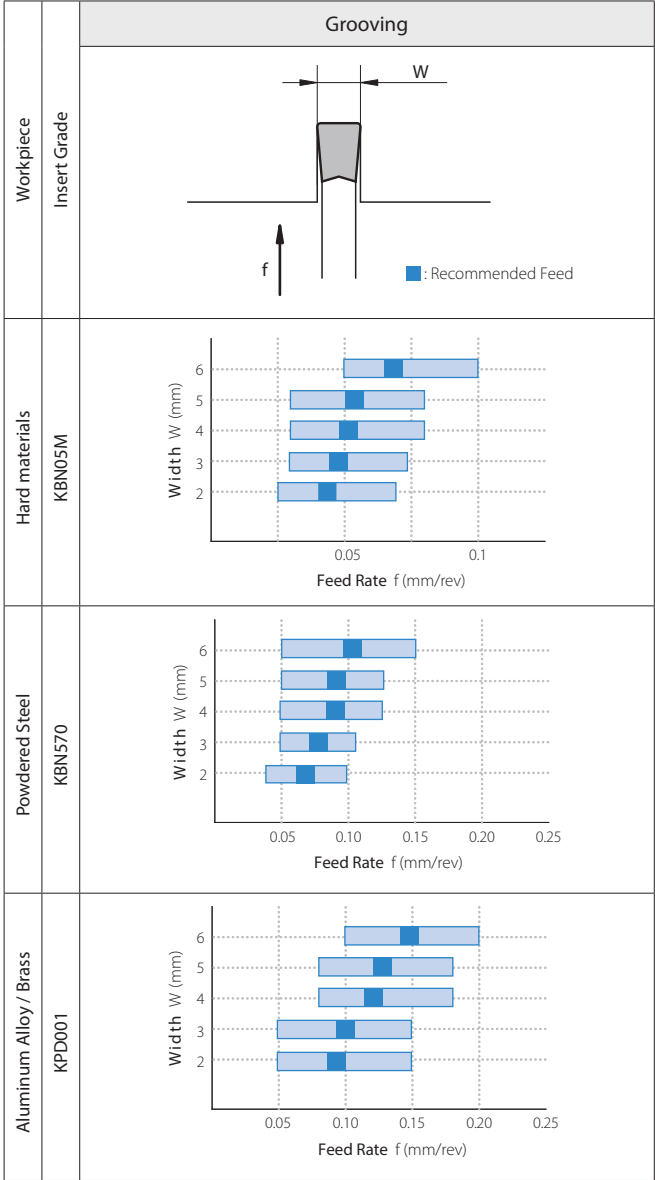
Recommended Cutting Conditions (External Grooving)

Recommended Cutting Conditions (Feed Rate / D.O.C.) (Workpiece : S50C)



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

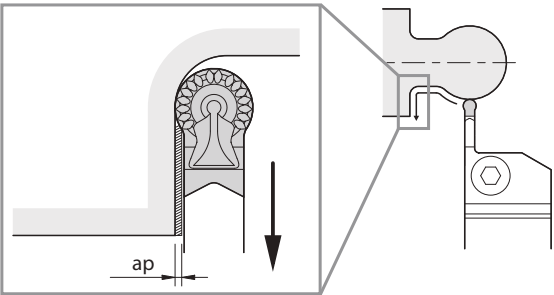
Recommended Cutting Conditions (Feed Rate)



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 (rc) = 0.03)			PF(Corner-R (rc) = 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

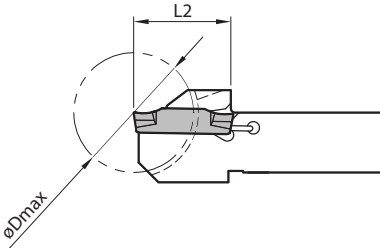
- Advantage 1
- Compatible with any machine setups regardless of overhang length specifications
- Advantage 2
- Minimum and optimal overhang length helps to control chattering

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

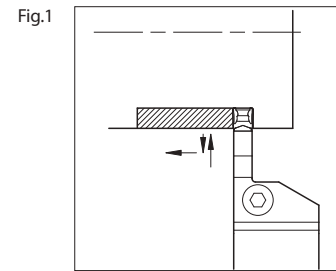


Guide for External Grooving

1) Traversing After Grooving

1. Grooving Depths Over 0.5mm : At Roughing (see Fig.1)

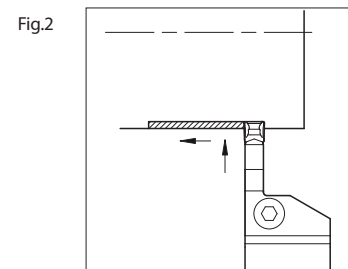
Before traversing, pull the tool back about 0.1mm after grooving, instead of traversing subsequent to grooving.
(Failure to pull the tool back before traverse cutting will result in an unbalanced load applied on only one side of the cutting edge.)



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

2. Grooving Depths Under 0.5mm : At Finishing (see Fig.2)

Traversing subsequent to grooving is possible because shallow groove depths relate a small load on the cutting edge.
(Dwell-motion is not necessary)



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

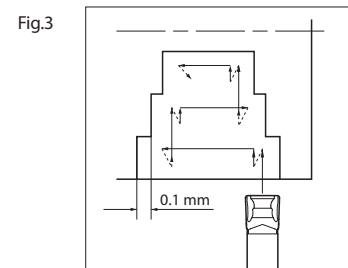
2)

1. When widening the groove width, apply the "Step Turning" as shown in Fig.3

2. The widened groove and side walls should be finished last.

(For better chip control, D.O.C. over 0.5mm is recommended.)

Note: If the workpiece is not supported at the center, reduce the feed rate when grooving towards center



Face Grooving

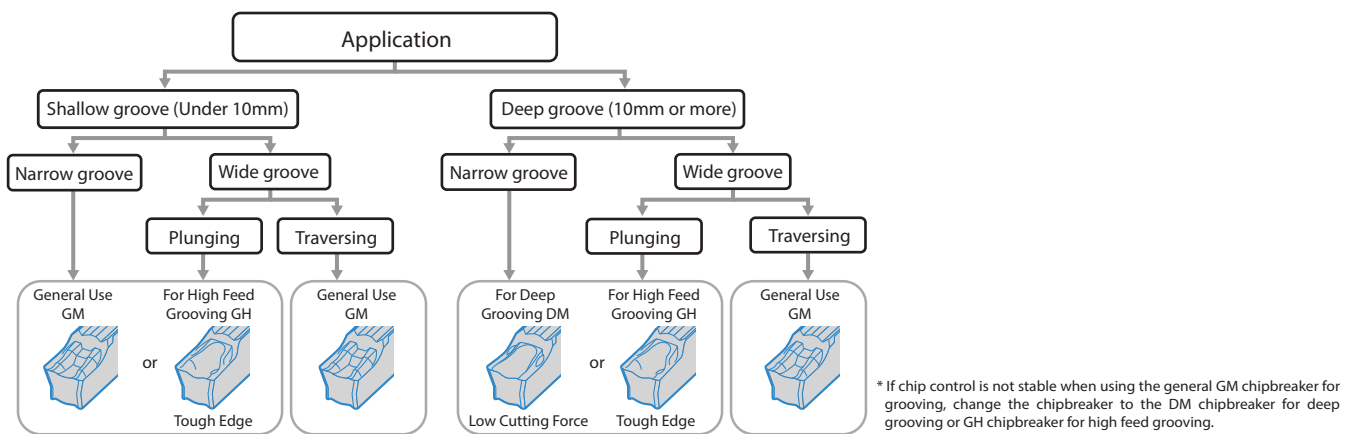
KGDF

Good chip control

MEGACOAT coating technology for long tool life and high efficiency machining

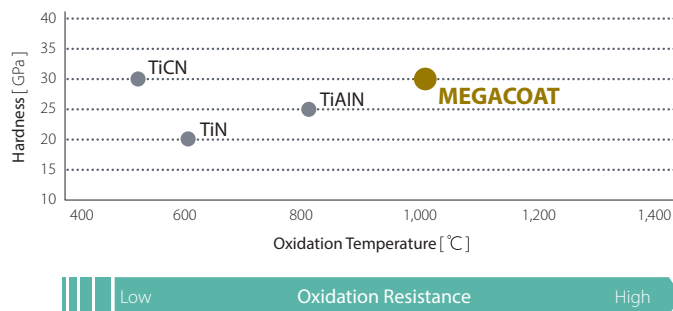
1 Wide Range of Chipbreakers Available for Face Grooving

Chipbreaker Selection



2 MEGACOAT Coating Technology for Long Tool Life

Coating Properties



PR1225(MEGACOAT)

1st. Recommendation for face grooving

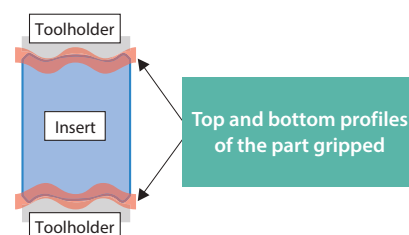
PR1215(MEGACOAT)

Superior wear resistance,
1st. Recommendation for machining of cast iron

3 High Clamping Strength

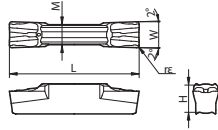
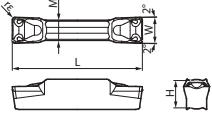
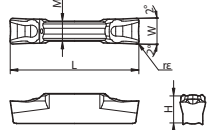
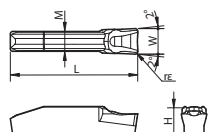
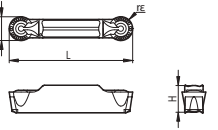
Prevents abnormal machining surface and / or insert breakage resulting from slip of insert.
Improves repetitive installation accuracy of insert

New insert clamping system "W Grip"



GDFM/GDFMS (Face Grooving)

Applicable Inserts

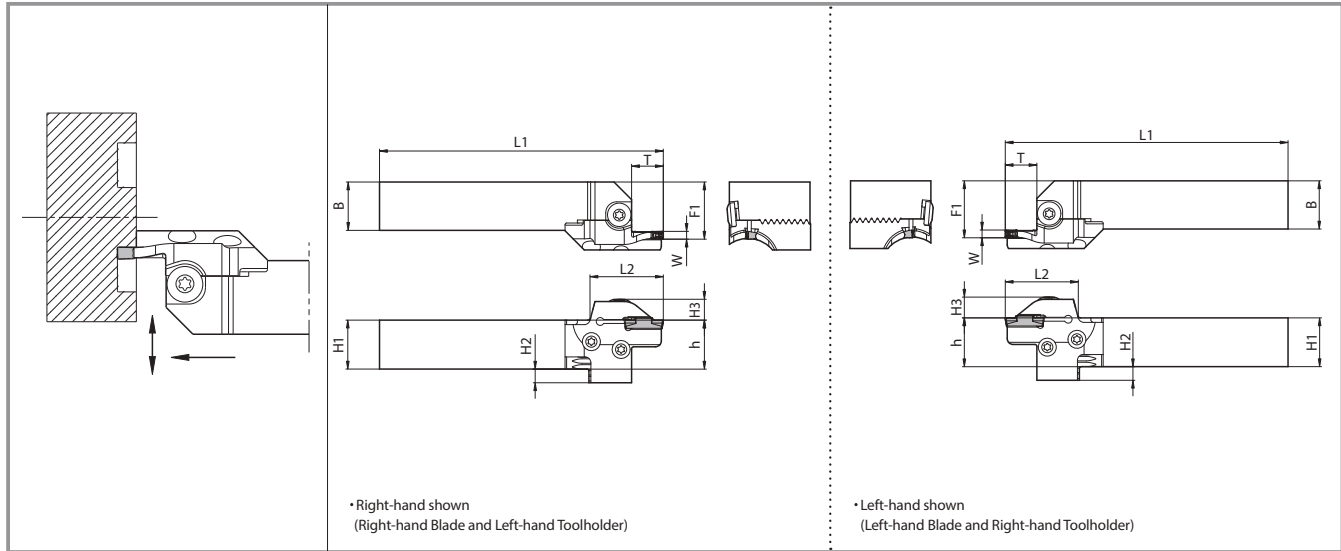
Applicable Inserts			Classification of usage		P		Carbon Steel / Alloy Steel		●		●		☺	
					M		Stainless Steel						☺	
			K		Cast Iron								●	
			N		Non-ferrous Metals									
			S		Titanium Alloy									
			H		Hard materials (In case hardness is under 40HRC)									
					Hard materials (In case hardness is over 40HRC)									
Insert			Description		Dimensions (mm)					Cermet		MEGACOAT		
					W		re	M	L	H	TN620	TN90	PR1225	PR1215
Tolerance														
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	4.5			●	●	●	
				5020N-040GM	5.0	±0.04	4.1				●	●	●	
				5020N-080GM			0.8			●	●	●		
				6020N-040GM			0.4			●	●	●		
				6020N-080GM	6.0	0.8	5.0		●	●	●			
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			0.4	5.0				●	●	
				6020N-080GH	6.0	0.8					●	●		
Deep Grooving and Traversing			GDFM	3020N-030DM	3.0	±0.03	0.3	2.1	20	4.3		●	●	●
				4020N-040DM	4.0		3.1	4.5			●	●	●	
				5020N-040DM	5.0	±0.04	4.1				●	●	●	
				6020N-040DM			5.0			●	●	●		
			GDFMS	3020N-030DM	3.0	±0.03	0.3	2.1	20	4.3		●	●	●
				4020N-040DM	4.0	3.1	4.5			●	●	●		
				5020N-040DM	5.0	±0.04		4.1			●	●	●	
				6020N-040DM			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 differs 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 M : M-Class	No. of Edges No Indication : 2-edge S : 1-edge	Insert Width 20 : 2 mm 30 : 3 mm :	Insert Length 20 : 20 mm	Hand of Tool N : Neutral		Corner-R(re) 020 : 0.2 mm 030 : 0.3 mm 040 : 0.4 mm 150R : 1.5 mm(Full-R)	Chipbreaker GM : Grooving and Traversing DM : Grooving GH : High Feed CM : Full-R

KGDF (Face Grooving / SwitchBlade Type)



Toolholder Dimensions

Shank Angle	Insert Width W	Shank Size	Max. Grooving Depth	Face Grooving Dia. øD (mm)		Unit Description (Standard Stock Description)		Stock		Blade Description ➡ P25	Toolholder Description ➡ P10	Dimensions(mm)								
				MIN.	MAX.							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	118	36	24.5	13
				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	No Unit Description ➡	-25-2B-C															
					-30-2B-C															
					-35-2B-C															
					-45-2B-C															
					-60-2B-C															
					-80-2B-C															
		15	-100-2B-C																	
			-25-2B-C																	
			-30-2B-C																	
			-35-2B-C																	
			-45-2B-C																	
			-60-2B-C																	
		□ 25	6		25	30	KGDFR	2525X25-2AS	●	—	KGDFR	-25-2A-C	KGDL2525-C	25	7	11.6	25	143	36	29.5
				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	No Unit Description ➡	-25-2B-C															
					-30-2B-C															
					-35-2B-C															
					-45-2B-C															
					-60-2B-C															
					-80-2B-C															
		□ 32	6		25	30	No Unit Description ➡	KGDFR	-25-2A-C	KGDL3232-C	32	—	11.6	32	163	36	36.5	13		
					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	-25-2B-C																			
	-30-2B-C																			
	-35-2B-C																			
	-45-2B-C																			
	-60-2B-C																			
	-80-2B-C																			
15	100	130	-100-2B-C																	
	30	35	-30-2B-C																	
	35	45	-35-2B-C																	
	45	60	-45-2B-C																	
	60	80	-60-2B-C																	
	80	100	-80-2B-C																	
	100	130	-100-2B-C																	

Note 1) In case the unit description is not available (No Unit Description), please purchase toolholder and blade separately.

2) Dimension T : Maximum depth to which processing can be made. If the dimension T is 20mm or more, the maximum groove-depth of groove made by the 2-edge insert will be 18mm.

● : Standard Stock
Applicable Inserts ➡ P18

KGDF (Face Grooving / SwitchBlade Type)

Toolholder Dimensions

Shank Angle	Insert Width W	Shank Size	Max. Grooving Depth	Face Grooving Dia. øD (mm)		Unit Description (Standard Stock Description)		Stock		Blade Description ➡ P25	Toolholder Description ➡ P10	Dimensions (mm)									
				MIN.	MAX.															R	L
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		●	●											-30-3A-C		
				40	50		●	●											-40-3A-C		
			15	50	65		2020X50-3BS	●							●	-50-3B-C					
				65	85			●							●		-65-3B-C				
				85	110			●							●		-85-3B-C				
			22	110	145		2020X110-3BS	●							●	-110-3B-C					
				50	65			●							●		-50-3C-C				
				65	85			●							●		-65-3C-C				
			25	85	110		2020X85-3CS	●							●	-85-3C-C					
				110	145			●							●		-110-3C-C				
				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		●	●											-30-3A-C		
				40	50		●	●											-40-3A-C		
			15	50	65		2525X50-3BS	●							●	-50-3B-C					
				65	85			●							●		-65-3B-C				
				85	110			●							●		-85-3B-C				
			22	110	145		2525X110-3BS	●							●	-110-3B-C					
				50	65			●							●		-50-3C-C				
				65	85			●							●		-65-3C-C				
			25	85	110		2525X85-3CS	●							●	-85-3C-C					
				110	145			●							●		-110-3C-C				
				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						
				65	85											●	●	-65-3B-C			
				85	110											●	●	-85-3B-C			
			22	110	145										-110-3B-C						
				50	65											●	●	-50-3C-C			
				65	85											●	●	-65-3C-C			
			25	85	110										-85-3C-C						
				110	145											●	●	-110-3C-C			
				2525X110-3CS	●											●	-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			
				35	50		●	●											-35-4B-C		
				50	70		●	●											-50-4B-C		
			15	70	100		2020X70-4BS	●							●	-70-4B-C					
				100	150			●							●		-100-4B-C				
				150	220			●							●		-150-4B-C				
			25	220	∞		2020X220-4BS	●							●	-220-4B-C					
				35	50			●							●		-35-4C-C				
				50	70			●							●		-50-4C-C				
			25	70	100		2020X70-4CS	●							●	-70-4C-C					
				100	150			●							●		-100-4C-C				
				150	220			●							●		-150-4C-C				
			25	220	∞		2020X220-4CS	●							●	-220-4C-C					
				35	50			●							●		-35-4C-C				
				50	70			●							●		-50-4C-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			
				35	50		●	●											-35-4B-C		
				50	70		●	●											-50-4B-C		
			15	70	100		2525X50-4BS	●							●	-70-4B-C					
				100	150			●							●		-100-4B-C				
				150	220			●							●		-150-4B-C				
			25	220	∞		2525X100-4BS	●							●	-220-4B-C					
				35	50			●							●		-35-4C-C				
				50	70			●							●		-50-4C-C				
			25	70	100		2525X70-4CS	●							●	-70-4C-C					
				100	150			●							●		-100-4C-C				
				150	220			●							●		-150-4C-C				
			25	220	∞		2525X220-4CS	●							●	-220-4C-C					
		35		50	●	●		-35-4C-C													
		50		70	●	●		-50-4C-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			
				35	50														●	●	-35-4B-C
				50	70														●	●	-50-4B-C
			15	70	100										-70-4B-C						
				100	150											●	●	-100-4B-C			
				150	220											●	●	-150-4B-C			
25	220		∞	-220-4B-C																	
	35		50		●										●	-35-4C-C					
	50		70		●										●	-50-4C-C					
25	70		100	-70-4C-C																	
	100		150		●										●	-100-4C-C					
	150		220		●										●	-150-4C-C					
25	220	∞	-220-4C-C																		
	35	50		●	●	-35-4C-C															
	50	70		●	●	-50-4C-C															

KGDF (Face Grooving / SwitchBlade Type)

Toolholder Dimensions

Shank Angle	Insert Width W	Shank Size	Max. Grooving Depth	Face Grooving Dia. øD (mm)		Unit Description (Standard Stock Description)		Stock		Blade Description ➡ P25	Toolholder Description ➡ P10	Dimensions (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																		
				35	50		2020X35-5BS	●	●		-35-5B-C																							
				50	75		2020X50-5BS	●	●		-50-5B-C																							
				75	115		2020X75-5BS	●	●		-75-5B-C										120	38												
				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											
				35	50	2020X35-5CS	●	●	-35-5C-C																									
				50	75	2020X50-5CS	●	●	-50-5C-C																									
				25	75	115	2020X75-5CS	●	●	-75-5C-C	130										48		25											
					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																							
					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								
					35	50		2525X35-5BS	●	●											-35-5B-C													
					50	75		2525X50-5BS	●	●											-50-5B-C													
					75	115		2525X75-5BS	●	●											-75-5B-C										145	38		
					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	
					35	50	2525X35-5CS	●	●	-35-5C-C																								
					50	75	2525X50-5CS	●	●	-50-5C-C																								
					25	75	115	No Unit Description ➡													-75-5C-C										155	48		25
		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																			
				115		180						2525X115-5DS	●	●	-115-5D-C																			
				180		235						2525X180-5DS	●	●	-180-5D-C																			
				235	∞	2525X235-5DS		●	●	-235-5D-C																								
		□ 32		15	25	35					KGDF R/L	-25-5B-C	KGD L/R3232-C	32	—	11.6	32	165	38		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													
					35	50					-35-5C-C																							
					50	75					-50-5C-C																							
					25	75					115							-75-5C-C	175	48											25			
			115			180					-115-5C-C																							
			180			235					-180-5C-C																							
			235			∞					-235-5C-C																							
			32	75		115					-75-5D-C																							
				115		180					-115-5D-C																							
				180		235					-180-5D-C																							
				235	∞	-235-5D-C																												

KGDF (Face Grooving / SwitchBlade Type)

Toolholder Dimensions

Shank Angle	Insert Width W (mm)	Shank Size (mm)	Max. Grooving Depth (mm)	Face Grooving Dia. øD (mm)		Unit Description (Standard Stock Description)		Stock		Blade Description ➡ P25	Toolholder Description ➡ P10	Dimensions (mm)									
				MIN.	MAX.			R	L			H1=h	H2	H3	B	L1	L2	F1	T		
0°	6	□ 20	15	25	35	KGDF R/L 2020X25-6BS	●	●	KGDF R/L -25-6B-C	KGD 1/8 2020-C	20	12	11.6	20							
				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	2020X25-6CS	●	●	-25-6C-C												
				35	50		●	●	-35-6C-C												
				50	75		●	●	-50-6C-C												
				75	115		●	●	-75-6C-C												
				115	180		●	●	-115-6C-C												
				180	235		●	●	-180-6C-C												
				235	∞		●	●	-235-6C-C												
			32	75	115	No Unit Description ➡															-75-6D-C
				115	180																-115-6D-C
				180	235																-180-6D-C
				235	∞																-235-6D-C
				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	2525X25-6CS	●	●	-25-6C-C													
			35	50		●	●	-35-6C-C													
			50	75		●	●	-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													
			115	180		●	●	-115-6D-C													
			180	235		●	●	-180-6D-C													
			235	∞		●	●	-235-6D-C													
			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																
			35	50	-35-6C-C																
			50	75	-50-6C-C																
			75	115	-75-6C-C																
			115	180	-115-6C-C																
			180	235	-180-6C-C																
			235	∞	-235-6C-C																
		32	75	115	-75-6D-C																
			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 20mm or more, the maximum groove-depth of groove made by the 2-edge insert will be 18mm.

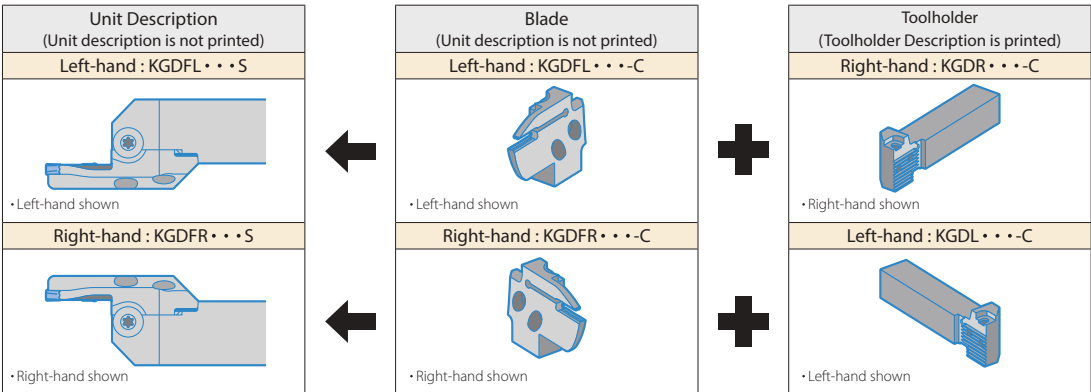
● : Standard Stock
Applicable Inserts ➡ P18

Spare Parts (Common with SwitchBlade types)

Unit Description	Spare Parts		
	Clamp Bolt (for Insert Clamp)	Clamp Bolt (for Blade)	Wrench
KGDF R/L • • • S	BH6X10TR	SB-60120TR	LTW-25

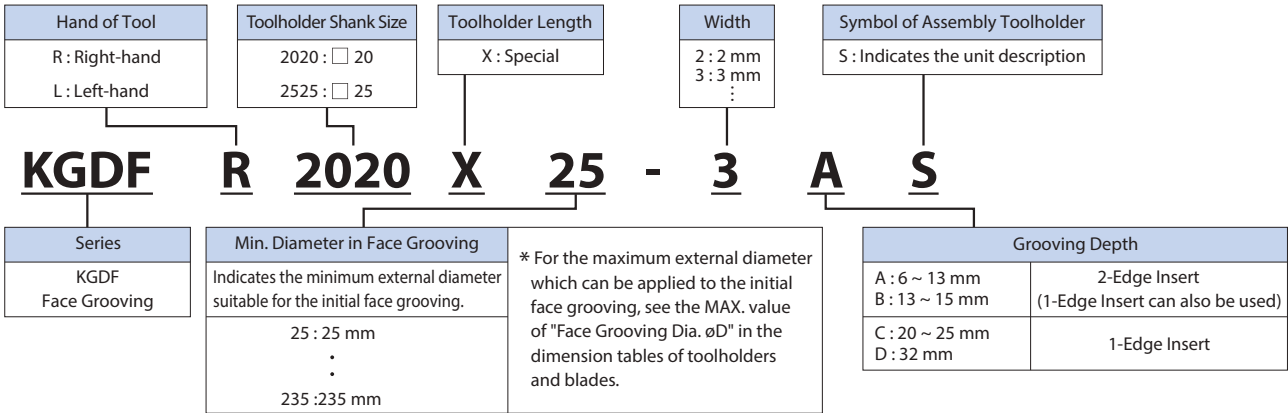
* The parts are included in the toolholder and unit.

KGDF Toolholder Assembly Identification (Face Grooving / SwitchBlade Type)



- 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 / SwitchBlade Type)



Face Grooving Dia. (øD)

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

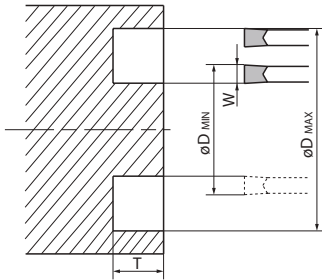
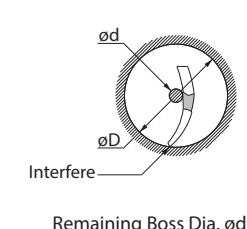


Fig.1

Limit of Turning toward Center

Turning towards the Center causes the toolholder to interfere with the groove wall depending on the initial cut's diameter.

 Remaining Boss Dia. ød	øD		25	26	27	28 and over
	Description		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 ø25mm is created using KGDFR2020X25-3AS and turning is made toward the inside, a ø4mm 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.

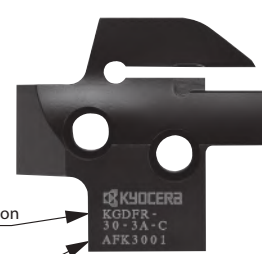
25 : 25 mm
235 : 235 mm

Grooving Depth

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

Description

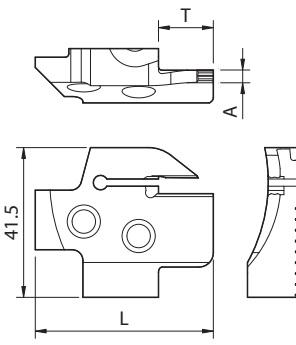
Lot No.



Example of printing of blade description

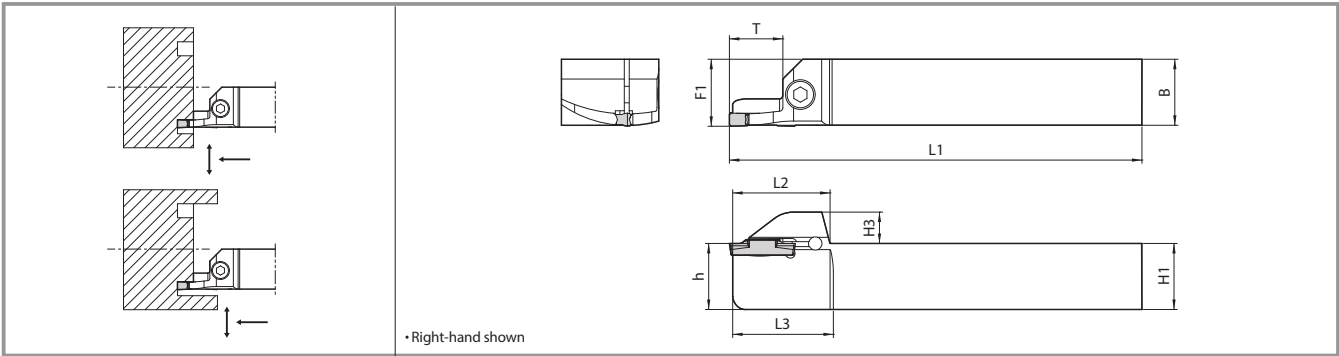
Face Grooving Blade

Blade Dimensions

Shape	Blade Description	Stock		Dimensions(mm)			Face Grooving Dia. øD (mm)		Insert Width (mm)	Applicable Inserts ➡ P18	Description of Toolholder ➡ P10	
		R	L	L	T	A	MIN.	MAX.				
 Right-hand shown	KGDFR	-25-2A-C	●	—	44.35	6	1.5	25	30	2	GDFM 2020N-020GM	
		-30-2A-C	●	—				30	35			
		-35-2A-C	●	—				35	45			
		-45-2A-C	●	—				45	60			
		-60-2A-C	●	—				60	80			
		-80-2A-C	●	—				80	100			
		-100-2A-C	●	—				100	130			
		-25-2B-C	●	—	47.35	13		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	
		-30-3A-C	●	●	30	40						
		-40-3A-C	●	●	40	50						
		-50-3B-C	●	●	49.35	15	50	65				
		-65-3B-C	●	●			65	85				
		-85-3B-C	●	●			85	110				
		-110-3B-C	●	●	110	145						
		-50-3C-C	●	●	56.35	22	50	65				
		-65-3C-C	●	●			65	85				
		-85-3C-C	●	●			85	110				
		-110-3C-C	●	●	59.35	25	110	145				
		KGDF ^{R/L}	-25-4A-C	●	●	47.35	13	3		25	35	
	-35-4B-C		●	●	35				50			
	-50-4B-C		●	●	50				70			
	-70-4B-C		●	●	70				100			
	-100-4B-C		●	●	100				150			
	-150-4B-C		●	●	150				220			
	-220-4B-C		●	●	220	∞						
	-35-4C-C		●	●	59.35	25	35		50			
	-50-4C-C		●	●			50		70			
	-70-4C-C		●	●			70		100			
	-100-4C-C		●	●			100		150			
	-150-4C-C		●	●			150		220			
	-220-4C-C	●	●	220			∞					
	KGDF ^{R/L}	-25-5B-C	●	●	49.35	15	4	25	35	5	GDFM 5020N-040GM GDFM 5020N-080GM GDFM 5020N-040GH GDFM 5020N-080GH GDFM 5020N-040DM GDFMS 5020N-040DM GDFMS5020N-250R-CM	
		-35-5B-C	●	●				35	50			
		-50-5B-C	●	●				50	75			
		-75-5B-C	●	●				75	115			
		-115-5B-C	●	●				115	180			
		-180-5B-C	●	●				180	235			
		-235-5B-C	●	●	235	∞						
		-25-5C-C	●	●	54.35	20		25	35			
		-35-5C-C	●	●				35	50			
		-50-5C-C	●	●				50	75			
		-75-5C-C	●	●	59.35	25		75	115			
		-115-5C-C	●	●				115	180			
		-180-5C-C	●	●				180	235			
		-235-5C-C	●	●	66.35	32		235	∞			
		-75-5D-C	●	●				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	●	●				35	50			
		-50-6C-C	●	●				50	75			
		-75-6C-C	●	●	59.35	25		75	115			
		-115-6C-C	●	●				115	180			
		-180-6C-C	●	●				180	235			
		-235-6C-C	●	●	66.35	32		235	∞			
		-75-6D-C	●	●				75	115			
		-115-6D-C	●	●				115	180			
		-180-6D-C	●	●	180	235						
		-235-6D-C	●	●	235	∞						

● : Standard Stock

KGDF-Z (Face Grooving / Integral Type)



Toolholder Dimensions

Insert Width W (mm)	Shank Size (mm)	Max. Grooving Depth (mm)	Face Grooving Dia. øD (mm)		Description		Stock		Dimensions(mm)												
			MIN.	MAX.			R	L	H1=h	H3	B	L1	L2	L3	F1	T					
3	□20	15	50	65	KGDF ^R / _L	2020K50-3B-Z	●	●	20	9.5	20	125	30.5	31	20.3	15					
			65	85		2020K65-3B-Z	●	●													
			85	110		2020K85-3B-Z	●	●													
			110	145		2020K110-3B-Z	●	●													
	□25		KGDF ^R / _L	2525M50-3B-Z	●	●	25	25	150		25.3										
				2525M65-3B-Z	●	●															
				2525M85-3B-Z	●	●															
				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	●	●													
			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				
					75	115	2020K75-5B-Z		●		●										
115		180			2020K115-5B-Z	●	●														
50		75			KGDF ^R / _L	2525M50-5B-Z	●		●	25	25	150	25.3								
75		115	2525M75-5B-Z			●	●														
115		180	2525M115-5B-Z			●	●														

● : Standard Stock
Applicable Inserts ➔ P18

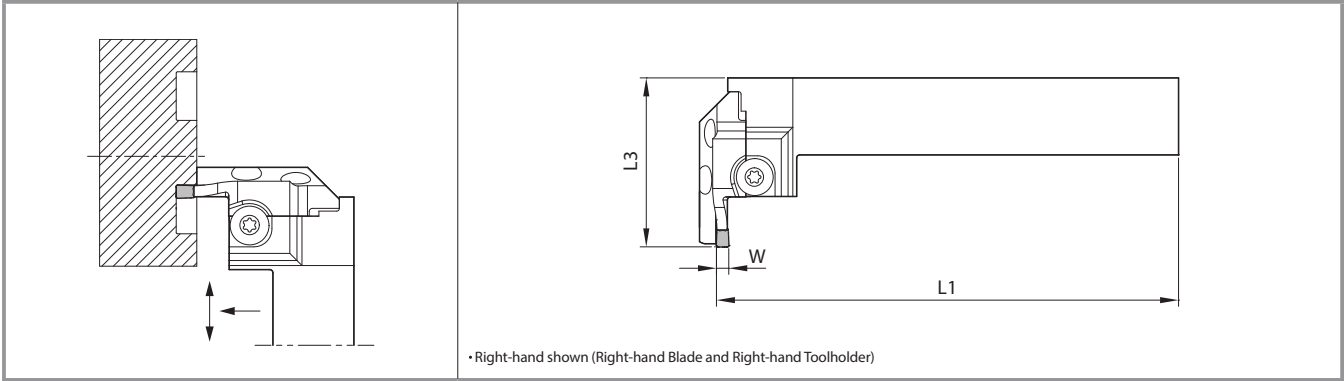
Spare Parts

Description	Spare Parts	
	Clamp Bolt	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 : Integral Type

KGDF (Face Grooving / 90° SwitchBlade Type)



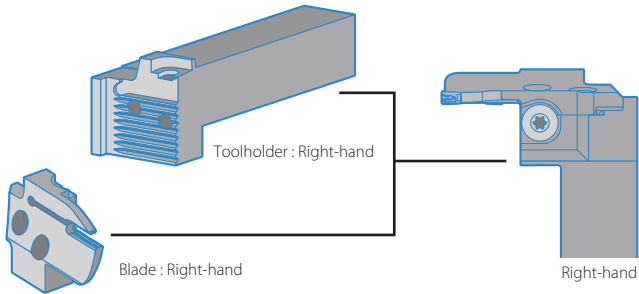
Toolholder Dimensions

Shank Angle	Insert Width W (mm)	Shank Size (mm)	Max. Grooving Depth (mm)	Face Grooving Dia. øD (mm)		Blade Description ➡ P25	Toolholder Description ➡ P10	Dimensions (mm)		
				MIN.	MAX.			L1	L3	
90°	2	□ 20	6	25	30	KGDFR -25-2A-C	KGDSR2020-C	125	49.7	
				30	35	-30-2A-C				
				35	45	-35-2A-C				
				45	60	-45-2A-C				
				60	80	-60-2A-C				
				80	100	-80-2A-C				
				100	130	-100-2A-C				
			13	25	30	-25-2B-C			125	52.7
				30	35	-30-2B-C				
				35	45	-35-2B-C				
				45	60	-45-2B-C				
				60	80	-60-2B-C				
				80	100	-80-2B-C				
		15	100	130	-100-2B-C	125		54.7		
			25	30	KGDFR -25-2A-C					
			30	35	-30-2A-C					
			35	45	-35-2A-C					
			45	60	-45-2A-C					
			60	80	-60-2A-C					
			80	100	-80-2A-C					
		□ 25	6	100	130	-100-2A-C		KGDSR2525-C	150	49.7
				25	30	-25-2B-C				
				30	35	-30-2B-C				
				35	45	-35-2B-C				
				45	60	-45-2B-C				
				60	80	-60-2B-C				
				80	100	-80-2B-C				
			13	100	130	-100-2B-C			150	52.7
25	30			KGDFR -25-2A-C						
30	35			-30-2A-C						
35	45			-35-2A-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				
				50	65	-50-3B-C				
				65	85	-65-3B-C				
				85	110	-85-3B-C				
			15	110	145	-110-3B-C		125	54.7	
				50	65	-50-3C-C				
				65	85	-65-3C-C				
				85	110	-85-3C-C				
				110	145	-110-3C-C				
			22	50	65	-50-3C-C		125	59.7	
				65	85	-65-3C-C				
				85	110	-85-3C-C				
				110	145	-110-3C-C				
			25	50	65	-50-3C-C		125	61.7	
				65	85	-65-3C-C				
				85	110	-85-3C-C				
				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				
				50	65	-50-3B-C				
				65	85	-65-3B-C				
				85	110	-85-3B-C				
			15	110	145	-110-3B-C		150	54.7	
				50	65	-50-3C-C				
				65	85	-65-3C-C				
85	110			-85-3C-C						
110	145			-110-3C-C						
22	50		65	-50-3C-C	150	59.7				
	65		85	-65-3C-C						
	85		110	-85-3C-C						
	110		145	-110-3C-C						
25	50		65	-50-3C-C	150	61.7				
	65		85	-65-3C-C						
	85		110	-85-3C-C						
	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)		Blade Description ➡ P25	Toolholder Description ➡ P10	Dimensions (mm)	
				MIN.	MAX.			L1	L3
90°	4	□ 20	13	25	35	KGDF R/L -25-4A-C	KGDS R/L2020-C	125	52.7
				35	50	-35-4B-C			
				50	70	-50-4B-C			
				70	100	-70-4B-C			
				100	150	-100-4B-C			
				150	220	-150-4B-C			
			15	220	∞	-220-4B-C			
				35	50	-35-4C-C			
				50	70	-50-4C-C			
				70	100	-70-4C-C			
				100	150	-100-4C-C			
				150	220	-150-4C-C			
				220	∞	-220-4C-C			
		□ 25	13	25	35	KGDF R/L -25-4A-C	KGDS R/L2525-C	150	52.7
				35	50	-35-4B-C			
				50	70	-50-4B-C			
				70	100	-70-4B-C			
				100	150	-100-4B-C			
				150	220	-150-4B-C			
			15	220	∞	-220-4B-C			
				35	50	-35-4C-C			
				50	70	-50-4C-C			
				70	100	-70-4C-C			
				100	150	-100-4C-C			
				150	220	-150-4C-C			
				220	∞	-220-4C-C			

Applicable Inserts ➡ P18



- KGDF 90° SwitchBlade 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° SwitchBlade Type)

Toolholder Dimensions

Shank Angle	Insert Width W (mm)	Shank Size (mm)	Max. Grooving Depth (mm)	Face Grooving Dia. øD (mm)		Blade Description ➡ P25	Toolholder Description ➡ P10	Dimensions (mm)		
				MIN.	MAX.			L1	L3	
90°	5	□ 20	15	25	35	KGDF ^{R/L} -25-5B-C	KGDS ^{R/L} 2020-C	125	54.7	
				35	50					-35-5B-C
				50	75					-50-5B-C
				75	115					-75-5B-C
				115	180					-115-5B-C
				180	235					-180-5B-C
				235	∞					-235-5B-C
			20	25	35			-25-5C-C	125	59.7
				35	50			-35-5C-C		
				50	75			-50-5C-C		
				75	115			-75-5C-C		
				115	180			-115-5C-C		
				180	235			-180-5C-C		
				235	∞			-235-5C-C		
			25	75	115			-75-5D-C	125	64.7
				115	180			-115-5D-C		
				180	235			-180-5D-C		
				235	∞			-235-5D-C		
				75	115			-75-5D-C		
				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/L} 2525-C	150	54.7	
				35	50					-35-5B-C
				50	75					-50-5B-C
				75	115					-75-5B-C
				115	180					-115-5B-C
				180	235					-180-5B-C
				235	∞					-235-5B-C
			20	25	35			-25-5C-C	150	59.7
				35	50			-35-5C-C		
				50	75			-50-5C-C		
				75	115			-75-5C-C		
				115	180			-115-5C-C		
				180	235			-180-5C-C		
				235	∞			-235-5C-C		
			25	75	115			-75-5D-C	150	64.7
				115	180			-115-5D-C		
				180	235			-180-5D-C		
				235	∞			-235-5D-C		
				75	115			-75-5D-C		
				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)		Blade Description ➡ P25	Toolholder Description ➡ P10	Dimensions (mm)					
				MIN.	MAX.			L1	L3				
90°	6	□ 20	15	25	35	KGDF R/L -25-6B-C -35-6B-C -50-6B-C -75-6B-C -115-6B-C -180-6B-C -235-6B-C -25-6C-C -35-6C-C -50-6C-C -75-6C-C -115-6C-C -180-6C-C -235-6C-C -75-6D-C -115-6D-C -180-6D-C -235-6D-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					
				35	50			-35-6C-C					
				50	75			-50-6C-C					
				75	115			-75-6C-C					
				115	180			-115-6C-C					
				180	235			-180-6C-C					
				235	∞			-235-6C-C					
			25	75	115			-75-6D-C					
				115	180			-115-6D-C					
				180	235			-180-6D-C					
				235	∞			-235-6D-C					
				□ 25	15			25	35	KGDF R/L -25-6B-C -35-6B-C -50-6B-C -75-6B-C -115-6B-C -180-6B-C -235-6B-C -25-6C-C -35-6C-C -50-6C-C -75-6C-C -115-6C-C -180-6C-C -235-6C-C -75-6D-C -115-6D-C -180-6D-C -235-6D-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							
			35		50	-35-6C-C							
			50		75	-50-6C-C							
			75		115	-75-6C-C							
			115		180	-115-6C-C							
			180		235	-180-6C-C							
			235		∞	-235-6C-C							
		25	75		115	-75-6D-C							
			115		180	-115-6D-C							
			180		235	-180-6D-C							
			235		∞	-235-6D-C							

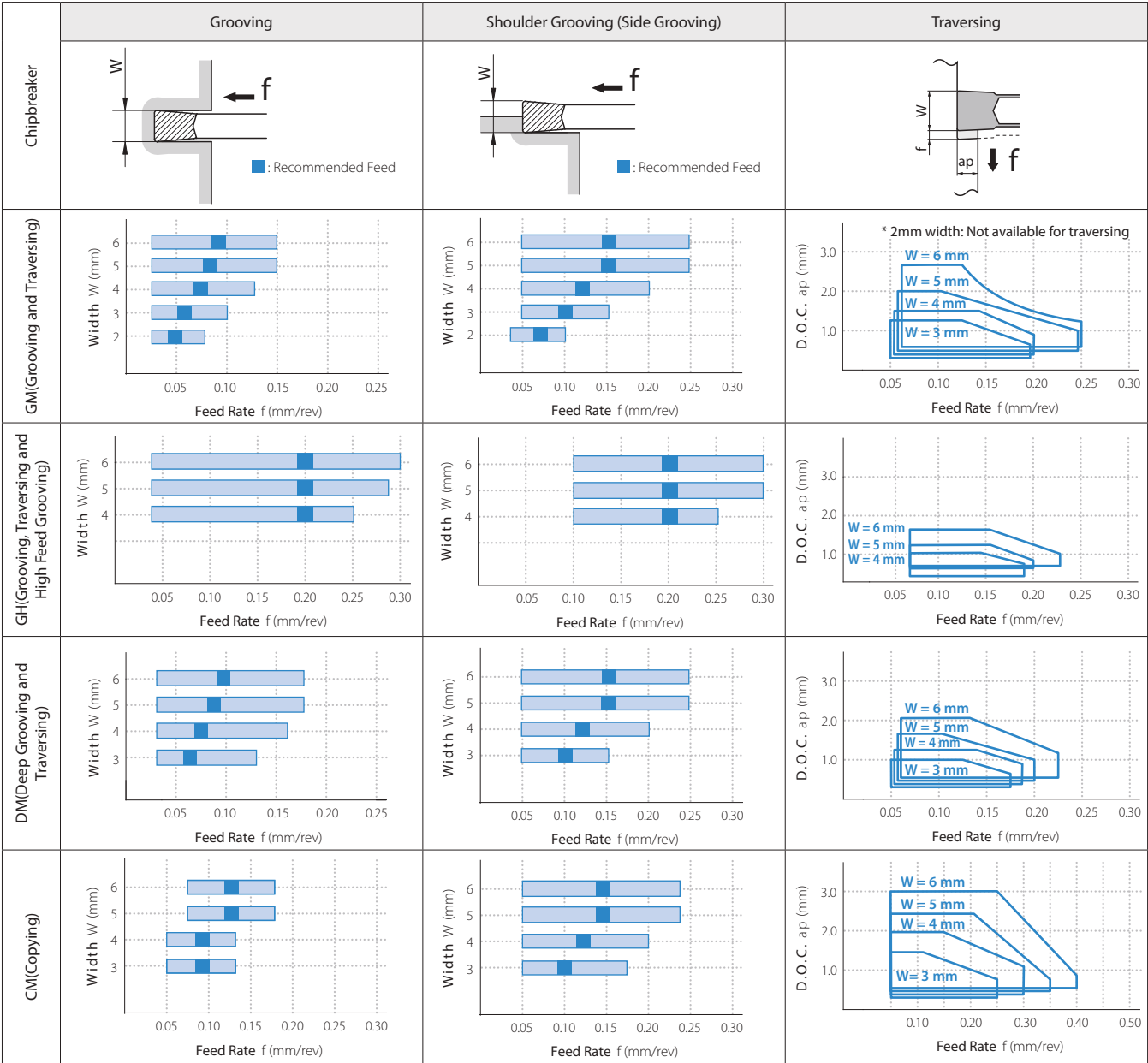
Applicable Inserts → P18

Recommended Cutting Conditions (Face Grooving) ★1st Recommendation ☆2nd Recommendation

Workpiece	Recommended Insert Grade (Vc : m/min)				Notes
	Cermet		MEGACOAT		
	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 (Feed Rate / D.O.C.)

(Workpiece : S50C)



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

Guide for Face Grooving

1 Toolholder Selection

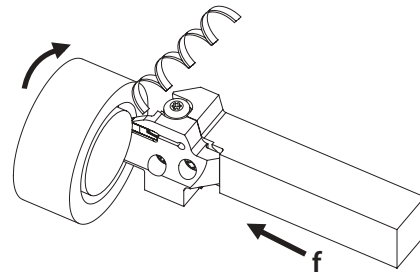
Check the range of applicable "face grooving diameter" as well as the groove width and depth.

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 0.5mm

- (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 Fig.1)

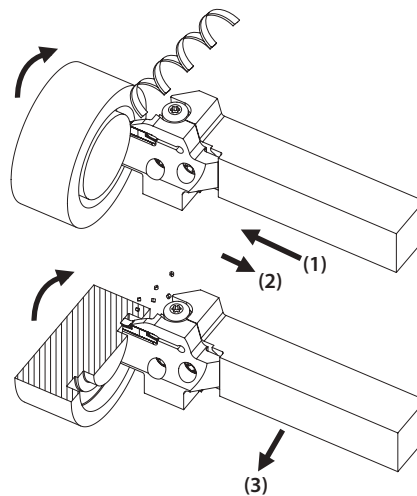
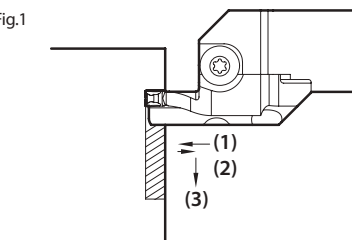
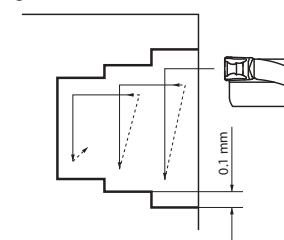


Fig.1



- When widening the face groove width (see Fig.2)
Apply the "Step Turning".
Then perform finishing.

Fig.2



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

- (1) Plunging
- (2) Perform traversing
Machining without interruption is possible. (see Fig.3)

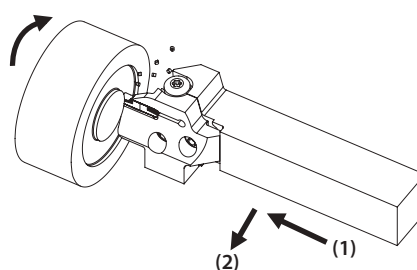
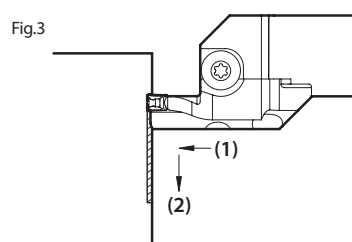


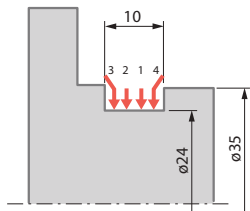
Fig.3



Case Studies

Gear SCr420H (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

Tool Life
6 times

Competitor C
(PVD Coated Carbide)

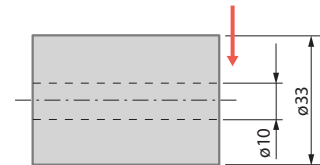
250 pcs/edge

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



Sleeve S45CF (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)

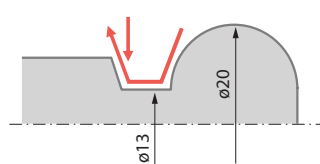
250 pcs/edge , with chipping

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

(User evaluation)

Ball Stud SCM435 (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

Tool Life
2 times

Conventional A

400 pcs/edge

Resolve issues such as chip-bite and tangled chips due to its superior chip evacuation performance

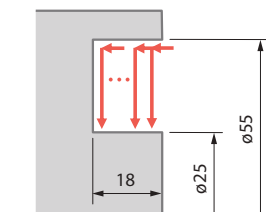
⇒ Resolve brakage of edge caused by chips.

Doubled tool life by reducing damage on the edge.

(User evaluation)

Piston SCM435H (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 evacuation compared to Conventional B. (Resolved frequent brakage of toolholder.)

Smaller wear on the edge provided by MEGACOAT make the tool life longer. (Lower running cost by longer tool life)

(User evaluation)