



KGD KGD^F

Grooving, Cut-Off & Face Grooving Tools

■ ***KGD for Small Parts Machining*** **NEW**

Excellent chip control due to the new PF & PQ chipbreakers and improved insert clamping force generated by an innovative toolholder design

■ ***Improved Grooving Performance***

Smooth chip control with a high precision edge preparation and MEGACOAT coating for long tool life and high efficiency machining

■ ***Expanded Toolholder Lineup***

Featuring the Integral-Style, SwitchBlade-Style, Face Grooving Style, and Cut-Off Style toolholders for various grooving applications

the **NEW**
1.3mm
Edge Width is
NOW Available!

KGDF/KGDF

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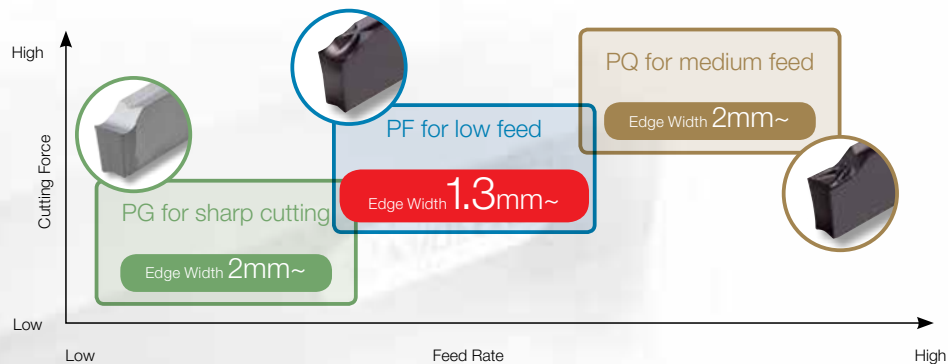
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NEW
Edge Width

1.3mm

KGD_{for} Small Parts Machining

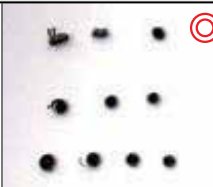
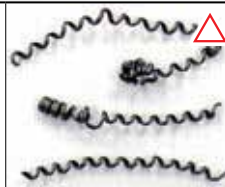
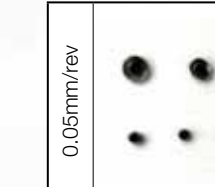
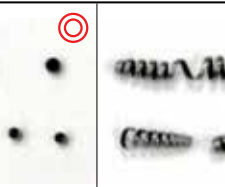
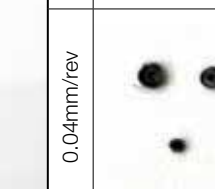
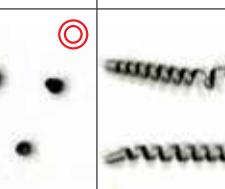
NEW



 PF chipbreaker Depression at center of chipbreaker curls chips at low feed range ($f=0.0004\text{--}0.0020\text{ipr}$). Small corner R ($r_e$)=$0.03\text{mm}$ effectively reduces the boss remaining on the workpiece surface.	 PQ chipbreaker Chipbreaker finely breaks chips with double the projection at medium feed range ($f=0.0016\text{--}0.004\text{ipr}$). Corner R ($r_e$)=$0.1\text{mm}$ combining both sharpness and fracture resistance.
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● Chip Shape

[Cutting Conditions] $V_c=250\text{sfm}$ $f=\text{Variable}$
Workpiece : 1045 ($\phi 10\text{mm}$) WET (oil base)

PF chipbreaker			PQ chipbreaker		
0.03mm/rev			0.05mm/rev		
0.02mm/rev			0.04mm/rev		
NEW PF chipbreaker		Competitor A	NEW PQ chipbreaker		Competitor B

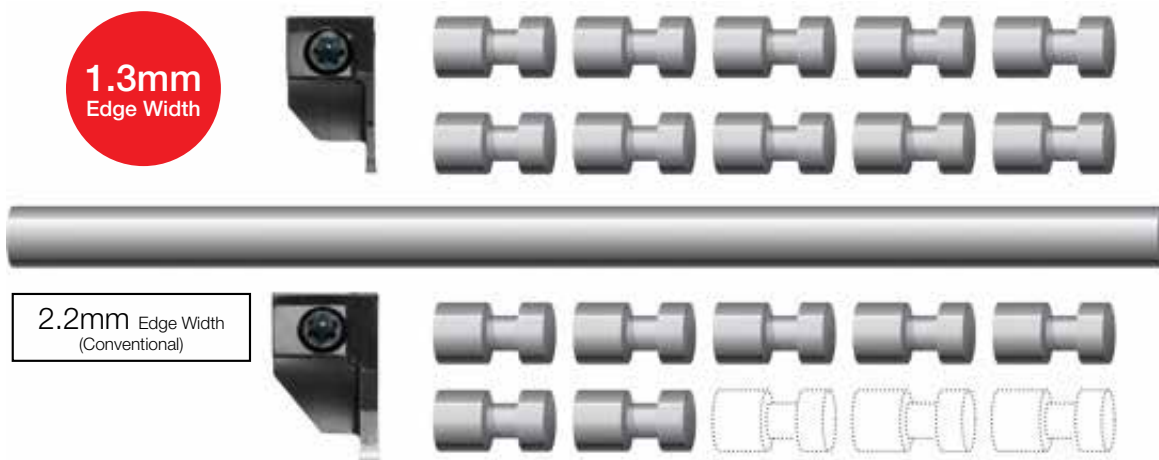


PG chipbreaker for sharp cutting of non-ferrous materials

1.3mm Edge Width NEW

Now Available

Minimizes wasted material during cut-off operation

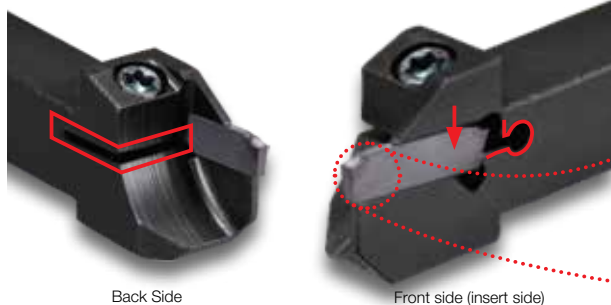


※ When using the 1.3mm width insert, see recommended cutting conditions on **page 9**

Improved insert clamping force with innovative toolholder design

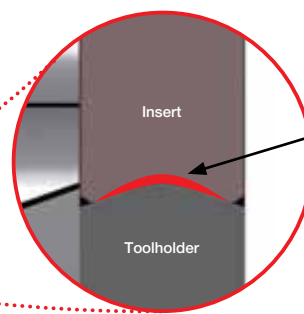
1 New Slit Design

Toolholder clamps insert equally and firmly



The insert clamping force is improved by firmly fastening the front side (insert side) of the toolholder.

2 Radial-Shaped Surface on Toolholder



Radial shaped surface on the toolholder increases the contact area between insert and toolholder.

The insert clamping force and installation are improved by increasing the contact area between the insert and toolholder

● Clamping Test (traversing)

[Cutting Conditions]
~0.012ipr D.O.C.=0.039"~0.118"
Workpiece: W1-9 (Ø10mm) WET (oil base)

D.O.C.	0.039"		0.059"		0.079"		0.118"	
feed rate	0.010ipr	0.012ipr	0.010ipr	0.012ipr	0.010ipr	0.012ipr	0.010ipr	0.012ipr
New KGD								✗
Competitor C			✗					
Competitor D			✗					

Improved Performance Grooving

- **Good chip control**

➡ Expanded lineup of chipbreakers covers a wide variety of work materials

- **High precision edge preparation**

➡ High precision molding technology tolerance $\pm 0.03\text{mm}$ (2,3 & 4mm widths)

- **MEGACOAT technology**

➡ Long tool life and high efficiency machining through high oxidation resistance and wear resistance

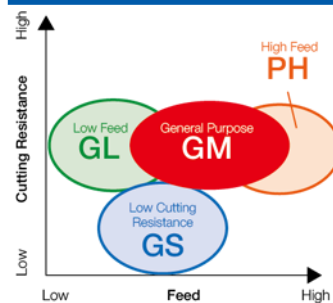
- **Comprehensive Toolholder lineup**

➡ Integral-style Toolholder with multiple groove width & depth capabilities and SwitchBlade-Style Toolholder for more economical replacement costs and quicker changeovers

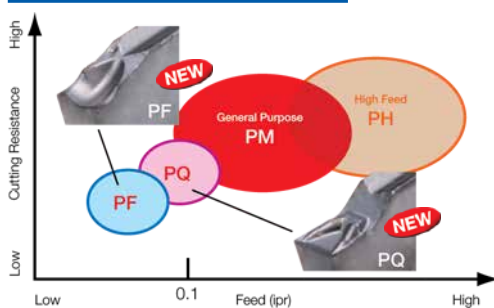
Insert Lineup for External grooving, Traversing, and Cut-off

- **Application Maps**

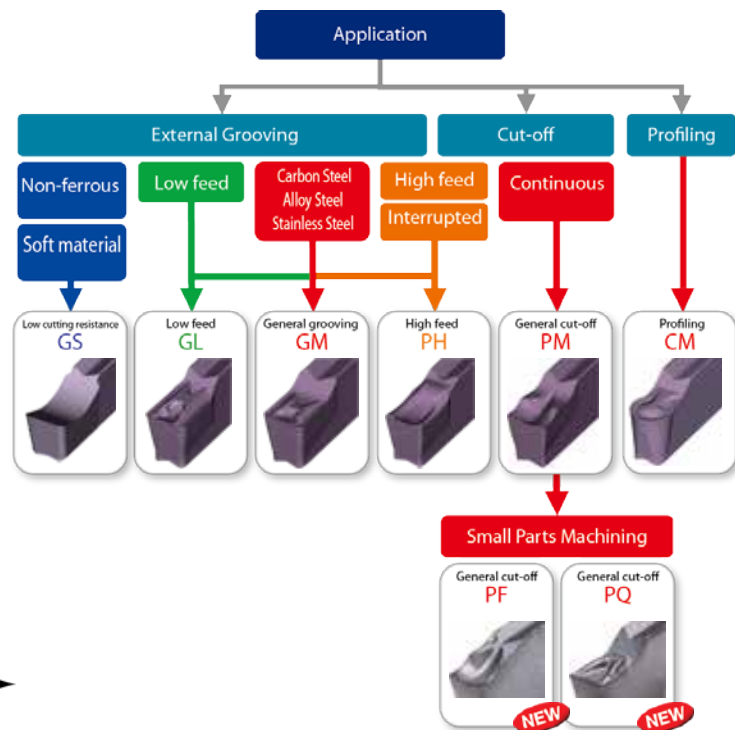
External Grooving & Traversing



Cut-off



- **Chipbreaker Selection**



Good chip control contributes to productivity improvement

- **SCM415 $V_c=490\text{ sfm}$, $f=0.006\text{ ipr}$** (Comparison of chip control)



GM Chipbreaker

Better chip control than competitors



Competitor A



Competitor B

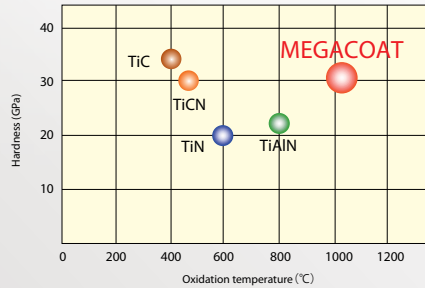
➡ Reduces damage of cutting edge caused by crushing chips

MEGACOAT

Advanced Coating Technology



Features of MEGACOAT



PR1225

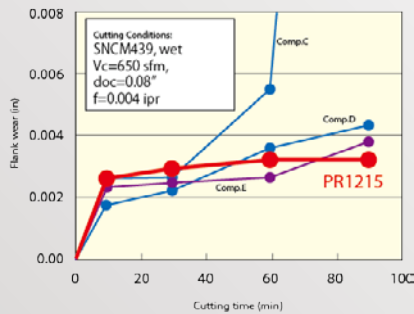
1st recommendation for cut-off, grooving, and traversing

PR1215

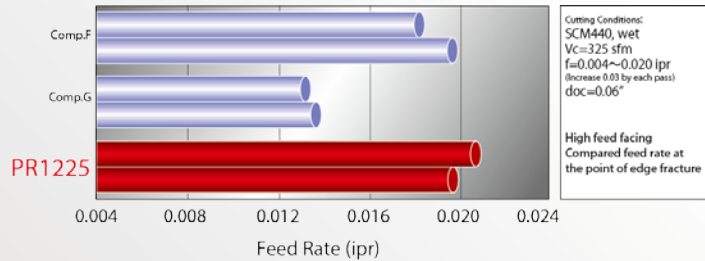
Superior wear resistance, recommended for grooving and cut-off under stable conditions.

First recommendation for machining of cast iron.

Comparison of wear resistance



Comparison of fracture resistance



Good wear resistance and fracture resistance
Stable cutting and long tool life for grooving and cut-off

Toolholder Lineup

Three available styles: Integral-Style, SwitchBlade-Style, and the New Toolholder for Small Parts Machining



Integral-Style Toolholder

Featuring a wide variety of available groove widths and depths



SwitchBlade-Style Toolholder

For more economical replacement costs and quicker changeovers



Small Parts Machining Toolholder

For deep grooving and cut-off

Face Grooving Toolholder and Inserts



Only SwitchBlade-Style Toolholders with interchangeable blades are available for face grooving

Features of new W-Grip insert clamping system

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

- Prevents the insert from side-slip causing unstable machining and insert breakage
- Improved indexability accuracy
- High rigidity, reliability and clamping strength

*Insert for GDFM/GDFMS is not compatible with KGD holder.



KGD KGDF

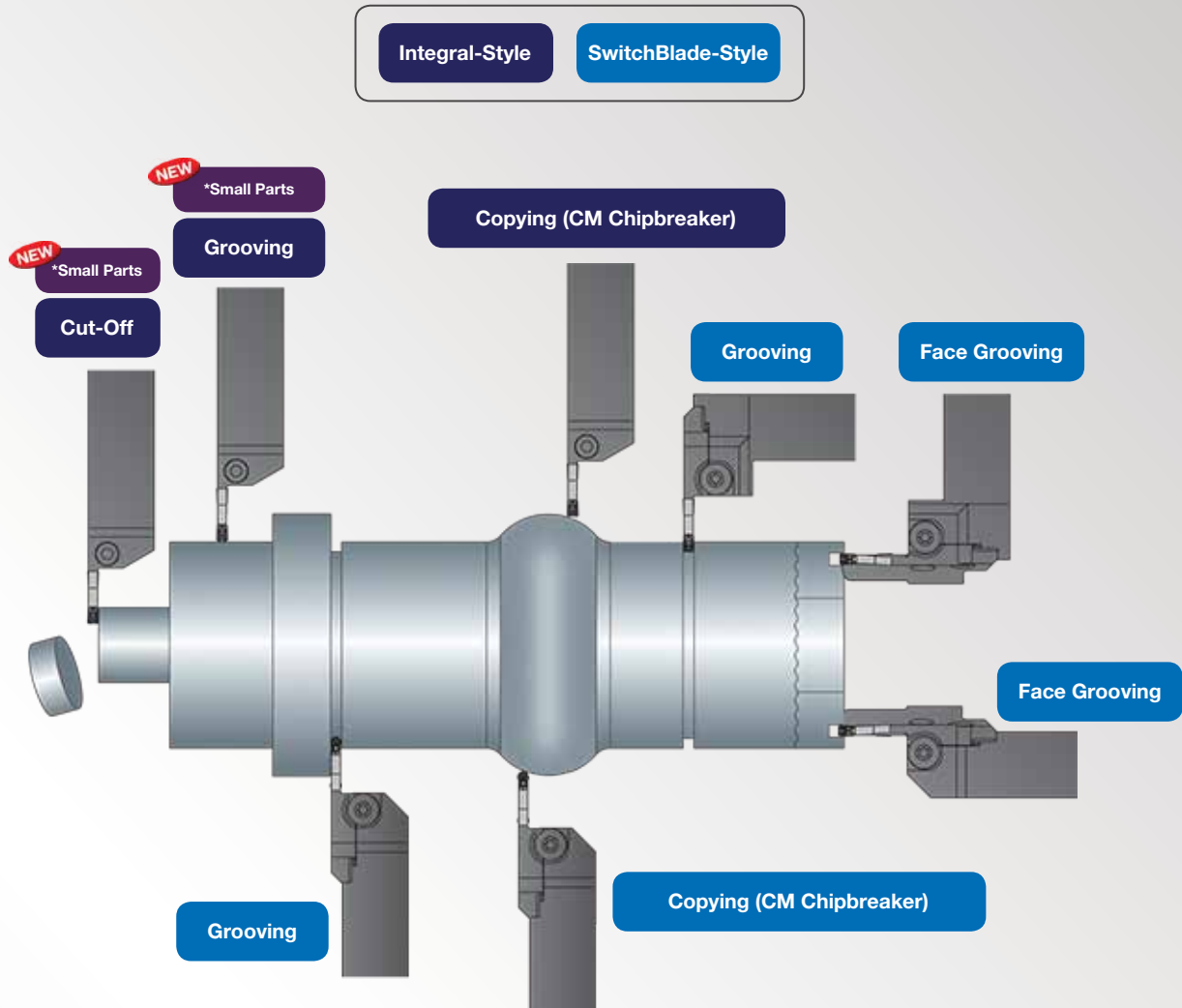
Grooving Tool Series

Integral-Style Toolholder:

Provides a wide lineup of various groove widths and depths
*Includes new KGD lineup for small parts machining

SwitchBlade-Style Toolholder:

Utilizes a replaceable blade to provide a diverse tool for various types of grooving and cut-off, such as external and face cutting



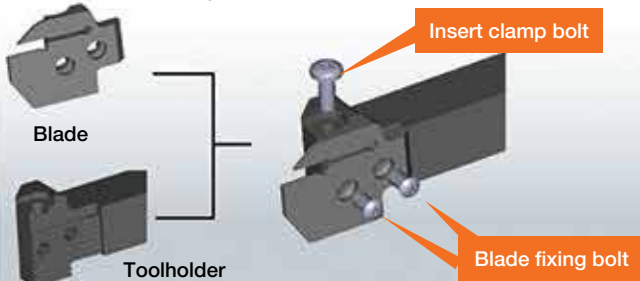
● Choosing Between the Integral-Style & SwitchBlade-Style Toolholders

Integral-Style	SwitchBlade-Style
•Wide variety of Toolholder Sizes Available for various groove depths (shallow /medium / deep) Optimum overhang length •Available for low-rigidity machines and workpieces •For small machines with limited work space (Swiss type machine, small lathe, etc.)	•Interchangeable blades are suitable for high-mix low-volume production Suitable for grooving with various width •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

Toolholders & Blade Sets

Toolholder & Blade Set for Grooving, Traversing, Cut-off

① 0° SwitchBlade-Style Toolholder

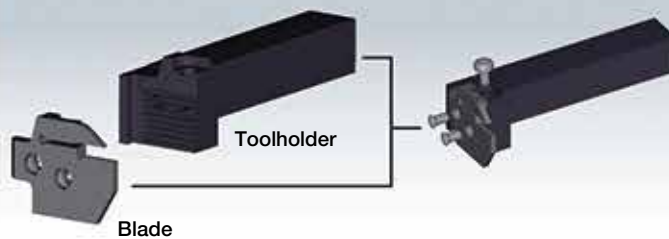


Toolholder (KGD^{R/L}○○-C)

+
Blade (KGD^{R/L}-○T○○-C)

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

② 90° SwitchBlade-Style Toolholder



Toolholder (KGDS^{R/L}○○-C)

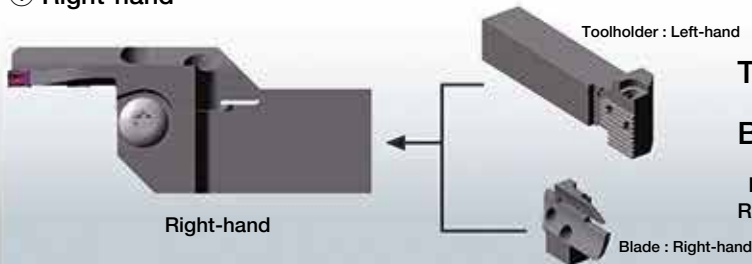
+
Blade (KGD^{R/L}-○T○○-C)

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

Toolholder & Blade Set for Face Grooving

■ 0° SwitchBlade-Style Toolholder

① Right-hand

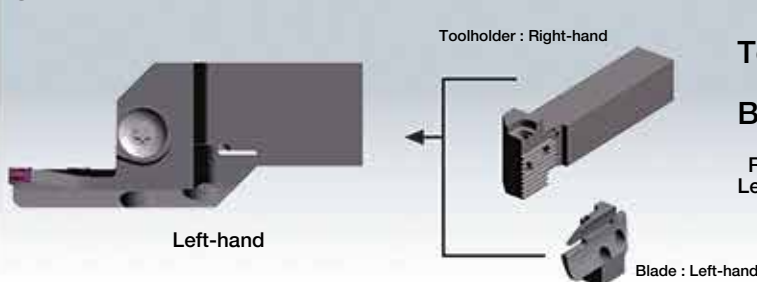


Toolholder (KGD^L○○-C)

+
Blade (KGDF^R-○○-○○-C)

Left-hand Toolholder requires
Right-hand blade

② Left-hand

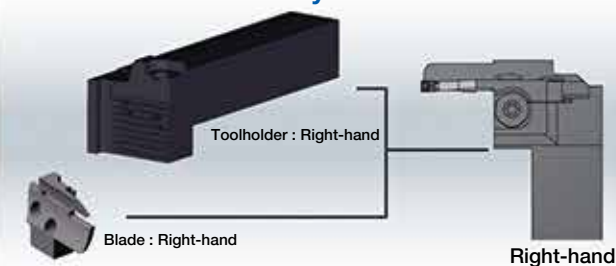


Toolholder (KGD^R○○-C)

+
Blade (KGDF^L-○○-○○-C)

Right-hand Toolholder requires
Left-hand blade

■ 90° SwitchBlade-Style Toolholder

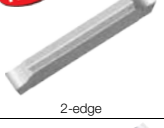


Toolholder (KGDS^{R/L}○○-C)

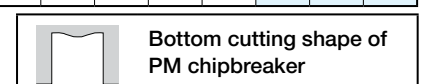
+
Blade (KGDF^{R/L}-○○-○○-C)

Right-hand Blade (face grooving) for
Right-hand Toolholder, Left-hand Blade
(face grooving) for Left-hand Toolholder

● Cut-Off Inserts

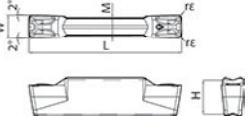
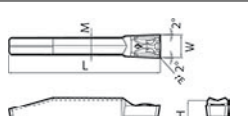
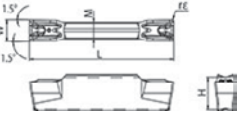
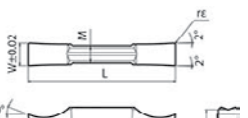
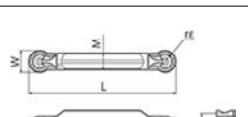
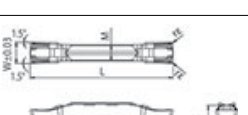
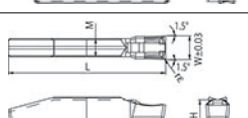
Cut-off Inserts		Classification of usage		P	Carbon steel, Alloy steel								
				M	Stainless Steel								
				K	Cast iron								
				N	Non-ferrous Material								
				S	Titanium alloy								
				H	Hard materials (under 40HRC)								
					Hard materials (over 40HRC)								
Shape Right-hand Insert shown		Description	Dimension (inch)						Angle	MEGACOAT		Carbide	
			in	mm	Tolerance	rε	M	L	H	θ	PR1225	PR1215	GW15
Cut-off for Small Parts Machining	NEW  Low Feed 2-edge	GDM 1316N-003PF	0.051	1.3	±0.0016	0.0012	0.041	0.63	0.146	-			
	GDM 1516N-003PF	0.059	1.5			0.049							
	GDM 1316N-015PF	0.051	1.3			0.041							
	GDM 1516N-015PF	0.059	1.5			0.049							
	GDM 2020N-003PF	0.079	2.0			0.067							
	GDM 2520N-003PF	0.098	2.5			0.083							
	GDM 3020N-003PF	0.118	3.0		0.091								
	NEW  15° Lead Angle Low Feed / 2-edge	GDM 1316%-003PF-15D	0.051	1.3	±0.0016	0.0012	0.041	0.63	0.146	15°			
	GDM 1516%-003PF-15D	0.059	1.5				0.049						
	GDM 2020%-003PF-15D	0.079	2.0				0.067						
GDM 2520%-003PF-15D	0.098	2.5		0.083									
GDM 3020%-003PF-15D	0.118	3.0		0.091									
NEW  Medium Feed 2-edge	GDM 2020N-010PQ	0.079	2.0	±0.0012	0.004	0.067	0.787	0.169	-				
GDM 2520N-010PQ	0.098	2.5				0.083							
GDM 3020N-010PQ	0.118	3.0				0.091							
NEW  15° Lead Angle Medium Feed / 2-edge	GDM 2020R-010PQ-15D	0.079	2.0	±0.0012	0.004	0.067	0.787	0.169	15°				
GDM 2520R-010PQ-15D	0.098	2.5				0.083							
GDM 3020R-010PQ-15D	0.118	3.0				0.091							
NEW  2-edge	GDG 2020N-005PG	0.079	2.0	±0.0008	0.002	0.067	0.787	0.169	-				
GDG 2520N-005PG	0.098	2.5				0.083							
GDG 3020N-005PG	0.118	3.0				0.091							
NEW  15° Lead Angle 2-edge	GDG 2020R-005PG-15D	0.079	2.0	±0.0008	0.002	0.067	0.787	0.169	15°				
GDG 2520R-005PG-15D	0.098	2.5				0.083							
GDG 3020R-005PG-15D	0.118	3.0				0.091							
Cut-off	 2-edge	GDM 2020N-020PM	0.079	2.0	±0.0012	0.008	0.06	0.787	0.169	-			
	GDM 2520N-020PM	0.098	2.5			0.008	0.077						
	GDM 3020N-025PM	0.118	3.0			0.01	0.091						
	GDM 4020N-030PM	0.158	4.0			0.012	0.13						
	 2-edge	GDM 2020R-020PM-6D	0.079	2.0	±0.0012	0.008	0.059	0.787	0.169	6°			
	GDM 2520R-020PM-6D	0.098	2.5			0.008	0.077						
	GDM 3020R-025PM-6D	0.118	3.0			0.010	0.091						
	 1-edge	GDMS 2020N-020PM	0.079	2.0	±0.0012	0.008	0.059	0.787	0.169	-			
	GDMS 3020N-025PM	0.118	3.0			0.010	0.091						
	GDMS 4020N-030PM	0.158	4.0			0.012	0.13						
 1-edge	GDMS 2020R-020PM-6D	0.079	2.0	±0.0012	0.008	0.059	0.787	0.169	6°				
GDMS 3020R-025PM-6D	0.118	3.0			0.01	0.091							
GDMS 4020R-030PM-6D	0.158	4.0			0.012	0.13							

1. When grooving with PM chipbreaker (for cut-off), bottom cutting shape is not flat. (see Right Fig.)



Grooving & Traversing Inserts

● Grooving & Traversing Inserts

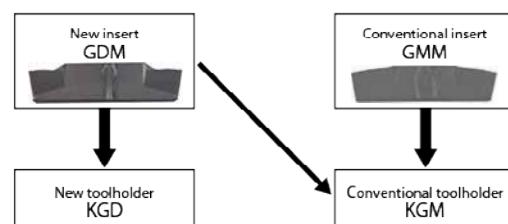
● Grooving & Traversing Inserts			Classification of usage		P Carbon steel, Alloy steel		M Stainless Steel		K Cast iron		N Non-ferrous Material		S Titanium alloy		H Hard materials (under 40HRC)		H Hard materials (over 40HRC)		● : Continuous - Interruption / 1st Choice		○ : Continuous - Interruption / 2nd Choice		● : Continuous / 1st Choice	
Shape Right-hand Insert shown			Description		Dimension (inch)							Angle		Cermet		MEGACOAT		Carbide						
					W			rE	M	L	H	θ	TN90	PR1225	PR1215	GW15								
in	mm	Tolerance																						
Grooving & Traversing			GDM 2420N-020GM	0.094	2.4	±0.0012	0.008	0.077	0.787	0.169	-	○	●	●										
			3020N-020GM	0.118	3.0		0.008	0.091				●	●											
			3020N-040GM				0.016					●	●											
			4020N-020GM				0.008					●	●											
			4020N-040GM	0.157	4.0	0.016	0.130	●	●															
			4020N-080GM			0.032	●	●																
			5020N-040GM			0.016	0.165	●	●															
			5020N-080GM	0.197	5.0	0.032	0.205	●	●															
			6020N-040GM			0.016		●	●															
			6020N-080GM			0.032		●	●															
8030N-080GM	0.315	8.0	±0.0020	0.032	0.236	1.181	0.217	●	●															
Grooving & Traversing			GDMS 2220N-020GM	0.087	2.2	±0.0012	0.008	0.069	0.787	0.169	-	○	●	●										
			3020N-040GM	0.118	3.0		0.016	0.091				●	●											
			4020N-040GM				0.016					0.130	●	●										
			5020N-080GM	0.197	5.0	0.032	0.165	●	●															
			6020N-080GM			0.236		6.0	±0.0016	0.032	0.205	●	●											
Grooving			GDM 2420N-020GL	0.094	2.4	±0.0012	0.008	0.077	0.787	0.169	-	○	●	●										
			3020N-020GL	0.118	3.0		0.008	0.091				●	●											
			3020N-040GL				0.016					●	●											
			4020N-020GL				0.008					●	●											
			4020N-040GL	0.157	4.0	0.016	0.130	●	●															
			5020N-040GL			0.197	5.0	0.016	0.165	●	●													
			6020N-040GL					0.236		6.0	±0.0016	0.016	0.205	●	●									
			Grooving			GDG 2520N-020GS	0.098	2.5	±0.0008	0.008	0.079	0.787	0.169	-	○	●	●	●						
3020N-020GS	0.118	3.0				0.091	●	●			●													
3520N-020GS						0.110	●	●			●													
4020N-040GS						0.130	●	●			●													
5020N-040GS	0.197	5.0				0.165	0.205	●		●	●													
6020N-040GS						0.236		6.0		●	●	●												
8030N-040GS						0.315		8.0		0.236	1.181	0.217	●	●	●									
Full-R / Copying						GDM 3020N-150R-CM	0.118	3.0		±0.0012	0.059	0.091	0.787	0.169	-	○	●	●						
			4020N-200R-CM	0.157	4.0	0.079	0.130	●	●															
			5020N-250R-CM	0.197	5.0	±0.0016	0.098	0.165	○	●	●													
			6020N-300R-CM				0.236	6.0	0.12	0.205	○	●				●								
Grooving & Traversing			GDM 2020N-020PH	0.079	2.0	±0.0012	0.008	0.059	0.787	0.169	-		●	●										
			3020N-030PH	0.118	3.0		0.012	0.091				●	●											
			4020N-030PH				0.012					0.130	●	●										
			GDMS 2020N-020PH	0.079	2.0	±0.0012	0.008	0.059	0.787	0.169	-		●	●										
			3020N-030PH	0.118	3.0		0.012	0.091				●	●											
			4020N-030PH				0.157					4.0	0.012	0.130	●	●								

※KGD・KGM

Combination of KGD / KGM toolholder and Insert

Insert setting angle of KGD / KGM toolholder

New KGD type (0°)	Conventional KGM type (5°)



Not recommended to install GMM/GMG insert on new KGD toolholder.

Recommended Cutting Conditions (PM/GM Chipbreaker)

Workpiece	Recommended Insert Grade		Feed Rate (ipr)			Remarks
			PM	GM		
	MEGACOAT		Edge Width (mm)	Edge Width (mm)		
	PR1215	PR1225	2~4	2.2 / 2.4	3.0 / 4.0	
Carbon Steel	☆ 325~650	★ 250~650	0.003~0.007	0.002~0.007	0.003~0.008	Wet
Alloy Steel	☆ 250~600	★ 225~600				
Stainless Steel	☆ 200~500	★ 200~500	0.002~0.005	0.002~0.005	0.003~0.006	
Cast Iron	★ 325~650	-	0.003~0.007	0.002~0.008	0.003~0.009	

★ : 1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions (PF/PQ/PG Chipbreaker)

Workpiece	Recommended Insert Grade			Feed Rate (ipr)							Remarks
				PF			PQ		PG		
	MEGACOAT		Carbide	Edge Width (mm)			Edge Width (mm)		Edge Width (mm)		
	PR1215	PR1225	GW15	1.3/1.5	2.0	2.5/3.0	2.0	2.5/3.0	2.0	2.5/3.0	
Carbon Steel	☆ 225~600	★ 225~500	-	.0004"~.0016"	.0008"~.0024"	.0008"~.0031"	.0012"~.0039"	.0016"~.0047"	-	-	Wet
Alloy Steel	☆ 225~600	★ 225~500	-								
Stainless Steel	☆ 200~500	★ 200~400	-	.0004"~.0012"	.0004"~.0016"	.0004"~.0020"	.0008"~.0028"	.0008"~.0031"	-	-	
Cast Iron	★ 250~650	-	☆ 175~325	.0004"~.0020"	.0008"~.0028"	.0012"~.0031"	.0016"~.0039"	.0016"~.0047"	.0004"~.0016"	.0004"~.0020"	
Aluminum	-	-	★ 650~1475	-	-	-	-	-	.0004"~.0020"	.0004"~.0024"	
Brass	-	-	★ 325~650	-	-	-	-	-	.0004"~.0028"	.0004"~.0031"	

★ : 1st Recommendation ☆ : 2nd Recommendation

Feed Rate (PF/PQ Chipbreaker)

(Workpiece: 1045 Steel)

Chipbreaker	Edge Width (mm)	Feed Rate (ipr)							
		.0008	.0016	.0024	.0031	.0039	.0047		
PF Chipbreaker	1.3 / 1.5								
	2.0								
	2.5 / 3.0								
PQ Chipbreaker	2.0								
	2.5 / 3.0								

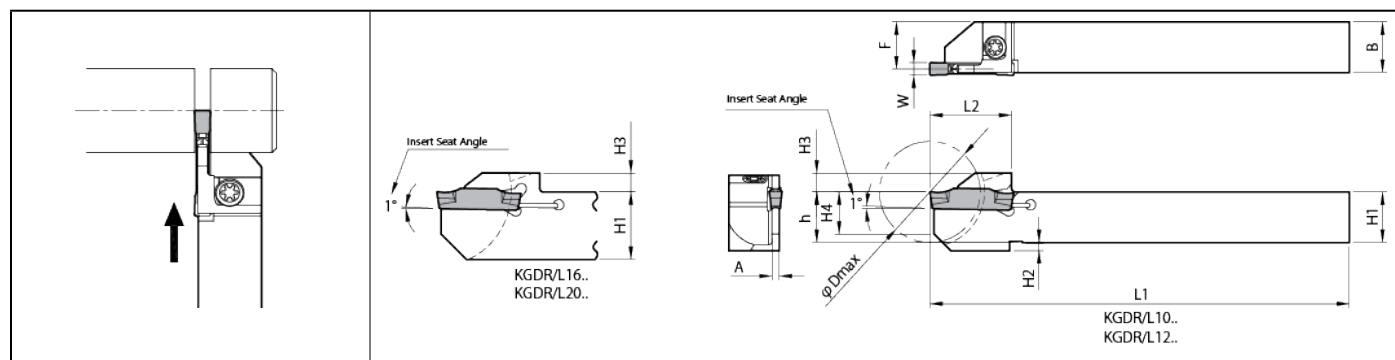
- Shaded area indicates absolute feed range; bold area indicates optimum range for best chip control

■ Indication of Insert Description



-
- Figure 3 illustrates the correct and incorrect methods for inserting a toolholder into a workpiece. The left side shows the 'Correct' method, where the toolholder is inserted perpendicular to the workpiece surface, indicated by a red circle. The right side shows the 'Incorrect' method, where the toolholder is inserted at an angle, indicated by a red X. Labels include 'Insert clamp bolt', 'Insert mounting part', and 'Toolholder's surface for locating the insert's back end'.

KGD Toolholder for Small Parts Machining (Inch-Size)

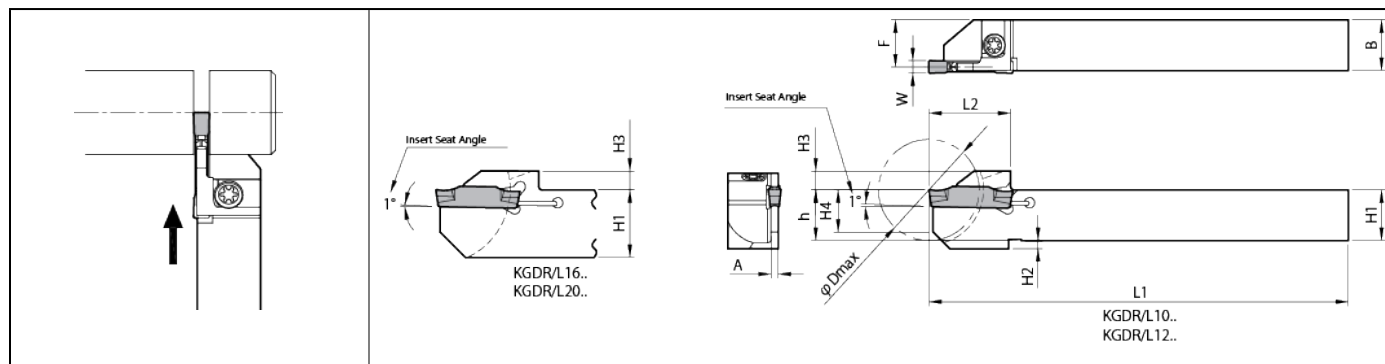


● Toolholder Dimensions

Description	Stock		Cutting Diameter	Dimension (inch)										Inserts (Ref. ➡ Pg.7-8) Choose Insert with a width that falls within the parameters shown		Spare parts	
																Clamp Bolt	Wrench
	R	L	øDmax	H1=h	H2	H3	H4	B	L1	L2	F	A	Insert Width (inch)				
													MIN	MAX			
KGD% 6-1.5JX	●	●	0.787	0.375	0.098	0.177	0.315	0.375	4.75	0.709	0.351	0.047	-	0.059	SB-40120TR	LTW-15S	
8-1.5JX	●	●	0.944	0.5	0.051		0.394	0.5		0.768	0.476						
KGD% 6-2JX	●	●	0.787	0.375	0.098	0.177	0.315	0.375	4.75	0.709	0.342	0.067	0.078	0.118	SB-40120TR	LTW-15S	
8-2JX	●	●	0.944	0.5	0.051		0.394	0.5		0.768	0.467						
10-2JX	●	●	1.259	0.625	-		0.394	0.625		0.965	0.592						
KGD% 6-2.4JX	●	●	0.787	0.375	0.098	0.177	0.315	0.375	4.75	0.709	0.336	0.079	0.094	0.118	SB-40120TR	LTW-15S	
8-2.4JX	●	●	0.944	0.5	0.051		0.394	0.5		0.768	0.461						
10-2.4JX	●	●	1.259	0.625	-		0.394	0.625		0.965	0.586						
KGD% 8-3JX	●	●	0.944	0.5	0.051	0.236	0.394	0.5	4.75	0.768	0.453	0.094	0.118	0.157	SB-40120TR	LTW-15S	
10-3JX	●	●	1.259	0.625	-		0.394	0.625		0.965	0.578						
KGD% 10-3D38JX	●	●	1.496	0.625	-	0.236	0.394	0.625	4.75	1.142	0.578	0.094	0.118	0.157	SE-50125TR	LTW-20	
12-3D42JX	●	●	1.653	0.75	-		0.551	0.75		1.22	0.703						
43-3D42JX	●	●	1.653	0.75	-		0.551	0.5		1.22	0.453						

KGD for Small Parts Machining NEW

KGD Toolholder for Small Parts Machining (Metric-Size)

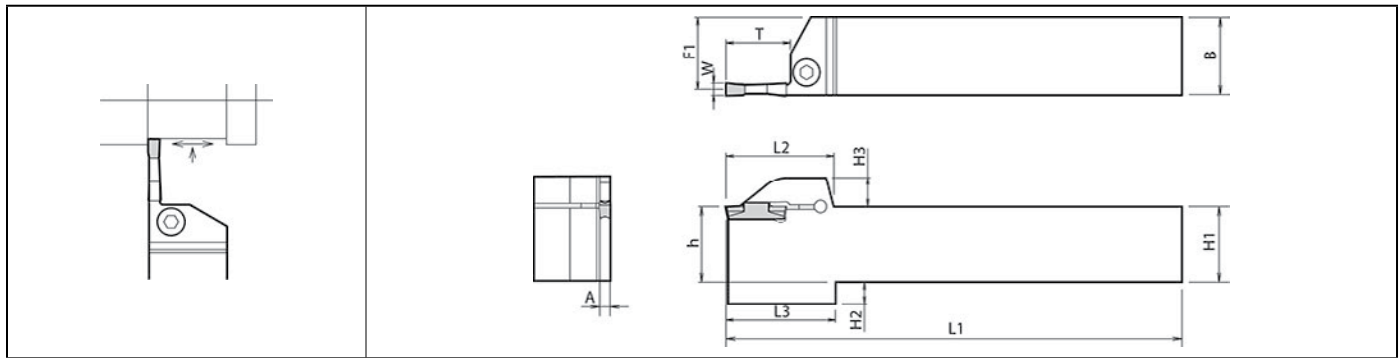


● Toolholder Dimensions

Description	Stock		Cutting Diameter	Dimension (mm)										Inserts (Ref. ➡ Pg.7-8) Choose Insert with a width that falls within the parameters shown		Spare parts	
																Clamp Bolt	Wrench
	R	L	øDmax	H1=h	H2	H3	H4	B	L1	L2	F	A	Insert Width (mm)				
													MIN	MAX			
KGD% 1010JX-1.3	○	○	20	10	2	4.5	8	10	120	18	9.5	1.0	1.3	1.5	SB-40120TR	LTW-15S	
1212F-1.3	○	○	24	12	2		10	12	85	19.5	11.5						
1212JX-1.3	○	○	24	12	2		10	12	120	19.5	11.5						
KGD% 1010JX-1.5	○	○	20	10	2	4.5	8	10	120	18	9.4	1.2	-	1.5	SB-40120TR	LTW-15S	
1212F-1.5	○	○	24	12	2		10	12	85	19.5	11.4						
1212JX-1.5	○	○	24	12	2		10	12	120	19.5	11.4						
KGD% 1010JX-2	○	○	20	10	2	4.5	8	10	120	18	9.15	1.7	2.0	3.0	SB-40120TR	LTW-15S	
1212F-2	○	○	24	12	2		10	12	85	19.5	11.15						
1212JX-2	○	○	24	12	2		10	12	120	19.5	11.15						
1616JX-2	○	○	32	16	-		10	16		24.5	15.15						
KGD% 1010JX-2.4	○	○	20	10	2	4.5	8	10	120	18	9	2.0	2.4	3.0	SB-40120TR	LTW-15S	
1212F-2.4	○	○	24	12	2		10	12	85	19.5	11						
1212JX-2.4	○	○	24	12	2		10	12	120	19.5	11						
1616JX-2.4	○	○	32	16	-		10	16		24.5	15						
KGD% 1212JX-3	○	○	24	12	2	4.5	10	12	120	19.5	10.8	2.4	3.0	4.0	SB-40120TR	LTW-15S	
1616JX-3	○	○	32	16	-		10	16		24.5	14.8						
KGD% 1616JX-3D38	○	○	38	16	-	6	10	16	120	29	14.8	2.4	3.0	4.0	SE-50125TR	LTW-20	
2020JX-3D42	○	○	42	20	-		14	20		31	18.8						
2012JX-3D42	○	○	42	20	-		14	12		31	10.8						

• 4.0mm-width insert can be installed in KGD% 1212JX-3, but is not recommended due to the toolholder's rigidity.

KGD Integral-Style Toolholder (Inch-Size)



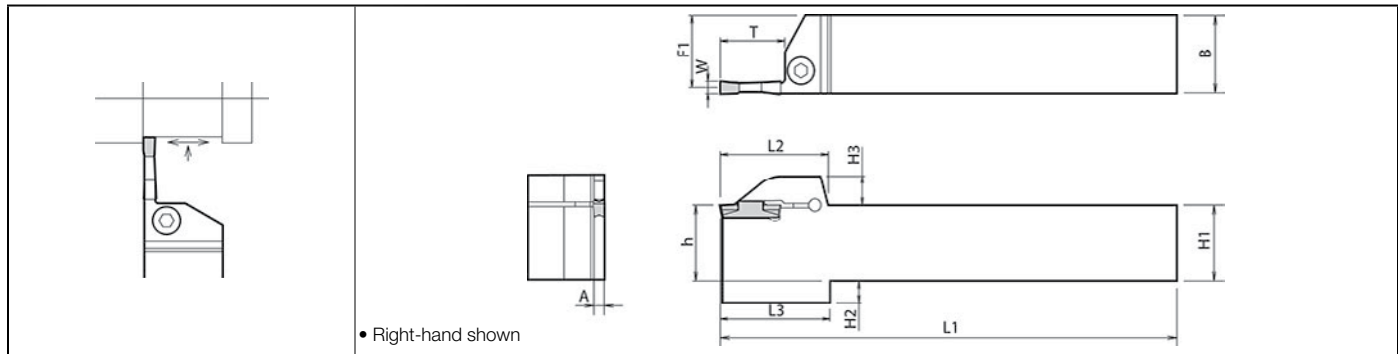
● Toolholder Dimensions

Width (mm)	Maximum Grooving Depth * (mm)	Description	Stock		Dimension (inch)											Inserts (Ref. ➡ Pg.7-8) Choose Insert with a width that falls within the parameters shown		Spare parts	
																		Clamp Bolt	Wrench
			R	L	H1=h	H2	H3	B	L1	L2	L3	F1	A	T*	Insert Width (mm)				
MIN	MAX																		
2	0.669 (17mm)	KGD [®] /L 12-2T17	●	●	0.75	-	0.374	0.75	4.92	1.28	-	0.71	0.067	0.669 (17mm)	2.0	3.0	BH6X10TR	LTW-25	
		16-2T17	●	●	1.00	-		1.00	5.90			0.96							
3	0.393 (10mm)	KGD [®] /L 12-3T10	●	●	0.75	-		0.75	4.92	1.20		0.70	0.094	0.393 (10mm)	3.0	4.0			
		16-3T10	●	●	1.00	-		1.00	5.90			0.95							
	0.787 (20mm)	KGD [®] /L 12-3T20	●	●	0.75	-		0.75	4.92	1.35		0.70		0.787 (20mm)					
		16-3T20	●	●	1.00	-		1.00	5.90	1.39		0.95							
4	0.393 (10mm)	KGD [®] /L 12-4T10	●	●	0.75	-		0.75	4.92	1.20		0.68	0.133	0.393 (10mm)	4.0	5.0			
		16-4T10	●	●	1.00	-		1.00	5.90			0.93							
	0.787 (20mm)	KGD [®] /L 12-4T20	●	●	0.75	-		0.75	4.92	1.35		0.68		0.787 (20mm)					
		16-4T20	●	●	1.00	-		1.00	5.90	1.39		0.93							
	0.984 (25mm)	KGD [®] /L 16-4T25	●	●	1.00	-		1.00	5.90	1.59		0.93		0.984 (25mm)					
5	0.393 (10mm)	KGD [®] /L 12-5T10	●	●	0.75	-		0.75	4.92	1.20		0.66	0.173	0.393 (10mm)	5.0	6.0			
		16-5T10	●	●	1.00	-		1.00	5.90			0.91							
	0.669 (17mm)	KGD [®] /L 12-5T17	●	●	0.75	-		0.75	4.92	1.47		0.66		0.669 (17mm)					
		16-5T17	●	●	1.00	-		1.00	5.90			0.91							
	0.984 (25mm)	KGD [®] /L 16-5T25	●	●	1.00	-		1.00	5.90	1.59		0.91	0.984 (25mm)						
6	0.591 (15mm)	KGD [®] /L 16-6T15	●	●	1.00	-		1.00	5.90	1.28	-	0.89	0.208	0.591 (15mm)	6.0	6.0			
	1.181 (30mm)	KGD [®] /L 16-6T30	●	●	1.00	-		1.00	5.90	1.79		0.89		1.181 (30mm)					
8	0.984 (25mm)	KGD [®] /L 16-8T25	●	●	1.00	0.26		1.00	5.90	1.65	1.69	0.88	0.236	0.984 (25mm)	8.0	8.0			

* T dimension shows the distance from the Toolholder to the cutting edge.
(When using 2-edge insert, the maximum grooving depth is 18mm.)

KGD Integral-Style

KGD Integral-Style Toolholder (Metric-Size)

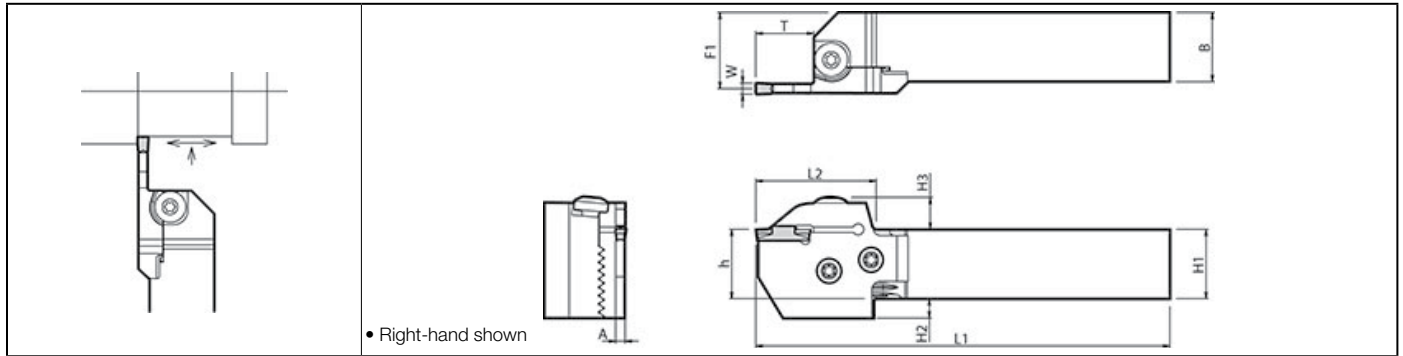


Toolholder dimensions

Width (mm)	Maximum Grooving Depth * (mm)	Description	Stock		Dimension (mm)												Inserts (Ref. ➡ Pg.7-8) Choose Insert with a width that falls within the parameters shown		Spare parts				
																			Clamp Bolt	Wrench			
			R	L	H1=h	H2	H3	B	L1	L2	L3	F1	A	T*	Insert Width (mm)								
															MIN	MAX							
2	6	KGD 1616H-2T06	○	○	16	4.0	9.5	16	100	27.7	28.0	15.2	1.7	6	2.0	3.0	HH5X16	LW-4					
		2020K-2T06	○	○	20	-		20	125	28.0	-	19.2					HH5X25						
		2525M-2T06	○	○	25	-		25	150	28.0	-	24.2					HH5X16						
	10	KGD 1616H-2T10	○	○	16	4.0		16	100	30.2	30.5	15.2		10			HH5X16						
		2020K-2T10	○	○	20	-		20	125	30.5	-	19.2					HH5X25						
		2525M-2T10	○	○	25	-		25	150	30.5	-	24.2					HH5X16						
	17	KGD 1616H-2T17	○	○	16	4.0		16	100	31.2	31.5	15.2		17			HH5X16						
		2012K-2T17	○	○	20	-		12	125	-	-	11.2					HH5X25						
		2020K-2T17	○	○	-	20		125	32.5	-	19.2	HH5X16											
	2525M-2T17	○	○	25	-	25		150	-	-	24.2	HH5X25											
	3	6	KGD 1616H-3T06	○	○	16		4.0	16	100	27.7	28.0		14.8			2.4		6	3.0	4.0	HH5X16	LW-4
			2020K-3T06	○	○	20		-	20	125	28.0	-		18.8								HH5X25	
2525M-3T06			○	○	25	-	25	150	28.0	-	23.8	HH5X16											
10		KGD 1616H-3T10	○	○	16	4.0	16	100	30.2	30.5	14.8	10	HH5X16										
		2020K-3T10	○	○	20	-	20	125	30.5	-	18.8		HH5X25										
		2525M-3T10	○	○	25	-	25	150	30.5	-	23.8		HH5X16										
20		KGD 1616H-3T20	○	○	16	4.0	16	100	34.2	34.5	14.8	20	HH5X16										
		2012K-3T20	○	○	20	-	12	125	34.5	-	10.8		HH5X25										
		2020K-3T20	○	○	-	20	125	-	-	18.8	HH5X16												
2525M-3T20		○	○	25	-	25	150	35.5	-	23.8	HH5X25												
4		10	KGD 2020K-4T10	○	○	20	-	20	125	30.5	-	18.3	3.4	10	4.0	5.0		HH5X16	LW-4				
			2525M-4T10	○	○	25	-	25	150	30.5	-	23.3						HH5X25					
	20	KGD 2020K-4T20	○	○	20	-	20	125	34.5	-	18.3	20		HH5X16									
		2525M-4T20	○	○	25	-	25	150	35.5	-	23.3			HH5X25									
	25	KGD 2525M-4T25	○	○	25	-	25	150	40.5	-	23.3	25		HH5X25									
		KGD 2525M-4T25	○	○	25	-	25	150	40.5	-	23.3	25		HH5X25									
5	10	KGD 2020K-5T10	○	○	20	-	20	125	30.5	-	17.8	4.4	10	5.0	6.0	HH5X16	LW-4						
		2525M-5T10	○	○	25	-	25	150	30.5	-	22.8					HH5X25							
	17	KGD 2020K-5T17	○	○	20	-	20	125	37.5	-	17.8		17			HH5X25							
		2525M-5T17	○	○	25	-	25	150	37.5	-	22.8					HH5X25							
	25	KGD 2525M-5T25	○	○	25	-	25	150	40.5	-	22.8		25			HH5X25							
		KGD 2525M-5T25	○	○	25	-	25	150	40.5	-	22.8		25			HH5X25							
6	15	KGD 2525M-6T15	○	○	25	-	25	150	32.5	-	22.4	5.3	15	6.0	6.0	HH5X25	LW-4						
	30	KGD 2525M-6T30	○	○	25	-	25	150	45.5	-	22.4		30			HH5X25							
8	25	KGD 2525M-8T25	○	○	25	7.0	25	150	43.3	44.2	22.0	6.0	25	8.0	8.0	HH6X25	LW-5						
		3232P-8T25	○	○	32	-	32	170	43.3	-	29.0					HH6X25							

* T dimension shows the distance from the Toolholder to the cutting edge.
(When using 2-edge insert, the maximum grooving depth is 18mm.)

KGD-S 0° SwitchBlade-Style Toolholder (Inch-Size)



● Toolholder dimensions (toolholder and blade)

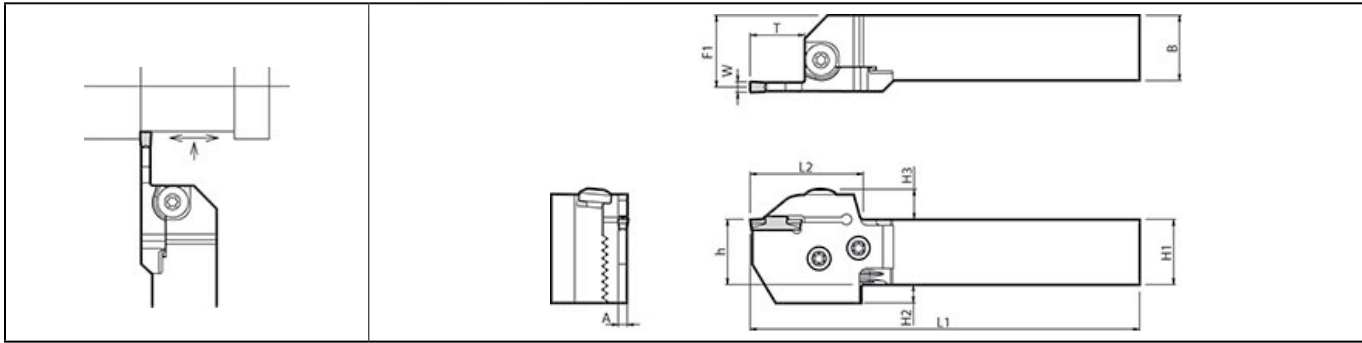
Shank Angle	Width (mm)	Maximum Grooving Depth * (mm)	Set Description (Includes Toolholder and Blade)	Stock		Toolholder Description (Ref. ➡ Pg. 17)	Blade Description (Ref. ➡ Pg. 17)	Dimension (inch)												Inserts (Ref. ➡ Pg.7-8) Choose Insert with a width that falls within the parameters shown	
				R	L			H1=h	H2	H3	B	L1	L2	L3	F1	A	T*	Insert Width (mm)			
																		MIN	MAX		
0°	2	0.669 (17mm)	KGD [®] / 12X-2T17S	●	●	KGD [®] / 12-C	KGD [®] / -2T17-C	0.75	0.435	0.456	0.75	4.80	1.57	-	0.88	0.067	0.669 (17mm)	2.0	3.0		
			16X-2T17S	●	●	KGD [®] / 16-C		1.00	0.291		1.00	5.78			1.13						
	3	0.393 (10mm)	KGD [®] / 12X-3T10S	●	●	KGD [®] / 12-C	KGD [®] / -3T10-C	0.75	0.435		0.75	4.52	1.29		0.86	0.094	0.393 (10mm)	3.0	4.0		
			16X-3T10S	●	●	KGD [®] / 16-C		1.00	0.291		1.00	5.51			1.11						
		0.787 (20mm)	KGD [®] / 12X-3T20S	●	●	KGD [®] / 12-C	KGD [®] / -3T20-C	0.75	0.435		0.75	4.92	1.68		0.86						
			16X-3T20S	●	●	KGD [®] / 16-C		1.00	0.291		1.00	5.90			1.11						
	4	0.393 (10mm)	KGD [®] / 12X-4T10S	●	●	KGD [®] / 12-C	KGD [®] / -4T10-C	0.75	0.435		0.75	4.52	1.29		0.84	0.133	0.393 (10mm)	4.0	5.0		
			16X-4T10S	●	●	KGD [®] / 16-C		1.00	0.291		1.00	5.51			1.09						
		0.787 (20mm)	KGD [®] / 12X-4T20S	●	●	KGD [®] / 12-C	KGD [®] / -4T20-C	0.75	0.435		0.75	4.92	1.68		0.84						
			16X-4T20S	●	●	KGD [®] / 16-C		1.00	0.291		1.00	5.90			1.09						
		0.984 (25mm)	KGD [®] / 12X-4T25S	●	●	KGD [®] / 12-C	KGD [®] / -4T25-C	0.75	0.435		0.75	5.11	1.88		0.84						
			16X-4T25S	●	●	KGD [®] / 16-C		1.00	0.291		1.00	6.10			1.09						
	5	0.393 (10mm)	KGD [®] / 12X-5T10S	●	●	KGD [®] / 12-C	KGD [®] / -5T10-C	0.75	0.435		0.75	4.52	1.29		0.82	0.173	0.393 (10mm)	5.0	6.0		
			16X-5T10S	●	●	KGD [®] / 16-C		1.00	0.291		1.00	5.51			1.07						
		0.984 (25mm)	KGD [®] / 16X-5T25S	●	●	KGD [®] / 16-C	KGD [®] / -5T25-C	1.00	0.291		1.00	6.10	1.88		1.07		0.990 (25mm)				

* T dimension shows the distance from the Toolholder to the cutting edge.
(When using 2-edge insert, the maximum grooving depth is 0.71")

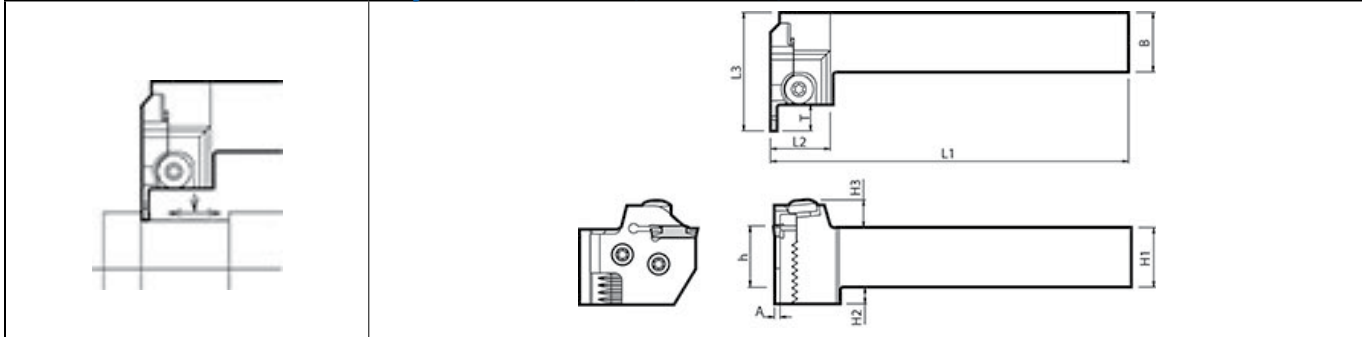
- Note) 1. In case of normal mounting position, toolholder body may interfere with tool presetter
2. Toolholder description and blade description are printed on toolholder body. (Set description is not indicated.)
KGD-S : R-hand Blade for R-hand Toolholder, L-hand Blade for L-hand Toolholder.
KGD-S-S : L-hand Blade for R-hand Toolholder, R-hand Blade for L-hand Toolholder.
The toolholder is applicable for all blade with suitable hand.

KGD-S SwitchBlade Style

KGD-S 0° SwitchBlade-Style Toolholder (Metric-Size)



KGD-S 90° SwitchBlade-Style Toolholder (Metric-Size)



● Toolholder Dimensions (toolholder and blade)

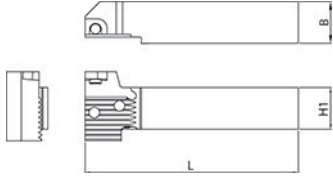
Shank Angle	Width (mm)	Maximum Grooving Depth* (mm)	Set Description (Includes Toolholder and Blade)	Stock		Toolholder Description (Ref. ➡ Pg. 17)	Blade Description (Ref. ➡ Pg. 17)	Dimension (mm)											Inserts (Ref. ➡ Pg.7-8) Choose Insert with a width that falls within the parameters shown	
				R	L			H1=h	H2	H3	B	L1	L2	L3	F1	A	T*	Insert Width (mm)		
																		MIN	MAX	
0°	2	17	KGD% 2020X-2T17S	○	○	KGD% 2020-C	KGD% -2T17-C	20	12	11.6	20	122	39.9	-	23.4	1.7	17	2.0	3.0	
	2525X-2T17S	○	○	KGD% 2525-C		25	7	25	147		28.4									
	3	10	KGD% 2020X-3T10S	○	○	KGD% 2020-C	KGD% -3T10-C	20	12		20	115	32.9		23.0	2.4	10	3.0	4.0	
			2525X-3T10S	○	○	KGD% 2525-C		25	7		25	140			28.0					
			3232X-3T10S	○	○	KGD% 3232-C		32	-		32	160			33.0					
		20	KGD% 2020X-3T20S	○	○	KGD% 2020-C		20	12		20	125	42.9	23.0	2.4	20	3.0	4.0		
			2525X-3T20S	○	○	KGD% 2525-C	KGD% -3T20-C	25	7		25	150		28.0						
			3232X-3T20S	○	○	KGD% 3232-C		32	-		32	170		33.0						
	4	10	KGD% 2020X-4T10S	○	○	KGD% 2020-C	KGD% -4T10-C	20	12		20	115	32.9	22.5	3.4	10	4.0	5.0		
			2525X-4T10S	○	○	KGD% 2525-C		25	7		25	140		27.5						
			3232X-4T10S	○	○	KGD% 3232-C		32	-		32	160		32.5						
		20	KGD% 2020X-4T20S	○	○	KGD% 2020-C	KGD% -4T20-C	20	12		20	125	42.9	22.5	3.4	20	4.0	5.0		
			2525X-4T20S	○	○	KGD% 2525-C		25	7		25	150		27.5						
			3232X-4T20S	○	○	KGD% 3232-C		32	-		32	170		32.5						
		25	KGD% 2020X-4T25S	○	○	KGD% 2020-C	KGD% -4T25-C	20	12		20	130	47.9	22.5	3.4	25	4.0	5.0		
			2525X-4T25S	○	○	KGD% 2525-C		25	7		25	155		27.5						
			3232X-4T25S	○	○	KGD% 3232-C		32	-		32	175		32.5						
	5	10	KGD% 2020X-5T10S	○	○	KGD% 2020-C	KGD% -5T10-C	20	12		20	115	32.9	22.0	4.4	10	5.0	6.0		
			2525X-5T10S	○	○	KGD% 2525-C		25	7		25	140		27.0						
			3232X-5T10S	○	○	KGD% 3232-C		32	-		32	160		32.0						
		25	KGD% 2020X-5T25S	○	○	KGD% 2020-C	KGD% -5T25-C	20	12		20	130	47.9	22.0	4.4	25	5.0	6.0		
			2525X-5T25S	○	○	KGD% 2525-C		25	7		25	155		27.0						
			3232X-5T25S	○	○	KGD% 3232-C		32	-		32	175		32.0						
90°	3	10	KGDS% 2020X-3T10S	○	○	KGDS% 2020-C	KGDS% -3T10-C	20	12	11.6	20	125	25.1	49.7	-	2.4	10	3.0	4.0	
2525X-3T10S	○	○	KGDS% 2525-C		25	7	25	150												

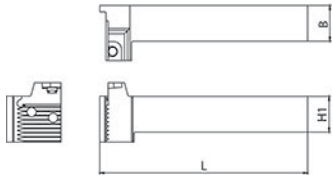
* T dimension shows the distance from the Toolholder to the cutting edge.
(When using 2-edge insert, the maximum grooving depth is 18mm)

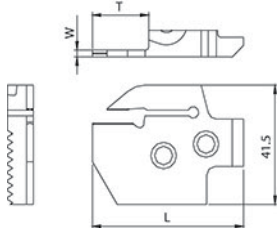
Note) 1. In case of normal mounting position, toolholder body may interfere with tool presetter
2. Toolholder description and blade description are printed on toolholder body. (Set description is not indicated.)
KGD-S : R-hand Blade for R-hand Toolholder, L-hand Blade for L-hand Toolholder.
KGDS-S : L-hand Blade for R-hand Toolholder, R-hand Blade for L-hand Toolholder.
The toolholder is applicable for all blade with suitable hand.

● : Stock Standard ○ : World Express

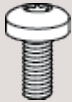
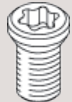
● SwitchBlade-Style Dimensions

0° SwitchBlade-Style Shape Right-hand Shown	Description of Toolholder	Stock		Dimension		
		R	L	L	B	H1
	KGDR/L 12-C	●	●	4.09"	0.75"	0.75"
	16-C	●	●	5.08"	1.00"	1.00"
	KGDR/L 2020-C	○	○	104	20	20
	2525-C	○	○	129	25	25
	3232-C	○	○	149	32	32

90° SwitchBlade-Style Shape Right-hand Shown	Description of Toolholder	Stock		Dimension		
		R	L	L	B	H1
	KGDSR/L 12-C	●	●	4.80"	0.75"	0.75"
	16-C	●	●	5.79"	1.00"	1.00"
	KGDSR/L 2020-C	○	○	122	20	20
	2525-C	○	○	147	25	25

Blade shape Right-hand Shown	Description of Blade	Stock		Dimension (inch)		
		R	L	L	T	W
	KGDR/L -2T17-C	●	●	2.02	0.677	0.07
	-3T10-C	●	●	1.74	0.402	0.09
	-3T20-C	●	●	2.09	0.795	0.09
	-4T10-C	●	●	1.74	0.402	0.13
	-4T20-C	●	●	2.13	0.795	0.13
	-4T25-C	●	●	2.33	0.992	0.13
	-5T10-C	●	●	1.74	0.402	0.17
	-5T25-C	●	●	2.33	0.992	0.17

● Spare parts

Set Description	Spare parts		
	Clamp Bolt (For Insert Clamp)	Fixing Bolt (For Blade)	Wrench
	 BH6X10TR	 SB-60120TR	 LTW-25
KGDR/LS			

■ Installing the blade (SwitchBlade Style Holder)

1. Completely eliminate chips and dust from the serration part (See Fig. 4).
2. Fit the serration joints of the blade and toolholder (See Fig. 5).
3. Tighten the blade mounting bolts at an appropriate torque (Recommended tightening torque : 8 N·m). You can tighten them in any order (See Fig. 5).
4. Set the insert after setting the blade.

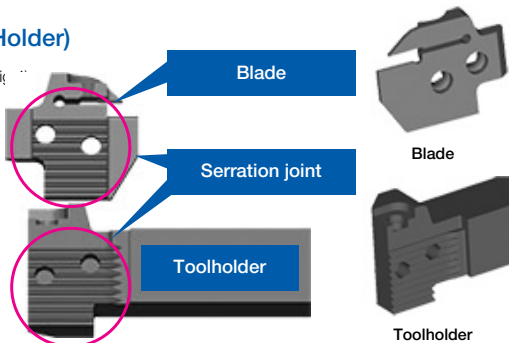


Fig.4

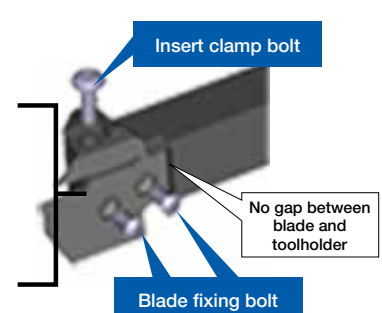


Fig.5

Cutting Conditions

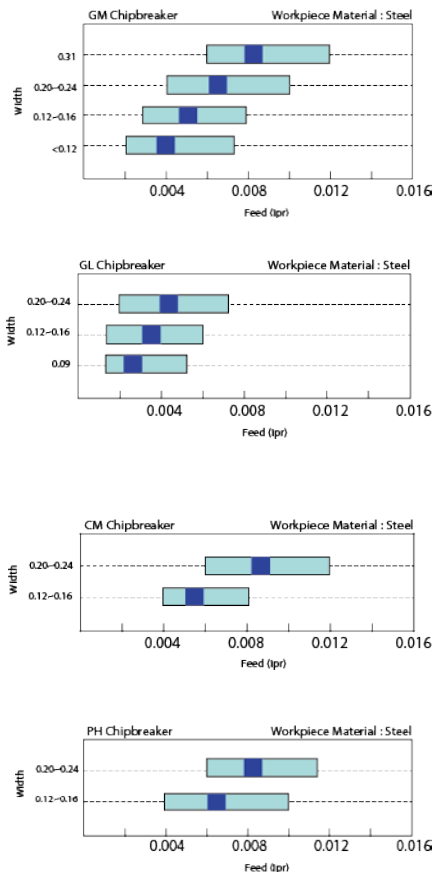
● KGD Recommended Cutting Conditions (Grooving, Cut-off)

Workpiece Material		Recommended Insert Grade (Cutting Speed: sfm)				Remark
		Cermet	MEGACOAT		Uncoated Carbide	
		TN90	PR1225	PR1215	GW15	
Carbon Steel (SxxC)	GM GL PM PH CM GS	☆ 325~720	★ 260~650	☆ 325~650	-	Coolant Recommended
Alloy Steel (SCM)		☆ 260~650	★ 230~590	☆ 260~590	-	
Stainless Steel (SUS304)		☆ 230~590	★ 200~500	☆ 200~500	-	
Cast Iron (FC FCD)		-	-	★ 325~650	-	
Aluminum	GS	-	-	-	★ 650~1650	
Brass		-	-	-	★ 325~720	

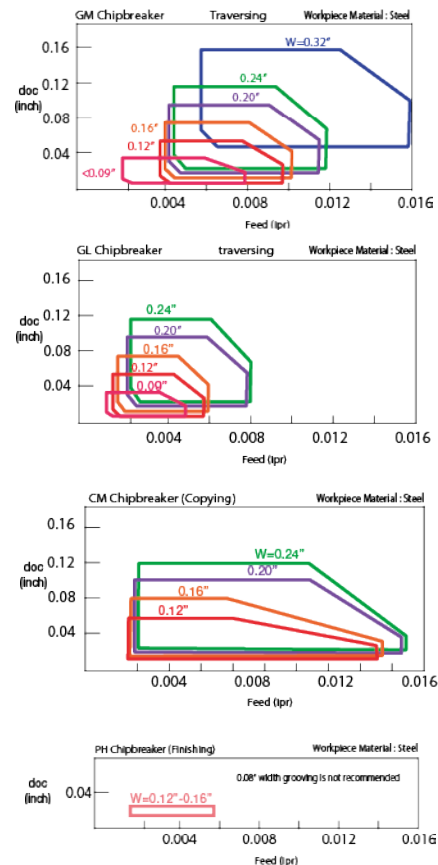
★: 1st. Recommendation ☆: 2nd. Recommendation

● Recommended Cutting Conditions Based on Insert Width (feed rate / DOC)

■ Grooving



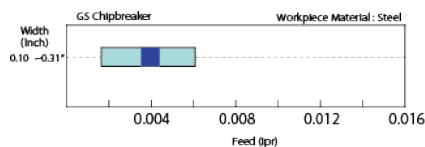
■ Traversing



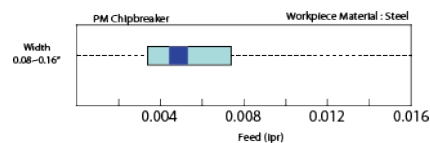
- 1) Above conditions are when toolholder's T dimension is under 17mm
- 2) When T dimension is more than 17mm (for all toolholders except 8mm insert width type) use up to 90% of recommended cutting conditions at traversing

● Recommended Cutting Conditions (Feed)

■ Grooving



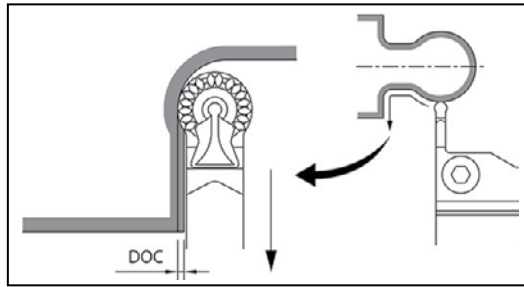
■ Cut-off



Set up depth of cut (ap) for traversing less than radius size.

● CM Chipbreaker (Recommended DOC for Pulling Up)

Description	Max D.O.C. (inch)				
	Description of Toolholder				
	KGD...-2T...	KGD...-3T...	KGD...-4T...	KGD...-5T...	KGD...-6T...
GDM 3020N-150R-CM	0.009	0.008	-	-	-
4020N-200R-CM	-	0.009	0.007	-	-
5020N-250R-CM	-	-	0.012	0.008	-
6020N-300R-CM	-	-	-	0.012	0.010



● Point of OD Turning

Point (I) (Traversing after grooving)

1) Over 0.020" of groove depth : For Roughing (Refer to fig 1)

Before traversing, pull the tool back by 0.004" after grooving. (Put the load on edge from single direction.)

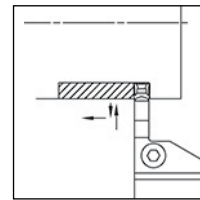


Fig 1

Pull back the tool by 0.004" before traversing (over 0.020" of groove depth for roughing)

2) Less than 0.020" of groove depth : For Finishing (Refer to fig 2)

Available to traverse continuously after grooving. (Dwell motion is not required)

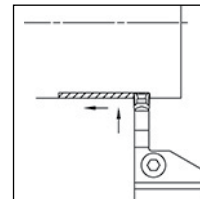


Fig 2

Traversing continuously after grooving (Less than 0.020" of groove depth for finishing)

Point (II)

1) In case of expanding groove width (Refer to fig. 3)

Please program to make steps at each pass.

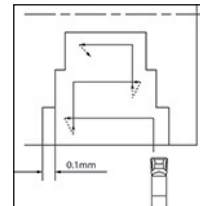


Fig 3

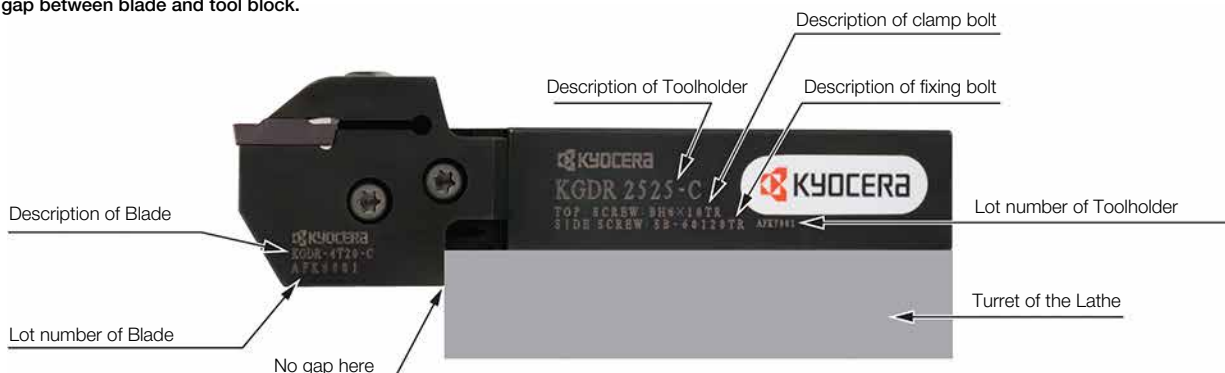
2) For finishing

(Leave the material more than 0.020" total to get better chip control.)

Caution: It is recommend not to feed the tool toward the center when traversing without center.

● Descriptions of SwitchBlade-Style Toolholder and indication of setting up to machine.

No gap between blade and tool block.



Face Grooving Inserts

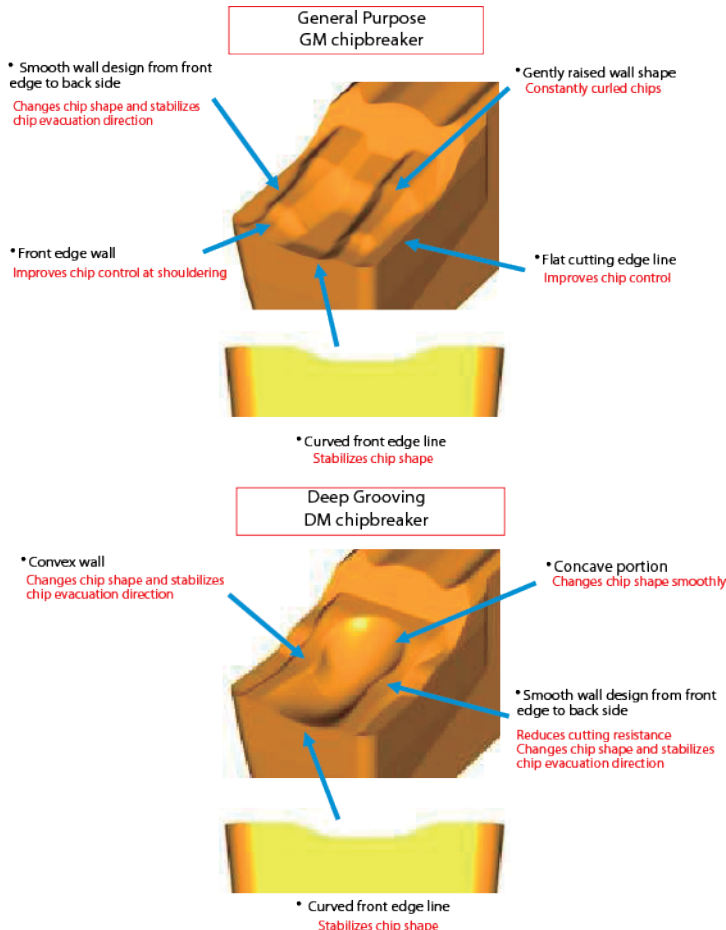
● Face Grooving Inserts

• See page 10 for insert description

Classification of usage				P	Carbon steel, Alloy steel				●	●	⊙	
				M	Stainless Steel					●	⊙	
				K	Cast iron						●	
				N	Non-ferrous Material							
				S	Titanium alloy							
				H	Hard materials (under 40HRC)							
Hard materials (over 40HRC)												
Description		Dimension (inch)							Cermet		MEGACOAT	
		W			rε	M	L	H	TN90	PR1225	PR1215	
		in	mm	Tolerance								
GDFM	3020N-030GM	0.12	3.0	±0.0012	0.012	0.091	0.787	0.169	○	●	●	
	4020N-040GM	0.16	4.0			0.130			○	●	●	
	5020N-040GM	0.20	5.0	±0.0016	0.016	0.165			○	●	●	
	6020N-040GM	0.24	6.0			0.205			○	●	●	
GDFM	3020N-030DM	0.12	3.0	±0.0012	0.012	0.091	0.787	0.169	○	●	●	
	4020N-040DM	0.16	4.0			0.130			○	●	●	
	5020N-040DM	0.20	5.0	±0.0016	0.016	0.165			○	●	●	
	6020N-040DM	0.24	6.0			0.205			○	●	●	
GDFMS	3020N-030DM	0.12	3.0	±0.0012	0.012	0.091	0.787	0.169	○	●	●	
	4020N-040DM	0.16	4.0			0.130			○	●	●	
	5020N-040DM	0.20	5.0	±0.0016	0.016	0.165			○	●	●	
	6020N-040DM	0.24	6.0			0.205				●	●	

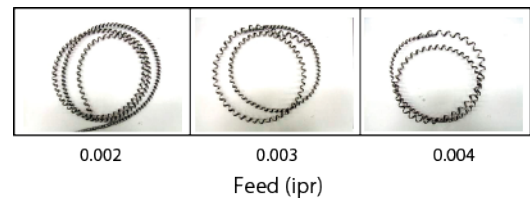
● Advantages of chipbreakers

● Comparison of chip control (GM chipbreaker)

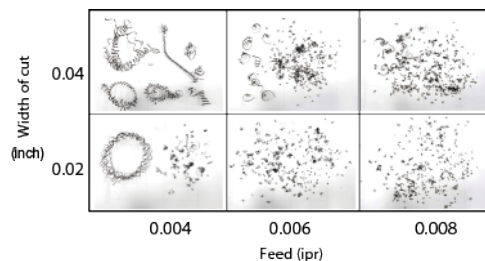


Cutting Conditions
Vc=500sfm f=0.002~ 0.004 ipr GDFM5020N-040GM SCM415 Wet

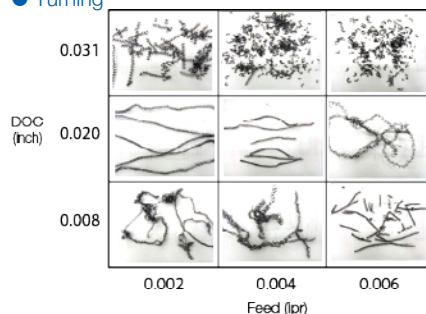
● Face grooving



● Groove wall machining

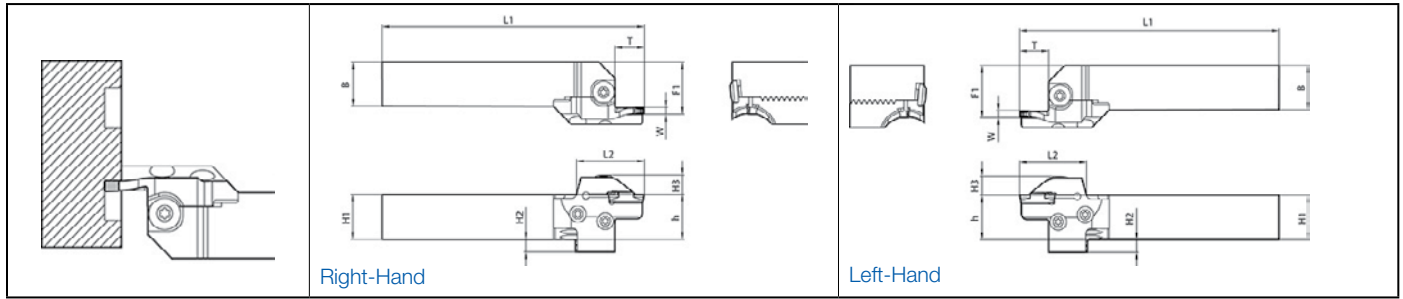


● Turning



● : Stock Standard ○ : World Express

KGDF Face Grooving 0° Toolholders (Inch-Size)



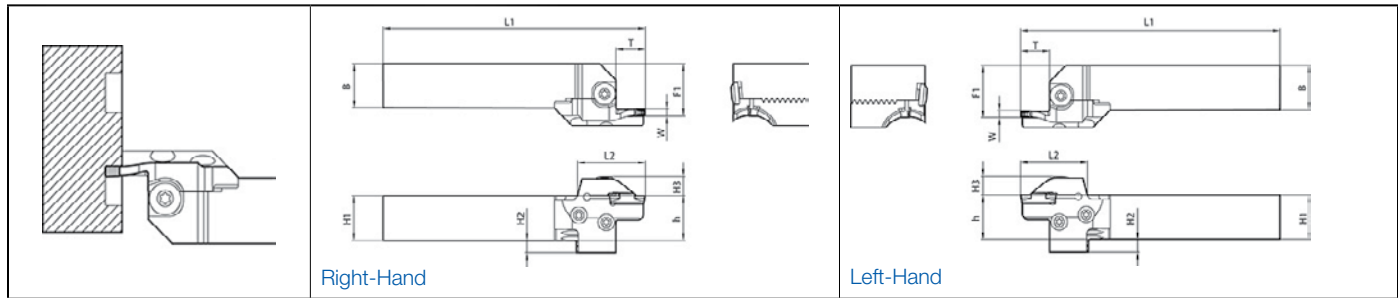
● Toolholder Dimensions (3mm width)

Shank Angle	Width (mm)	Maximum Grooving Depth (mm)	Unit	Set Description	Toolholder Description (Ref. ➡ Pg. 17)	Stock		Blade Description (Ref. ➡ Pg. 37)	Stock		Dimension (inch)										Choose insert with the width (mm) shown below (Ref. ➡ Pg.20)	Face Grooving Dia. øD (mm)		
						R	L		R	L	H1=h	H2	H3	B	L1	L2	F1	T	W	MIN		MAX		
0°	3	13	Right Hand	No Set Description. Please order Toolholder and Blade separately.	KGDL12-C		●	KGDFR -25-3A-C	●		0.75	0.510		0.75	4.65	1.42	0.512	0.591	0.927	0.866	0.984	3	25	30
								-30-3A-C	●														30	40
								-40-3A-C	●														40	50
								-50-3B-C	●														50	65
		-65-3B-C						●		65					85									
		-85-3B-C						●		85					110									
		-110-3B-C						●		110					145									
		-50-3C-C						●		50					65									
	-65-3C-C	●		65	85																			
	-85-3C-C	●		85	110																			
	-110-3C-C	●		110	145																			
	15	No Set Description. Please order Toolholder and Blade separately.	KGDL16-C		●	KGDFR -25-3A-C	●		1.00	0.260	0.457	1.00	5.63	1.42	0.512	1.177	0.591	0.866	0.984	3	25	30		
						-30-3A-C	●														30	40		
						-40-3A-C	●														40	50		
						-50-3B-C	●														50	65		
						-65-3B-C	●						65	85										
-85-3B-C						●		85					110											
-110-3B-C						●		110					145											
-50-3C-C						●		50					65											
-65-3C-C	●		65	85																				
-85-3C-C	●		85	110																				
-110-3C-C	●		110	145																				
0°	3	13	Left Hand	No Set Description. Please order Toolholder and Blade separately.	KGDR12-C		●	KGDFL -25-3A-C		●	0.75	0.510		0.75	4.65	1.42	0.512	0.591	0.927	0.866	0.984	3	25	30
								-30-3A-C		●													30	40
								-40-3A-C		●													40	50
								-50-3B-C		●													50	65
		-65-3B-C							●	65					85									
		-85-3B-C							●	85					110									
		-110-3B-C							●	110					145									
		-50-3C-C							●	50					65									
	-65-3C-C		●	65	85																			
	-85-3C-C		●	85	110																			
	-110-3C-C		●	110	145																			
	15	No Set Description. Please order Toolholder and Blade separately.	KGDR16-C		●	KGDFL -25-3A-C		●	1.00	0.260	0.457	1.00	5.63	1.42	0.512	1.177	0.591	0.866	0.984	3	25	30		
						-30-3A-C		●													30	40		
						-40-3A-C		●													40	50		
						-50-3B-C		●													50	65		
						-65-3B-C		●					65	85										
-85-3B-C							●	85					110											
-110-3B-C							●	110					145											
-50-3C-C							●	50					65											
-65-3C-C		●	65	85																				
-85-3C-C		●	85	110																				
-110-3C-C		●	110	145																				

- R-hand Blade for L-hand Toolholder, L-hand Blade for R-hand Toolholder
- Blade and toolholder are available to assemble when purchasing individually.
- Insert clamp bolt (BH6x10TR)/Blade fixing bolt(SB-60120TR) come with toolholder.

KGDF Face Grooving 0°

KGDF Face Grooving 0° Toolholders (Inch-Size)

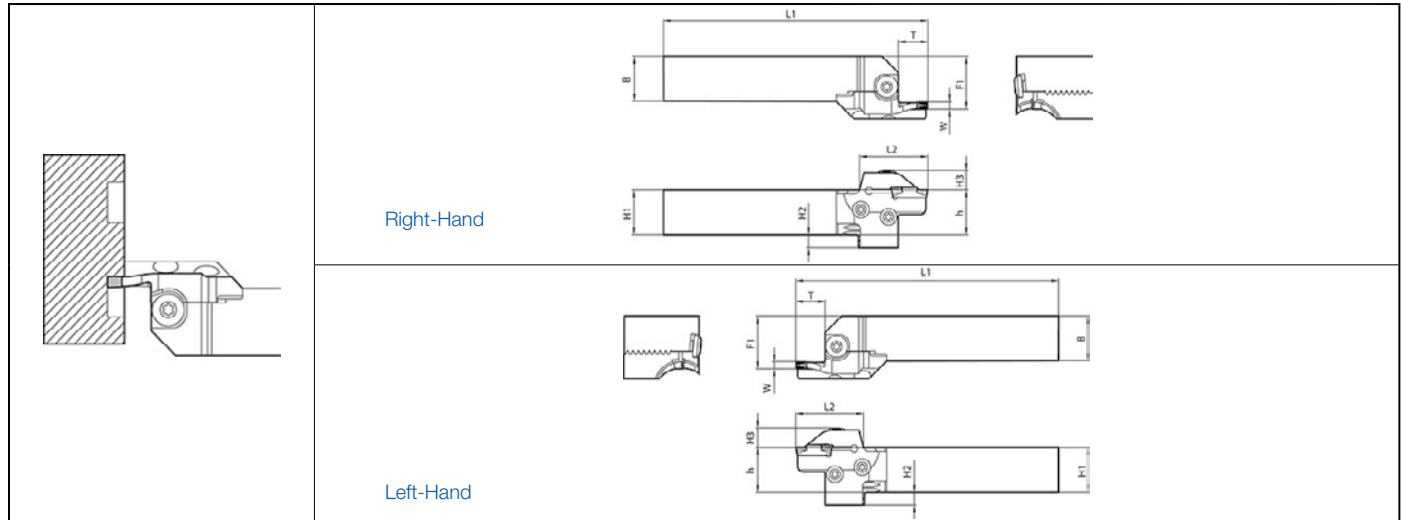


● Toolholder Dimensions (4mm width)

Shank Angle	Width (mm)	Maximum Grooving Depth (mm)	Unit	Set Description	Toolholder Description (Ref. ➡ Pg. 17)	Stock		Blade Description (Ref. ➡ Pg. 37)	Stock		Dimension (inch)										Choose insert with the width (mm) shown below (Ref. ➡ Pg.20)	Face Grooving Dia. øD (mm)	
						R	L		R	L	H1=h	H2	H3	B	L1	L2	F1	T	W	MIN		MAX	
0°	4	13	Right Hand	No Set Description. Please order Toolholder and Blade separately.	KGDL12-C	●		KGDFR -25-4A-C	●		0.75	0.510	0.75	4.65	1.42		0.512	4	25	35			
		-35-4B-C						●		4.72				0.591	0.927	0.591	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						●		5.12				0.984	0.984	0.984	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						
	13	Right Hand	No Set Description. Please order Toolholder and Blade separately.	KGDL16-C	●		KGDFR -25-4A-C	●		1.00	0.260	0.457	1.00	5.63	1.42		0.512	4	25	35			
							-35-4B-C	●						5.71	0.591	1.177	0.591		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	●						6.10	0.984	0.984	0.984		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																				
0°	4	Left Hand	No Set Description. Please order Toolholder and Blade separately.	KGDR12-C	●		KGDFL -25-4A-C		●	0.75	0.510	0.75	4.65	1.42		0.512	4	25	35				
							-35-4B-C		●				4.72	0.591	0.927	0.591		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		●				5.12	0.984	0.984	0.984		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																				
13	Left Hand	No Set Description. Please order Toolholder and Blade separately.	KGDR16-C	●		KGDFL -25-4A-C		●	1.00	0.260	0.457	1.00	5.63	1.42		0.512	4	25	35				
						-35-4B-C		●					5.71	0.591	1.177	0.591		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		●					6.10	0.984	0.984	0.984		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																				

- R-hand Blade for L-hand Toolholder, L-hand Blade for R-hand Toolholder
- Blade and toolholder are available to assemble when purchasing individually.
- Insert clamp bolt (BH6x10TR)/Blade fixing bolt(SB-60120TR) comes with toolholder.

KGDF Face Grooving 0° Toolholders (Metric-Size)



● Toolholder Dimensions (3mm width)

Shank Angle	Width (mm)	Maximum Grooving Depth (mm)	Set Description (Includes Toolholder and Blade)	Stock		Toolholder Description (Ref. ➡ Pg. 17)	Blade Description (Ref. ➡ Pg. 37)	Dimension (mm)										Choose insert with the width (mm) shown below (Ref. ➡ Pg.20)	Face Grooving Dia. øD (mm)										
				R	L			H1=h	H2	H3	B	L1	L2	F1	T	W	MIN		MAX										
0°	3	13	KGDF% 2020X25-3AS 2020X30-3AS 2020X40-3AS 2020X50-3BS 2020X65-3BS 2020X85-3BS 2020X110-3BS 2020X50-3CS 2020X65-3CS 2020X85-3CS 2020X110-3CS	○	○	KGD% 2020-C	KGDF% -25-3A-C -30-3A-C -40-3A-C -50-3B-C -65-3B-C -85-3B-C -110-3B-C -50-3C-C -65-3C-C -85-3C-C -110-3C-C	20	12	11.6	20	118	36	24.2	13	3	25	30											
																	30	40											
																	40	50											
																	50	65											
																	65	85											
																	85	110											
												15	○	○	KGD% 2525-C		KGDF% 2525X25-3AS 2525X30-3AS 2525X40-3AS 2525X50-3BS 2525X65-3BS 2525X85-3BS 2525X110-3BS 2525X50-3CS 2525X65-3CS 2525X85-3CS 2525X110-3CS	○	○	25	17	11.6	25	143	36	29.2	15	25	30
																												30	40
																												40	50
																												50	65
																												65	85
																												85	110
		22	○	○	KGD% 2525-C	KGDF% 2525X25-3AS 2525X30-3AS 2525X40-3AS 2525X50-3BS 2525X65-3BS 2525X85-3BS 2525X110-3BS 2525X50-3CS 2525X65-3CS 2525X85-3CS 2525X110-3CS	○	○	25	17	11.6	25	143	36	29.2		15	110	145										
																		110	145										
																		110	145										
																		110	145										
																		110	145										
																		110	145										
		25	○	○	KGD% 2525-C	KGDF% 2525X25-3AS 2525X30-3AS 2525X40-3AS 2525X50-3BS 2525X65-3BS 2525X85-3BS 2525X110-3BS 2525X50-3CS 2525X65-3CS 2525X85-3CS 2525X110-3CS	○	○	25	17	11.6	25	143	36	29.2		15	110	145										
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																		110	145										
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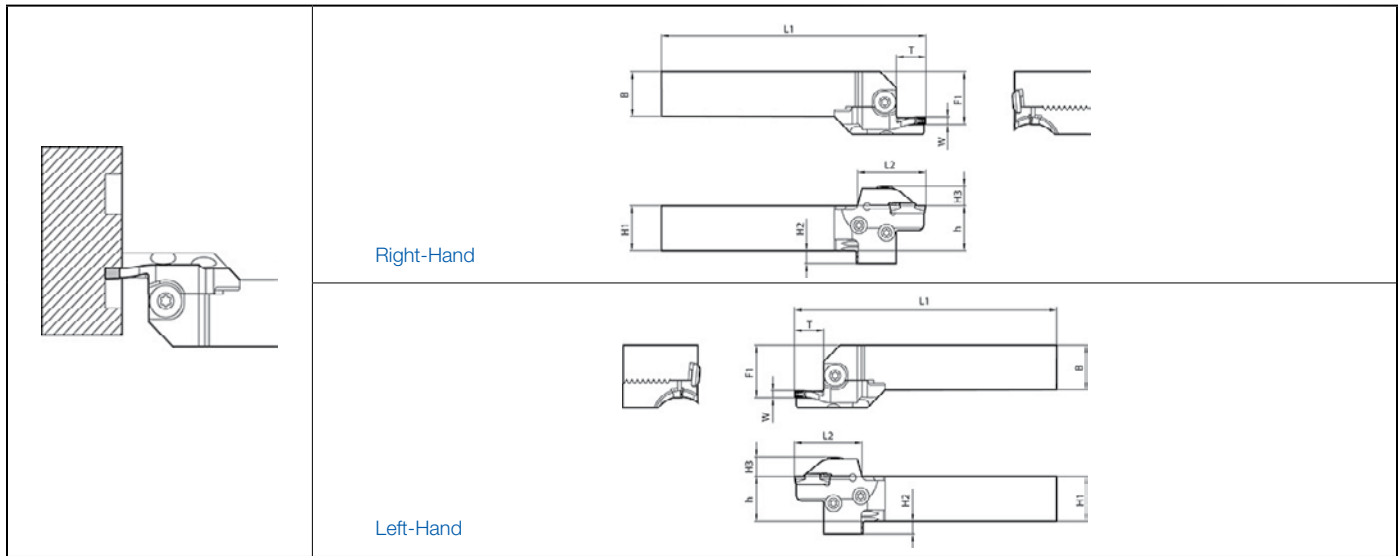
● KGDF Description

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

- R-hand Blade for L-hand Toolholder, L-hand Blade for R-hand Toolholder
- Set description is shown on the level, not marked on
- Blade and toolholder are available to assemble when purchasing individually.
- Insert clamp bolt (BH6x10TR)/Blade fixing bolt (SB-60120TR) come with toolholder.

● : Stock Standard ○ : World Express

KGDF Face Grooving 0° Toolholders (Metric-Size)



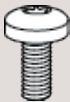
● Toolholder dimensions (6mm width)

Shank Angle	Width (mm)	Maximum Grooving Depth (mm)	Set Description (Includes Toolholder and Blade)	Stock		Toolholder Description (Ref. ➡ Pg. 17)	Blade Description (Ref. ➡ Pg. 37)	Dimension (mm)								Choose insert with the width (mm) shown below (Ref. ➡ Pg.20)	Face Grooving Dia. øD (mm)	
				R	L			H1=h	H2	H3	B	L1	L2	F1	T		W	MIN
0°	6	15	KGDF% 2020X25-6BS	○	○	KGD% 2020-C	KGDF% -25-6B-C	20	12	11.6	20	120	38	24.2	15	6	25	35
			2020X35-6BS	○	○		-35-6B-C										35	50
			2020X50-6BS	○	○		-50-6B-C										50	75
			2020X75-6BS	○	○		-75-6B-C										75	115
			2020X115-6BS	○	○		-115-6B-C										115	180
			2020X180-6BS	○	○		-180-6B-C										180	235
		2020X235-6BS	○	○	-235-6B-C		20	12	11.6	20	125	43	24.2	20	235			
		2020X25-6CS	○	○	-25-6C-C										25		35	
		2020X35-6CS	○	○	-35-6C-C										35		50	
		2020X50-6CS	○	○	-50-6C-C										50		75	
		2020X75-6CS	○	○	-75-6C-C										75		115	
		2020X115-6CS	○	○	-115-6C-C										115		180	
		2020X180-6CS	○	○	-180-6C-C		180	235										
		2020X235-6CS	○	○	-235-6C-C		235											
		15	KGDF% 2525X25-6BS	○	○	KGD% 2525-C	KGDF% -25-6B-C	25	17	11.6	25	145	38	29.2	15		25	35
			2525X35-6BS	○	○		-35-6B-C										35	50
			2525X50-6BS	○	○		-50-6B-C										50	75
			2525X75-6BS	○	○		-75-6B-C										75	115
			2525X115-6BS	○	○		-115-6B-C										115	180
			2525X180-6BS	○	○		-180-6B-C										180	235
		2525X235-6BS	○	○	-235-6B-C		25	17	11.6	25	150	43	29.2	20	235			
		2525X25-6CS	○	○	-25-6C-C										25		35	
		2525X35-6CS	○	○	-35-6C-C										35		50	
		2525X50-6CS	○	○	-50-6C-C										50		75	
		2525X75-6DS	○	○	-75-6C-C										75		115	
		2525X115-6DS	○	○	-115-6C-C										115		180	
		32	2525X180-6DS	○	○		-180-6C-C	162	55	32			180	235				
			2525X235-6DS	○	○		-235-6C-C						235					

KGDF Spare Parts

KGDF Face Grooving 0° Toolholders

● Spare parts

Set Description	Spare parts		
	Clamp bolt (For Insert Clamp)	Fixing bolt(For Blade)	Wrench
			
KGDF%L...S	BH6X10TR	SB-60120TR	LTW-25

● Limitation of groove expansion for small diameter.

Please be aware of the limit diameter when expanding the groove to the center. There is no limit diameter to expand the groove outside.

 Limitation of groove expansion	φD		25	26	27	28 over
	Description		φd			
	KGDF%	2020X25-3AS	4	2	0	0 No remaining Boss
		2525X25-3AS				
		2020X25-4AS	6	3	0	
		2525X25-4AS				
		2020X25-5AS	7	4	1	
		2525X25-5AS				
		2020X25-6AS	9	4	1	
		2525X25-6AS				

KGDFR2020X25-3AS with Ø25mm as first cut towards the center, it will encounter rubbing of the holder cartridge when Ød is 4.0mm. However, if the first cut ØD was 27mm and above, it will be able to transverse cut towards the center without interference.

● Face Grooving Set Description

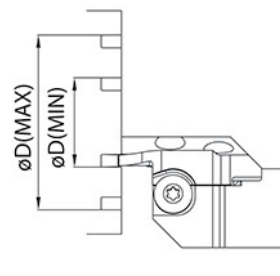
Hand of Blade	Shank size of tool holder	Width	Symbol of Holder Type	
R : Right-hand L : Left-hand	2020X : 20mm Square 2525X : 25mm Square	3 : 3mm 4 : 4mm 5 : 5mm 6 : 6mm	S: SwitchBlade-Style	
KGDF	R	2020X	25	- 3 A S
Series	Min.Bore Dia. (Face grooving)	Grooving Depth		
KGDF Face Grooving	Min. diameter (outside of groove) for the first plunge	Available in both Double and Single-edged inserts		
	25 : 25mm 30 : 30mm · 235 : 235mm	Only recommended for use with Single-edged inserts		

※ Reference: "A0 (mm)" in the chart to determine initial clearance diameter.

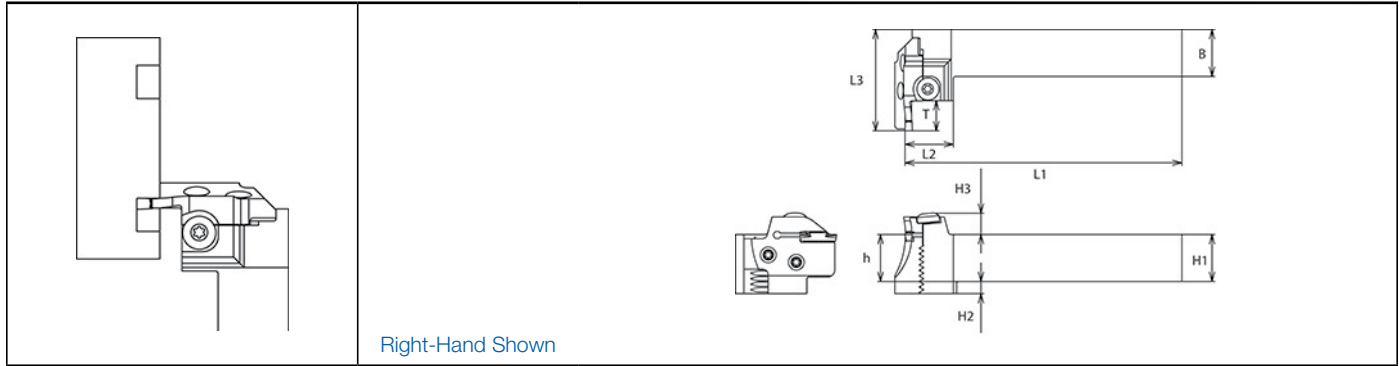
※ Reference "φD (mm)" in the chart to determine initial plunge diameter

What does ØD MIN and ØD MAX indicate?

It indicates the available range for the 1st plunge. Outside diameter of the groove is show



KGDF Face Grooving 90° Toolholders (Inch-Size)



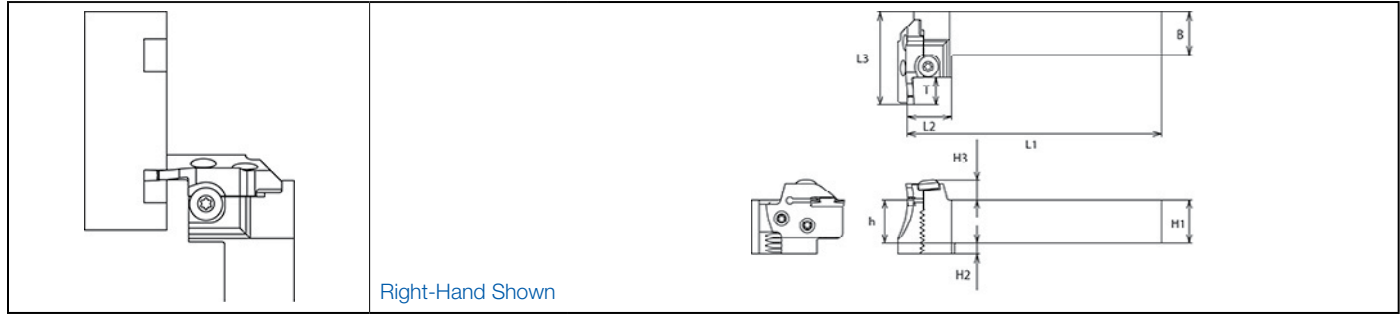
Toolholder Dimensions (3mm width)

Shank Angle	Width (mm)	Maximum Grooving Depth (mm)	Unit	Set Description	Toolholder Description (Ref. ➡ Pg. 17)	Stock		Blade Description (Ref. ➡ Pg. 37)	Stock		Dimension (inch)								Choose insert with the width (mm) shown below (Ref. ➡ Pg.20)	Face Grooving Dia. øD (mm)			
						R	L		R	L	H1=h	H2	H3	B	L1	L2	F1	T		W	MIN	MAX	
90°	3	13	Right Hand	No Set Description. Please order Toolholder and Blade separately.	KGDSR12-C	●		KGDFR -25-3A-C	●		0.75	0.510		0.75	4.93		2.07	0.512	3		25	30	
								-30-3A-C	●												30	40	
								-40-3A-C	●												40	50	
								-50-3B-C	●												50	65	
		-65-3B-C						●		65											85		
		-85-3B-C						●		85											110		
		-110-3B-C						●		110											145		
		-50-3C-C						●		50											65		
	-65-3C-C	●		65	85																		
	-85-3C-C	●		85	110																		
	-110-3C-C	●		110	145																		
	15	No Set Description. Please order Toolholder and Blade separately.	KGDSR16-C	●		KGDFR -25-3A-C	●		1.00	0.260		1.00	5.91		2.15	0.591		2.07	0.512	3		25	30
						-30-3A-C	●															30	40
						-40-3A-C	●															40	50
						-50-3B-C	●															50	65
						-65-3B-C	●															65	85
-85-3B-C						●		85														110	
-110-3B-C						●		110														145	
-50-3C-C						●		50														65	
-65-3C-C	●		65	85																			
-85-3C-C	●		85	110																			
-110-3C-C	●		110	145																			
90°	3	13	Left Hand	No Set Description. Please order Toolholder and Blade separately.	KGDSL12-C	●		KGDFL -25-3A-C		●	0.75	0.510		0.75	4.93		2.07	0.512	3		25	30	
								-30-3A-C		●											30	40	
								-40-3A-C		●											40	50	
								-50-3B-C		●											50	65	
		-65-3B-C							●	65											85		
		-85-3B-C							●	85											110		
		-110-3B-C							●	110											145		
		-50-3C-C							●	50											65		
	-65-3C-C		●	65	85																		
	-85-3C-C		●	85	110																		
	-110-3C-C		●	110	145																		
	15	No Set Description. Please order Toolholder and Blade separately.	KGDSL16-C	●		KGDFL -25-3A-C		●	1.00	0.260		1.00	5.91		2.15	0.591		2.07	0.512	3		25	30
						-30-3A-C		●														30	40
						-40-3A-C		●														40	50
						-50-3B-C		●														50	65
						-65-3B-C		●														65	85
-85-3B-C							●	85														110	
-110-3B-C							●	110														145	
-50-3C-C							●	50														65	
-65-3C-C		●	65	85																			
-85-3C-C		●	85	110																			
-110-3C-C		●	110	145																			

- R-hand Blade for R-hand Toolholder, L-hand Blade for L-hand Toolholder
- Blade and toolholder are available to assemble when purchasing individually.
- Insert clamp bolt (BH6x10TR)/Blade fixing bolt (SB-60120TR) come with toolholder.

KGDF Face Grooving 90°

KGDF Face Grooving 90° Toolholders (Inch-Size)



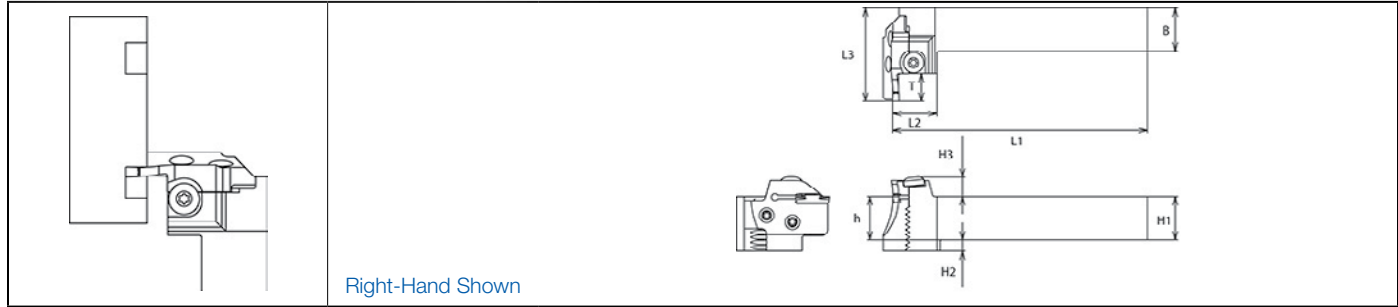
● Toolholder Dimensions (4mm width)

Shank Angle	Width (mm)	Maximum Grooving Depth (mm)	Unit	Set Description	Toolholder Description (Ref. ➡ Pg. 17)	Stock		Blade Description (Ref. ➡ Pg. 37)	Stock		Dimension (inch)								Choose insert with the width (mm) shown below (Ref. ➡ Pg.20)	Face Grooving Dia. øD (mm)	
						R	L		R	L	H1=h	H2	H3	B	L1	L2	F1	T		W	MIN
90°	4	13	Right Hand	No Set Description. Please order Toolholder and Blade separately.	KGDSR12-C	●		KGDFR -25-4A-C	●		0.75	0.510		0.75	4.93		2.07	0.512	4	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						●		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																		
90°	4	13	Right Hand	No Set Description. Please order Toolholder and Blade separately.	KGDSR16-C	●		KGDFR -25-4A-C	●		1.00	0.260		1.00	5.91		2.07	0.512	4	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						●		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																		
90°	4	13	Left Hand	No Set Description. Please order Toolholder and Blade separately.	KGDSL12-C	●		KGDFL -25-4A-C		●	0.75	0.510		0.75	4.93		2.07	0.512	4	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							●	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																
		13	Left Hand	No Set Description. Please order Toolholder and Blade separately.	KGDSL16-C	●		KGDFL -25-4A-C		●	1.00	0.260		1.00	5.91		2.07	0.512	4	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							●	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																		

- R-hand Blade for R-hand Toolholder, L-hand Blade for L-hand Toolholder
- Blade and toolholder are available to assemble when purchasing individually.
- Insert clamp bolt (BH6x10TR)/Blade fixing bolt (SB-60120TR) come with toolholder.

KGDF Face Grooving 90°

KGDF Face Grooving 90° Toolholders (Inch-Size)



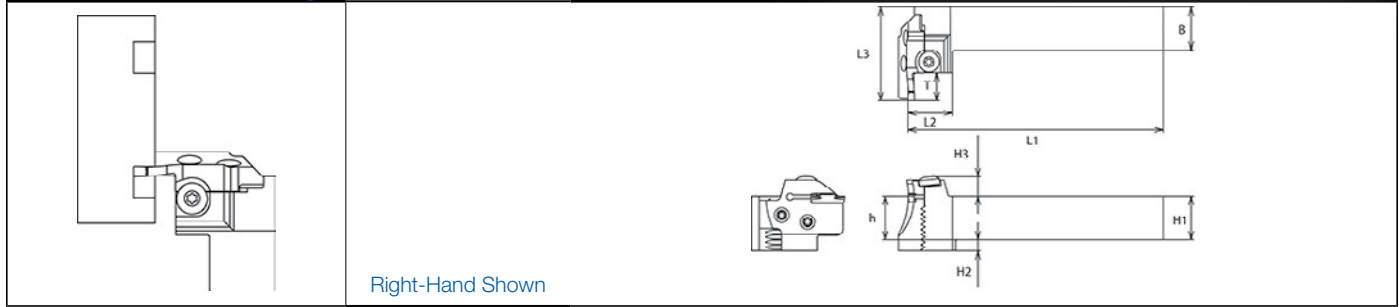
● Toolholder Dimensions (6mm width)

Shank Angle	Width (mm)	Maximum Grooving Depth (mm)	Unit	Set Description	Toolholder Description (Ref. ➡ Pg. 17)	Stock		Blade Description (Ref. ➡ Pg. 37)	Stock		Dimension (inch)								Choose insert with the width (mm) shown below (Ref. ➡ Pg.20)	Face Grooving Dia. øD (mm)	
						R	L		R	L	H1=h	H2	H3	B	L1	L2	F1	T	W	MIN	MAX
90°	6	15	Right Hand	No Set Description. Please order Toolholder and Blade separately.	KGDSR12-C	●	KGDFR -25-6B-C	●		0.75	0.510	0.75	4.93	2.15	0.591	6	25	35			
		-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					●		2.35					0.787	25		35				
		-35-6C-C					●		35					50							
		-50-6C-C					●		50					75							
		-75-6C-C					●		75					115							
		-115-6C-C					●		2.55					0.984	115		180				
	-180-6C-C	●		180	235																
	-235-6C-C	●		235																	
	15	No Set Description. Please order Toolholder and Blade separately.	KGDSR16-C	●	KGDFR -25-6B-C	●		1.00	0.260	0.457	1.00	5.91	2.15	0.591	25		35				
					-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	●							2.35	0.787	25		35				
					-35-6C-C	●							35	50							
					-50-6C-C	●							50	75							
-75-6C-C					●		75						115								
-115-6C-C					●		2.55						0.984	115	180						
-180-6C-C	●		180	235																	
-235-6C-C	●		235																		
90°	6	15	Left Hand	No Set Description. Please order Toolholder and Blade separately.	KGDSL12-C	●	KGDFL -25-6B-C		●	0.75	0.510	0.75	4.93	2.15	0.591	6	25	35			
		-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						●	2.35					0.787	25		35				
		-35-6C-C						●	35					50							
		-50-6C-C						●	50					75							
		-75-6C-C						●	75					115							
		-115-6C-C						●	2.55					0.984	115		180				
	-180-6C-C		●	180	235																
	-235-6C-C		●	235																	
	15	No Set Description. Please order Toolholder and Blade separately.	KGDSL16-C	●	KGDFL -25-6B-C		●	1.00	0.260	0.457	1.00	5.91	2.15	0.591	25		35				
					-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		●						2.35	0.787	25		35				
					-35-6C-C		●						35	50							
					-50-6C-C		●						50	75							
-75-6C-C						●	75						115								
-115-6C-C						●	2.55						0.984	115	180						
-180-6C-C		●	180	235																	
-235-6C-C		●	235																		

- R-hand Blade for R-hand Toolholder, L-hand Blade for L-hand Toolholder
- Blade and toolholder are available to assemble when purchasing individually.
- Insert clamp bolt (BH6x10TR)/Blade fixing bolt(SB-60120TR) come with toolholder.

● : Stock Standard ○ : World Express

KGDF Face Grooving 90° Toolholders (Metric-Size)



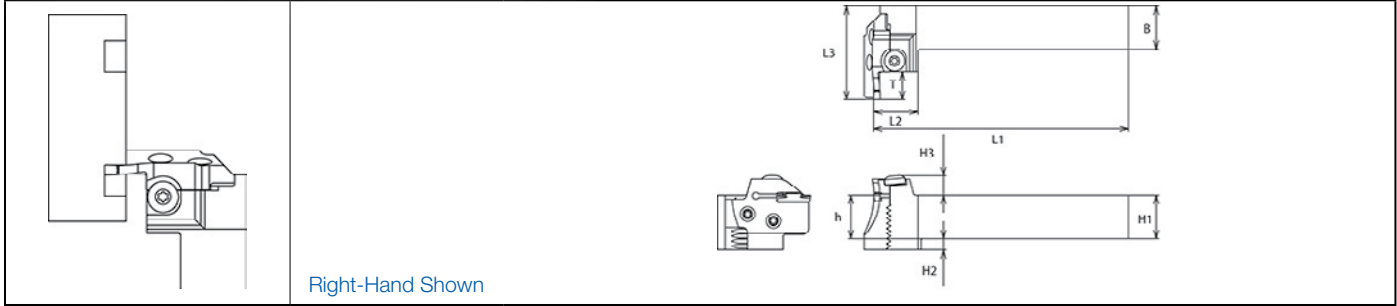
Toolholder Dimensions (3mm width)

Shank Angle	Width (mm)	Maximum Grooving Depth (mm)	Unit	Set Description	Toolholder Description (Ref. ➡ Pg. 17)	Stock		Blade Description (Ref. ➡ Pg. 37)	Stock		Dimension (mm)								Choose insert with the width (mm) shown below (Ref. ➡ Pg.20)	Face Grooving Dia. øD (mm)	
						R	L		R	L	H1=h	H2	H3	B	L1	L2	F1	T		W	MIN
90°	3	13	Right Hand	No Set Description. Please order Toolholder and Blade separately.	KGDSR2020-C	○		KGDFR -25-3A-C	●		20	12		20	125		52.7	13	3	25	30
		-30-3A-C						●		30										40	
		-40-3A-C						●		40										50	
		-50-3B-C						●		50										65	
		-65-3B-C						●		65										85	
		-85-3B-C						●		85										110	
		-110-3B-C						●		110										145	
		-50-3C-C						●		50										65	
		-65-3C-C						●		65										85	
		-85-3C-C						●		85										110	
		-110-3C-C						●		110										145	
		15		No Set Description. Please order Toolholder and Blade separately.	KGDSR2525-C	○		KGDFR -25-3A-C	●		25	7	11.6	25	150		54.7	15	3	25	30
		-30-3A-C						●		30										40	
		-40-3A-C						●		40										50	
22	No Set Description. Please order Toolholder and Blade separately.	KGDSR2525-C	○		-50-3B-C	●		25	7	11.6	25	150		54.7	15	3	50	65			
-65-3B-C					●		65										85				
-85-3B-C					●		85										110				
-110-3B-C					●		110										145				
-50-3C-C					●		50										65				
-65-3C-C					●		65										85				
25	No Set Description. Please order Toolholder and Blade separately.	KGDSR2525-C	○		-85-3C-C	●		25	7	11.6	25	150		54.7	15	3	85	110			
-110-3C-C					●		110										145				
-50-3C-C					●		50										65				
-65-3C-C					●		65										85				
-85-3C-C					●		85										110				
-110-3C-C					●		110										145				
90°	3	13	Left Hand	No Set Description. Please order Toolholder and Blade separately.	KGDSL2020-C	○		KGDFL -25-3A-C		●	20	12		20	125		52.7	13	3	25	30
		-30-3A-C							●	30										40	
		-40-3A-C							●	40										50	
		-50-3B-C							●	50										65	
		-65-3B-C							●	65										85	
		-85-3B-C							●	85										110	
		-110-3B-C							●	110										145	
		-50-3C-C							●	50										65	
		-65-3C-C							●	65										85	
		-85-3C-C							●	85										110	
		-110-3C-C							●	110										145	
		15		No Set Description. Please order Toolholder and Blade separately.	KGDSL2525-C	○		KGDFL -25-3A-C		●	25	7	11.6	25	150		54.7	15	3	25	30
		-30-3A-C							●	30										40	
		-40-3A-C							●	40										50	
22	No Set Description. Please order Toolholder and Blade separately.	KGDSL2525-C	○		-50-3B-C		●	25	7	11.6	25	150		54.7	15	3	50	65			
-65-3B-C						●	65										85				
-85-3B-C						●	85										110				
-110-3B-C						●	110										145				
-50-3C-C						●	50										65				
-65-3C-C						●	65										85				
25	No Set Description. Please order Toolholder and Blade separately.	KGDSL2525-C	○		-85-3C-C		●	25	7	11.6	25	150		54.7	15	3	85	110			
-110-3C-C						●	110										145				
-50-3C-C						●	50										65				
-65-3C-C						●	65										85				
-85-3C-C						●	85										110				
-110-3C-C						●	110										145				

- R-hand Blade for R-hand Toolholder, L-hand Blade for L-hand Toolholder
- Blade and toolholder are available to assemble when purchasing individually.
- Insert clamp bolt (BH6x10TR)/Blade fixing bolt(SB-60120TR) come with toolholder.

KGDF Face Grooving 90°

KGDF Face Grooving 90° Toolholders (Metric-Size)



● Toolholder Dimensions (4mm width)

Shank Angle	Width (mm)	Maximum Grooving Depth (mm)	Unit	Set Description	Toolholder Description (Ref. ➡ Pg. 17)	Stock		Blade Description (Ref. ➡ Pg. 37)	Stock		Dimension (mm)										Choose insert with the width (mm) shown below (Ref. ➡ Pg.20)	Face Grooving Dia. øD (mm)	
						R	L		R	L	H1=h	H2	H3	B	L1	L2	F1	T	W	MIN		MAX	
90°	4	13	Right Hand	No Set Description. Please order Toolholder and Blade separately.	KGDSR2020-C	○		KGDFR -25-4A-C	●		20	12		20	125		52.7	13	4	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						●		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																				
90°	4	13	Right Hand	No Set Description. Please order Toolholder and Blade separately.	KGDSR2525-C	○		KGDFR -25-4A-C	●		25	7	11.6	25	150		52.7	13	4	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						●		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																				
90°	4	13	Left Hand	No Set Description. Please order Toolholder and Blade separately.	KGDSL2020-C	○		KGDFL -25-4A-C		●	20	12		20	125		52.7	13	4	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							●	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																		
		13	Left Hand	No Set Description. Please order Toolholder and Blade separately.	KGDSL2525-C	○		KGDFL -25-4A-C		●	25	7	11.6	25	150		52.7	13		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							●	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																				

- R-hand Blade for R-hand Toolholder, L-hand Blade for L-hand Toolholder
- Blade and toolholder are available to assemble when purchasing individually.
- Insert clamp bolt (BH6x10TR)/Blade fixing bolt (SB-60120TR) come with toolholder.

KGDF Face Grooving 90° Toolholders (Metric-Size)



- R-hand Blade for R-hand Toolholder, L-hand Blade for L-hand Toolholder
- Blade and toolholder are available to assemble when purchasing individually.
- Insert clamp bolt (BH6x10TR)/Blade fixing bolt(SB-60120TR) come with toolholder.

35

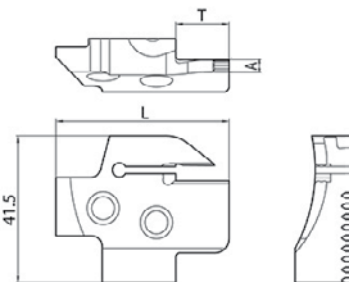
KGDF Face Grooving 90°Toolholders (Metric-Size)



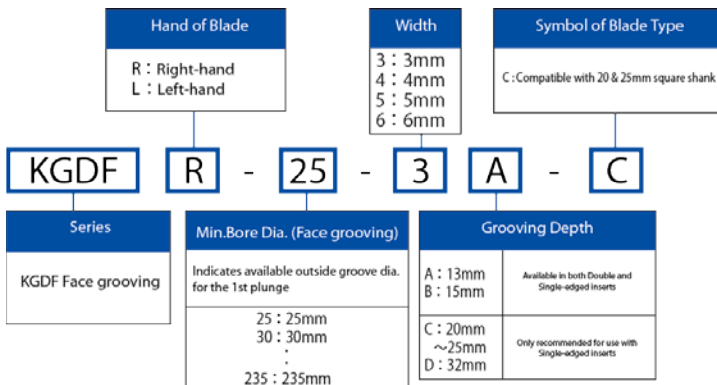
- R-hand Blade for R-hand Toolholder, L-hand Blade for L-hand Toolholder
- Blade and toolholder are available to assemble when purchasing individually.
- Insert clamp bolt (BH6x10TR)/Blade fixing bolt (SB-60120TR) come with toolholder.

KGDF Face Grooving Blade

● KGDF Blade Dimensions (inch)

Shape	Description of Blade	Stock		Dimension (inch)			Face Grooving Dia. øD (inch)		Applicable Inserts (Ref. ➡ Pg.20)	Toolholder Description (Ref. ➡ Pg. 17)		
		R	L	L	T	A	MIN	MAX				
 Right-hand Shown	KGDF ^{R/L}	-25-3A-C	●	●	1.86	0.512	0.08	0.98	1.18	GDFM 3020N-030GM GDFM 3020N-030DM GDFMS 3020N-030DM		
		-30-3A-C	●	●				1.18	1.57			
		-40-3A-C	●	●				1.57	1.97			
		-50-3B-C	●	●	1.94	0.591		1.97	2.56			
		-65-3B-C	●	●				2.56	3.35			
		-85-3B-C	●	●				3.35	4.33			
		-110-3B-C	●	●	2.22	0.866		4.33	5.71			
		-50-3C-C	●	●				1.97	2.56			
		-65-3C-C	●	●				2.56	3.35			
		-85-3C-C	●	●	2.34	0.984		3.35	4.33			
	-110-3C-C	●	●	4.33				5.71				
	KGDF ^{R/L}	-25-4A-C	●	●	1.86	0.512	0.12	0.98	1.38	GDFM 4020N-040GM GDFM 4020N-040DM GDFMS 4020N-040DM		
		-35-4B-C	●	●				1.38	1.97			
		-50-4B-C	●	●	1.94	0.591		1.97	2.76			
		-70-4B-C	●	●				2.76	3.94			
		-100-4B-C	●	●				3.94	5.91			
		-150-4B-C	●	●	2.34	0.984		5.91	8.66			
		-220-4B-C	●	●				8.66				
		-35-4C-C	●	●				1.38	1.97			
		-50-4C-C	●	●				1.97	2.76			
		-70-4C-C	●	●	2.34	0.984		2.76	3.94			
		-100-4C-C	●	●				3.94	5.91			
		-150-4C-C	●	●	2.14	0.787		5.91	8.66			
		-220-4C-C	●	●				8.66				
		KGDF ^{R/L}	-25-5B-C	●	●	1.94		0.591	0.16			0.98
	-35-5B-C		●	●	1.38		1.97					
	-50-5B-C		●	●	1.97		2.95					
	-75-5B-C		●	●	2.34	0.984	2.95	4.53				
	-115-5B-C		●	●			4.53	7.09				
	-180-5B-C		●	●			7.09	9.25				
	-235-5B-C		●	●	2.14	0.787	9.25					
	-25-5C-C		●	●			0.98	1.38				
	-35-5C-C		●	●			1.38	1.97				
	-50-5C-C		●	●	2.34	0.984	1.97	2.95				
	-75-5C-C		●	●			2.95	4.53				
	-115-5C-C		●	●			4.53	7.09				
	-180-5C-C		●	●	2.61	1.260	7.09	9.25				
	-235-5C-C		●	●			9.25					
	-75-5D-C		●	●	2.14	0.787	2.95	4.53				
	-115-5D-C		●	●			4.53	7.09				
	-180-5D-C		●	●	2.34	0.984	7.09	9.25				
	-235-5D-C		●	●			9.25					
	KGDF ^{R/L}	-25-6B-C	●	●	1.94	0.591	0.20	0.98	1.38	GDFM 6020N-040GM GDFM 6020N-040DM GDFMS 6020N-040DM		
		-35-6B-C	●	●				1.38	1.97			
		-50-6B-C	●	●				1.97	2.95			
		-75-6B-C	●	●	2.34	0.984		2.95	4.53			
		-115-6B-C	●	●				4.53	7.09			
		-180-6B-C	●	●				7.09	9.25			
		-235-6B-C	●	●	2.14	0.787		9.25				
		-25-6C-C	●	●				0.98	1.38			
		-35-6C-C	●	●				1.38	1.97			
		-50-6C-C	●	●	2.34	0.984		1.97	2.95			
		-75-6C-C	●	●				2.95	4.53			
		-115-6C-C	●	●				4.53	7.09			
		-180-6C-C	●	●	2.61	1.260		7.09	9.25			
		-235-6C-C	●	●				9.25				
		-75-6D-C	●	●	2.14	0.787		2.95	4.53			
		-115-6D-C	●	●				4.53	7.09			
		-180-6D-C	●	●	2.34	0.984		7.09	9.25			
		-235-6D-C	●	●				9.25				

● Indication of Blade for Face Groove



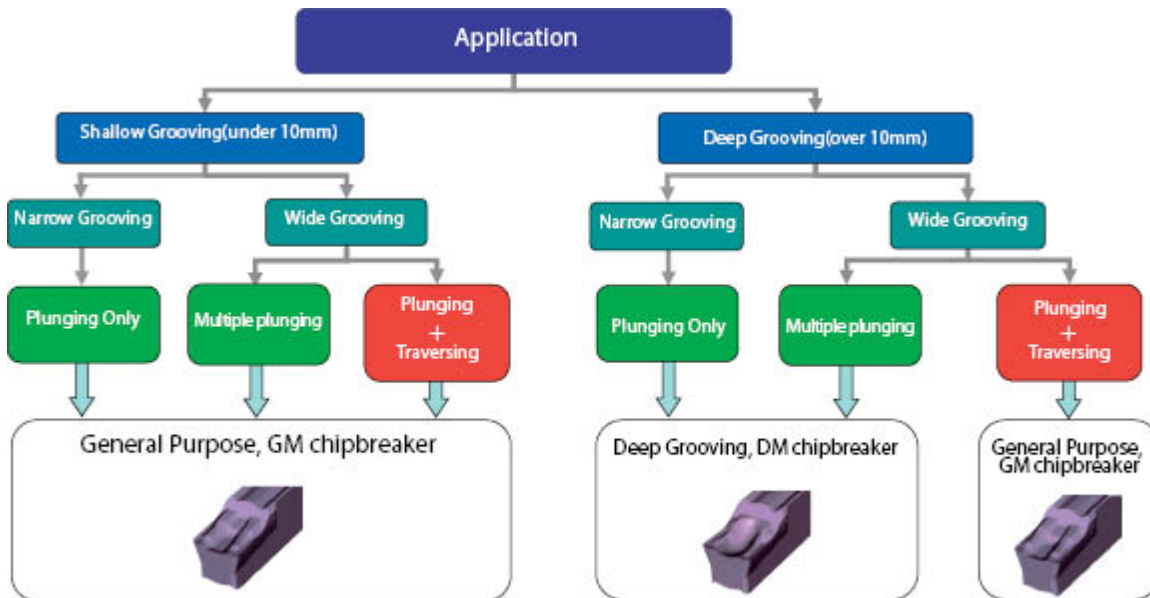
KGDF Cutting Conditions

Recommended Cutting Conditions (Face Grooving)

Workpiece Material	Recommended Insert Grade Cutting Speed (sfm)			Remarks
	Cermet	MEGACOAT		
	TN90	PR1225	PR1215	
Carbon Steel (SxxC)	☆ 325~720	★ 250~650	☆ 325~650	Coolant Recommended
Alloy Steel (SCM)	☆ 260~650	★ 225~600	☆ 260~590	
Stainless Steel (SUS304)	☆ 230~790	★ 200~500	☆ 200~500	
Cast Iron (FC FCD)	-	-	★ 325~650	
Aluminum	-	-	-	
Brass	-	-	-	

★ : 1st Recommendation ☆ : 2nd Recommendation

Chipbreaker Selection (Face Grooving)

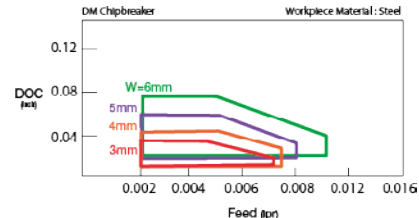
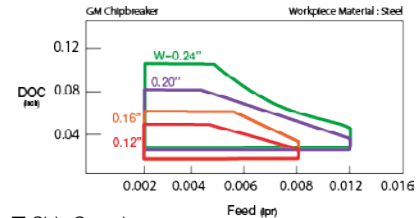
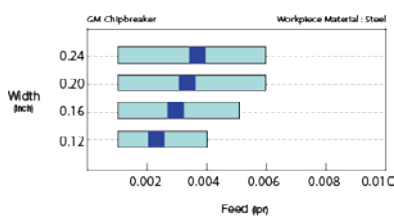


※ Please try DM chipbreaker when experiencing unstable chip evacuation

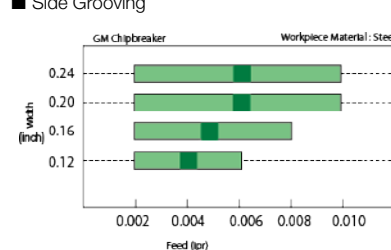
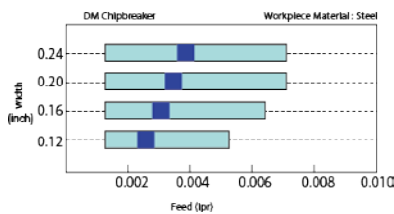
Recommended Cutting Conditions (f, ap)

■ Grooving

■ Traversing



※ DM Chipbreaker Max. Depth of Cut: Edge width x 0.3



Keys to Face Grooving

1) Toolholder Selection

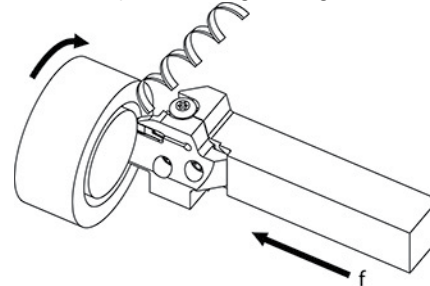
Check available min and max dia as well as width and depth.

2) Feed rate

Set proper feed rate to create continuous chips for face grooving on steel.

3) Expand groove width (Plunging, Traversing)

Recommend traversing from outside to inside to get better chip evacuation



Plunging (Face & Side grooving)	Traversing

4) Traversing

A. To remove over 0.5mm depth of cut (cp), take the following three steps.

- ① Plunging
- ② Pull back the tool by 0.1mm
- ③ Traversing

Refer to fig.1

● To expand groove width (Refer to fig.2)

Leave steps at each pass for finishing

B. May take the following two steps continuously for less than 0.5mm D.O.C.

- ① Plunging
- ② Traversing

Traversing subsequent to grooving is possible (Refer to fig.3)

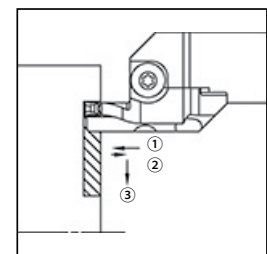
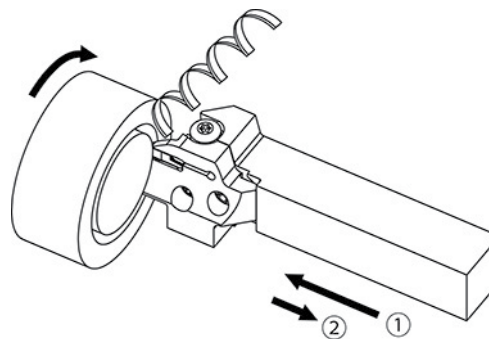


fig 1

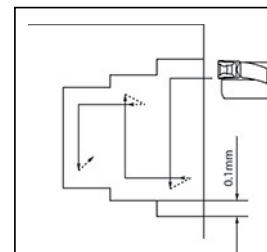


fig 2

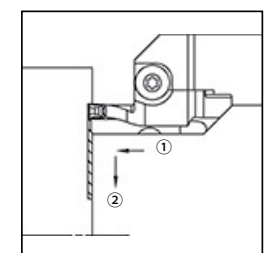
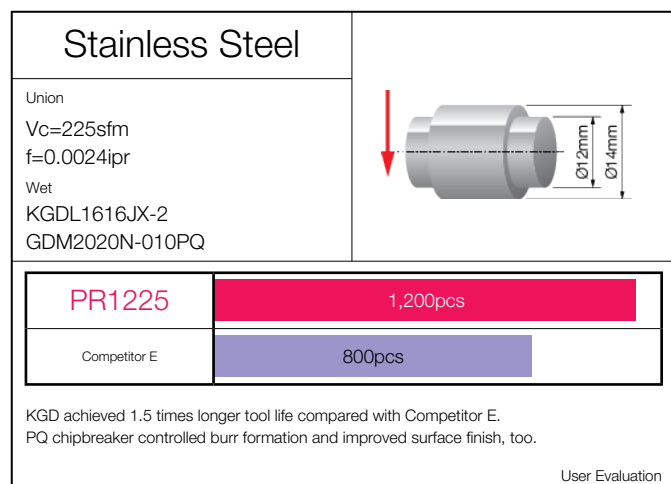
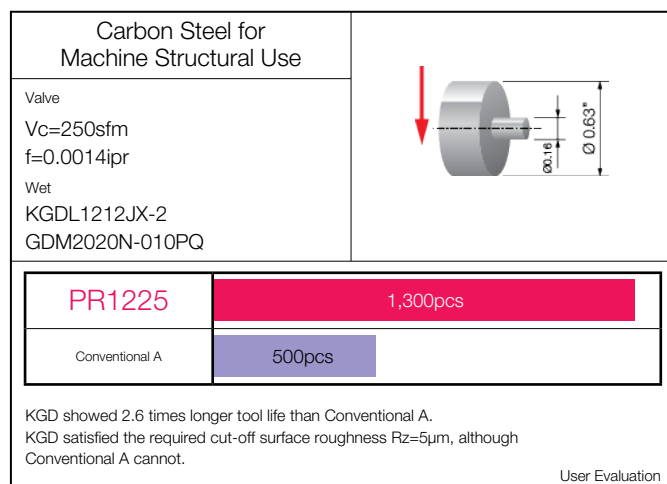
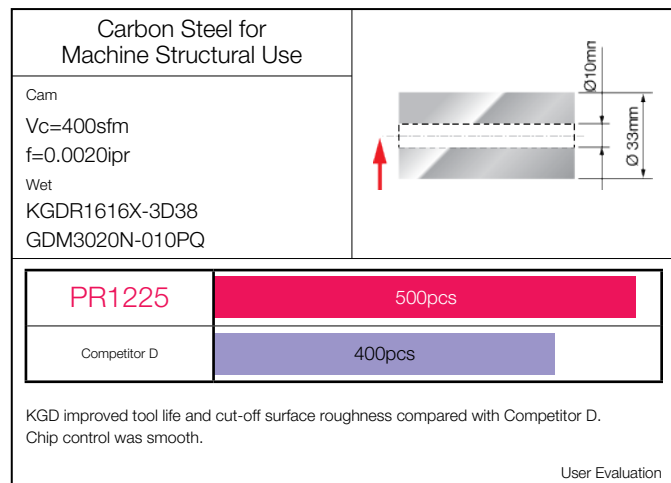
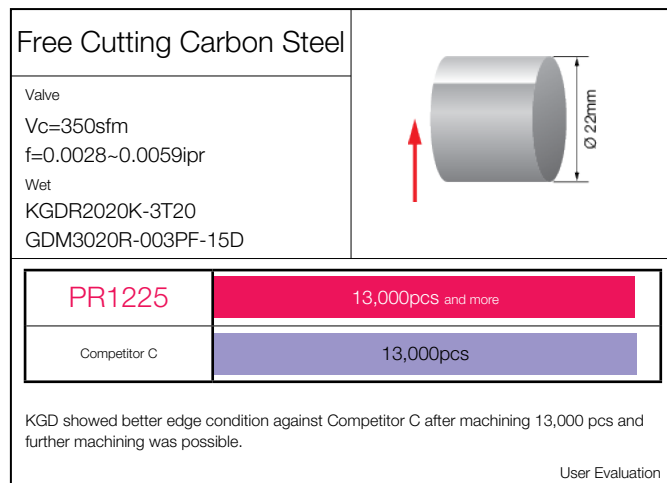
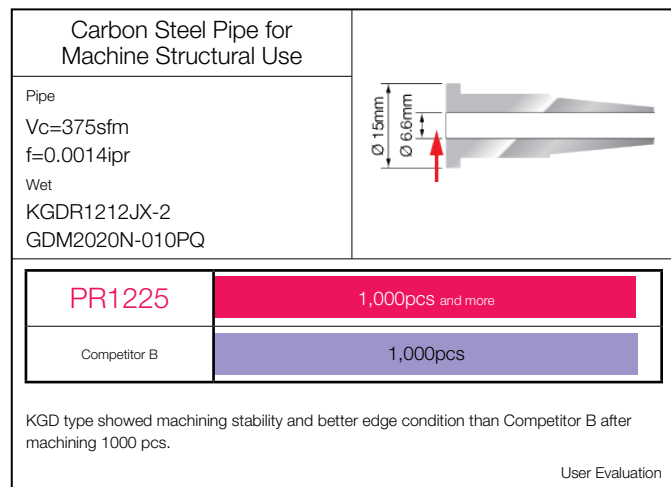
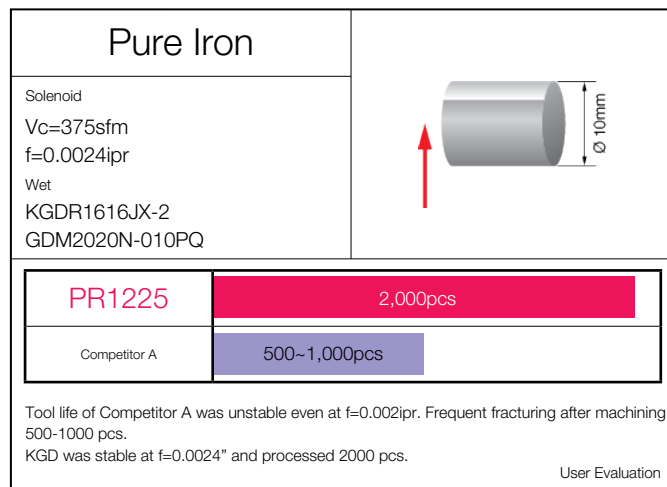


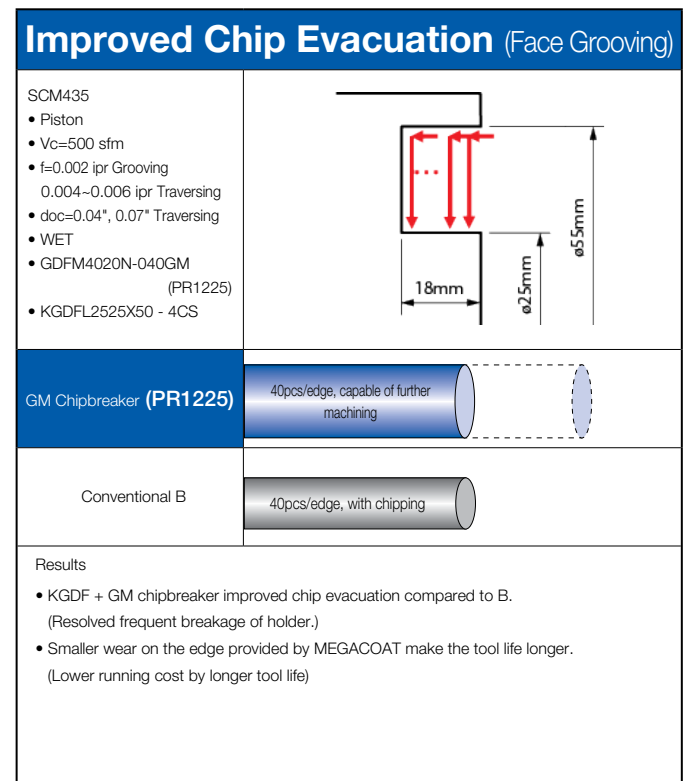
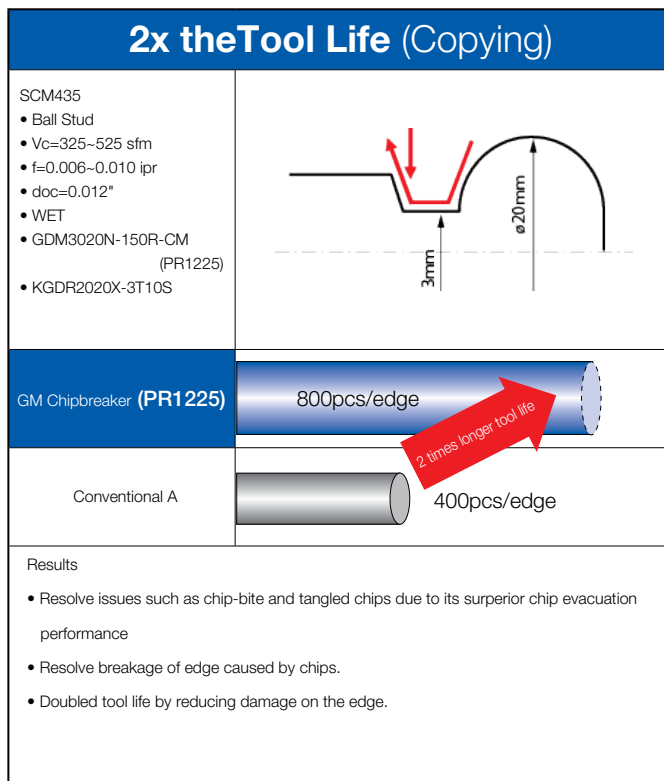
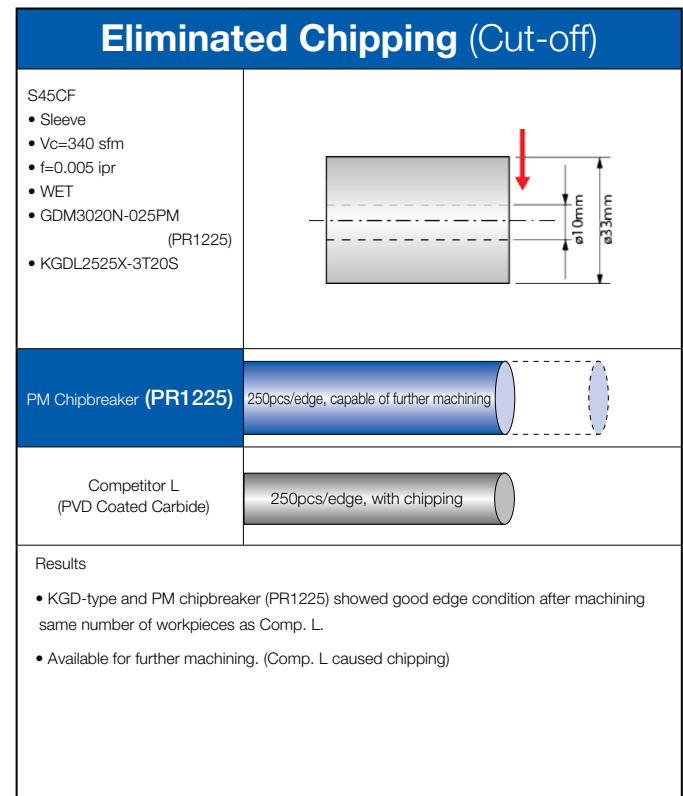
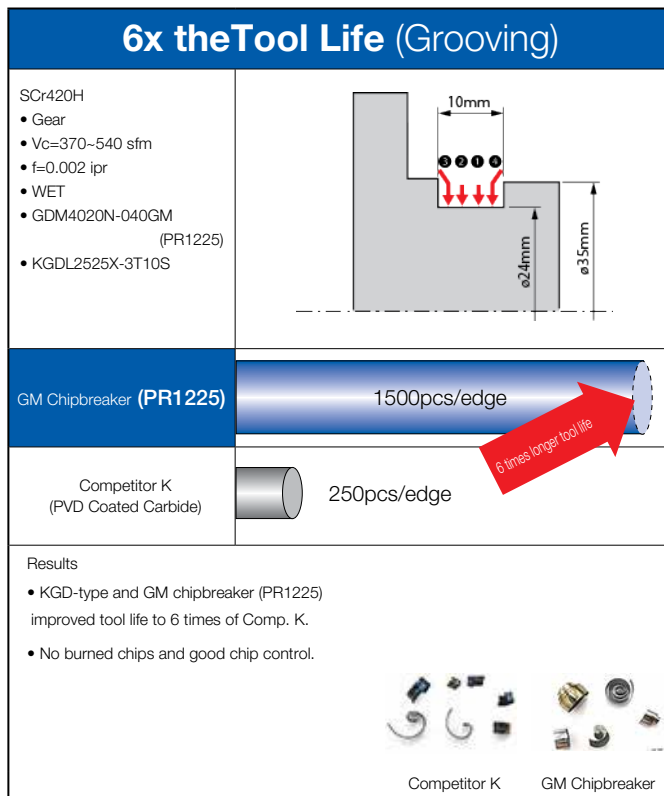
fig 3

Studies

■ Case Studies (Small Parts)



Case Studies





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