

THE NEW VALUE FRONTIER



新斷屑槽
New chipbreaker

全新槽刀!!
New Grooving Solution

新構造
New structure toolholder

新材質
New grades

新槽溝 切斷工具
New grooving and cut-off tool

端面槽溝工具
Face grooving tool

KGD / KGDF

1

徹底掌握槽溝加工

Master of Grooving

- 良好的碎屑處理 Smooth chip control
- 高精密度刀刃樣式 High precision edge preparation
- 採用MEGACOAT以延長壽命及提高效率
MEGACOAT for long tool life and high efficiency machining

2

種類豐富的刀柄規格

Various Toolholder Lineup

- 一體式刀桿齊全 Integral type toolholder with wide lineup
- 針對多品種少量生產的分離型
(0度分離, 90度分離)
Separate type toolholder for high-mix low-volume production (0 separate type, 90 separate type)
- 端面槽溝新登場 Face grooving is available

端面槽溝新登場!

ADVANCING PRODUCTIVITY

生産性向上に貢献する京セラ

● 良好的切屑處理 Good chip control

➡ 涵蓋多樣工件材種，新斷屑槽現已發行
Covers a variety of workpiece materials. New chipbreakers are now available

● 高精度之刀口 High precision edge preparation

➡ 高精度研磨技術 刀幅公差 $\pm 0.03\text{mm}$ (溝幅 2, 3, 4)
High precision molding technology tolerance $\pm 0.03\text{mm}$ (Edge width 2, 3, 4mm type)

● 採用廣受好評的MEGACOAT MEGACOAT technology

➡ 優秀的耐酸化性和耐摩耗性、實現長壽命和高效能之加工
Long tool life and high efficiency machining by high oxidation resistance and wear resistance.

● 多樣化的刀桿選擇 Various Toolholder lineup

➡ 豐富的一體型刀桿、多品種少量生產最為適合的分離型刀桿。
Integral type toolholder with wide lineup and Separate type toolholder for high-mix low-volume production are available.

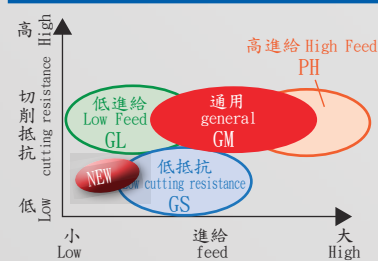
外徑溝·切斷用及橫移之刀片

Inserts lineup for External grooving, Traversing and Cut-off.

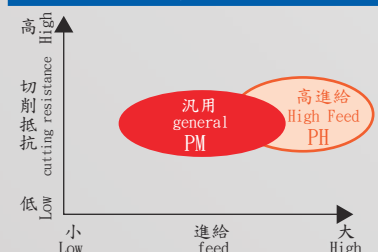
● 適用圖

Application Maps

溝·橫移 External Grooving & Traversing

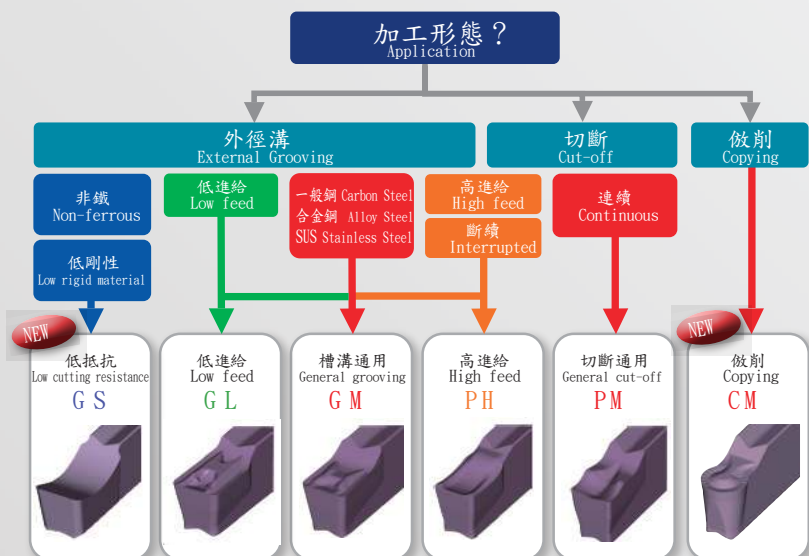


切斷 Cut-off



● 斷屑槽選擇基準 (外徑·切斷)

Chipbreaker Selection



良好的切屑處理，改善生產力

Good chip control to contribute productivity improvement

● 切屑處理比較

(SCM415 $V_c=150\text{m/min}$, $f=0.15\text{mm/rev}$)

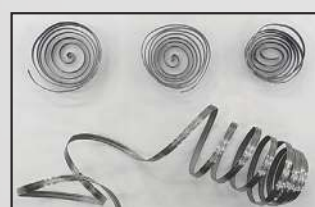
Comparison of chip control



GM 斷屑槽 GM Chipbreaker



他社品 A Comp. A



他社品 B Comp. B

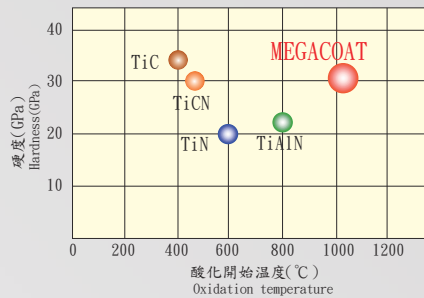
切屑處理比其他社品好 Better chip control than competitors

減少卡屑的問題 Less chip biting trouble

長壽命塗層 MEGACOAT

Long tool life coating "MEGACOAT"

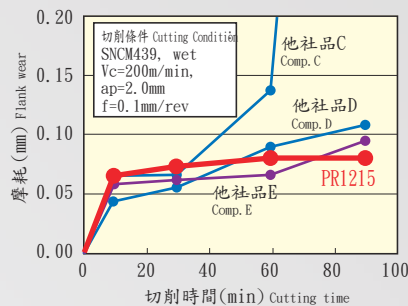
●MEGACOAT的優點特性 Features of MEGACOAT



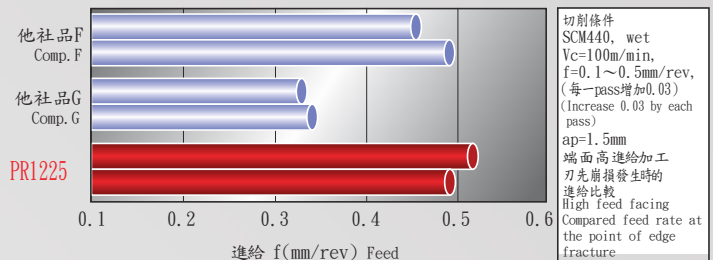
PR1225 :
切斷・槽溝・橫移加工的第一推薦材種
PR1225: 1st. Recommendation for cut-off, grooving and traversing

PR1215 :
耐摩耗性優良、安定條件下槽溝・切斷加工用
鑄鐵加工推薦
PR1215: With superior wear resistance, recommended for grooving and cut-off under the stable conditions.
1st. Recommendation for machining of cast iron.

●耐摩耗性比較 Comparison of wear resistance



●耐崩損性比較 Comparison of fracture resistance



良好的耐摩耗性、耐崩損性
Good wear resistance and fracture resistance

穩定的槽溝・切斷加工、實現長壽命
Stable cutting and long tool life at grooving and cut-off

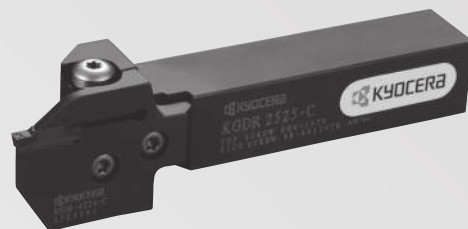
多樣化產品線

Various lineup

兩種類型支刀桿提供選擇：一體型與分離型(本體+刀板)
Available two types of toolholder, Integral type and Separate type.



一體型 integral type
(豐富的溝槽・溝深 Various groove width and depth)



分離型 separate type
(適合多樣少量之生產 Suitable for high-mix low-volume production)

端面槽溝刀桿・刀片

Toolholder and Inserts for Face grooving.



端面槽溝僅有分離型
(藉由更換刀板提供多樣化溝槽及溝深選擇)
Only separate type is available for Face grooving
(Applicable for various groove diameter by replacing blades)

●刀片夾持之特色 Features of insert clamping system

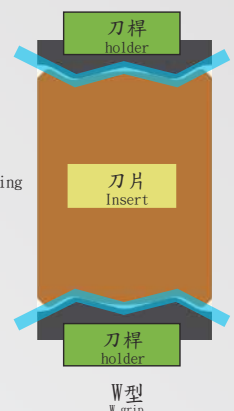
新研發「W型」提供更穩固的夾持與安定的加工
The new "W grip" is applied for more rigid clamping and stable machining.

1)防止刀片滑動造成不穩定加工及刀片崩損
Prevent the insert from side-slip causing unstable machining and insert breakage

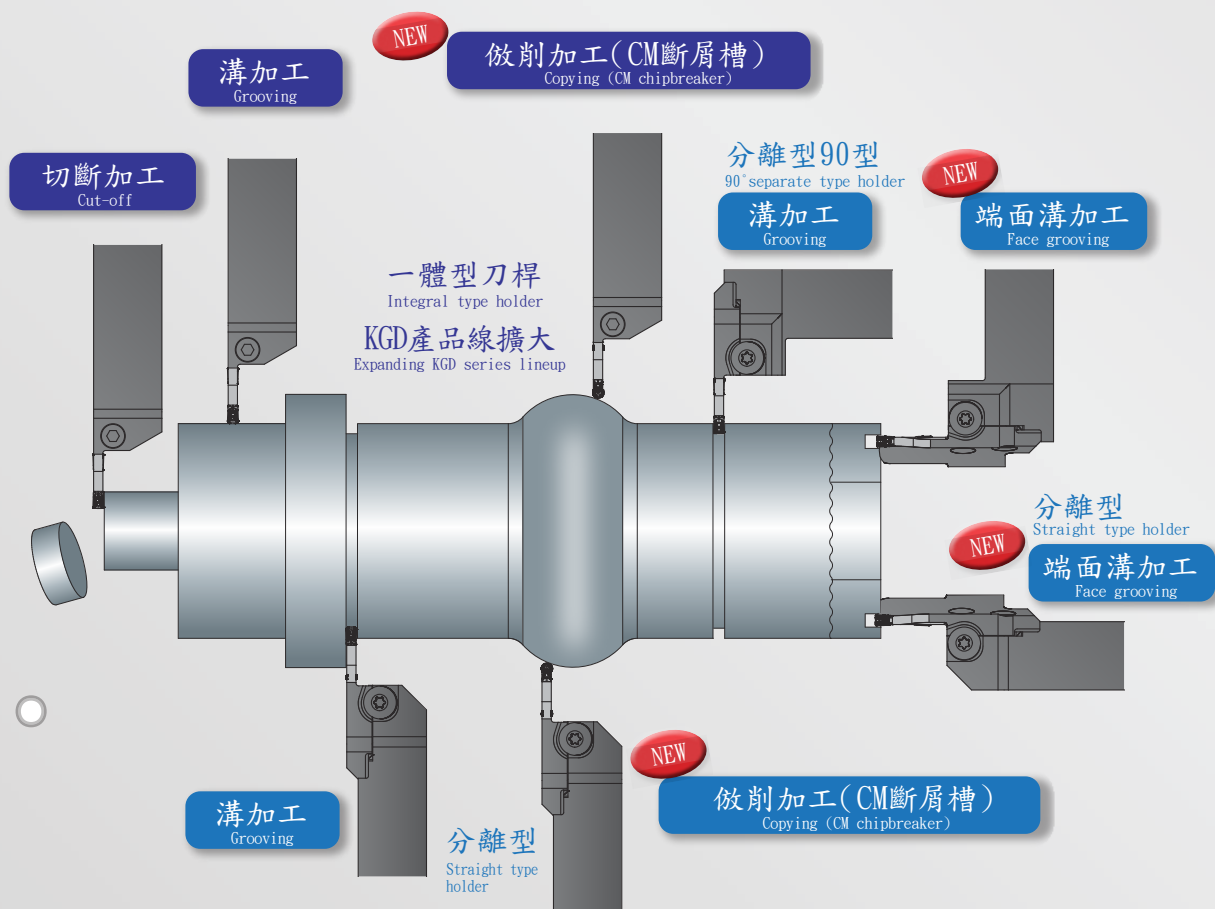
2)提升裝載刀片時的精度
Upgrade the accuracy of indexability.

高剛性・高信賴性・高夾持力
High rigidity, reliability and clamping strength.

GDFM型・GDFMS型的刀片無法使用在KGD型的刀桿上。
Insert for GDFM/GDFMS is not compatible with KGD holder.



● KGD型/KGDF型 槽溝系列 KGD / KGDF type grooving tool series



• 一體型刀桿: 寬廣的刀桿產品線

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

• 分離型刀桿: 藉由更換刀板對應多樣化端面及外徑的槽溝及切斷加工

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

● 一體型/分離型 應用參考

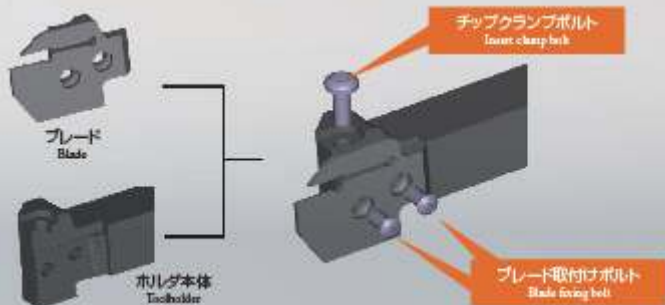
Integral type / Separate type Selection Reference

一體型 integral type	分離型 separate type
• 寬廣的刀桿產品線 Various toolholder lineup 對應多樣溝深 (淺溝 / 標準溝 / 深溝) Available for various groove depth (shallow / medium / deep) 理想的懸伸量確保 Optimum overhang length • 可對應低剛性的機台和工件 Available for low-rigid machine and workpiece • 對應狹小工作空間的車床 (自動車床、小型車床等) For small machine with limited work space (Swiss type machine, small lathe, etc.)	• 對應少量多樣之生產 Suitable for high-mix low-volume production 適合多種溝寬之加工 Suitable for grooving with various width 藉由更換刀板應用在不同溝寬 Applicable for various groove width by replacing blades • 適合難加工材料 Suitable for difficult-to-cut material 嚴苛的切削條件 Tough cutting conditions 刀桿成本減少 (可替換刀板) Toolholder cost reduction (replaceable blade) • 藉由更換刀板也可對應端面槽溝加工 Face grooving is possible by changing blade ※需注意左手及右手刀 Make sure right hand / left hand

刀桿本體+刀板組合 (外徑・橫移・切斷)

Combination of Toolholder & Blade (for grooving, traversing, cut-off)

①分離式 0° 0°separate type



刀桿本體 (KGD R/L ●● -C) Toolholder

+

刀板 (KGD R/L- ● T ●● -C) Blade

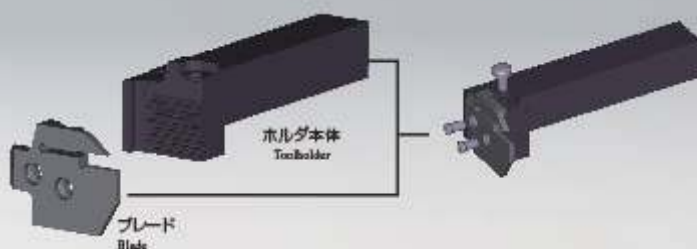
=>右手(R) 刀桿、右手(R)刀板

左手(L) 刀桿、左手(L)刀板

Right-hand Blade for Right-hand Toolholder,

Left-hand Blade for Left-hand Toolholder

②直角分離式 90° 90°separate type



刀桿本體 (KGDS R/L ●● -C) Toolholder

+

刀板 (KGD L/R- ● T ●● -C) Blade

=>右手(R) 刀桿、左手(L)刀板

左手(L) 刀桿、右手(R)刀板

Left-hand Blade for Right-hand Toolholder,

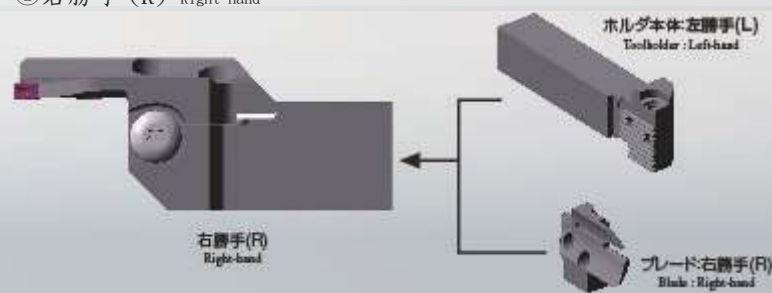
Right-hand Blade for Left-hand Toolholder

刀桿本體+刀板組合 (端面槽溝)

Combination of Toolholder & Blade (for Face Grooving)

■分離式 0° 0°separate type

①右勝手(R) Right-hand



刀桿本體 (KGD $\underline{L}$ ●● -C) Toolholder

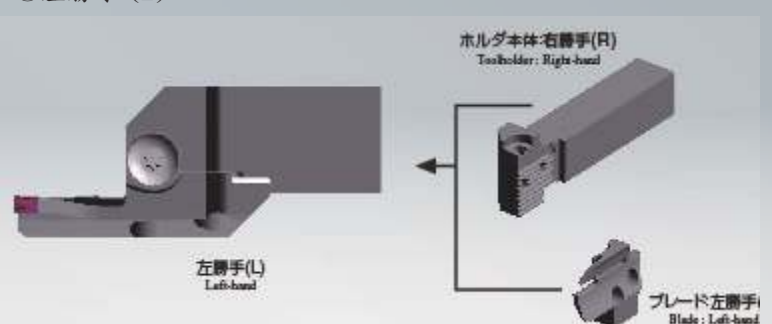
+

刀板 (KGDFR- ●● - ●● -C) Blade

全端面槽溝・右手(R) 皆適用

All face grooving toolholder (Right-hand) is applicable

②左勝手(L) Left-hand



刀桿本體 (KGD $\underline{R}$ ●● -C) Toolholder

+

刀板 (KGDFL- ●● - ●● -C) Blade

全端面槽溝・左手(L) 皆適用

All face grooving toolholder (Left-hand) is applicable

※刀桿與刀板為反方向 (僅在0度分離型)

Toolholder hand is opposite as the one assembled. (Only for 0° separate type)

■直角刀桿 90° 90°separate type



刀桿本體 (KGDS R/L ●● -C) Toolholder

+

刀板 (KGDF R/L- ●● - ●● -C) Blade

右手(R) 刀桿、右手(R) 端面槽溝

左手(L) 刀桿、左手(L) 端面槽溝

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

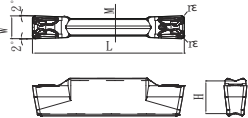
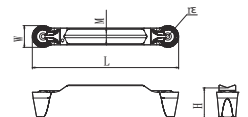
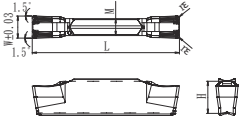
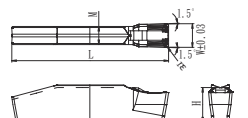
Left-hand Blade (face grooving) for Left-hand Toolholder

●適合刀片（溝・橫移）

Applicable Inserts
(Grooving & Traversing)

使用的分類 Classification of usage	P	M	K	N	S	H
	炭素鋼・合金鋼 Carbon steel, Alloy steel	不銹鋼 Stainless Steel	鑄鐵 Cast iron	非鐵金屬 Non-ferrous Material	鈦合金 Titanium alloy	高硬度材 (40HRC 以下) Hard materials (under 40HRC) 高硬度材 (40HRC 以上) Hard materials (over 40HRC)

●:連續~斷續 / 第1選擇 (Continuous - Interruption / 1st Choice)
○:連續~斷續 / 第2選擇 (Continuous - Interruption / 2nd Choice)
●:連續 / 第1選擇 (Continuous / 1st Choice)

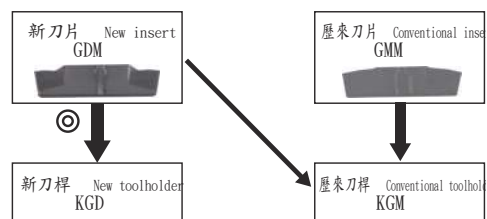
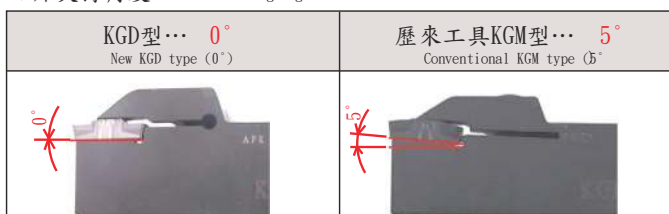
形状 Shape 顯示為右手(R)刀 Right-hand Insert shown			型番 Description	尺寸 (mm) Dimension(mm)				角度(°) Angle	寬金 Cermet	MEGACOAT		超硬 Carbide				
				W	rε	M	L	H	θ	TN90	PRI 225	PRI 215	GW15			
														公差 tolerance		
溝・橫移 Grooving & Traversing	通用 2刀 General Purpose 2-edge		GDM 2420N-020GM	2.4	0.2	1.95	20	4.3	-							
			3020N-020GM	3.0	0.2	2.3										
			3020N-040GM	±0.03	0.4	3.3										
			4020N-020GM		0.2											
			4020N-040GM		0.4											
			4020N-080GM		0.8											
			5020N-040GM	±0.04	0.4	4.2										
			5020N-080GM		0.8											
			6020N-040GM		0.4									5.2		
			6020N-080GM		0.8											
	8030N-080GM	±0.05	0.8	6	30	5.5										
	3020N-040GM	±0.03	0.4	2.3												
	4020N-040GM		0.4	3.3												
	5020N-080GM	±0.04	0.8	4.2												
	6020N-080GM		0.8	5.2												
	3020N-020GL	±0.03	0.2	2.3												
	3020N-040GL		0.4	3.3												
	4020N-020GL		0.2													
4020N-040GL	0.4															
5020N-040GL	±0.04	0.4	4.2													
6020N-040GL		0.4		5.2												
6020N-040GL		0.4														
6020N-040GL		0.4														
溝 Grooving	低抵抗 2刀 Low cutting force		GDG 2520N-020GS		2.5	0.2	2.0	20	4.3	-						
			3020N-020GS	±0.02	0.2	2.3										
			3520N-020GS		2.8											
			4020N-040GS		3.3											
			5020N-040GS		4.2											
			6020N-040GS	0.4	5.2											
			8030N-040GS		6.0	30	5.5									
			全R溝・微削 Full-R / Copying	2刀 2-edge		GDM 3020N-150R-CM	3.0								±0.03	1.5
4020N-200R-CM	4.0	2.0				3.3										
5020N-250R-CM	5.0	2.5				4.2										
6020N-300R-CM	6.0	3.0				5.2										
溝・切斷 Grooving & Traversing	高進給 2刀 High feed 2-edge		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									
	高進給 1刀 High feed 1-edge		GDMS 2020N-020PH	2.0	±0.03	0.2	1.5	20		-						
			3020N-030PH	3.0		0.3	2.3									
			4020N-030PH	4.0		0.3	3.3									

●:標準在庫 Standard Stock

※KGD型(新型)・KGM型(歷來型)刀桿刀片組合需注意的點

Combination of KGD / KGM toolholder and Insert

刀片夾持角度 Insert setting angle of KGD / KGM toolholder

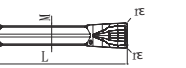
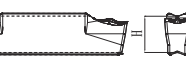
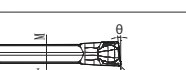
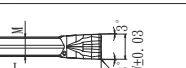
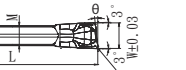


不建議將歷來刀片裝在新型刀桿上
Not recommended for installing conventional insert on new toolholder

●適合刀片

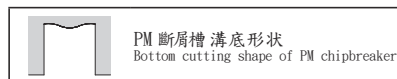
(切斷 PM 斷屑槽)

Applicable Inserts
(Cut-off PM chipbreaker)

使用的分類 Classification of usage		P 炭素鋼・合金鋼 Carbon steel, Alloy steel		M 不銹鋼 Stainless Steel		K 鑄鐵 Cast iron		N 非鐵金屬 Non-ferrous Material		S 鈦合金 Titanium alloy		H 高硬度材 (40HRC 以下) Hard materials (under 40HRC)		H 高硬度材 (40HRC 以上) Hard materials (over 40HRC)		寬金 Cermet		MEGACOAT	
		●:連續~斷續 / 第1選擇 (Continuous - Interruption / 1st Choice)		○:連續~斷續 / 第2選擇 (Continuous - Interruption / 2nd Choice)															
圖形 Diagram	型番 Description	尺寸 (mm) Dimension(mm)					角度 (°) Angle	寬金 Cermet	PRI225	PRI215									
		W 公差 tolerance	TE	M	L	H					θ								
       	GDM	2020N-020PM	2.0	±0.03	0.2	1.5	20	4.3	-		●	●							
	2520N-020PM	2.5	0.2		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°		●	●							
	2520R-020PM-6D	2.5	0.2		1.95	●				●									
	3020R-025PM-6D	3.0	0.25		2.3	●				●									
	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°		●	●							
	3020R-025PM-6D	3.0	0.25		2.3	●				●									
	4020R-030PM-6D	4.0	0.3		3.3	●				●									

注)1. 使用PM斷屑槽做加工，底部形狀並非平坦(右圖參照)。

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



●:標準在庫 Standard Stock

●刀片型番

Indication of Insert Description

精度記號 Tolerance	刀幅 Edge Width	勝手 Hand	斷屑槽記號 (外徑溝・切斷) Chipbreaker (grooving, cut-off)
M : M 級 W-Class G : G 級 G-Class	20 : 2 mm 30 : 3 mm 40 : 4 mm	R : 右勝手 Right-hand L : 左勝手 Left-hand N : 勝手無 No hand	GM:溝・橫移 Grooving & Traversing PM:切斷 Cut-off CM:銼削 Copying
G D M S 30 20 N - 025 GM			
系列名稱 Series	刀數 No. of Corners	刀片長 Insert Length	R 角 (rE) Corner-R
GD : 外徑溝・切斷 grooving, cut-off GDF: 端面槽溝 Face grooving	無記號: 2 刃 S : 1 刃 No Indication: 2-edge S: 1-edge	20 : 20 mm 30 : 30 mm	020 : 0.2mm 030 : 0.3mm 150 R ~: 1.5 mm (全R) Full-R
斷屑槽 (端面溝) Chipbreaker (Face Grooving)			
GM:通用 General Purpose DM:深溝 Deep Grooving			

安裝刀片的程序

Setting the insert (Common procedure for integrated and separate types)

1 使用吹風或其他工具讓刀片夾持的部位完全去除鐵屑(圖1參照)。

1. Make air blow or other measures to completely eliminate chips from the insert mounting part (Fig.1).

2 將刀片安裝在刀桿上，輕推讓刀片底部接觸到夾持部位的面(圖1圖2參照)。

2. Set the insert to the toolholder and push until it contacts with the toolholder's surface for fixing the insert's back end (See Fig.1 and Fig.2).

3 使用適當的扭力鎖緊夾持螺栓(建議扭力: 6.5 N·m (8 N·m 寬 8 N·m))。

3. Keeping the insert fit to the toolholder's surface, tighten the insert clamp bolt at an appropriate torque. (Recommended tightening torque: 6.5 N·m (8 N·m for 8 mm width))

4 使用前確認刀桿與刀片間沒有縫隙，並且注意刀片是否有傾斜(圖2圖3參照)。

4. Before using the unit, make sure that no gap is between the insert and the toolholder's surface, and that the insert is mounted without tilting (See Fig.2 and Fig.3).



圖 1 Fig.1

圖 2 Fig.2

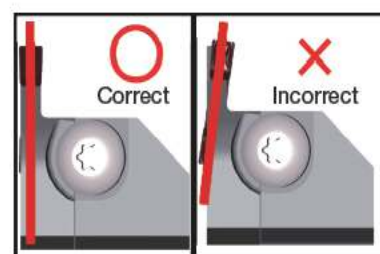
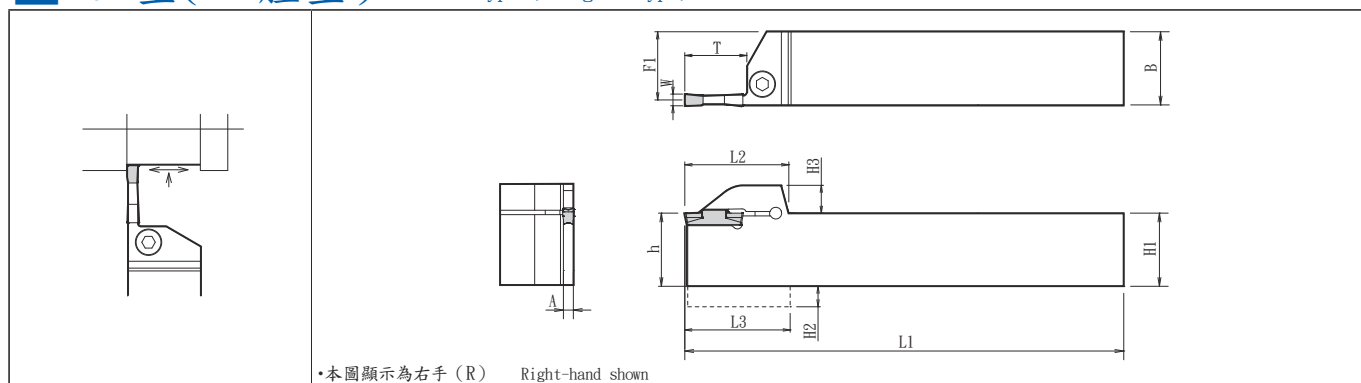


圖 3 Fig.3

KGD type (integral type)



● 刀桿尺寸 Toolholder dimensions

溝幅 Width (mm)	加工深度 Max. Grooving Depth (mm)	型番 Description	在庫 Stock		尺寸 (mm) Dimension											刃幅 W (mm) Width		部品 Spare parts		
			R	L	H1=h	H2	H3	B	L1	L2	L3	F1	A	T	MIN	MAX	紧固螺栓 Clamp Bolt	板手 Wrench		
																				
2	6	KGD R/L 1616H-2T06	▲	▲	16	4.0	9.5	16	100	27.7	28.0	15.2	1.7	6	2.0	3.0	HH5X16	LW-4		
		2020K-2T06	▲	▲	20	-		20	125	28.0	-	19.2					HH5X25			
		2525M-2T06	▲	▲	25	-		25	150	28.0	-	24.2					HH5X16			
	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		HH5X25						
		2525M-2T10	▲	▲	25	-		25	150	30.5	-	24.2		HH5X16						
	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		HH5X25						
		2020K-2T17	●	●	20	-		20	125			19.2								
		2525M-2T17	●	●	25	-		25	150			24.2								
	3	6	KGD R/L 1616H-3T06	▲	▲	16		4.0	9.5	16	100	27.7	28.0		14.8	2.4	6	3.0	4.0	HH5X16
			2020K-3T06	▲	▲	20		-		20	125	28.0	-	18.8	HH5X25					
2525M-3T06			▲	▲	25	-	25	150		28.0	-	23.8	HH5X16							
10		KGD R/L 1616H-3T10	●	●	16	4.0	16	100		30.2	30.5	14.8	10	HH5X25						
		2020K-3T10	●	●	20	-	20	125		30.5	-	18.8		HH5X16						
		2525M-3T10	●	●	25	-	25	150		-	23.8	HH5X25								
20		KGD R/L 1616H-3T20	●	●	16	4.0	16	100		34.2	34.5	14.8	20	HH5X16						
		2012K-3T20	●	●	20	-	12	125		34.5	-	10.8		HH5X25						
		2020K-3T20	●	●	20	-	20	125				18.8								
		2525M-3T20	●	●	25	-	25	150				35.5			23.8					
4		10	KGD R/L 2020K-4T10	●	●	20	-	20		125	30.5	-	18.3		3.4	10	4.0	5.0	HH5X16	LW-4
			2525M-4T10	●	●	25		25		150			23.3	HH5X25						
	KGD R/L 2020K-4T20		●	●	20	20		125	34.5	-			18.3	HH5X16						
	2525M-4T20	●	●	25	25	150		35.5	23.3	HH5X25										
	25	KGD R/L 2525M-4T25	●	●	25	25		150	40.5	23.3	25									
5	10	KGD R/L 2020K-5T10	●	●	20	-	20	125	30.5	-	17.8	4.4	10	5.0	6.0	HH5X16	LW-4			
		2525M-5T10	●	●	25		25	150			22.8					HH5X25				
	17	KGD R/L 2020K-5T17	▲	▲	20		20	125	37.5	-	17.8		17			HH5X25				
		2525M-5T17	▲	▲	25		25	150			22.8									
		KGD R/L 2525M-5T25	●	●	25		25	150			40.5						22.8	25		
6	15	KGD R/L 2525M-6T15	●	●	25	-	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	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										

注 T 尺寸：加工可能達到的溝深（T 尺寸 20mm 以上的場合，2 刃刀的溝深需在 18mm 以下）

T dimension shows the distance from the Toolholder to the cutting edge. (When using 2-edge insert, set the groove depth under 18mm.)

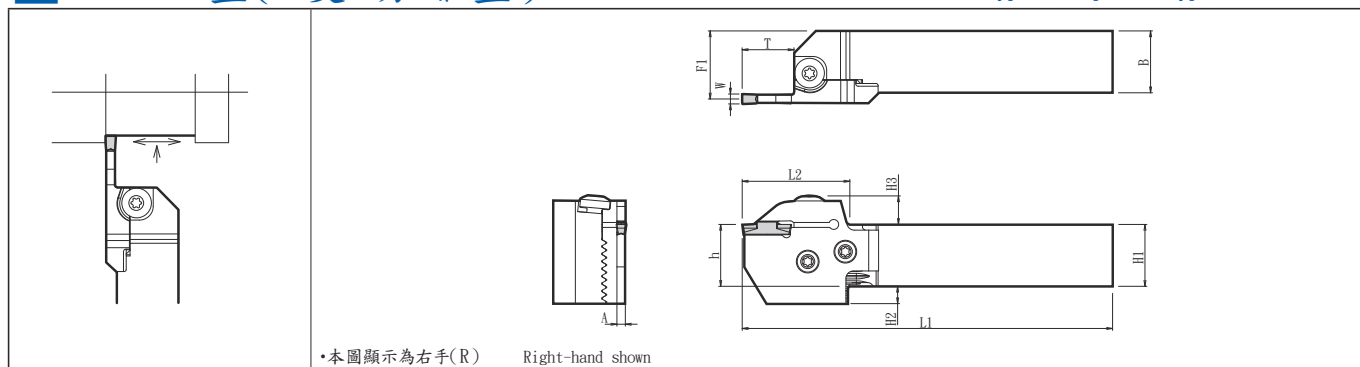
●:標準在庫 Standard Stock

▲:2011年8月預定在庫

Scheduled to be in stock August 2011

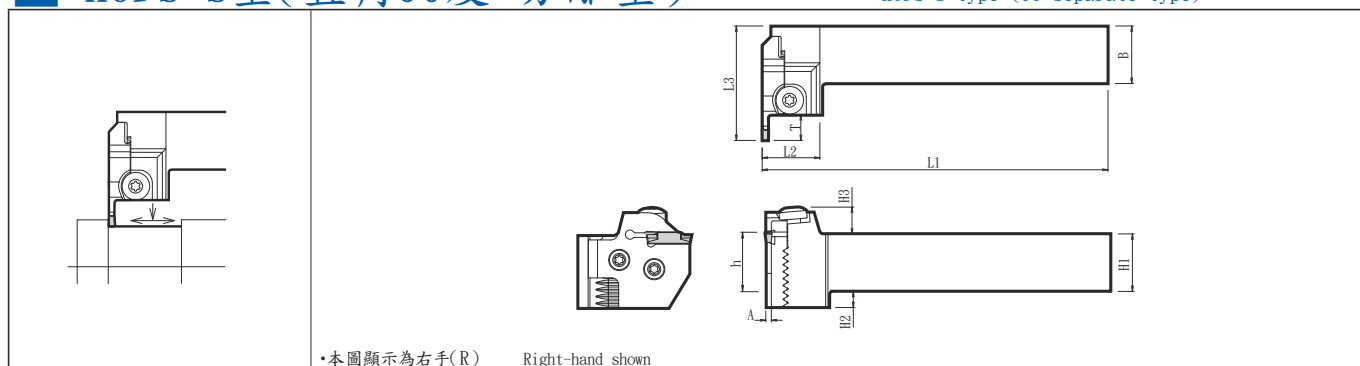
■ KGD-S型(0度 分離型)

KGD-S type (0°separate type)



■ KGDS-S型(直角90度 分離型)

KGDS-S type (90°separate type)



● 刀桿尺寸 (刀桿本體+刀板)

Toolholder dimensions (toolholder and blade)

刀桿角度 Shank Angle	溝幅 Width (mm)	加工深度 Max. Grooving Depth (mm)	組合型番 Unit Description (標準在庫型番) Std. Stock Description	在庫 Stock		本體型番 Toolholder Description P9	刀板型番 Blade Description P9	尺寸 (mm) Dimension(mm)											刀幅W(mm) Width(mm)			
				R	L			H1=h	H2	H3	B	L1	L2	L3	F1	A	T	MIN	MAX			
0°	2	17	KGD R/L 2020X-2T17S	●	●	KGD R/L 2020-C	KGD R/L-2T17-C	20	12	11.6	20	122	39.9	-	23.4	1.7	17	2.0	3.0			
			2525X-2T17S	●	●	KGD R/L 2525-C		25	7		25	147			28.4							
	3	10	KGD R/L 2020X-3T10S	●	●	KGD R/L 2020-C	KGD R/L-3T10-C	20	12		20	115	32.9		23.0		2.4			10	3.0	4.0
			2525X-3T10S	●	●	KGD R/L 2525-C		25	7		25	140			28.0							
			3232X-3T10S	●	●	KGD R/L 3232-C		32	-		32	160			33.0							
		20	KGD R/L 2020X-3T20S	●	●	KGD R/L 2020-C	KGD R/L-3T20-C	20	12		20	125	42.9		23.0	20						
			2525X-3T20S	●	●	KGD R/L 2525-C		25	7		25	150			28.0							
			3232X-3T20S	●	●	KGD R/L 3232-C		32	-		32	170			33.0							
	4	10	KGD R/L 2020X-4T10S	●	●	KGD R/L 2020-C	KGD R/L-4T10-C	20	12		20	115	32.9		22.5	3.4	10	4.0	5.0			
			2525X-4T10S	●	●	KGD R/L 2525-C		25	7		25	140			27.5							
			3232X-4T10S	●	●	KGD R/L 3232-C		32	-		32	160			32.5							
		20	KGD R/L 2020X-4T20S	●	●	KGD R/L 2020-C	KGD R/L-4T20-C	20	12		20	125	42.9		22.5					20		
			2525X-4T20S	●	●	KGD R/L 2525-C		25	7		25	150			27.5							
			3232X-4T20S	●	●	KGD R/L 3232-C		32	-		32	170			32.5							
	5	10	KGD R/L 2020X-4T25S	●	●	KGD R/L 2020-C	KGD R/L-4T25-C	20	12		20	130	47.9		22.5	4.4	25	5.0	6.0			
			2525X-4T25S	●	●	KGD R/L 2525-C		25	7		25	155			27.5							
			3232X-4T25S	●	●	KGD R/L 3232-C		32	-		32	175			32.5							
		25	KGD R/L 2020X-5T10S	●	●	KGD R/L 2020-C	KGD R/L-5T10-C	20	12		20	115	32.9		22.0					10		
			2525X-5T10S	●	●	KGD R/L 2525-C		25	7		25	140			27.0							
			3232X-5T10S	●	●	KGD R/L 3232-C		32	-		32	160			32.0							
	3	10	KGD R/L 2020X-5T25S	●	●	KGD R/L 2020-C	KGD R/L-5T25-C	20	12		20	130	47.9		22.0	25	5.0	6.0				
			2525X-5T25S	●	●	KGD R/L 2525-C		25	7		25	155			27.0							
			3232X-5T25S	●	●	KGD R/L 3232-C		32	-		32	175			32.0							
90°	3	10	KGDS R/L 2020X-3T10S	●	●	KGDS R/L 2020-C	KGDS R/L-3T10-C	20	12	11.6	20	125	25.1	49.7	-	2.4	10	3.0	4.0			
			2525X-3T10S	●	●	KGDS R/L 2525-C		25	7		25	150										

注) 1. 正常使用狀況下，刀桿可能會干涉刀具預調儀

●:標準在庫 Standard Stock

2. 刀桿和刀板型番印在刀桿上

KGD-S型：右手(R)刀桿搭配右手(R)刀板，左手(L)刀桿搭配左手(L)刀板

KGDS-S型：右手(R)刀桿搭配左手(L)刀板，左手(L)刀桿搭配右手(R)刀板

刀桿本體可搭配所有刀板，但需先確定左右手刀

3. T尺寸：加工可能達到的溝深。(T尺寸20mm以上的場合，2刃刀的溝深需在18mm以下)

Note) 1. In case of normal mounting position, toolholder body may interfere with tool presetter

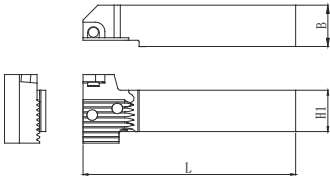
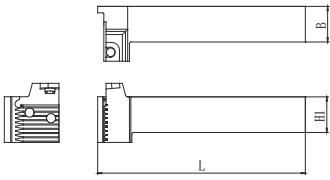
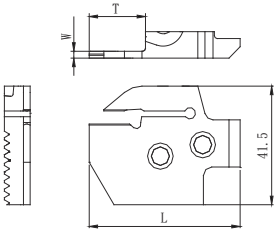
2. Toolholder description and blade description are printed on toolholder body. (Unit description is not indicated.)

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.

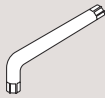
The toolholder is applicable for all blade with suitable hand.

3. T dimension shows the distance from the Toolholder to the cutting edge. (When using 2-edge insert, set the groove depth under 18mm.)

分離式(0度)本體形狀 0°separate type shape 本圖顯示為右手(R) Right-hand Shown	刀桿型番 Description of Toolholder	在庫 Stock		尺寸 (mm) Dimension(mm)		
		R	L	L	B	H1
	KG D R/L 2020-C	●	●	104	20	20
	2525-C	●	●	129	25	25
	3232-C	●	●	149	32	32
直角刀桿 (90度)本體形狀 90°separate type shape 本圖顯示為右手(R) Right-hand Shown	刀桿型番 Description of Toolholder	在庫 Stock		尺寸 (mm) Dimension(mm)		
		R	L	L	B	H1
	KGDS R/L 2020-C	●	●	122	20	20
	2525-C	●	●	147	25	25
刀板 形狀 Blade shape 本圖顯示為右手(R) Right-hand Shown	刀板型番 Description of Blade	在庫 Stock		尺寸 (mm) Dimension(mm)		
		R	L	L	T	W
	KG D R/L -2T17-C	●	●	51.2	17.2	1.7
	-3T10-C	●	●	44.2	10.2	2.4
	-3T20-C	●	●	53.2	20.2	2.4
	-4T10-C	●	●	44.2	10.2	3.4
	-4T20-C	●	●	54.2	20.2	3.4
	-4T25-C	●	●	59.2	25.2	3.4
	-5T10-C	●	●	44.2	10.2	4.4
	-5T25-C	●	●	59.2	25.2	4.4

●標準在庫 Standard Stock

●部品 Spare parts

組合の型番 Unit Description	部品 Spare parts		
	緊固螺栓 (緊固刀片用) Clamp bolt (For Insert Clamp)	緊固門 (刀板用) Fixing bolt(For Blade)	板手 Wrench
KG D \$S	 BH6X10TR	 SB-60120TR	 LTW-25

■組裝刀板(分離型刀桿) Setting the blade (Separate-type toolholder)

- 1 使用吹風或其他工具讓刀片夾持的部位完全去除鐵屑桿(圖4參照)。
1. Make air blow or other measures to completely eliminate chips and dusts from the serration part (See Fig.4).
- 2 將鋸齒狀的刀桿與刀板做緊密結合(圖5參照)。
2. Fit closely the serration joints of the blade and toolholder (See Fig.5).
- 3 用適當的扭力鎖緊刀板(建議扭力 8 N・m)(圖5參照)。
3. Tighten the blade fixing bolts at an appropriate torque (Recommended tightening torque : 8 N・m). You can tighten them in any order (See Fig.5).
- 4 裝好刀板後將刀片安裝上去
4. Set the insert after setting the blade.

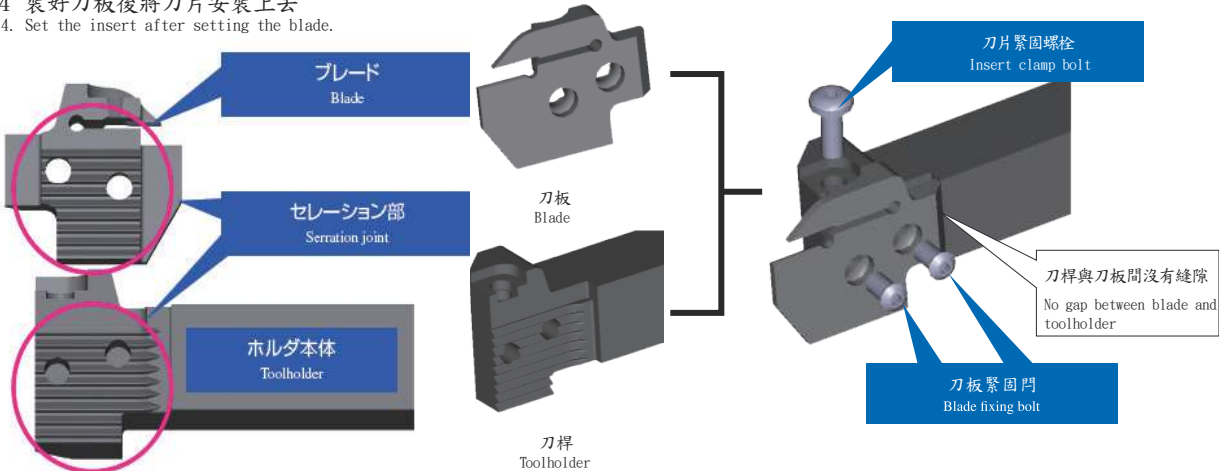


圖 4 Fig.4

圖 5 Fig.5

推薦切削條件(外徑溝・切斷)

Recommended Cutting Conditions (Grooving, Cut-off)

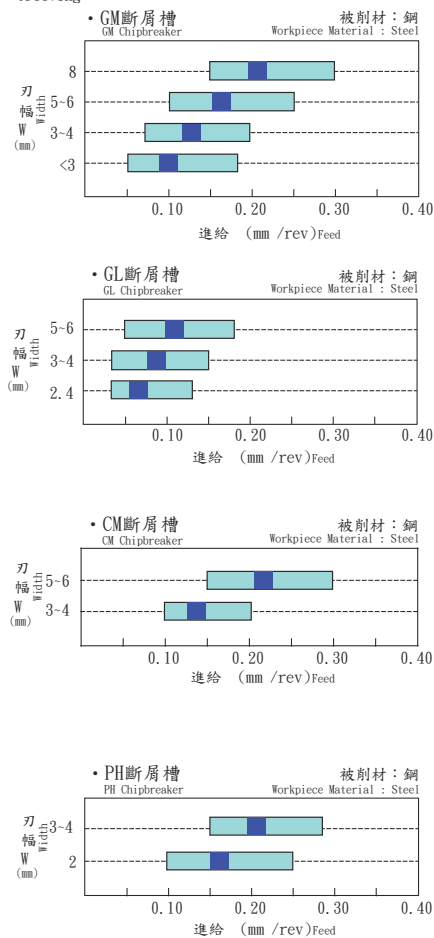
被削材 Workpiece Material	斷屑槽	推薦刀片材種(切削速度 m/min) Recommended Insert Grade(Cutting Speed/m/min)				備考
		氮化 Cermet	MEGACOAT		超硬	
		TN90	PR1225	PR1215	GW15	
炭素鋼 Carbon Steel (SxxC等)	GM GL PM PH CM GS	☆ 100~220	★ 80~200	☆ 100~200	-	溼式
合金鋼 Alloy Steel (SCM等)		☆ 80~200	★ 70~180	☆ 80~180	-	
不銹鋼 Stainless Steel (SUS304等)		☆ 70~180	★ 60~150	☆ 60~150	-	
鑄鐵 Cast Iron (FC、FCD等)		-	-	★ 100~200	-	
鋁	GS	-	-	-	★ 200~500	
黃銅		-	-	-	★ 100~200	

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

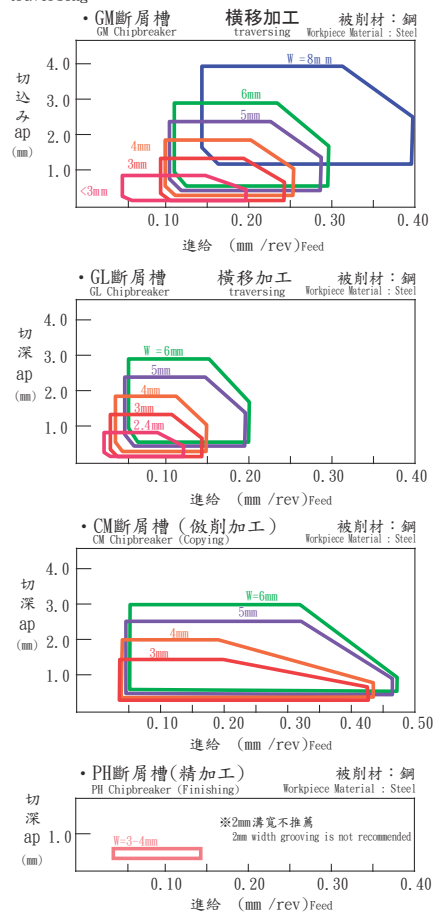
推薦切削條件(進給、切深)

Recommended Cutting Conditions (f, ap)

槽溝 Grooving



橫移 traversing



1) 上述條件為刀桿的T (溝深) 在17mm以下

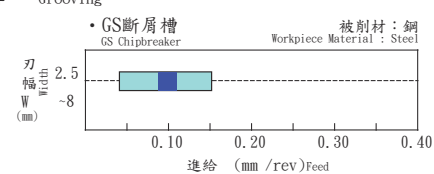
Above conditions are in case toolholder's T dimension is under 17mm

2) 若刀桿的T (溝深) 在17mm以上, 除了刀幅8mm之刀片, 其他請用90%以下之條件做橫移

In case T dimension is more than 17mm for all toolholders except 8mm insert width type, use up to 90% of recommended cutting conditions at traversing.

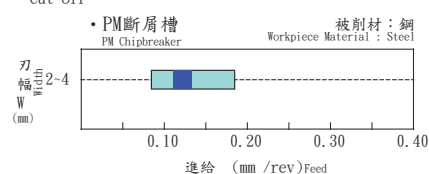
推薦切削條件(進給) Recommended Cutting Conditions (Feed)

槽溝 Grooving



GS 斷屑槽橫移時, 切深請小於R角
Set up depth of cut (ap) for traversing less than radius size.

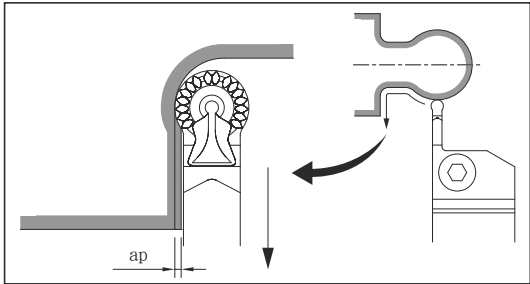
切斷 Cut-off



●CM斷屑槽〔加工時最大切深〕最大切深 (ap)的推薦

CM chip-breaker [about max. a.p. for pulling up] Recommended ap for pulling up.

型番 Description		最大切深 (ap:mm) Max. ap				
		刀桿型番 Description of Toolholder				
		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



●外徑加工的要點 Point of OD turning

・加工的要點 (I) (開槽後橫移加工的要點)

Point (I) (Traversing after grooving)

1)溝深0.5mm以上:粗加工時(圖1參照)

over 0.5mm of groove depth : For Roughing (Refer to fig 1)

開槽後，將刀桿後拉至0.1mm 再做橫移加工

(將切刃的負載朝單一方面)

Before traversing, pull the tool back by 0.1mm after grooving.
(Put the load on edge from single direction.)

2)溝深0.5mm以下:精加工時(圖2參照)

Less 0.5mm of groove depth : For Finishing (Refer to fig 2)

在開槽後直接橫移。

(不需要停留)

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

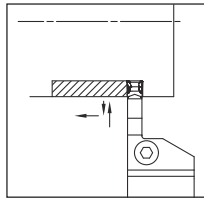


圖 1 fig 1

橫移前刀桿後拉至0.1mm
(溝深 0.5mm 以上:粗加工時)
Pull back the tool by 0.1mm before traversing
(over 0.5mm of groove depth : For Roughing)

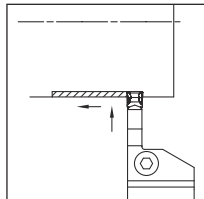


圖 2 fig 2

開槽後直接橫移
(溝深 0.5mm 以下:精加工時)
Traversing continuously after grooving
(Less 0.5mm of groove depth : For Finishing)

・加工的要點 (II)Point (II)

1)擴大溝幅の場合(圖3參照) In case of expanding groove width (Refer to fig. 3)

請用階梯式加工。 Please program to make steps at each pass.

2)最後之精加工 For finishing

(留0.5mm以上的材料會讓切屑處理更好)

(Leave the material more than 0.5mm total to get better chip control.)

注)朝向中心加工時建議降低進給速率

Caution) Recommend not feeding the tool toward to center when traversing without center.

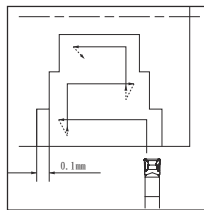
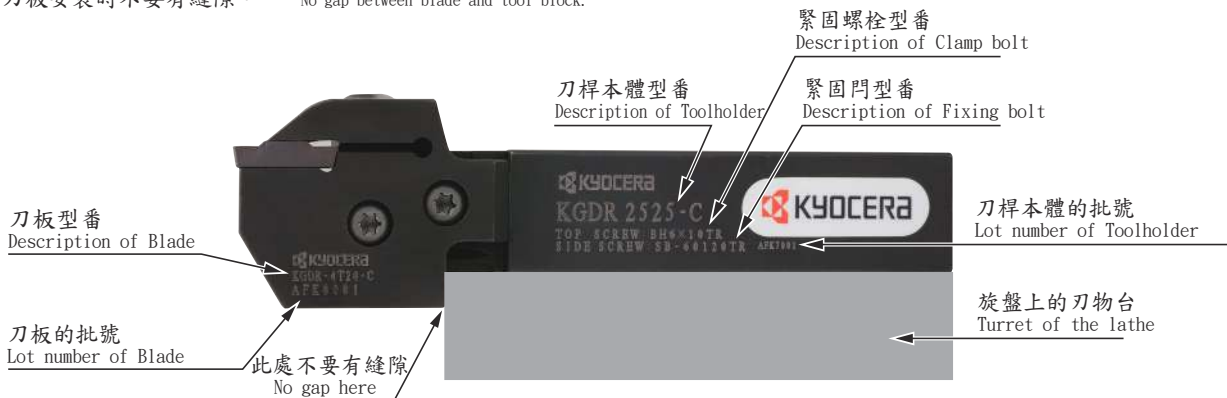


圖 3 fig 3

●分離型刀桿型番和旋盤安裝方式指引 Descriptions of separate type toolholder and indication of setting up to machine.

刀桿和刀板安裝時不要有縫隙。 No gap between blade and tool block.



KGDF型 端面切槽工具 KGDF Face grooving tool

●GDFM/GDFMS型

使用分類標準 Classification of usage		P	碳鋼・合金鋼 Carbon steel, Alloy steel	●	●	☉
		M	不鏽鋼 Stainless Steel		●	☉
●: 連續~斷續 / 第1 選擇 (● Continuous - Interruption / 1st Choice) ☉: 連續~斷續 / 第2 選擇 (☉ Continuous - Interruption / 2nd Choice) ●: 連續 / 第1 選擇 (● Continuous / 1st Choice)		K	鑄鐵 Cast iron			●
		N	有色金属 Non-ferrous Material			
		S	鈦合金 Titanium alloy			
		H	淬硬材料(40HRC 以下) Hard materials (under 40HRC) 淬硬材料(40HRC 以上) Hard materials (over 40HRC)			

形狀 Shape		型號 Description	尺寸 (mm) Dimension(mm)				金屬陶瓷 Cermet	MEGACOAT			
			W 公差 tolerance	rE	M	L	H	TN90	PR1225	PR1215	
切槽・橫進給 Grooving & Traversing	 2 刀尖式樣 2-edge	GDFM 3020N-030GM	3.0	±0.03	0.3	2.3	20	4.3	●	●	●
		4020N-040GM	4.0			3.3			●	●	●
		5020N-040GM	5.0	±0.04	0.4	4.2	●	●	●		
		6020N-040GM	6.0		5.2	▲	▲	▲			
深槽・橫進給 Deep Grooving, Traversing	 2 刀尖式樣 2-edge	GDFM 3020N-030DM	3.0	±0.03	0.3	2.3	20	4.3	●	●	●
		4020N-040DM	4.0			3.3			●	●	●
		5020N-040DM	5.0	±0.04	0.4	4.2	●	●	●		
		6020N-040DM	6.0		5.2	▲	▲	▲			
	 1 刀尖式樣 1-edge	GDFMS 3020N-030DM	3.0	±0.03	0.3	2.3	20	4.3	▲	▲	▲
		4020N-040DM	4.0			3.3			▲	▲	▲
		5020N-040DM	5.0	±0.04	0.4	4.2	▲	▲	▲		
		6020N-040DM	6.0		5.2	▲	▲	▲			

●チップ型番の見方は P.6を参照ください。
See page 6 for indication of insert description

●:標準庫存 Standard Stock
▲:2011年8月預定庫存
Scheduled to be in stock August 2011

●刀尖式樣 Advantages of chipbreaker

通用GM 斷屑槽
General Purpose, GM chipbreaker

- 從刀尖到後方平滑連接的壁面
Smooth wall design from front edge to back side
促進切屑的形變
Changes chip shape and stabilizes chip evacuation direction
- 緩慢形成的壁面
Gently raised wall shape
切屑捲曲的穩定感
Constantly curled chips
- 刀尖附近的壁面
Front edge wall
提高台階加工時的切屑處理性能
Improves chip control at shouldering
- 平滑的切刃稜線
Flat cutting edge line
切屑處理性能提高
Improves chip control
- 前切刃的彎曲形狀 Curved front edge line
切屑形狀的穩定性提高 Stabilizes chip shape

深槽用DM斷屑槽
Deep Grooving, DM chipbreaker

- 向內部突出的壁面
Convex wall
促進切屑的形變
Changes chip shape and stabilizes chip evacuation direction
- 中央凹部
Concave portion
促進切屑的形變
Changes chip shape smooth
- 能連貫置後方立壁為止的平滑壁面
Smooth wall design from front edge to back side
降低切屑抵抗, 促進切屑的形變以及排出方向的穩定化
Reduces cutting resistance
Changes chip shape and stabilizes chip evacuation direction
- 前切刃的彎曲形狀 Curved front edge line
切屑形狀的穩定性提高 Stabilizes chip shape

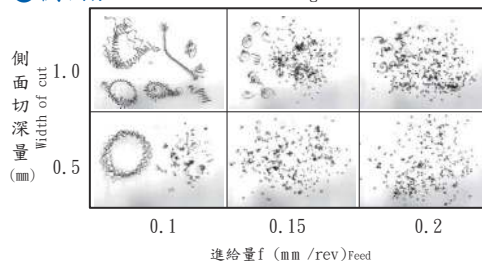
●GM斷屑槽的切屑處理 Comparison of chip control (GM chipbreaker)

< 切削條件 > Cutting Condition
Vc=150m/min f=0.05~0.1mm/rev GDFM5020N-040GM SCM415 濕式 Wet

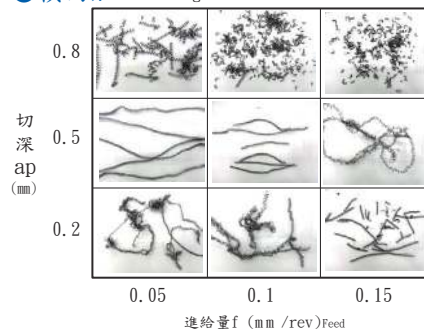
●端面切槽加工 (φ62) Face grooving

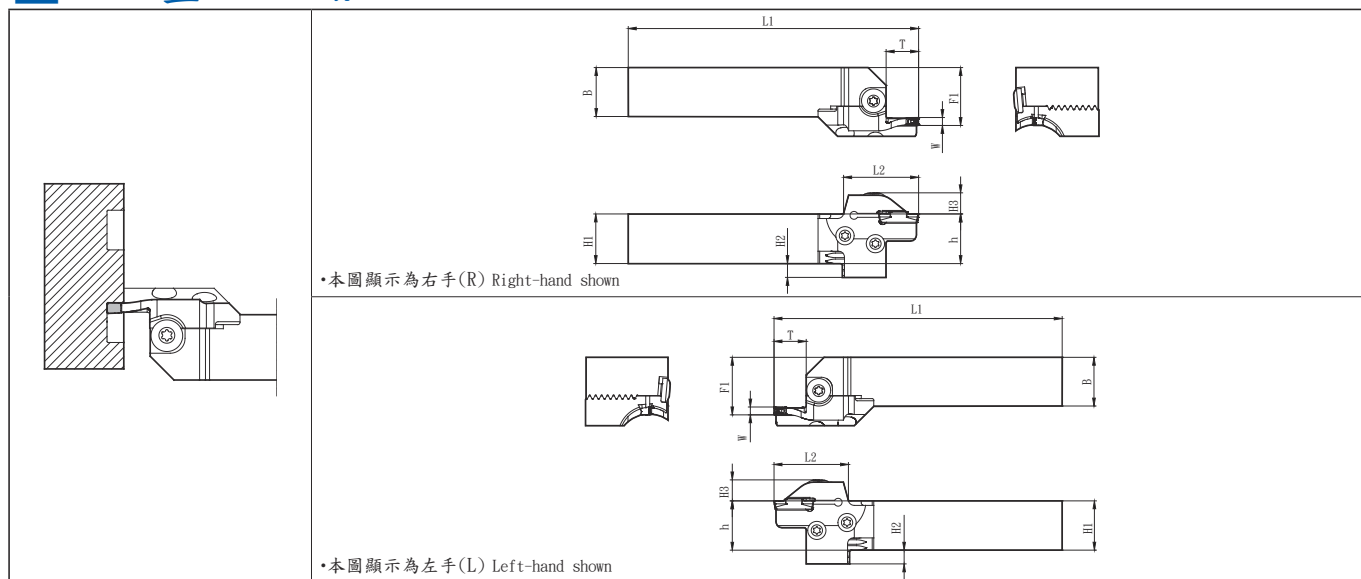


●側面加工 Groove wall machining



●橫向加工 Turning





●刀桿尺寸 Toolholder dimensions

本體角度 Shank Angle	溝寬 Width	可加工深度 Max. Grooving Depth	組合型號 Unit Description	庫存 Stock		本體型號 Toolholder Description P9	刀板型號 Blade Description P16	尺寸(mm) Dimension(mm)								刀寬 (mm) Width(mm)	端面溝外徑 oD (mm)							
				R	L			H1-h	H2	H3	B	L1	L2	F1	T	W	MIN	MAX						
0°	3	13	KGDF R/L 2020X25-3AS	●	▲	KGD 1/4 2020-C	KGDF R/L -25-3A-C	20	12	11.6	20	118	36	24.2	13	3	25	30						
			2020X30-3AS	●	▲		-30-3A-C										30	40						
			2020X40-3AS	●	▲		-40-3A-C										40	50						
			2020X50-3BS	●	▲		-50-3B-C										50	65						
			2020X65-3BS	●	▲		-65-3B-C										65	85						
			2020X85-3BS	●	▲		-85-3B-C										85	110						
			2020X110-3BS	●	▲		-110-3B-C										110	145						
			2020X50-3CS	▲	▲		-50-3C-C										50	65						
		15	2020X65-3CS	▲	▲		-65-3C-C					65	85											
			2020X85-3CS	▲	▲		-85-3C-C					85	110											
			2020X110-3CS	▲	▲		-110-3C-C					110	145											
			22	KGDF R/L 2525X25-3AS	●		▲					KGDF R/L -25-3A-C	25		17		11.6	25	143	36	29.2	15	25	30
				2525X30-3AS	●		▲					-30-3A-C											30	40
				2525X40-3AS	●		▲					-40-3A-C											40	50
				2525X50-3BS	●		▲					-50-3B-C											50	65
				2525X65-3BS	●		▲					-65-3B-C											65	85
		2525X85-3BS		●	▲	-85-3B-C	85	110																
		2525X110-3BS		●	▲	-110-3B-C	110	145																
		2525X50-3CS		▲	▲	-50-3C-C	50	65																
		25	2525X65-3CS	▲	▲	-65-3C-C	65	85																
			2525X85-3CS	▲	▲	-85-3C-C	85	110																
			2525X110-3CS	▲	▲	-110-3C-C	110	145																

●KGDF型刀桿組合型號的表示方式 Indication of KGDF unit description

組合型號 (組合型號無刻印) Unit description (Unit description is not marked)	刀桿本體 (刀桿本體型號刻印) Toolholder (Toolholder description is marked)	刀板 (刀板型號刻印) Blade (Blade description is marked)
右手刀 Right-hand : KGDFR • • • S	左手刀 Left-hand : KGDL • • • -C	右手刀 Right-hand : KGDFR • • • -C
左手刀 Left-hand : KGDFL • • • S	右手刀 Right-hand : KGDR • • • -C	左手刀 Left-hand : KGDFL • • • -C

●標準庫存 Standard Stock
▲2011年8月預定庫存
Scheduled to be in stock August 2011

- 左手(L)刀桿本體上安裝右手(R)刀板，右手(R)刀桿上安裝左手(L)刀板。
R-hand Blade for L-hand Toolholder, L-hand Blade for R-hand Toolholder
- 組合型號無刻印。外包裝的標籤上有組合型號。
Unit description is shown on the label, not marked on
- 分別採購刀桿本體與刀板，可作為組合型號產品來使用。
Blade and tool holder are available to assemble when purchasing individually.
- 刀片緊固刀桿 (BH6x10TR)/刀板安裝螺絲 (SB-60120TR)/板手 (LTW-25)。
Insert clamp bolt (BH6x10TR)/Blade fixing bolt (SB-60120TR) come with tool holder.

●刀桿尺寸 Toolholder dimensions

本體 角度	槽寬 Width (mm)	可加工深度 Max. Grooving Depth (mm)	組合型號 Unit Description	庫存 Stock		本體型號 Toolholder Description P9	刀板型號 Blade Description P16	尺寸 (mm) Dimension(mm)								刀寬 (mm) Width(mm)	端面溝外徑 oD (mm)	
				R	L			H1=h	H2	H3	B	L1	L2	F1	T		W	MIN
0°	4	13	KGDF R/L 2020X25-4AS	●	▲	KGD ¼ 2020-C	KGDF R/L -25-4A-C	20	12	11.6	20	118	36	24.2	13	4	25	35
		15	2020X35-4BS	●	▲		-35-4B-C					35	50					
			2020X50-4BS	●	▲		-50-4B-C					50	70					
			2020X70-4BS	●	▲		-70-4B-C					70	100					
			2020X100-4BS	●	▲		-100-4B-C					120	38		100		150	
			2020X150-4BS	●	▲		-150-4B-C					150	220					
			2020X220-4BS	●	▲		-220-4B-C					220	∞					
		25	2020X35-4CS	▲	▲		-35-4C-C					35	50					
			2020X50-4CS	▲	▲		-50-4C-C					50	70					
			2020X70-4CS	▲	▲		-70-4C-C					70	100					
			2020X100-4CS	▲	▲		-100-4C-C					100	150					
			2020X150-4CS	▲	▲		-150-4C-C					150	220					
			2020X220-4CS	▲	▲		-220-4C-C					220	∞					
		13	KGDF R/L 2525X25-4AS	●	▲	KGD ¼ 2525-C	KGDF R/L -25-4A-C	25	17	11.6	25	143	36	29.2	13		25	35
		15	2525X35-4BS	●	▲		-35-4B-C					35	50					
			2525X50-4BS	●	▲		-50-4B-C					50	70					
			2525X70-4BS	●	▲		-70-4B-C					70	100					
			2525X100-4BS	●	▲		-100-4B-C					100	150					
			2525X150-4BS	●	▲		-150-4B-C					150	220					
			2525X220-4BS	●	▲		-220-4B-C					220	∞					
		25	2525X35-4CS	▲	▲		-35-4C-C					35	50					
			2525X50-4CS	▲	▲		-50-4C-C					50	70					
			2525X70-4CS	▲	▲		-70-4C-C					70	100					
			2525X100-4CS	▲	▲		-100-4C-C					100	150					
			2525X150-4CS	▲	▲		-150-4C-C					150	220					
			2525X220-4CS	▲	▲		-220-4C-C					220	∞					
	5	15	KGDF R/L 2020X25-5BS	●	▲	KGD ¼ 2020-C	KGDF R/L -25-5B-C	20	12	11.6	20	120	38	24.2	15		25	35
			2020X35-5BS	●	▲		-35-5B-C										35	50
			2020X50-5BS	●	▲		-50-5B-C										50	75
			2020X75-5BS	●	▲		-75-5B-C										75	115
			2020X115-5BS	●	▲		-115-5B-C										115	180
			2020X180-5BS	●	▲		-180-5B-C										180	235
			2020X235-5BS	●	▲		-235-5B-C										235	∞
			20	2020X25-5CS	▲		△					-25-5C-C	25		35			
				2020X35-5CS	▲		△					-35-5C-C	35		50			
				2020X50-5CS	▲		△					-50-5C-C	50		75			
				2020X75-5CS	▲		△					-75-5C-C	75		115			
				2020X115-5CS	▲		△					-115-5C-C	115		180			
				2020X180-5CS	▲		△					-180-5C-C	180		235			
				2020X235-5CS	▲		△					-235-5C-C	235		∞			
		15	KGDF R/L 2525X25-5BS	●	▲	KGD ¼ 2525-C	KGDF R/L -25-5B-C	25	17	11.6	25	145	38	29.2	15		25	35
			2525X35-5BS	●	▲		-35-5B-C										35	50
			2525X50-5BS	●	▲		-50-5B-C										50	75
			2525X75-5BS	●	▲		-75-5B-C										75	115
			2525X115-5BS	●	▲		-115-5B-C										115	180
			2525X180-5BS	●	▲		-180-5B-C										180	235
			2525X235-5BS	●	▲		-235-5B-C										235	∞
			20	2525X25-5CS	▲		△					-25-5C-C	25		35			
				2525X35-5CS	▲		△					-35-5C-C	35		50			
				2525X50-5CS	▲		△					-50-5C-C	50		75			
				2525X75-5DS	▲		△					-75-5C-C	75		115			
				2525X115-5DS	▲		△					-115-5C-C	115		180			
				2525X180-5DS	▲		△					-180-5C-C	180		235			
				2525X235-5DS	▲		△					-235-5C-C	235		∞			
25	150	43	29.2	20	25	35												
					35	50												
					50	75												
	155	48			25	75	115											
						115	180											
						180	235											
162	55	32	235	∞														
			25	35														
			35	50														
			50	75														
			75	115														
			115	180														
32	180	235	32	180	235													
				235	∞													
				235	∞													
				235	∞													
				235	∞													
				235	∞													

●:標準庫存 Standard Stock

▲:2011年8月預定存庫 Scheduled to be in stock August 2011

△:2011年10月預定存庫 Scheduled to be in stock October 2011

●端面槽溝用組合型號表示方法 Indication of Face Grooving tool Unit Description

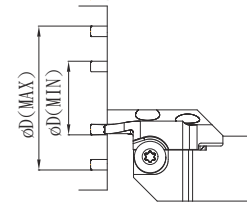
刀板的方向 Blade of Blade	刀桿握柄的尺寸 Shank size of tool holder	溝寬 Width	組合刀柄記號 Symbol of assembled holder
R : 右手刀 Right-hand L : 左手刀 Left-hand	2020X : □20 2025X : □25	3 : 3 mm 4 : 4 mm 5 : 5 mm 6 : 6 mm	S : 表示組合型號 Indicate the Unit Description
KGDF	R	2020X	25
系列名稱 Series	端面槽的最小加工外徑 Min. Bore Dia. (Face grooving)	槽溝深度 grooving depth	
KGDF 型 端面切槽加工 KGDF Face grooving	最初顯示為可加工端面槽(外徑側)的最小加工徑 Min. diameter (outside of groove) for the first plunging.	A : 1.3 mm B : 1.5 mm C : 2.0 mm D : 3.2 mm	2刀角式樣刀片用 For 2-edge type insert 1刀角式樣刀片用 For 1-edge type insert 1刀角式樣刀片用 For 1-edge type insert
	25 : 25 mm 30 : 30 mm · 235 : 235 mm		

※最初可加工的端面槽(外徑側)的最大加工徑，請參照刀桿及刀板型號表的「端面槽外徑 oD 的 MAX 數值」。
Refer max. diameter (outside of groove) to "oD (mm)" in the chart for holder spec.

●端面切槽直徑 oD 是指 What is min. D and max. D for ?

顯示最初切削端面槽時，該刀板可能加工的範圍。此外，直徑由端面槽的外側判定。

"It indicates the available range for the 1st plunging. Outside diameter of the groove is shown."



端面槽外徑 oD Face Grooving Dia.(Out side)

MIN:最小值(型號記載數值) minimum (Shown in the description)

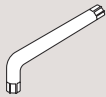
MAX:最大值(參照型號表) maximum (Refer to the spec chart)

● 刀桿尺寸 Toolholder dimensions

本體角度 Shank Angle	溝寬 Width (mm)	可加工深度 Max. Grooving Depth (mm)	組合型號 Unit Description	庫存 Stock		本體型號 Toolholder Description P9	刀板型號 Blade Description P16	尺寸 (mm) Dimension(mm)								刀寬 (mm) Width(mm)	端面切槽直徑 øD (mm)	
				R	L			H1=h	H2	H3	B	L1	L2	F1	T		W	MIN
0°	6	15	KGDF R/L 2020X25-6BS	▲	△	KGD ¼ 2020-C	KGDF R/L -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										235	∞
		20	2020X25-6CS	△	△		-25-6C-C					125	43	24.2	20		25	35
			2020X35-6CS	△	△		-35-6C-C										35	50
			2020X50-6CS	△	△		-50-6C-C										50	75
			2020X75-6CS	△	△		-75-6C-C										75	115
		25	2020X115-6CS	△	△		-115-6C-C					130	48	24.2	25		115	180
			2020X180-6CS	△	△		-180-6C-C										180	235
			2020X235-6CS	△	△		-235-6C-C										235	∞
		15	KGDF R/L 2525X25-6BS	▲	△	KGD ¼ 2525-C	KGDF R/L -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										235	∞
		20	2525X25-6CS	△	△		-25-6C-C					150	43	29.2	20		25	35
			2525X35-6CS	△	△		-35-6C-C										35	50
			2525X50-6CS	△	△		-50-6C-C										50	75
			2525X75-6DS	△	△		-75-6C-C										75	115
		25	2525X115-6DS	△	△		-115-6C-C					155	48	29.2	25		115	180
			2525X180-6DS	△	△		-180-6C-C										180	235
			2525X235-6DS	△	△		-235-6C-C										235	∞
		32	2525X25-6DS	△	△		-25-6C-C					162	55	29.2	32		25	35
			2525X35-6DS	△	△		-35-6C-C										35	50
			2525X50-6DS	△	△		-50-6C-C										50	75
			2525X75-6DS	△	△		-75-6C-C										75	115
		32	2525X115-6DS	△	△		-115-6C-C					162	55	29.2	32		115	180
			2525X180-6DS	△	△		-180-6C-C										180	235
			2525X235-6DS	△	△		-235-6C-C										235	∞

▲:2011年8月預定庫存 Scheduled to be in stock August 2011
△:2011年10月預定庫存 Scheduled to be in stock October 2011

● 零件 Spare parts

組合型號 Unit Description	零件 Spare parts		
	緊固螺栓 Clamp bolt (For Insert Clamp)	安裝螺栓 Fixing bolt(For Blade)	板手 Wrench
			
KGDF R/L.....S	BH6X10TR	SB-60120TR	LTW-25

● 小徑加工時的橫進給界限尺寸 Limitation of groove expansion for small diameter.

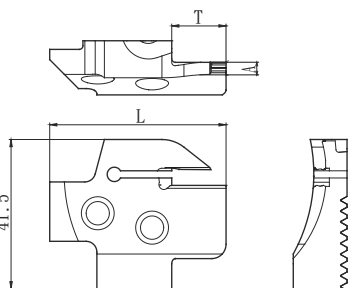
小徑加工至中心時因為刀桿與之干涉所以受限。此外，外徑側可擴大至無限大 (∞)進行槽的擴大加工。
Please be aware of the limit diameter when expanding the groove to the center. There is no limit diameter to expand the groove outside.

型號 Description	øD				0 (無凸點) No remaining Boss
	25	26	27	28 以上 over	
KGDF R/L 2020X25-3AS	4	2	0		
2525X25-3AS					
2020X25-4AS	6	3	0		
2525X25-4AS					
2020X25-5AS	7	4	1		
2525X25-5AS					
2020X25-6AS	9	4	1		
2525X25-6AS					

例 KGDFR2020X25-3AS 對外徑ø25的端面槽加工後，再向中心方向進行橫進給加工時，因與刀桿干涉，中心部留有ø4的突起。

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.

●刀桿尺寸 Blade dimensions

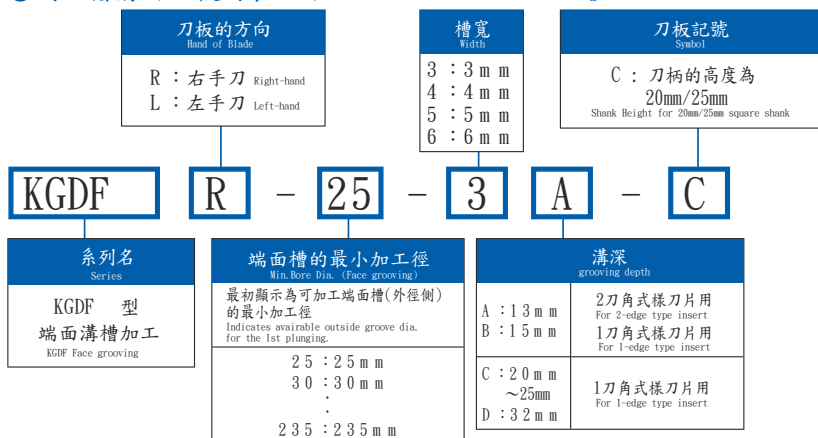
形狀 Shape	刀板型號 Description of Blade	庫存 Stock		尺寸 (mm) Dimension(mm)			端面切槽直徑 Face Grooving Dia. øD (mm)		適用刀片 Applicable Inserts ➡ P12	刀桿 本體型號 Description or Toolholder ➡ P9	
		R	L	L	T	A	MIN	MAX			
 圖示為右手方向(R) Right-hand Shown	KGDF R/L	-25-3A-C	●▲	47.35	13	2	25	30	GDFM 3020N-030GM GDFM 3020N-030DM GDFMS 3020N-030DM	KGD L/R...-C KGDS R/L...-C	
		-30-3A-C	●▲				30	40			
		-40-3A-C	●▲				40	50			
		-50-3B-C	●▲				50	65			
		-65-3B-C	●▲	49.35	15		65	85			
		-85-3B-C	●▲				85	110			
		-110-3B-C	●▲				110	145			
		-50-3C-C	▲▲				50	65			
		-65-3C-C	▲▲	56.35	22		65	85			
		-85-3C-C	▲▲				85	110			
		-110-3C-C	▲▲	59.35	25		110	145			
		-25-4A-C	●▲				25	35			
	KGDF R/L	-35-4B-C	●▲	49.35	15	3	35	50	GDFM 4020N-040GM GDFM 4020N-040DM GDFMS 4020N-040DM		
		-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	GDFM 5020N-040GM GDFM 5020N-040DM GDFMS 5020N-040DM		
		-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	●▲	54.35	20		235	∞			
		-25-5C-C	▲▲				25	35			
		-35-5C-C	▲▲				35	50			
		-50-5C-C	▲▲	59.35	25		50	75			
		-75-5C-C	▲▲				75	115			
		-115-5C-C	▲▲				115	180			
		-180-5C-C	▲▲				180	235			
		-235-5C-C	▲▲				235	∞			
		-75-5D-C	▲▲	66.35	32		75	115			
		-115-5D-C	▲▲				115	180			
		-180-5D-C	▲▲				180	235			
		-235-5D-C	▲▲				235	∞			
	KGDF R/L	-25-6B-C	▲▲	49.35	15	5	25	35	GDFM 6020N-040GM GDFM 6020N-040DM GDFMS 6020N-040DM		
		-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	▲▲	54.35	20		235	∞			
		-25-6C-C	▲▲				25	35			
		-35-6C-C	▲▲	59.35	25		35	50			
		-50-6C-C	▲▲				50	75			
		-75-6C-C	▲▲				75	115			
		-115-6C-C	▲▲				115	180			
		-180-6C-C	▲▲				180	235			
		-235-6C-C	▲▲	66.35	32		235	∞			
		-75-6D-C	▲▲				75	115			
		-115-6D-C	▲▲				115	180			
		-180-6D-C	▲▲				180	235			
		-235-6D-C	▲▲				235	∞			

●:標準在庫 Standard Stock

▲:2011年8月預定庫存 Scheduled to be in stock August 2011

△:2011年10月預定庫存 Scheduled to be in stock October 2011

●端面槽溝用刀板的表示方法 Indication of blade for face groove



推薦切削條件(端面槽溝)

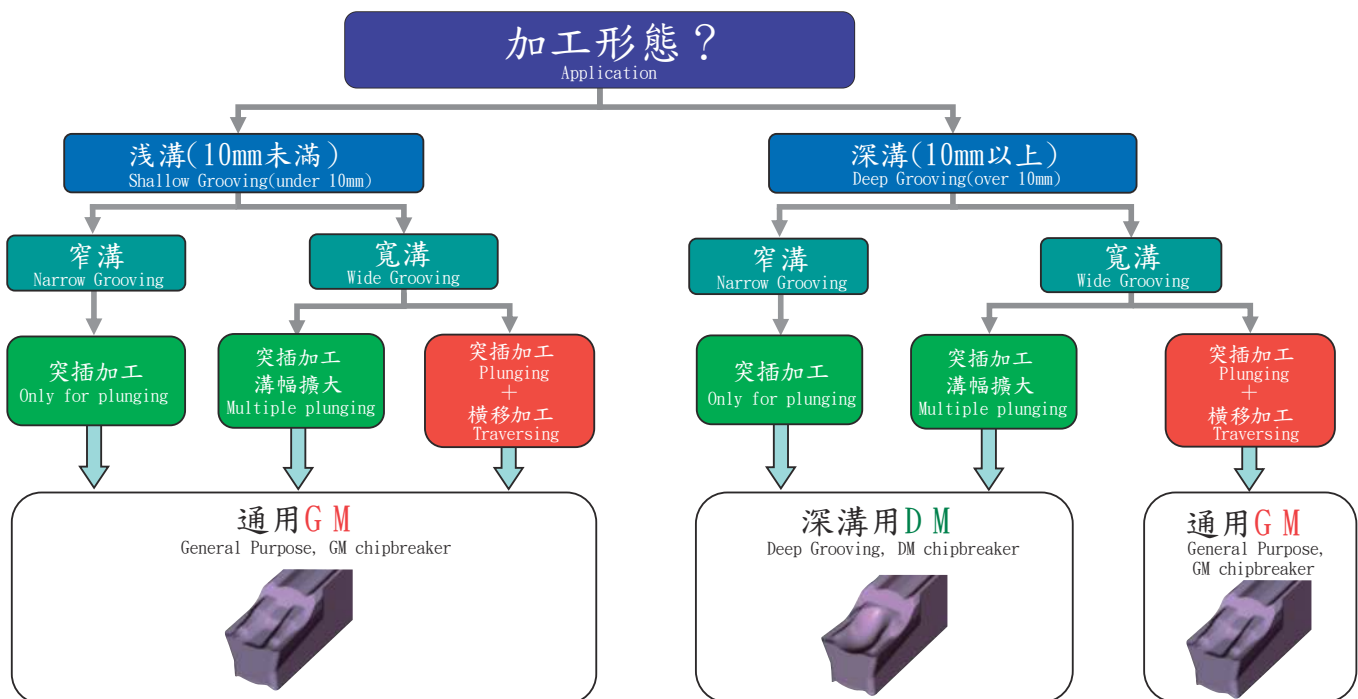
Recommended Cutting Conditions (Face grooving)

被削材 Workpiece Material	推薦刀片材種(切削速度 m/min) Recommended Insert GradCutting Speedm/min)			備考 Remarks
	瓷金 Cermet	MEGACOAT		
	TN90	PR1225	PR1215	
炭素鋼 Carbon Steel (SxxC等)	☆ 100~220	★ 80~200	☆ 100~200	溼式 Wet
合金鋼 Alloy Steel (SCM等)	☆ 80~200	★ 70~180	☆ 80~180	
不銹鋼 Stainless Steel (SUS304等)	☆ 70~180	★ 60~150	☆ 60~150	
鑄鐵 Cast Iron (FC、FCD等)	—	—	★ 100~200	
鋁 Aluminum	—	—	—	
黃銅 Brass	—	—	—	

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

斷屑槽選擇基準(端面溝)

Chipbreaker Selection(Face grooving)



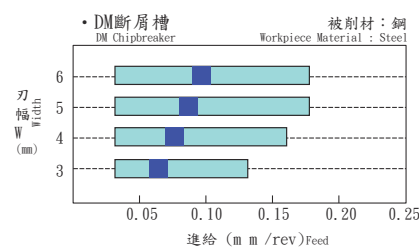
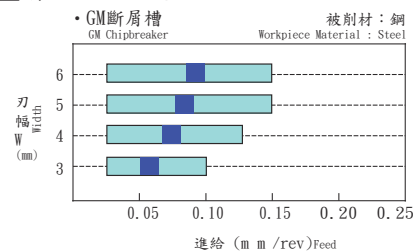
※若突插時GM斷屑槽排屑不穩，請試DM斷屑槽

Please try DM chip-breaker when experiencing unstable chips evacuation with GM for plunging.

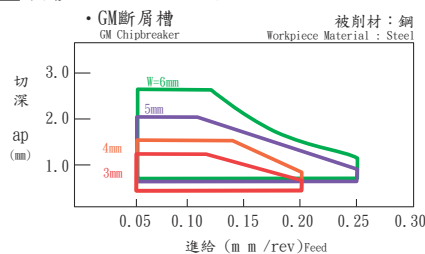
推薦切削條件(進給、切深)

Recommended Cutting Conditions (f, ap)

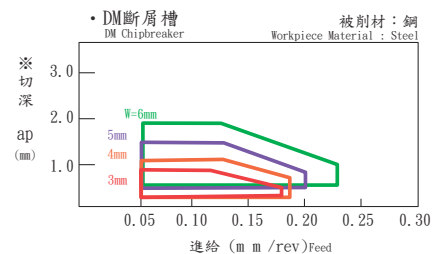
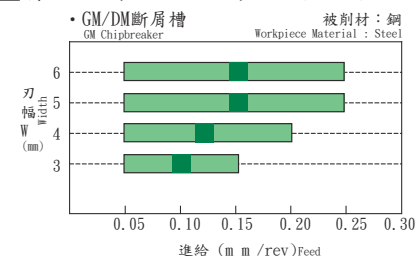
溝加工 Grooving



橫移加工 Traversing



肩加工(側面加工) Side grooving



※DM斷屑槽最大切深量：刀幅×30%
DM Chipbreaker Max. Depth of Cut: Edge widthx 0.3

●端面槽溝加工的重點 Points for face grooving

1) 刀桿選擇

Toolholder Selection

端面槽溝加工，除了溝深與寬度外
亦須確認端面溝最大及最小外徑。

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

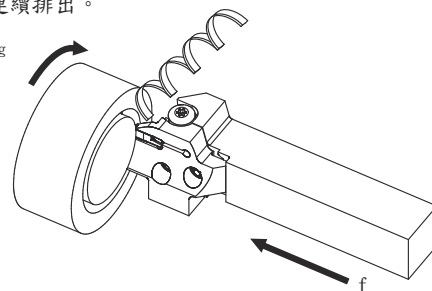
2) 切削條件(進給：f)的設定

Feed rate

進行鋼材等端面加工

設定適當的進給保持切屑連續排出。

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



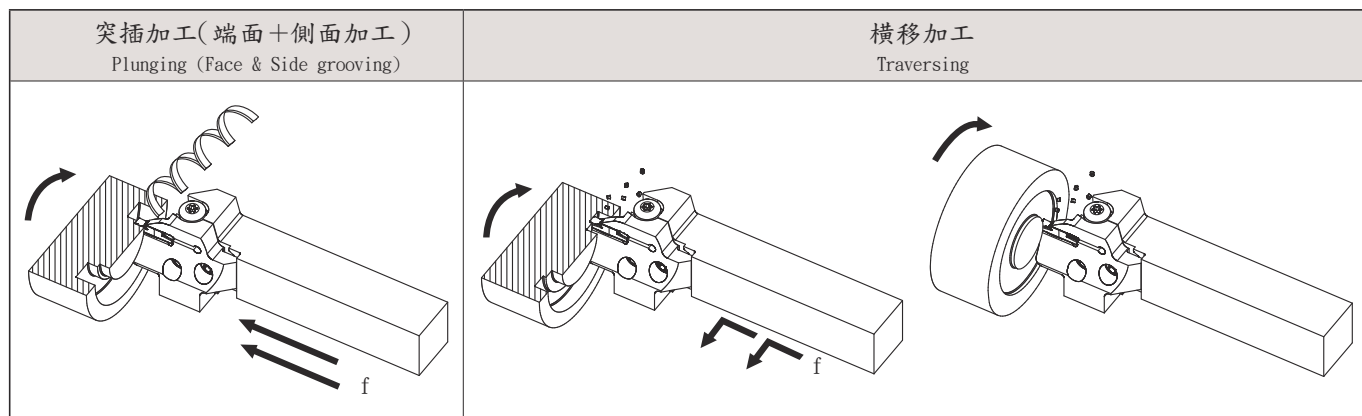
3) 槽寬擴大加工

Expand groove width (Plunging, Traversing)

要從外側向中心加工

切屑排出才會良好。

Recommend traversing from outside to inside to get better chips evacuation.



4) 橫移加工時需注意的點 Points for traversing

A. 切深0.5mm以上之場合

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

① 突切加工 Plunging

② 退刀至0.1mm Pull back the tool by 0.1mm

③ 橫移加工 Traversing

參考圖1 Refer to fig.1

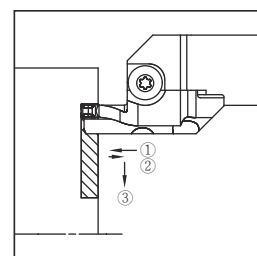
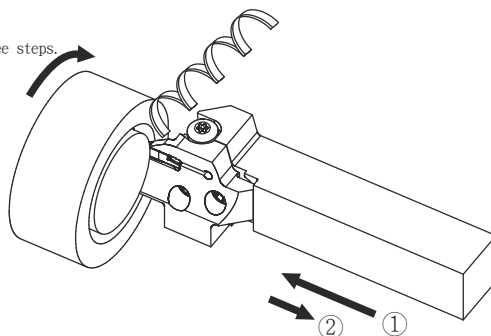


圖 1 fig 1

● 端面溝幅擴寬的場合 (參考圖2)

錯位成台階狀進行加工。

最後進行精加工。

To expand groove width (Refer to fig.2)

Leave steps at each pass for finishing

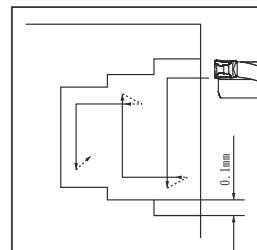
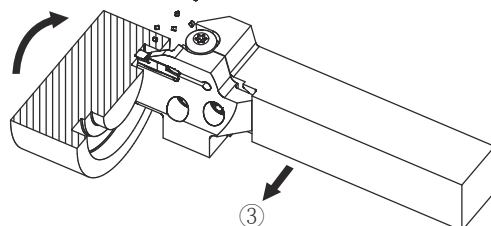


圖 2 fig 2

B. 切深0.5mm以下之場合

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

① 突插加工 Plunging

② 橫移加工 Traversing

可進行連續加工 (參考圖3)。

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

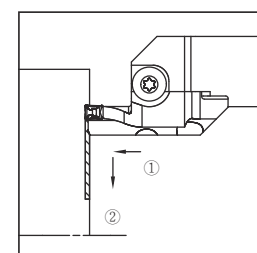
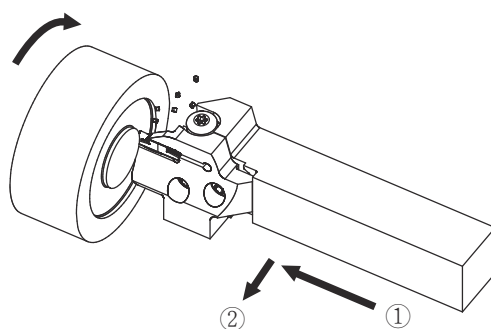


圖 3 fig 3

KGD 小徑系列 登場



刀柄尺寸
10x10mm ~追加

小徑槽溝・切斷刀桿
產品線擴大！

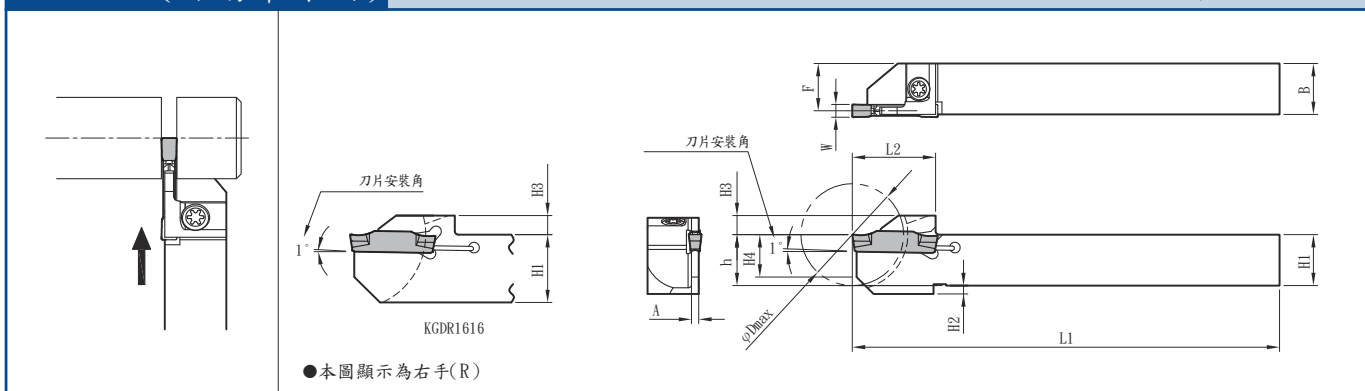
廣受好評的”KGD”系列，現已追加
自動車床用小徑系列刀桿。

KGDR1010JX-2

刀桿方向	刀柄尺寸	刀桿全長	適合刀片
R：右手 L：左手	10x10mm	120mm	GDM/GDMS 型 刃幅 2 ~ 3mm

KGD (自動車床用)

刃幅:2.0~4.0mm



刀桿尺寸

型 番	在庫		加工徑	尺 寸 (mm)											刀幅W(mm)		部 品	
	R	L	φD max	H1=h	H2	H3	H4	B	L1	L2	F	A	MIN.	MAX.	緊 固 螺 絲	板 手		
																		
KGD R/L 1010JX-2	●	●	20	10	2	4.5	8	10	120	18	9.15	1.7	2.0	3.0	SB-40120TR	LTW-15S		
1212JX-2	●	●	24	12	2		10	12		19.5	11.15							
1616JX-2	●	●	32	16	-		10	16		24.5	15.15							
KGD R/L 1010JX-2.4	●	●	20	10	2		8	10	120	18	9	2.0	2.4	3.0	SB-40120TR	LTW-15S		
1212JX-2.4	●	●	24	12	2		10	12		19.5	11							
1616JX-2.4	●	●	32	16	-		10	16		24.5	15							
KGD R/L 1212JX-3	●	●	24	12	2		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 R/L 1212F-2	●	●	24	12	2		10	12	85	19.5	11.15	1.7	2.0	3.0	SB-40120TR	LTW-15S		
1212F-2.4	●	●	24	12	2	10	12	19.5		11	2.0						2.4	3.0

●：標準在庫

小徑適合刀片 (槽溝・切斷)

KGD型小徑系列

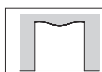


■GDM / GDMS / GDG 型

形狀	型番	尺寸 (mm)		R角 (rε)	鍍金 TN90	MEGA COAT PR1215	超硬 PR1225	GW15
		刀幅(W)	公差					
槽溝 橫移	通用 2 刀型	GDM 2420N-020GM	2.4	0.2	●	●	●	
		3020N-020GM	3.0	0.2	●	●	●	
		3020N-040GM	3.0	0.4	●	●	●	
		4020N-020GM	4.0	0.2	●	●	●	
		4020N-040GM	4.0	0.4	●	●	●	
槽溝 橫移	通用 1 刀型	GDMS 2220N-020GM	2.2	0.2	●	●	●	
		3020N-040GM	3.0	0.4	●	●	●	
		4020N-040GM	4.0	0.4	●	●	●	
槽溝 低抵抗 2 刀型	低進給 2 刀型	GDM 2420N-020GL	2.4	0.2	●	●	●	
		3020N-020GL	3.0	0.2	●	●	●	
		3020N-040GL	3.0	0.4	●	●	●	
		4020N-020GL	4.0	0.2	●	●	●	
		4020N-040GL	4.0	0.4	●	●	●	
槽溝 低抵抗 2 刀型	低抵抗 2 刀型	GDG 2520N-020GS	2.5	0.2	●	●	●	●
		3020N-020GS	3.0	0.2	●	●	●	●
		3520N-020GS	3.5	0.2	●	●	●	●
		4020N-040GS	4.0	0.4	●	●	●	●
槽溝 防削	2 刀型	GDM 3020N-150R-CM	3.0	1.5	●	●	●	
		4020N-200R-CM	4.0	2.0	●	●	●	
槽溝 高進給 2 刀型	高進給 2 刀型	GDM 2020N-020PH	2.0	0.2	●	●	●	
		3020N-030PH	3.0	0.3	●	●	●	
		4020N-030PH	4.0	0.3	●	●	●	
切斷 高進給 1 刀型	高進給 1 刀型	GDMS 2020N-020PH	2.0	0.2	●	●	●	
		3020N-030PH	3.0	0.3	●	●	●	
		4020N-030PH	4.0	0.3	●	●	●	
		4020N-030PH	4.0	0.3	●	●	●	

注) 1) PM斷屑槽(切斷用)

槽溝加工之溝底形狀如右圖。



PM斷屑槽的溝底形狀

■GDM / GDMS 型

形狀	型番	尺寸 (mm)		R角 (rε)	鍍金 TN90	MEGA COAT PR1215	超硬 PR1225	GW15
		刀幅(W)	公差					
2 刀型	2 刀型	GDM 2020N-020PM	2.0	0.2	●	●	●	
		2520N-020PM	2.5	0.2	●	●	●	
		3020N-025PM	3.0	0.25	●	●	●	
		4020N-030PM	4.0	0.3	●	●	●	
斜6度 2 刀型	斜6度 2 刀型	GDM 2020R-020PM-6D	2.0	0.2	●	●	●	
		2520R-020PM-6D	2.5	0.2	●	●	●	
		3020R-025PM-6D	3.0	0.25	●	●	●	
1 刀型	1 刀型	GDMS 2020N-020PM	2.0	0.2	●	●	●	
		3020N-025PM	3.0	0.25	●	●	●	
		4020N-030PM	4.0	0.3	●	●	●	
斜6度 1 刀型	斜6度 1 刀型	GDMS 2020R-020PM-6D	2.0	0.2	●	●	●	
		3020R-025PM-6D	3.0	0.25	●	●	●	
		4020R-030PM-6D	4.0	0.3	●	●	●	

●：標準在庫

■GDGS 型 (CBN・鑽石)

形狀	型番	尺寸 (mm)		MEGA CBN KBN05M	CBN KBN570	鑽石 KPD001
		刀幅(W)	R角 (rε)			
槽溝 1 刀型	1 刀型	GDGS 2020N-020NB	2.0	0.2	●	●
		3020N-020NB	3.0	0.2	●	●
		3020N-040NB	3.0	0.4	●	●
		4020N-020NB	4.0	0.2	●	●
		4020N-040NB	4.0	0.4	●	●
		4020N-040NB	4.0	0.4	●	●

●：標準在庫

2種IPHONE用之APP，幫助客人提升生產效率



切削條件計算機

藉由輸入轉速、進給、工件尺寸等，可迅速算出床台進給和加工時間。計算含車削、銑削和鑽孔。



他社型番對照表

查詢他社材種、斷屑槽型番對應京瓷刀片的斷屑槽與材種此APP亦連結京瓷切削工具的展示影片。

免費下載

App Store 下載！

至 App Store 搜尋

“KYOCERA”

即可找到此2項app

※ iPad 亦可使用

"KYOCERA Cutting Tools" 已在 App Store 與 Google Play 發行



- * 下載高解析度京瓷切削工具型錄
- * 切削產品影片
- * 車削、銑削與鑽孔之條件計算
- * KYOCERA 全球據點聯絡方式



ADVANCING PRODUCTIVITY

生產性向上に貢献する京セラ



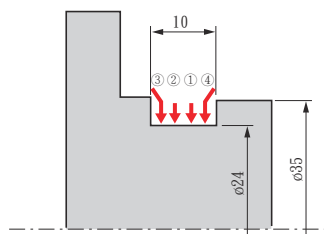
京セラ株式会社

機械工具事業本部
〒612-8501 京都市伏見区竹田島羽殿町6番地
TEL: 075-604-3651 FAX: 075-604-3472
<http://www.kyocera.co.jp/prdct/tool/index.html>

加工實例 Case studies

SCr420H(切槽 Grooving)

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



GM 斷屑槽
GM Chipbreaker
(PR1225)

1500 個 /C 1500pcs/edge

壽命提升6倍
6 times longer tool life

他社品K
(PVD塗層硬質合金)
Competitor K
(PVD Coated Carbide)

250 個 /C 250pcs/edge

結果

- ・KGD型槽溝GM斷屑槽 (PR1225)，相較其他產品K使用壽命延長6倍
- ・無發現燒焦碎屑，處理情況良好

Results

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

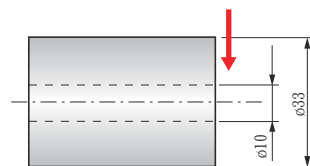


(根據使用者評價)

Evaluation by the user

S45CF(切斷 Cut-off)

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



PM 斷屑槽
PM Chipbreaker
(PR1225)

250 個 /C 壽命可延長
250pcs/edge, capable of further machining

他社品L
(PVD塗層硬質合金)
Competitor L
(PVD Coated Carbide)

250 個 /C 有磨損情形
250pcs/edge, with chipping

結果

- ・KGD型切斷PM斷屑槽 (PR1225) 與其他產品使用相同次數後刀刀依舊完好
- ・可延長使用壽命 (其他產品則可能發生刀刀磨損)

Results

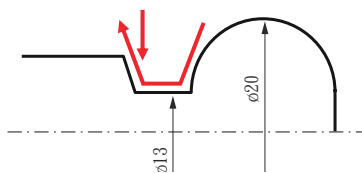
- ・KGD-type and PM chipbreaker (PR1225) showed good edge condition after machining same number of workpieces as Comp. L.
- ・Available for further machining. (Comp. L caused chipping)

(根據使用者評價)

Evaluation by the user

SCM435(倣削加工 Copying)

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



CM 斷屑槽
CM Chipbreaker
(PR1225)

800 個 /C 800pcs/edge

壽命2倍
2 times longer tool life

過去使用產品A
Conventional A

400 個 /C 400pcs/edge

結果

- ・因碎屑的排出性良好，故能改善卡屑的問題
解決因碎屑造成的刀刀磨損
- ・因減少刀刀的磨損故可延長工具使用壽命至2倍

Results

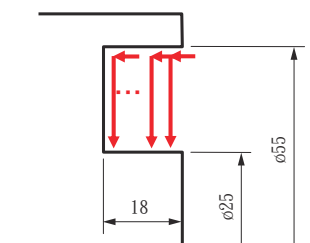
- ・Resolve issues such as chip-bite and tangled chips due to its superior evacuation performance
=> Resolve breakage of edge caused by chips.
- ・Doubled tool life by reducing damage on the edge.

(根據使用者評價)

Evaluation by the user

SCM435H(端面槽溝加工 Face grooving)

・活塞 Piston
・Vc=150 m/min
・f=0.05 mm/rev(溝) Grooving
0.1~0.15 mm/rev(橫) Traversing
・ap=1, 1.8 mm(橫) Traversing
・WET
・GDFM4020N-040GM
(PR1225)
・KGDFL2525X504CS



GM 斷屑槽
GM Chipbreaker
(PR1225)

40 個 /C 壽命可延長
40pcs/edge, capable of further machining

過去使用產品B
Conventional B

40 個 /C
40pcs/edge, with chipping

結果

- ・KGD F型端面槽溝GM斷屑槽與過去使用產品相較下碎屑的處理情形良好 (解決刀桿經常性崩損問題)
- ・利用MEGACOAT可減少刀刀磨損情形且使其延長使用 (因刀片使用壽命之延長，故亦能節省成本)

Results

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

(根據使用者評價)

Evaluation by the user

ADVANCING PRODUCTIVITY

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