

Cutting Off & Grooving System GY/GW Series

GY/GW Inserts

Series
Expansion

Grooving Revolution

Durable and Easy to Use Grooving and Cutting Off Tools



New Line-up

NEW

Low Feed Breaker



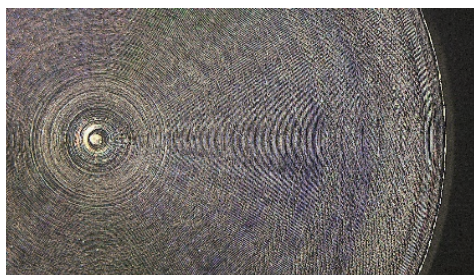
GS Breaker for Lead Angles 8° and 15°

By improving dimensional accuracy, the amount of remaining centre pip is reduced and good surface finishes are achieved.

Cutting Performance

SUS304 Comparison of Cutting Off and Remaining Material

GY GS Breaker



Completely cut off



Remaining pip in the centre : $\phi 0.49$ mm
RZ : 0.009 mm

Conventional A

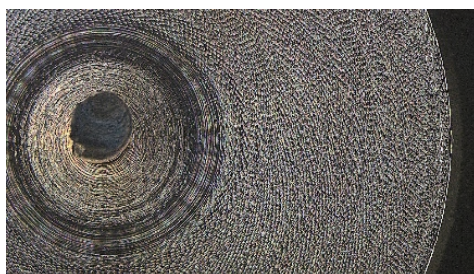


Not completely cut off



Remaining pip in the centre : $\phi 0.58$ mm
RZ : 0.043 mm

Conventional B



Not completely cut off



Remaining pip in the centre : $\phi 1.42$ mm
RZ : 0.015 mm

<Cutting Conditions>

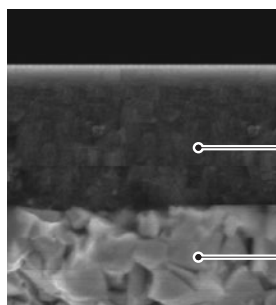
Workpiece Material : SUS304 $\phi 16$ mm
Tool : Cutting Width CW=2mm
Lead Angle 15°
Cutting Speed : $vc=100$ m/min
Feed per Rev. : $f=0.03$ mm/rev
Cutting Mode : Wet Cutting

Turning Inserts for Difficult-to-Cut Materials

PVD Coated Grades

MP9015/MP9025

Excellent Wear Resistance when Machining Heat Resistant Super Alloys



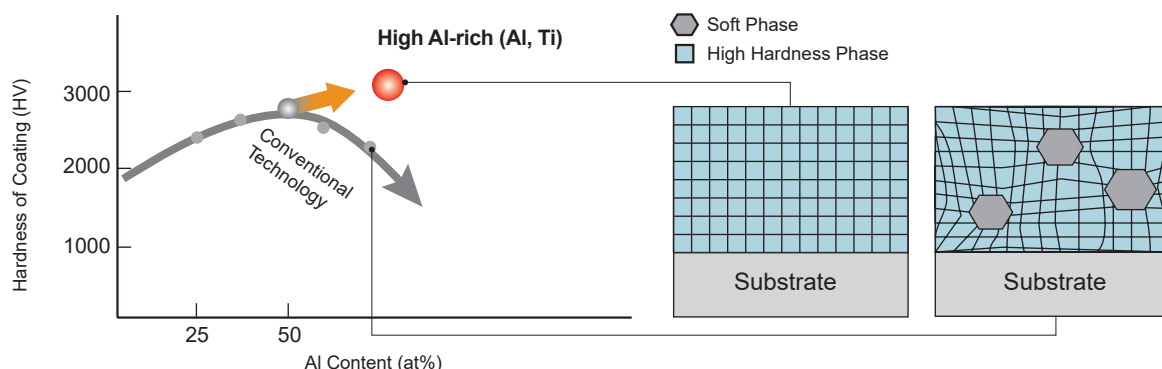
High Al-rich (Al, Ti)N Single Layer Coating Technology

Special Cemented Carbide Substrate

MP9015/MP9025

Comparison of High Al and Conventional Coating

The high Al-rich (Al, Ti)N single layer coating provides stabilization of the high hardness phase and succeeds in dramatically improving wear, crater and welding resistance.

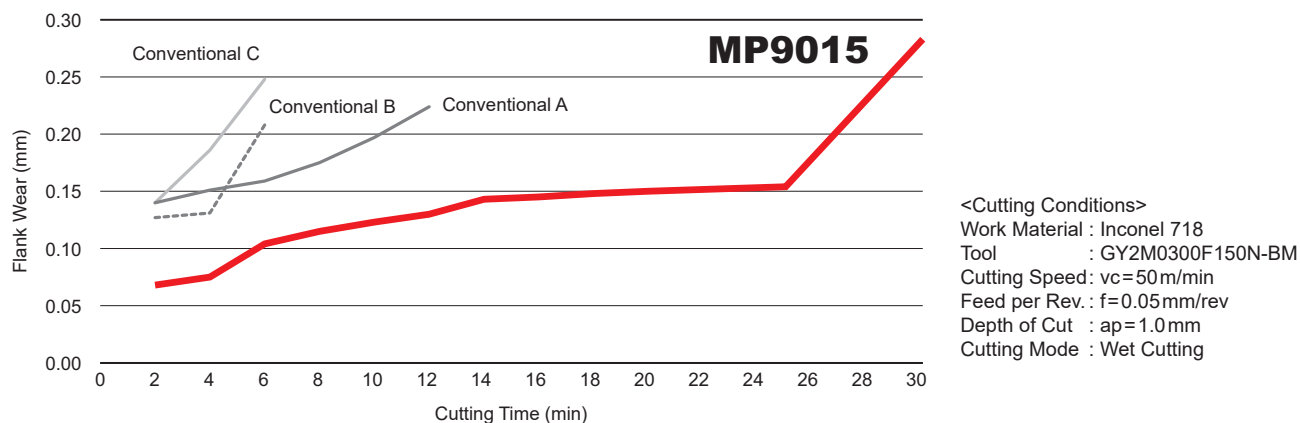


ISO Grade	Grade	Concept	Application
S10	MP9015	High hardness grade focusing on wear resistance.	Heat Resistant Alloys
S30	MP9025	First recommended grade focusing on fracture resistance.	Heat Resistant Alloys

Cutting Performance

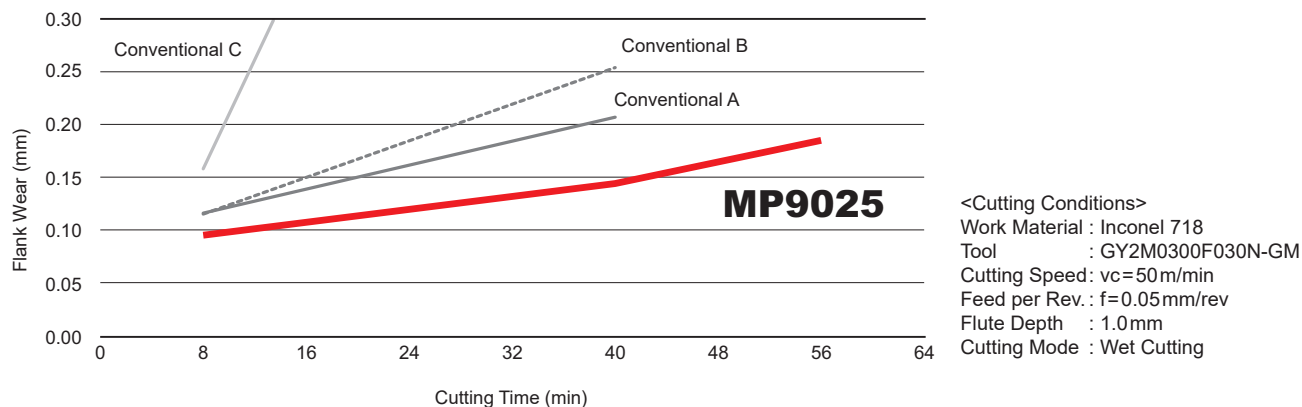
Cross Feed Machining of Inconel 718 - Comparison of Wear Resistance

MP9015 exhibits 1.5 times more wear resistance than conventional products.



Groove Machining of Inconel 718 - Comparison of Wear Resistance

MP9025 has excellent wear resistance.



Insert Grade

GY Series

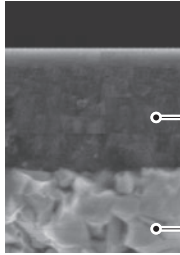
	P Steel	M Stainless Steel	K Cast Iron	N Aluminium Alloy	S Heat Resistant Alloy / Titanium Alloy	H Hardened Steel
Stable Cutting ↑ Cutting Conditions ↓ Unstable Cutting	NX2525 MY5015 VP10RT VP20RT	 VP10RT VP20RT	 MY5015 VP10RT VP20RT	 RT9010	 MP9015 RT9010 MP9025	BC8110 MB8025

GW Series

	P Steel	M Stainless Steel	K Cast Iron	S Heat Resistant Alloy / Titanium Alloy
Stable Cutting ↑ Cutting Conditions ↓ Unstable Cutting	MY5015 VP10RT VP20RT VP30RT	 VP10RT VP20RT VP30RT	MY5015 VP10RT VP20RT	VP10RT VP20RT

GW/GW Series Insert Grade

MP9000 Series

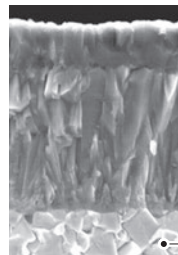


The high Al-rich (Al, Ti)N single layer coating provides stabilization of the high hardness phase and succeeds in dramatically improving wear, crater and welding resistance.

High Al-rich (Al, Ti)N Single Layer Coating

Special Cemented Carbide Substrate

MY5015

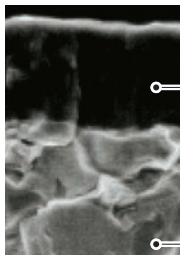


MY5015 is a CVD coated grade with excellent wear resistance even at high temperatures. It provides longer tool life when machining cast and ductile cast irons. Also suitable for high-speed, continuous cutting of steel.

CVD Coated Carbide

Tough Cemented Carbide Substrate

VP20RT



PVD coated grade suitable for a wide range of applications. The combination of a special tough cemented carbide substrate with MIRACLE coating provides an excellent balance of wear and fracture resistance.

MIRACLE Coating

Tough Cemented Carbide Substrate (90.5HRA)

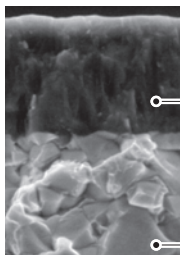
RT9010

RT9010 is a non-coated cemented carbide grade. Suitable for processing non-ferrous metals.

NX2525

NX2525 is a cermet grade for finish machining of steel and for good surface finishes at lower cutting speeds.

VP10RT



PVD coated grade with a cemented carbide substrate harder than VP20RT. For use on difficult-to-cut materials and for extending tool life.

MIRACLE Coating

Tough Cemented Carbide Substrate (92.0HRA)

BC8110

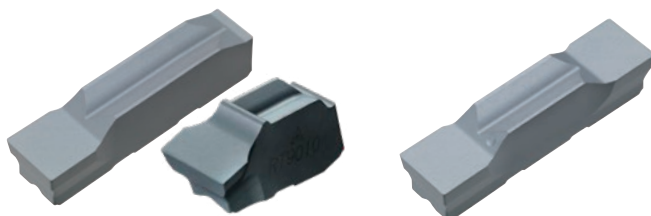
BC8110 is a coated grade for continuous cutting, which provides longer life when machining hardened steel.

MB8025

MB8025 is a sintered CBN grade for hardened steel.

Blank Inserts

Blank inserts for custom grinding.



1 Edge Type

2 Edge Type

* Insert blank is not suitable for machining without grinding.

RT9010/RT9020 for insert blank

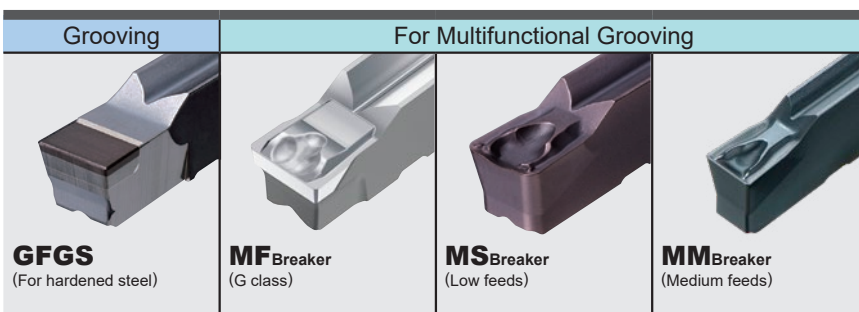
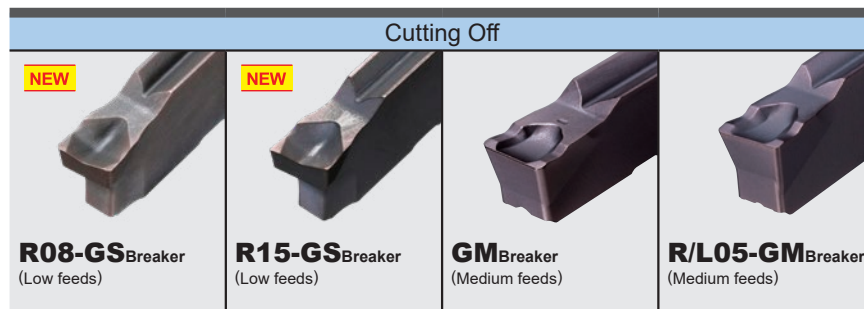
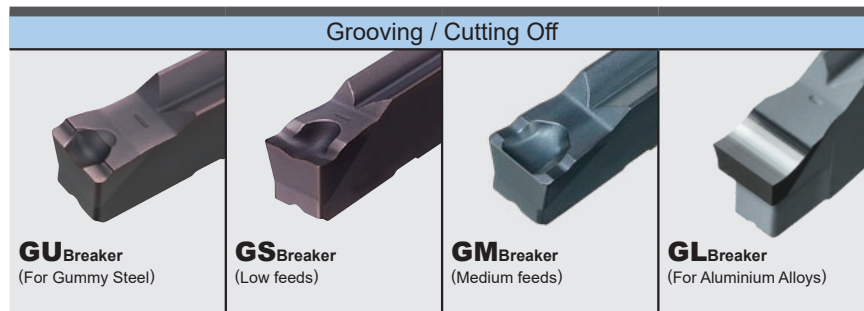
RT9020 is the first recommendation for blank inserts due to the tougher carbide substrate's suitability over a wider range of applications.

RT9010 is a harder substrate and is ideal for long tool life on stable applications.

A coating layer is recommended for machining steel, stainless and cast irons.

GY Series

Breaker System



For Grooving / Cutting Off

GL Breaker (For Aluminium Alloys)

G Class Breaker

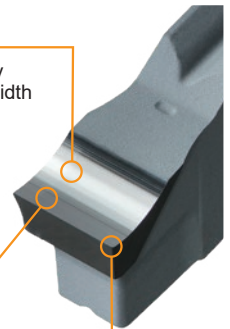
Improved chip control by narrowing the breaker width

High Rake Angle

Achieves low cutting resistance

Sharp Edge

Improved welding resistance for aluminium alloys

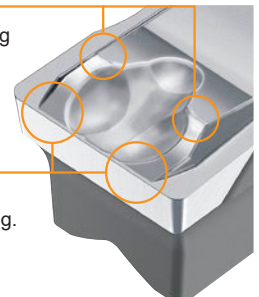


For Multifunctional Grooving

MF Breaker (For Finish Machining)

Efficient chip breaking when cross-feed machining.

Chips are controlled when finish machining.



GW Series

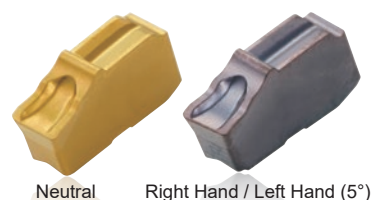
Breaker System Offering Excellent Chip Disposal Properties

Low Feeds



GS Breaker

Medium Feeds



GM Breaker

Grooving / Cutting Off

Reference Material

C-TYPE CIRCLIP STANDARDS LIST

Category	Application		Standard	Width (Tolerance)									
				For shaft					For hole				
C-type stop ring 	For shaft	For hole		0.5	+0.14 0	0.305	+0.051	1.15	+0.14 0	9	+0.14 0	0.457	+0.051
				0.7		0.457	0	1.35		1.1		0.457	0
				0.8		0.737	+0.076 0	1.75		1.3		0.737	+0.076
				0.9		0.991		1.95		1.6		0.991	0
				1.1		1.168	+0.102 0	2.2		1.85		1.168	+0.102
				1.3		1.422		2.7		2.15		1.422	0
				1.6		1.727	0	3.2	+0.18 0	2.65		1.727	0
				1.85		2.184	+0.127 0	4.2		3.15		2.184	+0.127
				2.15		2.616				4.15	+0.18 0	2.616	0
				2.65		3.048	+0.152 0			5.15		3.048	0
C-type concentric stop ring 	For shaft	For hole	ANSI B27.7/27.8 (US) BS 3673 (UK) DIN 471/472 (De) NF E 22 163 (Fr) UNI 7435/7438 (It) JIS B 2804 (JP)	3.15	+0.18 0	3.531	+0.152 0			6.2	+0.22 0		
				4.15									
				5.15									
				6.2									
E-type stop ring 	For shaft		N1*** American	0.32	+0.05	0.305	+0.051	0.3	+0.05				
				0.5	0	0.457	0	0.4	0				
				0.7	+0.10	0.737	+0.076	0.7	+0.10				
				1.0	0	0.991	0	0.9	0				
				1.2	+0.14	1.168	+0.102 0	1.15	+0.14 0				
				1.4	0	1.422		1.75					
						1.727	0	2.2					

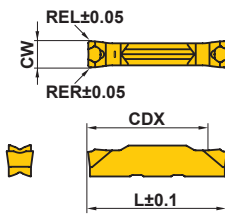
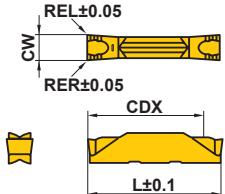
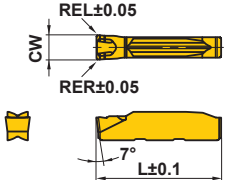
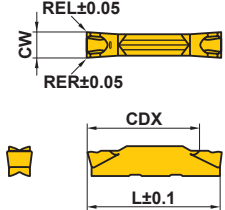
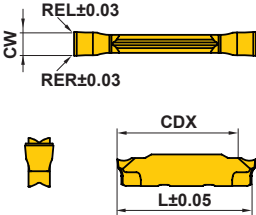
O-RING STANDARDS

Category	Standard	Width (Tolerance)											
		General				For oil pressure				For air pressure			
For stable	DIN 3770/3771 (De)	2.54	+0.13 0		1.9	+0.1							
		3.18		2.3	0	2.3	+0.2 0						
		4.32		2.9	+0.15	3.1							
		6.1		0	3.7								
		8.0				6.4							
	JIS B 2401 (JP) ISO 3601	3.2	+0.2 0	2.5	3.6	+0.2	9.0	+0.25 0					
		4.0		3.2	4.5	0							
		7.5		4.7	5.5	+0.3	2.4						
		11.0		7.5	7.0	0	3.6						
				11.1			4.8						
	SMS 1586/1588 (Se) BS 1806/4518 (UK)	2.39	+0.25 0		8.6	+0.4	7.1	+0.25 0	2.3	+0.2 0	2.2	+0.25 0	
		3.58			10.7	+0.5	9.5		3.1		3.4		
		4.78							3.7		4.6		
		7.14							6.4		6.9		
		9.58							9.0		9.3		
For dynamic	SAE AS-568 (US)												

- G-class insert with MF breaker is available for single-step machining.
- Conventional GY series insert is available for single-step machining.
- Machined in multiple steps or by cross feed machining.

GY Series Inserts

(mm)

Applications	Geometry	Order Number	Stock								Seat Size	CW		RER/L	CDX	*2 L
			Coated		Cermet		Carbide		Cutting Width	Tolerance						
			MP9015	MP9025	VP10RT	VP20RT	MY5015	NX2525				RT9010	RT9020			
For Grooving / Cutting Off	GU Breaker (For gummy steel) 	GY2M0200D020N-GU			●	●	●				D	2.00	±0.03	0.2	19.7	20.70
		GY2M0239E020N-GU			●	●	●				E	2.39	±0.03	0.2	19.8	20.70
		GY2M0250E020N-GU			●	●	●				E	2.50	±0.03	0.2	19.5	20.70
		GY2M0300F030N-GU			●	●	●				F	3.00	±0.03	0.3	19.3	20.70
		GY2M0318F030N-GU			●	●	●				F	3.18	±0.03	0.3	19.3	20.70
		GY2M0400G030N-GU			●	●	●				G	4.00	±0.04	0.3	24.2	25.65
		GY2M0475H040N-GU			●	●	●				H	4.75	±0.04	0.4	24.2	25.65
		GY2M0500H040N-GU			●	●	●				H	5.00	±0.04	0.4	24.2	25.65
		GY2M0600J040N-GU			●	●	●				J	6.00	±0.04	0.4	24.2	25.65
		GY2M0635J040N-GU			●	●	●				J	6.35	±0.04	0.4	24.2	25.65
	GS Breaker (Low feeds) 	NEW GY2M0120B010N-GS			●	●					B	1.20	±0.03	0.1	12.2	14.70
		GY2M0150C010N-GS			●	●	●				C	1.50	±0.03	0.1	13.4	14.70
		GY2M0200D020N-GS			●	●	●				D	2.00	±0.03	0.2	18.7	20.70
		GY2M0239E020N-GS			●	●	●				E	2.39	±0.03	0.2	18.5	20.70
		GY2M0250E020N-GS			●	●	●				E	2.50	±0.03	0.2	18.5	20.70
		GY2M0300F020N-GS			●	●	●				F	3.00	±0.03	0.2	18.5	20.70
		GY2M0318F020N-GS			●	●	●				F	3.18	±0.03	0.2	18.5	20.70
		GY2M0400G020N-GS			●	●	●				G	4.00	±0.04	0.2	23.9	25.65
		GY2M0475H030N-GS			●	●	●				H	4.75	±0.04	0.3	23.9	25.65
		GY2M0500H030N-GS			●	●	●				H	5.00	±0.04	0.3	24.0	25.65
		GY2M0600J030N-GS			●	●	●				J	6.00	±0.04	0.3	24.1	25.65
		GY2M0635J030N-GS			●	●	●				J	6.35	±0.04	0.3	24.1	25.65
		GY2M0800K030N-GS			●	●					K	8.00	±0.04	0.3	29.1	30.50
	GM Breaker (Medium feeds) 	GY1M0200D020N-GM	●	●	●	●	●				D	2.00	±0.03	0.2	—	20.70
		GY1M0250E020N-GM	●	●	●	●	●				E	2.50	±0.03	0.2	—	20.70
		GY1M0300F030N-GM	●	●	●	●	●				F	3.00	±0.03	0.3	—	20.70
		GY1M0400G030N-GM	●	●	●	●	●				G	4.00	±0.04	0.3	—	25.65
		GY1M0500H040N-GM	●	●	●	●	●				H	5.00	±0.04	0.4	—	25.65
	GM Breaker (Medium feeds) 	GY2M0150C020N-GM	●	●	●	●	●				C	1.50	±0.03	0.2	13.9	14.70
		GY2M0200D020N-GM	●	●	●	●	●				D	2.00	±0.03	0.2	19.4	20.70
		GY2M0239E020N-GM	●	●	●	●	●				E	2.39	±0.03	0.2	19.4	20.70
		GY2M0250E020N-GM	●	●	●	●	●				E	2.50	±0.03	0.2	19.4	20.70
		GY2M0300F030N-GM	●	●	●	●	●				F	3.00	±0.03	0.3	19.4	20.70
		GY2M0318F030N-GM	●	●	●	●	●				F	3.18	±0.03	0.3	19.4	20.70
		GY2M0400G030N-GM	●	●	●	●	●				G	4.00	±0.04	0.3	24.4	25.65
		GY2M0475H040N-GM	●	●	●	●	●				H	4.75	±0.04	0.4	24.3	25.65
		GY2M0500H040N-GM	●	●	●	●	●				H	5.00	±0.04	0.4	24.3	25.65
		GY2M0600J040N-GM	●	●	●	●	●				J	6.00	±0.04	0.4	24.3	25.65
		GY2M0635J040N-GM	●	●	●	●	●				J	6.35	±0.04	0.4	24.3	25.65
		GY2M0800K050N-GM	●	●	●	●	●				K	8.00	±0.04	0.5	29.3	30.50
	GL Breaker (For Aluminium Alloys) 	GY2G0200D005N-GL							●		D	2.00	±0.02	0.05	19.5	21.05
		GY2G0250E005N-GL							●		E	2.50	±0.02	0.05	19.1	21.05
		GY2G0300F005N-GL							●		F	3.00	±0.02	0.05	18.9	21.05

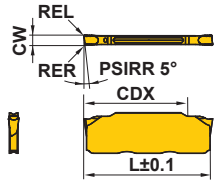
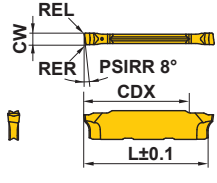
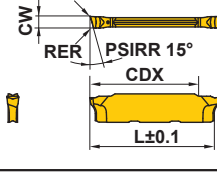
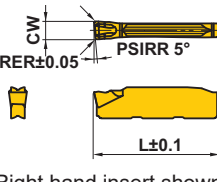
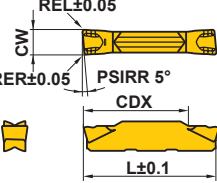
*2 The dimension depends on the breaker. Refer to page 12 "L dimension tolerance conversion table".

● : Inventory maintained in Japan.

(10 inserts in one case) (CBN inserts are with 1 piece in one case.)

GY Series Inserts

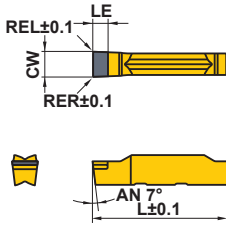
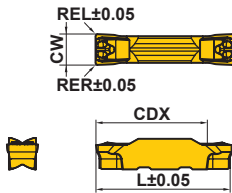
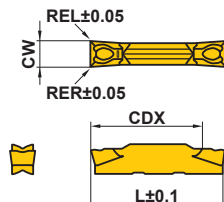
(mm)

Applications	Geometry	Order Number	Stock					Seat Size	CW		Corner R				CDX	*2 L
			Coated						Cutting Width	Tolerance	REL	Tolerance	RER	Tolerance		
			MP9015	MP9025	VP10RT	VP20RT	MY5015									
For Cutting off	R05-GS Breaker NEW (Low feeds) 	GY2M0120B010R05-GS			●	●		B	1.20	±0.03	0.1	±0.05	0.1	±0.05	12.22	14.70
	R08-GS Breaker NEW (Low feeds) 	GY2G0150C010R08-GS			●	●		C	1.50	±0.02	0.1	±0.03	0.1	—	13.17	15.23
		GY2G0200D020R08-GS			●	●		D	2.00	±0.03	0.2	±0.05	0.2	—	18.85	21.33
		GY2G0250E020R08-GS			●	●		E	2.50	±0.03	0.2	±0.05	0.2	—	19.04	21.46
		GY2G0300F020R08-GS			●	●		F	3.00	±0.03	0.2	±0.05	0.2	—	18.62	21.53
	R15-GS Breaker NEW (Low feeds) 	GY2G0150C003R15-GS			●	●		C	1.50	±0.02	0.03	+0.03 -0.02	0.1	—	13.17	15.23
		GY2G0150C010R15-GS			●	●		C	1.50	±0.02	0.1	±0.03	0.1	—	13.17	15.23
		GY2G0200D003R15-GS			●	●		D	2.00	±0.03	0.03	+0.03 -0.02	0.1	—	18.85	21.32
		GY2G0200D010R15-GS			●	●		D	2.00	±0.03	0.1	±0.03	0.1	—	18.85	21.30
		GY2G0250E003R15-GS			●	●		E	2.50	±0.03	0.03	+0.03 -0.02	0.1	—	19.04	21.46
		GY2G0250E020R15-GS			●	●		E	2.50	±0.03	0.2	±0.05	0.1	—	19.04	21.46
		GY2G0300F003R15-GS			●	●		F	3.00	±0.03	0.03	+0.03 -0.02	0.1	—	18.62	21.58
		GY2G0300F020R15-GS			●	●		F	3.00	±0.03	0.2	±0.05	0.1	—	18.62	21.53
	R/L05-GM Breaker  Right hand insert shown.	GY1M0200D020R05-GM			●	●		D	2.00	±0.03	0.2	±0.05	0.2	±0.05	—	20.80
		GY1M0200D020L05-GM			●	●		D	2.00	±0.03	0.2	±0.05	0.2	±0.05	—	20.80
		GY1M0300F030R05-GM			●	●		F	3.00	±0.03	0.3	±0.05	0.3	±0.05	—	20.85
		GY1M0300F030L05-GM			●	●		F	3.00	±0.03	0.3	±0.05	0.3	±0.05	—	20.85
	R/L05-GM Breaker  Right hand insert shown.	GY2M0200D020R05-GM			●	●		D	2.00	±0.03	0.2	±0.05	0.2	±0.05	19.5	20.80
		GY2M0200D020L05-GM			●	●		D	2.00	±0.03	0.2	±0.05	0.2	±0.05	19.5	20.80
		GY2M0250E020R05-GM			●	●		E	2.50	±0.03	0.2	±0.05	0.2	±0.05	19.5	20.825
		GY2M0250E020L05-GM			●	●		E	2.50	±0.03	0.2	±0.05	0.2	±0.05	19.5	20.825
		GY2M0300F030R05-GM			●	●		F	3.00	±0.03	0.3	±0.05	0.3	±0.05	19.5	20.85
		GY2M0300F030L05-GM			●	●		F	3.00	±0.03	0.3	±0.05	0.3	±0.05	19.5	20.85
	GY2M0400G030R05-GM			●	●		G	4.00	±0.04	0.3	±0.05	0.3	±0.05	24.5	25.85	
	GY2M0400G030L05-GM			●	●		G	4.00	±0.04	0.3	±0.05	0.3	±0.05	24.5	25.85	
	GY2M0500H040R05-GM			●	●		H	5.00	±0.04	0.4	±0.05	0.4	±0.05	24.5	25.95	
	GY2M0500H040L05-GM			●	●		H	5.00	±0.04	0.4	±0.05	0.4	±0.05	24.5	25.95	

*2 The dimension depends on the breaker. Refer to page 12 "L dimension tolerance conversion table".

● : Inventory maintained in Japan.

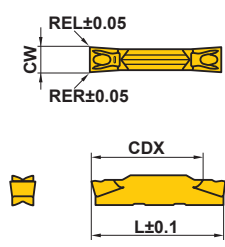
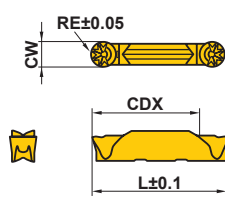
(10 inserts in one case) (CBN inserts are available in 1 piece in one case.)

(mm)																		
Applications	Geometry	Order Number	Stock								Seat Size	CW		RER/L	CDX	*2 L	LE	
			Coated				Cermet		Carbide	CBN		Cutting Width	Tolerance					
			MP9015	MP9025	VP10RT	VP20RT	MY5015	NX2525	RT9010	RT9020								BC8110
For Grooving	Flat Top (For hardened steel) 	GY1G0200D020N-GFGS									●	D	2.00	±0.03	0.2	—	20.70	2.7
		GY1G0239E020N-GFGS									●	E	2.39	±0.03	0.2	—	20.70	2.7
		GY1G0250E020N-GFGS									●	E	2.50	±0.03	0.2	—	20.70	2.7
		GY1G0300F020N-GFGS									●	F	3.00	±0.03	0.2	—	20.70	2.7
		GY1G0318F020N-GFGS									●	F	3.18	±0.03	0.2	—	20.70	2.7
		GY1G0400G020N-GFGS									●	G	4.00	±0.03	0.2	—	25.65	2.7
		GY1G0475H020N-GFGS									●	H	4.75	±0.03	0.2	—	25.65	2.7
		GY1G0500H020N-GFGS									●	H	5.00	±0.03	0.2	—	25.65	2.7
		GY1G0600J020N-GFGS									●	J	6.00	±0.03	0.2	—	25.65	2.7
For Multifunctional Grooving	MF Breaker (Finishing) 	GY2G0200D020N-MF			●	●	●	●	●			D	2.00	±0.02	0.2	19.5	21.05	—
		*1 GY2G0224D015N-MF			●	●	●	●	●			D	2.24	±0.02	0.15	19.8	21.05	—
		GY2G0239E020N-MF			●	●	●	●	●			E	2.39	±0.02	0.2	19.2	21.05	—
		GY2G0250E020N-MF			●	●	●	●	●			E	2.50	±0.02	0.2	19.4	21.05	—
		*1 GY2G0274E020N-MF			●	●	●	●	●			E	2.74	±0.02	0.2	19.7	21.05	—
		GY2G0300F020N-MF			●	●	●	●	●			F	3.00	±0.02	0.2	19.5	21.05	—
		GY2G0300F040N-MF			●	●	●	●	●			F	3.00	±0.02	0.4	19.3	21.05	—
		GY2G0318F020N-MF			●	●	●	●	●			F	3.18	±0.02	0.2	19.5	21.05	—
		GY2G0318F040N-MF			●	●	●	●	●			F	3.18	±0.02	0.4	19.3	21.05	—
		*1 GY2G0324F020N-MF			●	●	●	●	●			F	3.24	±0.02	0.2	19.5	21.05	—
		GY2G0400G020N-MF			●	●	●	●	●			G	4.00	±0.02	0.2	24.9	25.95	—
		GY2G0400G040N-MF			●	●	●	●	●			G	4.00	±0.02	0.4	24.7	25.95	—
		GY2G0400G080N-MF			●	●	●	●	●			G	4.00	±0.02	0.8	24.3	25.95	—
		*1 GY2G0424G020N-MF			●	●	●	●	●			G	4.24	±0.02	0.2	24.9	25.95	—
		GY2G0475H020N-MF			●	●	●	●	●			H	4.75	±0.02	0.2	24.4	25.95	—
		GY2G0475H040N-MF			●	●	●	●	●			H	4.75	±0.02	0.4	24.2	25.95	—
		GY2G0475H080N-MF			●	●	●	●	●			H	4.75	±0.02	0.8	23.8	25.95	—
		GY2G0500H020N-MF			●	●	●	●	●			H	5.00	±0.02	0.2	24.4	25.95	—
		GY2G0500H040N-MF			●	●	●	●	●			H	5.00	±0.02	0.4	24.2	25.95	—
		GY2G0500H080N-MF			●	●	●	●	●			H	5.00	±0.02	0.8	23.8	25.95	—
		*1 GY2G0524H020N-MF			●	●	●	●	●			H	5.24	±0.02	0.2	24.4	25.95	—
		GY2G0600J020N-MF			●	●	●	●	●			J	6.00	±0.02	0.2	24.4	25.95	—
		GY2G0600J040N-MF			●	●	●	●	●			J	6.00	±0.02	0.4	24.2	25.95	—
		GY2G0600J080N-MF			●	●	●	●	●			J	6.00	±0.02	0.8	23.8	25.95	—
		*1 GY2G0631J020N-MF			●	●	●	●	●			J	6.31	±0.02	0.2	24.4	25.95	—
		GY2G0635J020N-MF			●	●	●	●	●			J	6.35	±0.02	0.2	24.4	25.95	—
		GY2G0635J040N-MF			●	●	●	●	●			J	6.35	±0.02	0.4	24.2	25.95	—
		GY2G0635J080N-MF			●	●	●	●	●			J	6.35	±0.02	0.8	23.8	25.95	—
	MS Breaker (Low feeds) 	GY2M0200D020N-MS			●	●	●	●				D	2.00	±0.03	0.2	19.1	20.70	—
		GY2M0250E020N-MS			●	●	●	●				E	2.50	±0.03	0.2	19.1	20.70	—
		GY2M0300F020N-MS			●	●	●	●				F	3.00	±0.03	0.2	19.2	20.70	—
		GY2M0300F040N-MS			●	●	●	●				F	3.00	±0.03	0.4	18.9	20.70	—
		GY2M0400G020N-MS			●	●	●	●				G	4.00	±0.04	0.2	24.2	25.65	—
		GY2M0400G040N-MS			●	●	●	●				G	4.00	±0.04	0.4	23.9	25.65	—
		GY2M0500H040N-MS			●	●	●	●				H	5.00	±0.04	0.4	23.9	25.65	—
		GY2M0500H080N-MS			●	●	●	●				H	5.00	±0.04	0.8	23.5	25.65	—
		GY2M0600J040N-MS			●	●	●	●				J	6.00	±0.04	0.4	23.9	25.65	—
		GY2M0600J080N-MS			●	●	●	●				J	6.00	±0.04	0.8	23.5	25.65	—
		GY2M0800K080N-MS			●	●	●					K	8.00	±0.04	0.8	28.5	30.50	—

*1 Circlip corresponding width of cut

GY Series Inserts

(mm)

Applications	Geometry	Order Number	Stock								Seat Size	CW		RE RER/L	CDX	*2 L	
			Coated				Cermet		Carbide			Cutting Width	Tolerance				
			MP9015	MP9025	VP10RT	VP20RT	MY5015	NX2525		RT9010							RT9020
For Multifunctional Grooving	MM Breaker (Medium feeds) 	GY2M0200D020N-MM	●	●	●	●	●	●				D	2.00	±0.03	0.2	19.1	20.70
		GY2M0250E020N-MM	●	●	●	●	●	●				E	2.50	±0.03	0.2	19.1	20.70
		GY2M0300F020N-MM	●	●	●	●	●	●				F	3.00	±0.03	0.2	19.1	20.70
		GY2M0300F040N-MM	●	●	●	●	●	●				F	3.00	±0.03	0.4	18.9	20.70
		GY2M0300F080N-MM	●	●	●	●	●	●				F	3.00	±0.03	0.8	18.5	20.70
		GY2M0400G020N-MM	●	●	●	●	●	●				G	4.00	±0.04	0.2	24.1	25.65
		GY2M0400G040N-MM	●	●	●	●	●	●				G	4.00	±0.04	0.4	23.9	25.65
		GY2M0400G080N-MM	●	●	●	●	●	●				G	4.00	±0.04	0.8	23.5	25.65
		GY2M0500H040N-MM	●	●	●	●	●	●				H	5.00	±0.04	0.4	23.9	25.65
		GY2M0500H080N-MM	●	●	●	●	●	●				H	5.00	±0.04	0.8	23.5	25.65
		GY2M0600J040N-MM	●	●	●	●	●	●				J	6.00	±0.04	0.4	23.9	25.65
		GY2M0600J080N-MM	●	●	●	●	●	●				J	6.00	±0.04	0.8	23.5	25.65
		GY2M0800K080N-MM	●	●	●	●	●	●				K	8.00	±0.04	0.8	28.5	30.50
		GY2M0800K120N-MM	●	●	●	●	●	●				K	8.00	±0.04	1.2	28.1	30.50
For Copying / For Recessing	BM Breaker 	GY2M0200D100N-BM	●	●	●	●	●	●				D	2.00	±0.03	1.00	19.5	20.90
		GY2M0250E125N-BM	●	●	●	●	●	●				E	2.50	±0.03	1.25	19.3	20.90
		GY2M0300F150N-BM	●	●	●	●	●	●				F	3.00	±0.03	1.50	19.0	20.90
		GY2M0318F159N-BM	●	●	●	●	●	●				F	3.18	±0.03	1.59	18.9	20.90
		GY2M0400G200N-BM	●	●	●	●	●	●				G	4.00	±0.04	2.00	23.4	25.80
		GY2M0475H238N-BM	●	●	●	●	●	●				H	4.75	±0.04	2.38	22.9	25.80
		GY2M0500H250N-BM	●	●	●	●	●	●				H	5.00	±0.04	2.50	22.8	25.80
		GY2M0600J300N-BM	●	●	●	●	●	●				J	6.00	±0.04	3.00	22.5	25.90
		GY2M0635J318N-BM	●	●	●	●	●	●				J	6.35	±0.04	3.18	22.3	25.90
		GY2M0800K400N-BM	●	●	●	●	●	●				K	8.00	±0.04	4.00	26.5	30.80

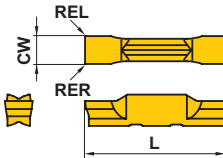
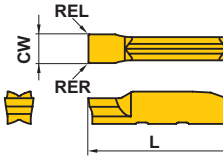
*2 The dimension depends on the breaker. Refer to page 12 "L dimension tolerance conversion table".

● : Inventory maintained in Japan.

(10 inserts in one case) (CBN inserts are available in 1 piece in one case.)

Blank Inserts

(mm)

Geometry	Order Number	Cermet		Carbide	Seat Size	CW		RER	REL	L
		NX2525	RT9010	RT9020		Groove Width	Tolerance			
2 Edge Type 	GY2B0220D020N	●	●	●	D	2.20	±0.10	0.2	0.2	21.05
	GY2B0250D020N	●	●	●	D	2.55	±0.10	0.2	0.2	21.28
	GY2B0270E020N	●	●	●	E	2.70	±0.10	0.2	0.2	21.05
	GY2B0300E020N	●	●	●	E	3.05	±0.10	0.2	0.2	21.28
	GY2B0340F020N	●	●	●	F	3.40	±0.10	0.2	0.2	21.05
	GY2B0360F020N	●	●	●	F	3.65	±0.10	0.2	0.2	21.28
	GY2B0420G020N	●	●	●	G	4.20	±0.10	0.2	0.2	26.00
	GY2B0460G020N	●	●	●	G	4.65	±0.10	0.2	0.2	26.18
	GY2B0520H020N	●	●	●	H	5.20	±0.10	0.2	0.2	26.00
	GY2B0560H020N	●	●	●	H	5.65	±0.10	0.2	0.2	26.18
	GY2B0655J020N	●	●	●	J	6.55	±0.10	0.2	0.2	26.03
	GY2B0680J020N	●	●	●	J	6.85	±0.10	0.2	0.2	26.18
GY2B0880K020N			●	●	K	8.85	±0.10	0.2	0.2	30.88
1 Edge Type 	GY1B0220D020N	●	●	●	D	2.20	±0.10	0.2	0.2	21.07
	GY1B0270E020N	●	●	●	E	2.70	±0.10	0.2	0.2	21.10
	GY1B0340F020N	●	●	●	F	3.40	±0.10	0.2	0.2	21.00
	GY1B0420G020N	●	●	●	G	4.20	±0.10	0.2	0.2	25.86
	GY1B0520H020N	●	●	●	H	5.20	±0.10	0.2	0.2	25.90
	GY1B0655J020N	●	●	●	J	6.55	±0.10	0.2	0.2	25.90

* Insert blank is not suitable for machining without grinding.

GY SERIES L DIMENSION TOLERANCE CONVERSION TABLE

(mm)

Cutting Width CW	*1 Dimensions L	*2 Dimensional tolerance versus standard dimension (L) of each breaker									
		GU	GS/GM	MS/MM	R05-GS	R08/15-GS	R/L-GM	Flat Top	MF	BM	GL
1.20	14.70		0		0						
1.50	14.70		0			0.50					
2.00	20.70	0	0	0		0.60	0.10	0	0.35	0.20	0.35
2.24	*3 (20.7)								0.35		
2.39	20.70	0	0					0	0.35		
2.50	20.70	0	0	0		0.80	0.125	0	0.35	0.20	0.35
2.74	*3 (20.7)								0.35		
3.00	20.70	0	0	0		0.80	0.15	0	0.35	0.20	0.35
3.18	20.70	0	0					0	0.35	0.20	
3.24	*3 (20.7)								0.35		
4.00	25.65	0	0	0			0.20	0	0.30	0.15	
4.24	*3 (25.65)								0.30		
4.75	25.65	0	0					0	0.30	0.15	
5.00	25.65	0	0	0			0.30	0	0.30	0.15	
5.24	*3 (25.65)								0.30		
6.00	25.65	0	0	0				0	0.30	0.25	
6.31	*3 (25.65)								0.30		
6.35	25.65	0	0						0.30	0.25	
8.00	30.50		0	0						0.30	

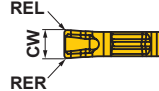
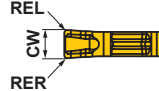
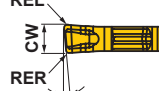
*1 This value is used at the described holder dimension.

*2 when there is no applicable breaker.

*3 The standard dimensions shown here use an approximate insert width.

GW Series Inserts

(mm)

Application	Order Number	Stock						CW		REL	RER	PSIRR PSIRL	Geometry
		Coating				Carbide		Cutting Width	Tolerance				
		MY5015	VP10RT	VP20RT	VP30RT	RT9010	RT9020						
Grooving, Cutting Off	GW1M0200D020N-GS		●	●	●			2.00	±0.03	0.2	0.2	—	
Grooving, Cutting Off	GW1M0239E020N-GS		●	●	●			2.39	±0.03	0.2	0.2	—	
Grooving, Cutting Off	GW1M0300F020N-GS		●	●	●			3.00	±0.03	0.2	0.2	—	
Grooving, Cutting Off	GW1M0400G020N-GS		●	●	●			4.00	±0.04	0.2	0.2	—	
Grooving, Cutting Off	GW1M0500H030N-GS		●	●	●			5.00	±0.04	0.3	0.3	—	
Grooving, Cutting Off	GW1M0200D020N-GM	●	●	●	●			2.00	±0.03	0.2	0.2	—	
Grooving, Cutting Off	GW1M0239E020N-GM	●	●	●	●			2.39	±0.03	0.2	0.2	—	
Grooving, Cutting Off	GW1M0300F030N-GM	●	●	●	●			3.00	±0.03	0.3	0.3	—	
Grooving, Cutting Off	GW1M0400G030N-GM	●	●	●	●			4.00	±0.04	0.3	0.3	—	
Grooving, Cutting Off	GW1M0500H040N-GM	●	●	●	●			5.00	±0.04	0.4	0.4	—	
Cutting off, Low Feed	GW1M0200D020R05-GS		●	●	●			2.00	±0.03	0.2	0.2	5	
Cutting off, Low Feed	GW1M0239E020R05-GS		●	●	●			2.39	±0.03	0.2	0.2	5	
Cutting off, Low Feed	GW1M0300F020R05-GS		●	●	●			3.00	±0.03	0.2	0.2	5	
Cutting off Low Feed, Lead Angle 8°	GW1M0200D003R08-GS		●	●	●			2.00	±0.03	0.03	0.03	8	
Cutting off Low Feed, Lead Angle 8°	GW1M0239E003R08-GS		●	●	●			2.39	±0.03	0.03	0.03	8	
Cutting off Low Feed, Lead Angle 8°	GW1M0300F003R08-GS		●	●	●			3.00	±0.03	0.03	0.03	8	
Cutting Off	GW1M0200D020R05-GM	●	●	●	●			2.00	±0.03	0.2	0.2	5	
Cutting Off	GW1M0200D020L05-GM	●	●	●	●			2.00	±0.03	0.2	0.2	5	
Cutting Off	GW1M0239E020R05-GM	●	●	●	●			2.39	±0.03	0.2	0.2	5	
Cutting Off	GW1M0239E020L05-GM	●	●	●	●			2.39	±0.03	0.2	0.2	5	
Cutting Off	GW1M0300F030R05-GM	●	●	●	●			3.00	±0.03	0.3	0.3	5	
Cutting Off	GW1M0300F030L05-GM	●	●	●	●			3.00	±0.03	0.3	0.3	5	
Cutting Off	GW1M0400G030R05-GM	●	●	●	●			4.00	±0.04	0.3	0.3	5	
Cutting Off	GW1M0400G030L05-GM	●	●	●	●			4.00	±0.04	0.3	0.3	5	
Cutting Off	GW1M0500H040R05-GM	●	●	●	●			5.00	±0.04	0.4	0.4	5	
Cutting Off	GW1M0500H040L05-GM	●	●	●	●			5.00	±0.04	0.4	0.4	5	

Right hand insert shown.

Right hand insert shown.

Blank Inserts

(mm)

Geometry	Order Number	Carbide		CW		RER	REL
		RT9010	RT9020	Grooving Width	Tolerance		
1 Edge Type REL CW RER  <td>GW1B0320D020N</td> <td>●</td> <td>●</td> <td>3.24</td> <td>±0.10</td> <td>0.2</td> <td>0.2</td>	GW1B0320D020N	●	●	3.24	±0.10	0.2	0.2
	GW1B0440F020N	●	●	4.44	±0.10	0.2	0.2
	GW1B0540G020N	●	●	5.44	±0.10	0.2	0.2
	GW1B0640H020N	●	●	6.44	±0.10	0.2	0.2

* Insert blank is not suitable for machining without grinding.

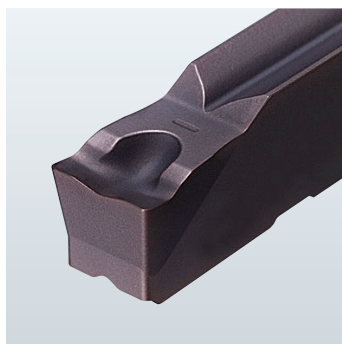
Correct Use of GY Series GS Breaker

First Recommendation

Reduction of Cutting Resistance

Cutting Off of Holes and Small Parts

Reduction of Burrs and Core Residue

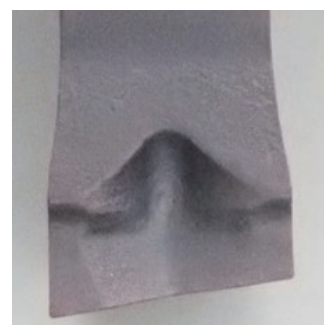


Correct Use of GW Series Inserts

First Recommendation

Improved Fracture Resistance

Reduction of Burrs and Core Residue



Grooving / Cutting Off

Recommended Cutting Speed [For External Grooving / Cutting Off]

	Workpiece Material	Properties	Grade	Cutting Speed v_c (m/min)					
				50	100	150	200	250	300
P	Mild Steel	Hardness $\leq 160\text{HB}$	VP20RT		100		220		
			VP10RT		110		230		
			NX2525		90		210		
	Carbon Steel Alloy Steel	Hardness 160–280HB	VP20RT		80		180		
			VP10RT		90		190		
			MY5015		110		250		
			NX2525		70		170		
		Hardness $280\text{HB} \leq$	VP20RT		60		140		
			VP10RT		70		150		
			MY5015		90		210		
			NX2525		55		135		
M	Stainless Steels	Hardness $\leq 270\text{HB}$	VP20RT		60		140		
			VP10RT		70		150		
K	Gray Cast Irons	Tensile Strength $\leq 300\text{MPa}$	VP20RT		80		180		
			VP10RT		90		190		
			MY5015			140		300	
	Ductile Cast Irons	Tensile Strength $\leq 800\text{MPa}$	VP20RT		60		140		
			VP10RT		70		150		
			MY5015		90		210		
S	Heat Resistant Alloys Titanium Alloys	—	MP9015	40	100				
			MP9025	30	90				
			VP20RT	30	60				
			VP10RT/ RT9010	40	70				
H	Hardened Steel	50HRC $\leq$	BC8110/MB8025		80	120			

Note 1) For MP9015, MP9025, VP10RT, VP20RT and MY5015, wet cutting is recommended.

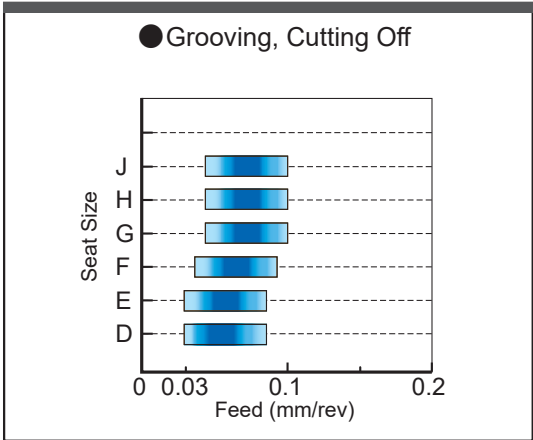
	Workpiece Material	Properties	Grade	Cutting Speed v_c (m/min)					
				50	100	200	300	400	500
N	Aluminium Alloys (A6061, 7075)	Content Si $<5\%$	RT9010			200			500
	Aluminium Alloys (AC4B)	Content $5\% \leq \text{Si} \leq 10\%$	RT9010			200			500
	Aluminium Alloys (ADC12, A390)	Content Si $>10\%$	RT9010		100	200			

Recommended Cutting Conditions [For External Grooving / Cutting Off]

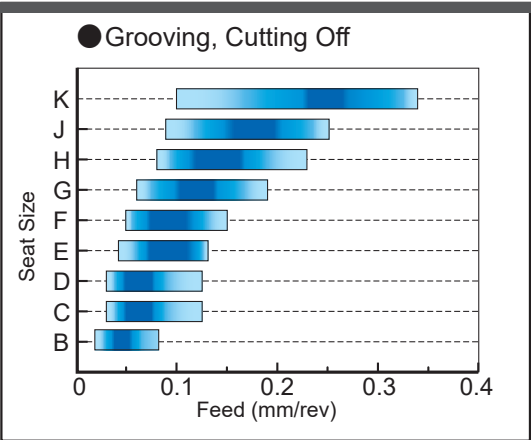
Recommended cutting conditions when combining a GYHR/L2525M00/90-M25R/L modular holder and GYM25R/LA-○○○ modular blade.

Recommended feed rate and depth of cut

GU Breaker

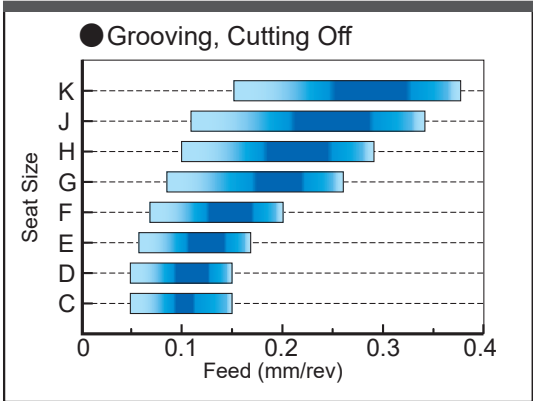


GS Breaker

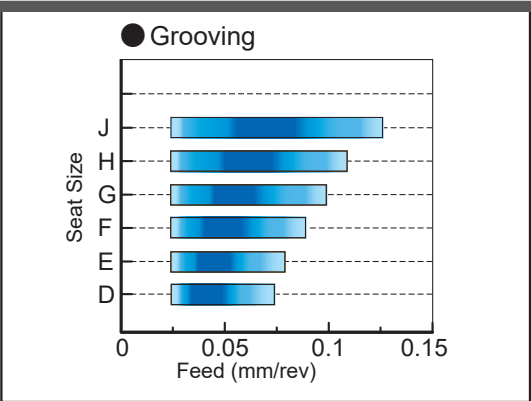


Seat Size	
Insert Width (mm)	
B	1.20
C	1.50
D	2.00
	2.24
E	2.39
	2.50
	2.74
F	3.00
	3.18
	3.24
G	4.00
	4.24
H	4.75
	5.00
	5.24
J	6.00
	6.31
	6.35
K	8.00

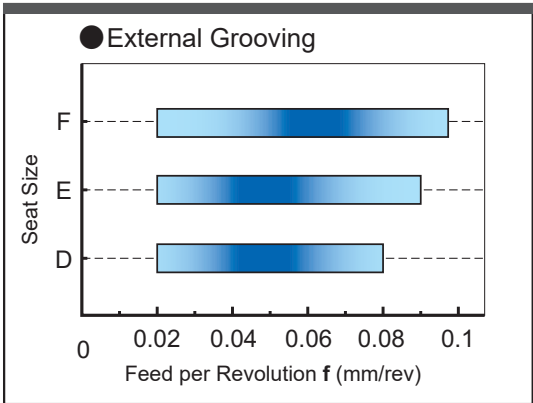
GM Breaker



Flat Top GFGS (CBN)



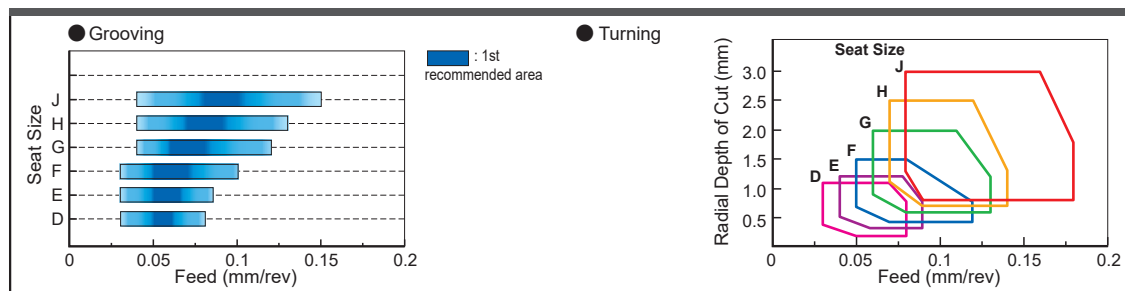
GL Breaker



■ : 1st recommended area

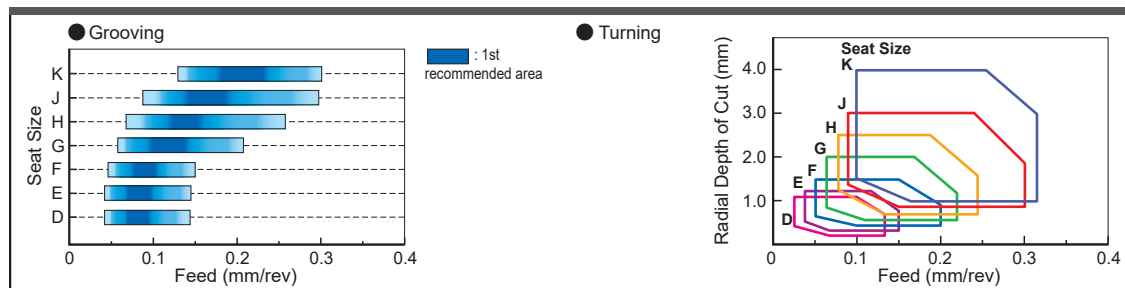
Grooving / Cutting Off

MF Breaker

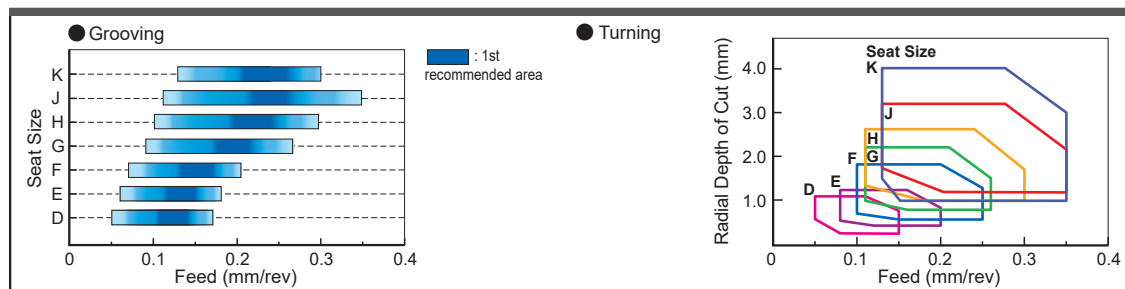


Seat Size	
Insert Width (mm)	
C	1.50
D	2.00
E	2.39
F	2.50
G	2.74
H	3.00
J	3.18
K	3.24
L	4.00
M	4.24
N	4.75
O	5.00
P	5.24
Q	6.00
R	6.31
S	6.35
T	8.00

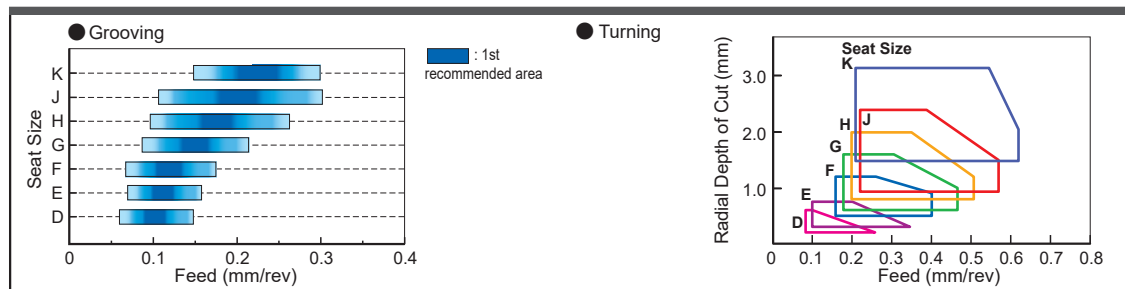
MS Breaker



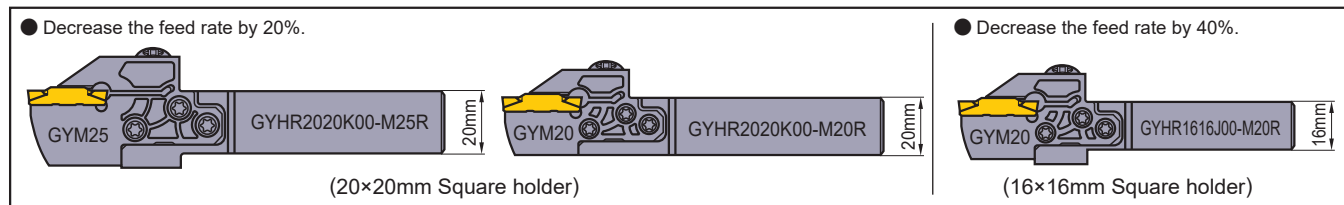
MM Breaker



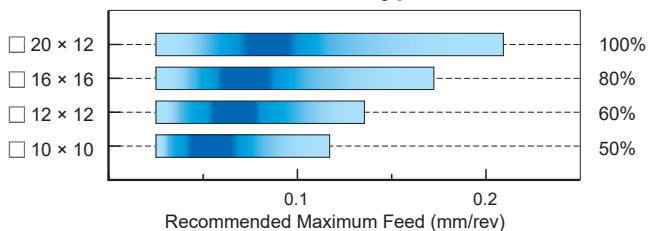
BM Breaker



Note 1) Lower the recommended cutting speed given in the table by 20% and 40% respectively when combining the following modular holders and modular blades.



In the case of mono block type holder for Swiss-type lathes



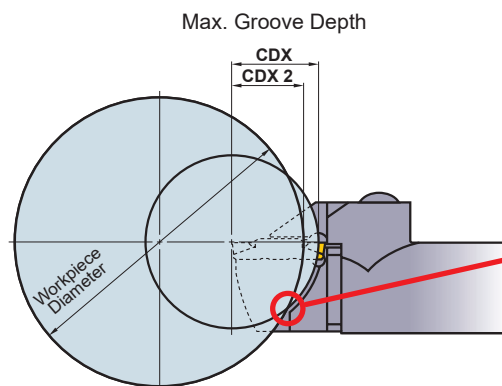
Please refer to the tables above on recommended cutting conditions for external grooving and cutting off.

Apply the percentage ratio shown on each shank size with the values in the table.

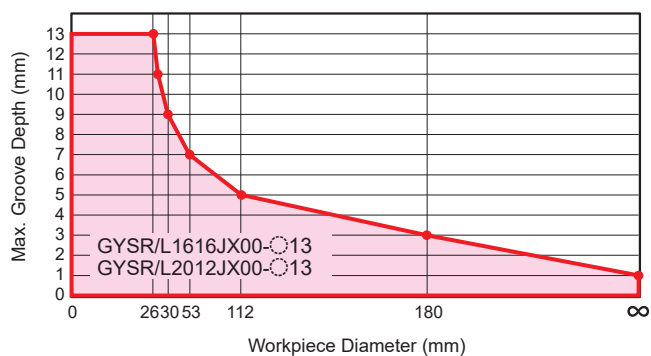
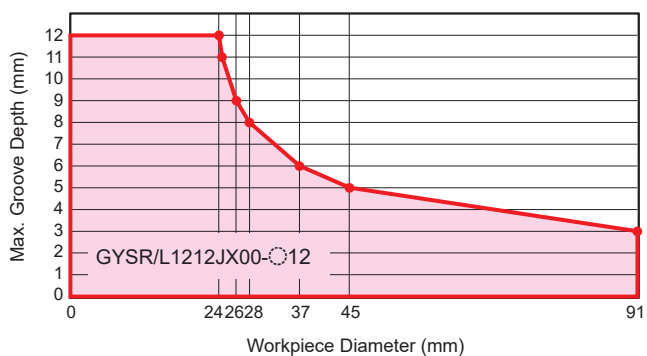
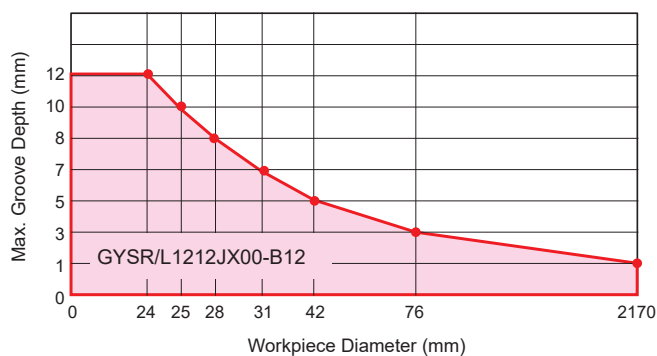
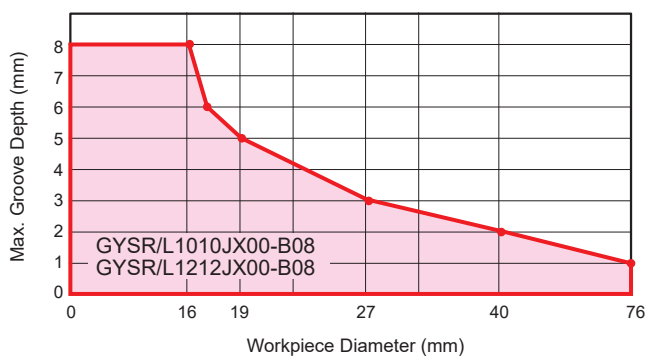
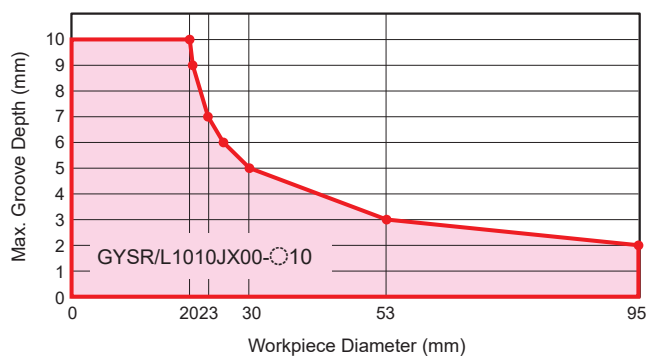
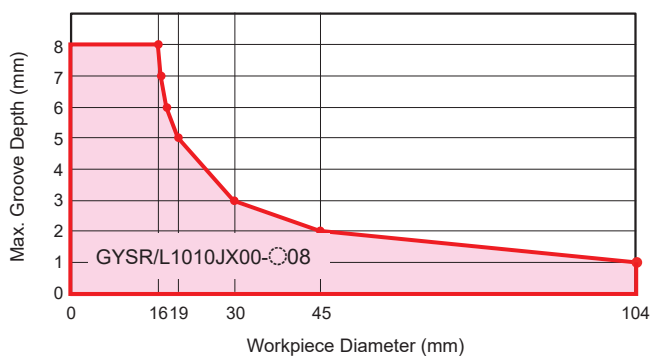
LIMITATION OF THE MAXIMUM GROOVE DEPTH [For External Grooving]

•In The Case of Mono Block Type Holder for Swiss-Type Lathes

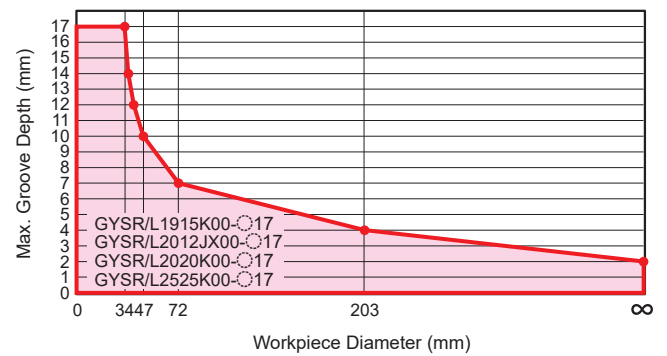
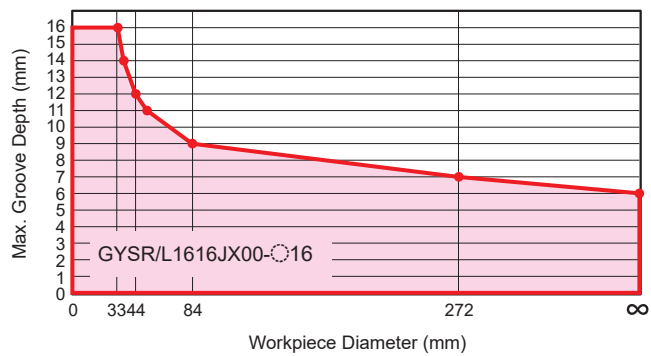
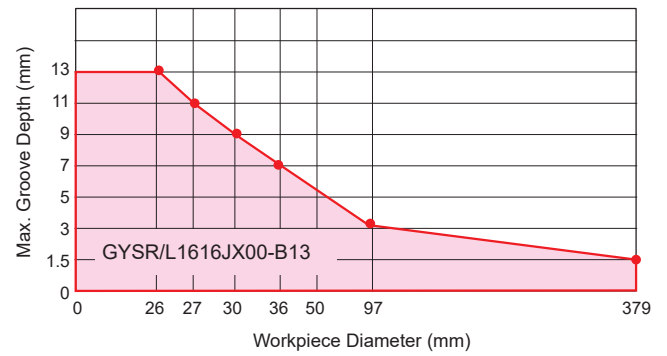
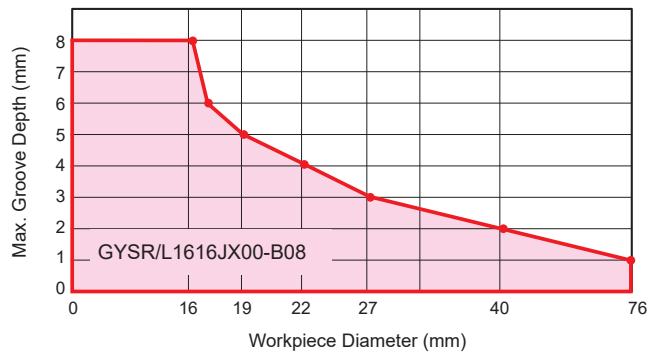
The maximum groove depth is limited by the workpiece diameter.



Due to interference, the maximum groove depth is limited by the workpiece diameter.



GY Series



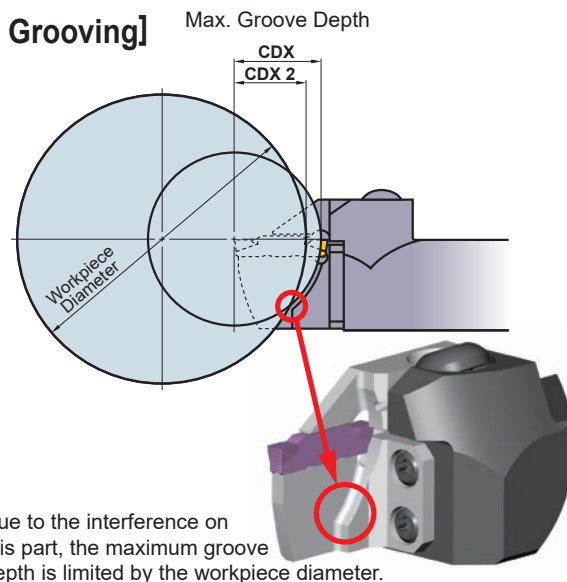
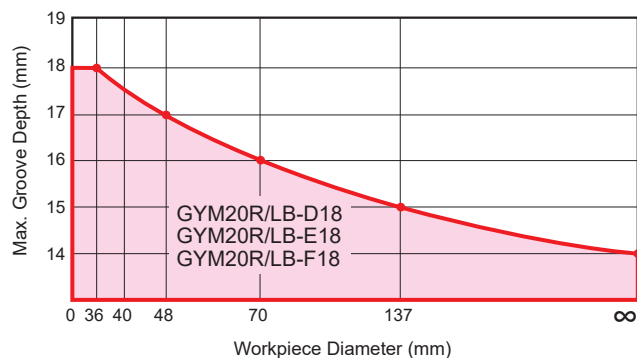
Limitation of The Maximum Groove Depth [For External Grooving]

•When using the modular blade GYM○○R/LA-○○○

The maximum groove depth is not limited by the workpiece diameter.

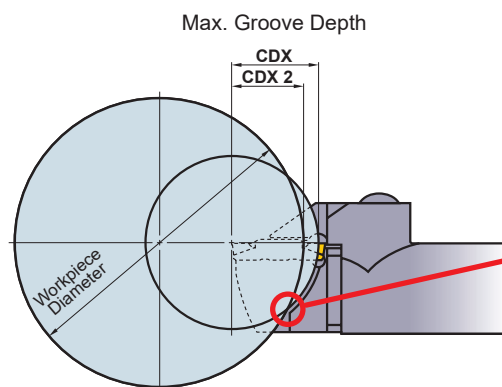
•When using the modular blade GYM○○R/LB-○○○

The maximum groove depth is limited by the workpiece diameter.

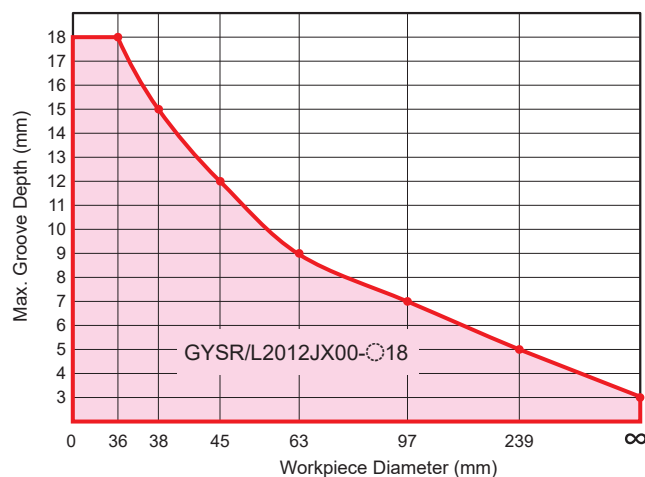
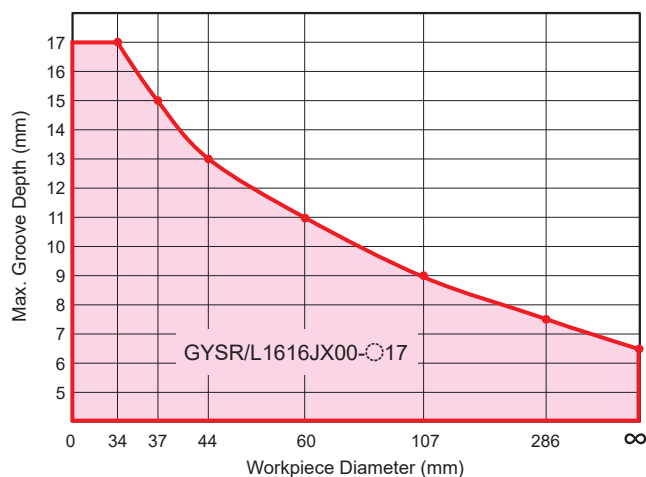
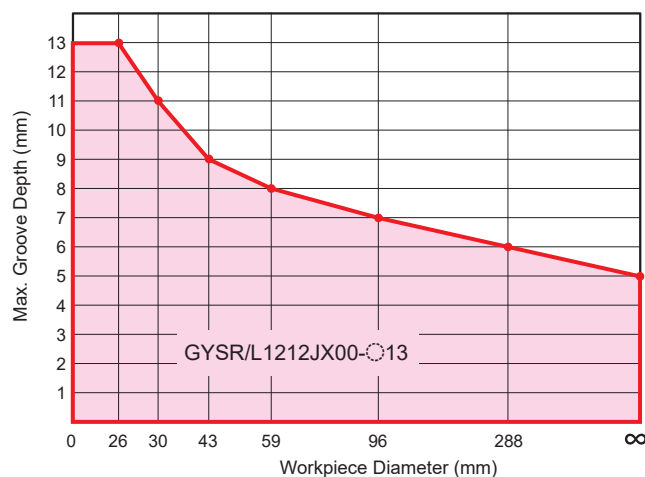
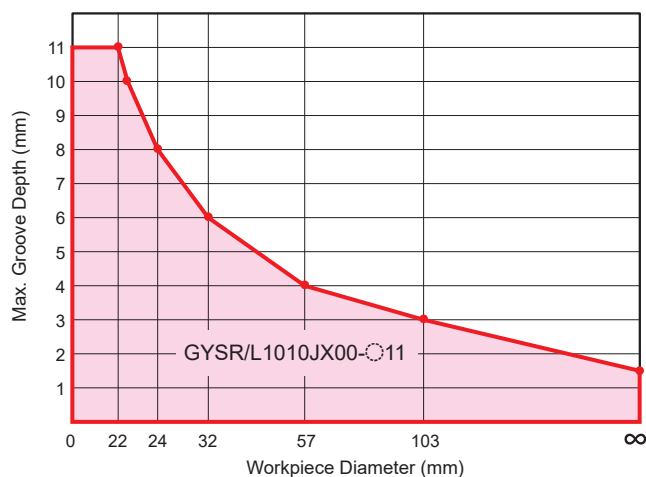


•In the case of mono block type holder for Swiss-type lathes

The maximum groove depth is limited by the workpiece diameter.



Due to interference, the maximum groove depth is limited by the workpiece diameter.

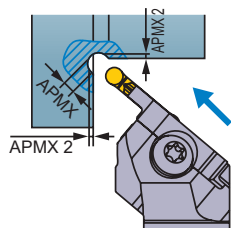


Recommended Cutting Speed [For External Recessing]

	Workpiece Material	Properties	Grade	Cutting Speed v_c (m/min)				
				50	100	150	200	250
P	Mild Steel	Hardness $\leq 180\text{HB}$	VP20RT		80	180		
			VP10RT		90	190		
	Carbon Steel Alloy Steel	Hardness 180—280HB	VP20RT	60	140			
			VP10RT	70	150			
			MY5015		90	210		
			NX2525	55	135			
	Carbon Steel Alloy Steel	Hardness 280—350HB	VP20RT	50	110			
			VP10RT	60	120			
			MY5015		80	160		
			NX2525	45	105			
M	Stainless Steels	Hardness $\leq 350\text{HB}$	VP20RT	50	110			
			VP10RT	60	120			
K	Gray Cast Irons	Tensile Strength $\leq 350\text{MPa}$	VP20RT	60	140			
			VP10RT	70	150			
			MY5015		90	210		
	Ductile Cast Irons	Tensile Strength $\leq 800\text{MPa}$	VP20RT	50	110			
			VP10RT	60	120			
			MY5015		80	160		
S	Heat Resistant Alloys Titanium Alloys	—	MP9015	40	100			
			MP9025	30	90			
			VP20RT	30	60			
			VP10RT	40	70			

Note 1) For MP9015, MP9025, VP10RT, VP20RT and MY5015, wet cutting is recommended.

Distance from Work Surface Recess Depth

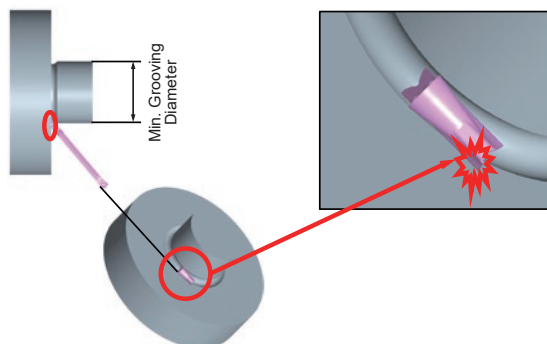


Cutting Width CW (mm)	Recess Depth APMX (mm)	Distance from Work Surface to Recess Depth APMX 2 (mm)
2.00	1.50	0.646
2.50	1.75	0.720
3.00	2.00	0.793
3.18	2.09	0.819
4.00	2.50	0.939
4.75	2.88	1.049
5.00	3.00	1.086
6.00	3.50	1.232
6.35	3.68	1.283

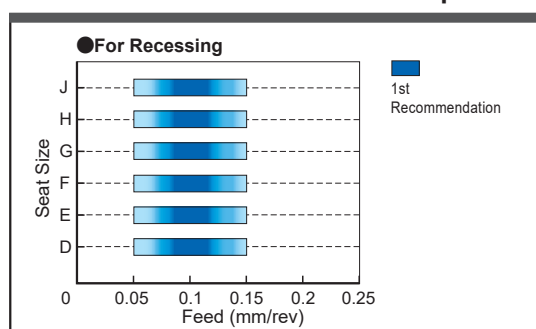
BM Breaker

Minimum grooving diameter

Ensure the tool is suitable for the diameter being machined. Refer to the Min. Grooving Diameter as shown in the table on the “page number” to avoid a collision with the workpiece shown below.

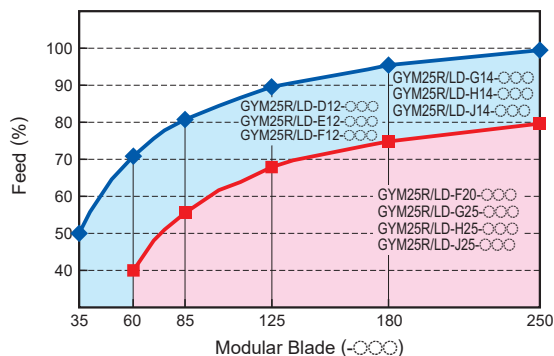


Recommended feed rate and depth of cut



This image shows a full page of a document template designed for writing. At the top left, there is a header area containing the word "Memo" in a large, bold, black sans-serif font. A solid dark grey horizontal bar runs across the entire width of the page directly beneath the header. The main body of the page is filled with numerous thin, light grey horizontal lines spaced evenly apart, providing a guide for handwriting or typing. The overall design is clean, minimalist, and functional.

Relationship Between The Modular Blade and Feed Per Rotation [For Face Grooving]



Note 1) Adjust the feed per rotation in the cutting conditions to the percentage shown in the table above.

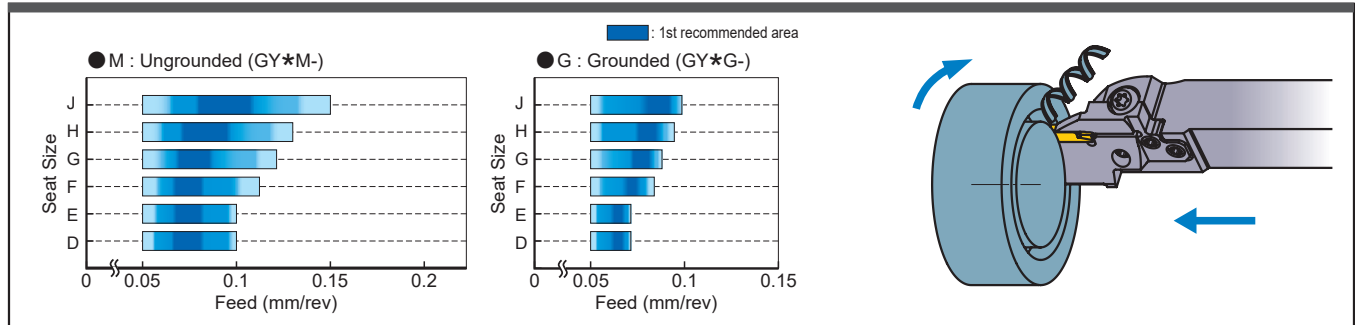
Recommended Cutting Speed [For Face Grooving]

Workpiece Material		Properties	Grade	Cutting Speed (m/min)					
				50	100	150	200	250	300
P	Mild Steel	Hardness ≤160HB	VP20RT		80	180			
			VP10RT		90	190			
			NX2525		70	170			
	Carbon Steel Alloy Steel	Hardness 160–280HB	VP20RT	60	140				
			VP10RT	70	150				
			MY5015		90	210			
			NX2525	55	135				
		Hardness 280HB≤	VP20RT	50	110				
			VP10RT	60	120				
			MY5015		80	160			
			NX2525	45	105				
M	Stainless Steels	Hardness ≤270HB	VP20RT	50	110				
			VP10RT	60	120				
K	Gray Cast Irons	Tensile Strength ≤300MPa	VP20RT	60	140				
			VP10RT	70	150				
			MY5015		90	210			
	Ductile Cast Irons	Tensile Strength ≤800MPa	VP20RT	50	110				
			VP10RT	60	120				
			MY5015		80	160			
S	Heat Resistant Alloys Titanium Alloys	—	MP9015	40	100				
			MP9025	30	90				
			VP20RT	30	60				
			VP10RT	40	70				
			RT9010	40	70				
H	Hardened Steel	Hardness 50HRC≤	BC8110		60	120			
			MB8025		60	120			

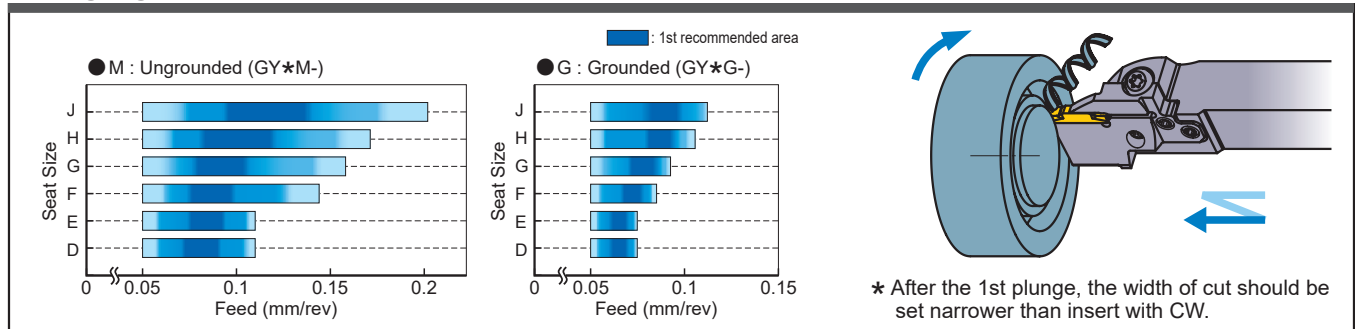
Note 1) For MP9015, MP9025, VP10RT, VP20RT and MY5015, wet cutting is recommended.

Recommended Cutting Conditions [For Face Grooving]

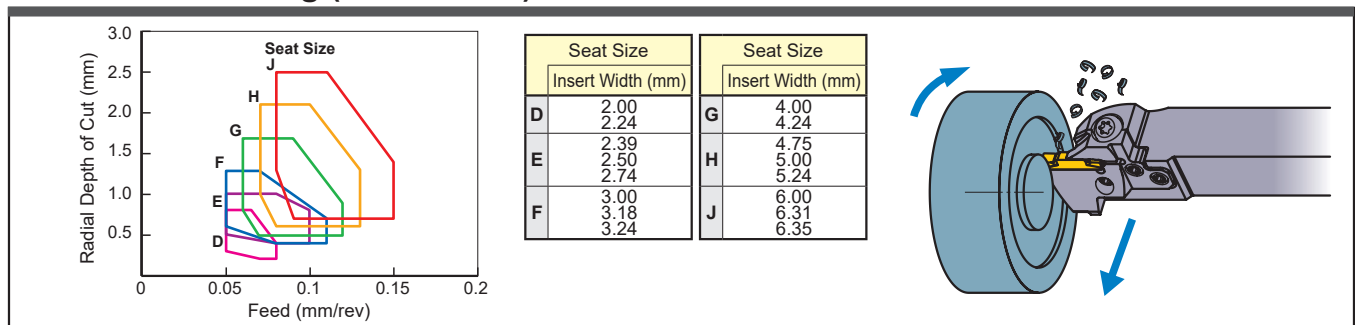
Grooving



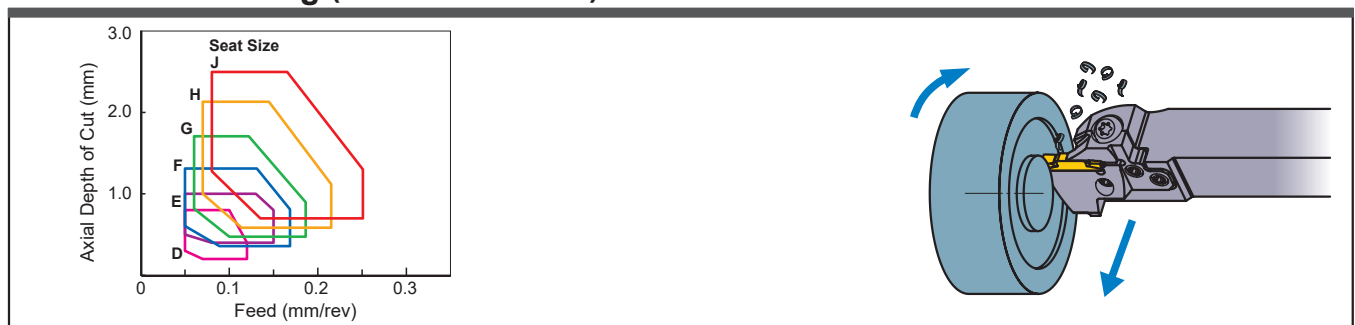
Plunging



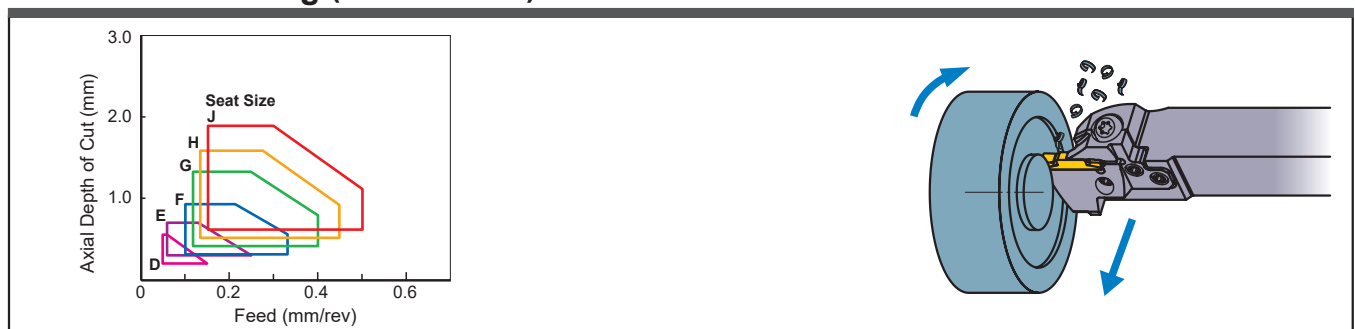
Traverse Machining (MF Breaker)



Traverse Machining (MM/MS Breaker)



Traverse Machining (BM Breaker)



Note 1) GL chip breaker is not recommended for face grooving.

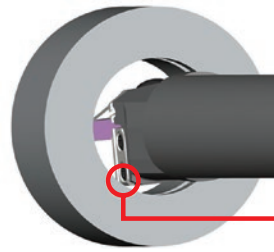
Limitation of The Maximum Groove Depth [For Internal Grooving]

•When using the mono block type

The maximum groove depth is not limited by the cutting diameter.

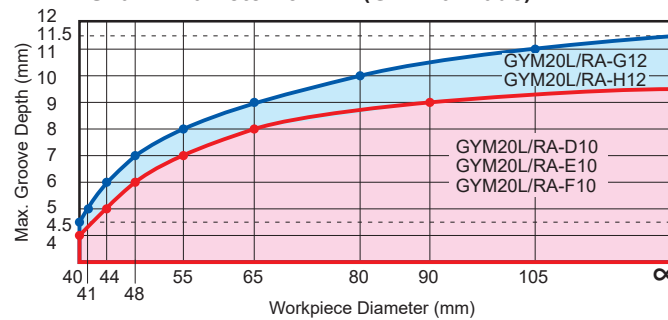
•When using the modular blade type

The maximum groove depth is limited by the cutting diameter.

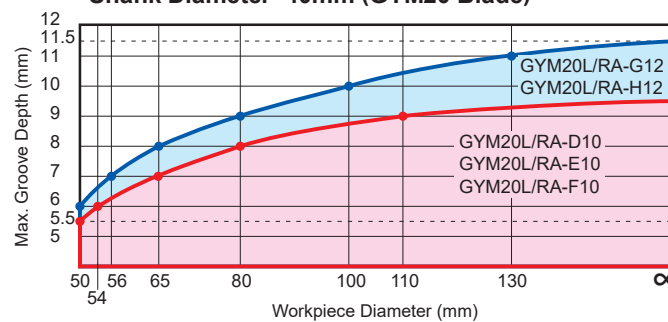


Due to interference of this part, the maximum groove depth is limited by the cutting diameter.

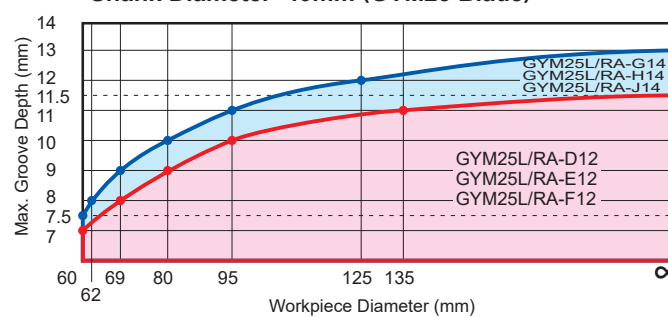
•Shank Diameter=32mm (GYM20 Blade)



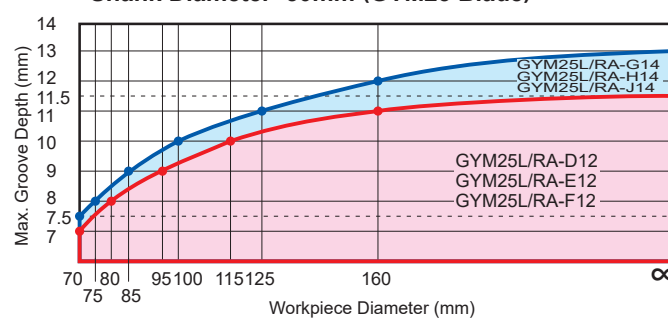
•Shank Diameter=40mm (GYM20 Blade)



•Shank Diameter=40mm (GYM25 Blade)



•Shank Diameter=50mm (GYM25 Blade)



Recommended Cutting Speed [For Internal Grooving]

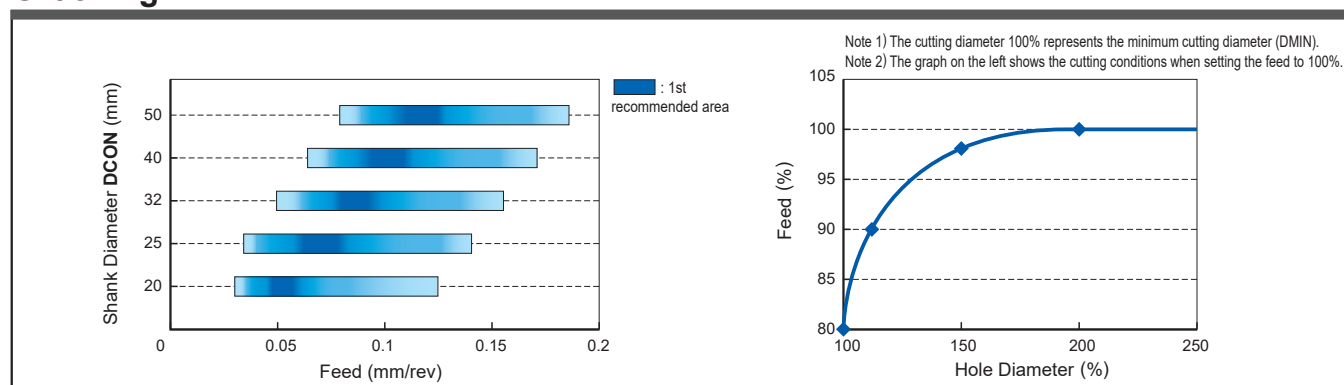
	Workpiece Material	Properties	Grade	Cutting Speed (m/min)				
				50	100	150	200	250
P	Mild Steel	Hardness ≤160HB	VP20RT		80	180		
			VP10RT		90	190		
			NX2525		70	170		
	Carbon Steel Alloy Steel	Hardness 160–280HB	VP20RT		60	140		
			VP10RT		70	150		
			MY5015		90	210		
			NX2525		55	135		
		Hardness 280HB≤	VP20RT		50	110		
			VP10RT		60	120		
			MY5015		80	160		
			NX2525		45	105		
M	Stainless Steels	Hardness ≤270HB	VP20RT		50	110		
			VP10RT		60	120		
K	Gray Cast Irons	Tensile Strength ≤300MPa	VP20RT		60	140		
			VP10RT		70	150		
			MY5015		90	210		
	Ductile Cast Irons	Tensile Strength ≤800MPa	VP20RT		50	110		
			VP10RT		60	120		
			MY5015		80	160		
S	Heat Resistant Alloys Titanium Alloys	—	MP9015		40	100		
			MP9025		30	90		
			VP20RT		30	60		
			VP10RT/RT9010		40	70		
H	Hardened Steel	50HRC≤	BC8110/MB8025		60	100		

Note 1) For MP9015, MP9025, VP10RT, VP20RT and MY5015, wet cutting is recommended.

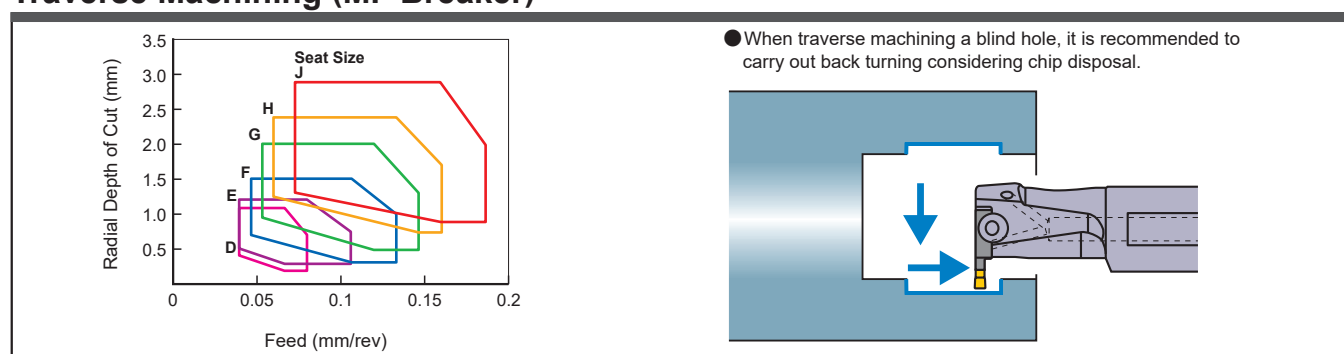
Workpiece Material		Properties	Grade	Cutting Speed v_c (m/min)					
				50	100	200	300	400	500
N	Aluminium Alloys (A6061, 7075)	Content Si<5%	RT9010			150		400	
	Aluminium Alloys (AC4B)	Content 5%≤Si≤10%	RT9010			150		400	
	Aluminium Alloys (ADC12, A390)	Content Si>10%	RT9010		80	160			

Recommended Cutting Conditions [For Internal Grooving]

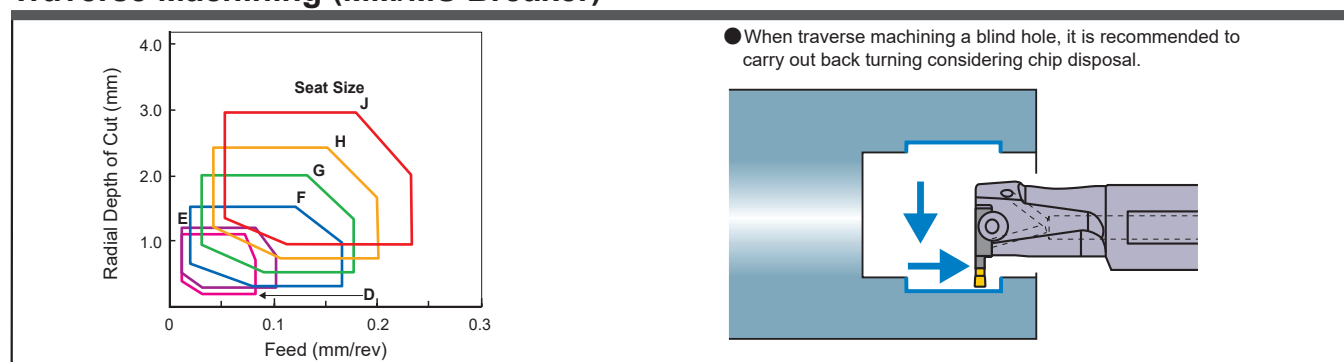
Grooving



Traverse Machining (MF Breaker)

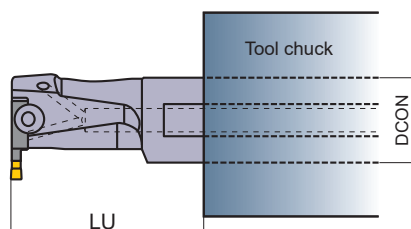


Traverse Machining (MM/MS Breaker)



Note 1) The above cutting conditions are for when using the tool overhang (LU) 1.6-2.0 times larger than the shank diameter (DCON). (L/D=1.6-2.0)
 When using L/D larger than 2.0, reduce the cutting conditions.

Seat Size	
Insert Width (mm)	
D	2.00
	2.24
E	2.39
	2.50
F	2.74
	3.00
G	3.18
	3.24
H	4.00
	4.24
J	4.75
	5.00
	5.24
	6.00
	6.31
	6.35



GW Series

Recommended Cutting Conditions

■ Cutting Speed

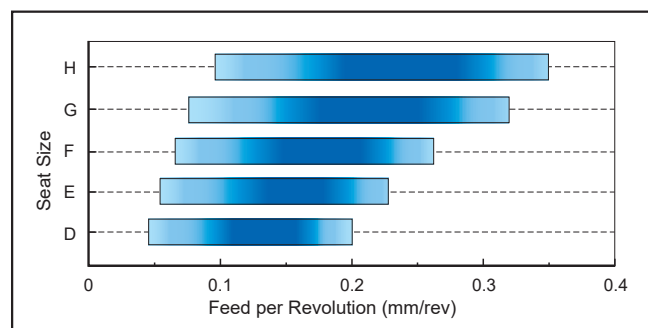
Workpiece Material	Properties	Grade	Cutting Speed (m/min)					
			50	100	150	200	250	300
P	Mild Steel	VP20RT		100		240		
		VP10RT		110		250		
	Carbon Steel	VP20RT		80		200		
		VP10RT		90		210		
		VP30RT	60		180			
		MY5015		110		250		
	Alloy Steel	VP20RT	60		160			
		VP10RT		70		170		
		VP30RT	40		140			
		MY5015		90		210		
M	Stainless Steels	VP20RT		60		180		
		VP10RT		70		190		
		VP30RT	40		160			
K	Gray Cast Irons	VP20RT		80		200		
		VP10RT		90		210		
		MY5015			140		300	
	Ductile Cast Irons	VP20RT	60		160			
		VP10RT		70		170		
		MY5015		90		210		
S	Heat Resistant Alloys Titanium Alloys	VP20RT	30	60				
		VP10RT	40	70				

Note 1) VP20RT is the first recommended grade for materials.

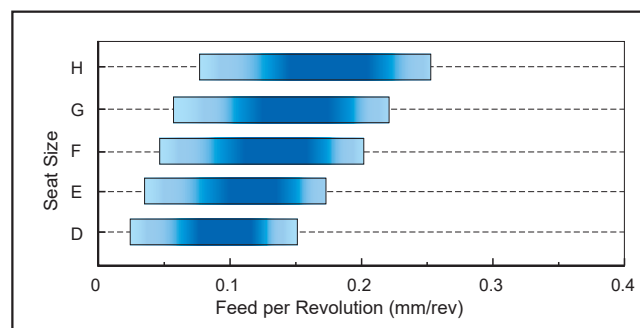
Note 2) For VP10RT, VP20RT, VP30RT and MY5015, wet cutting is recommended.

■ Feed per Revolution

GM Breaker



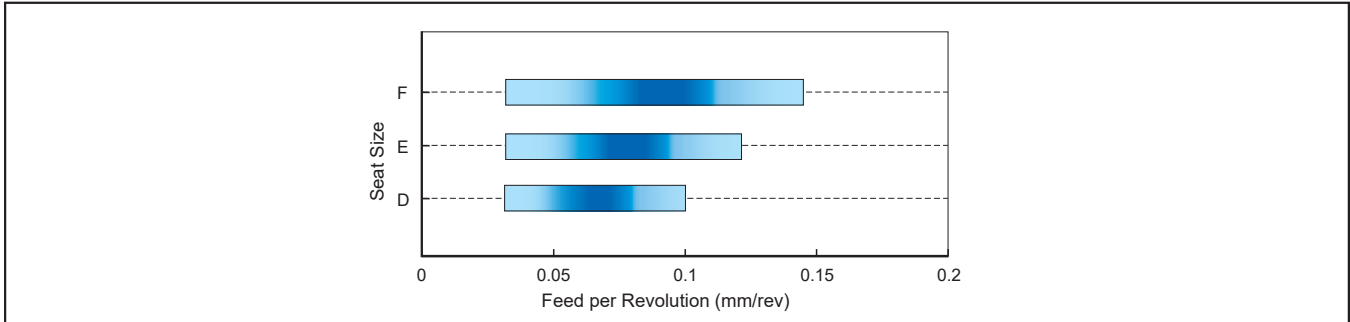
GS Breaker



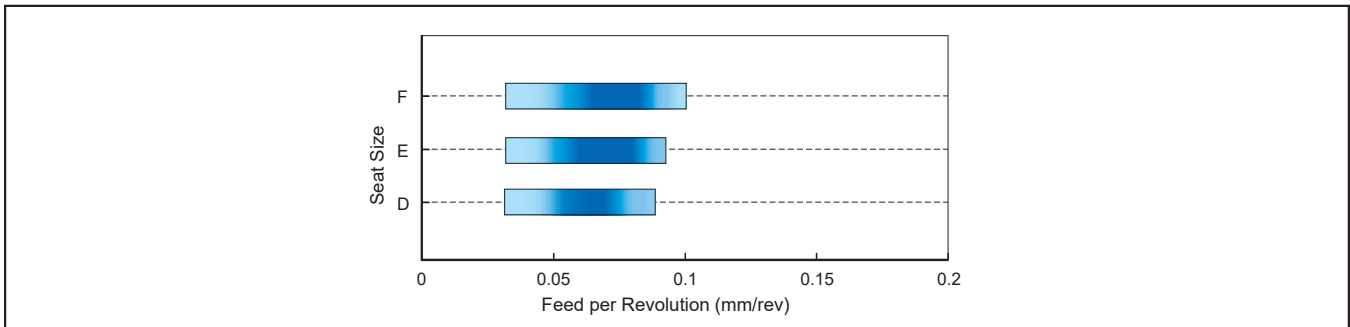
Chip Breaker	Feed per Revolution (mm/rev)				
	Seat Size D	Seat Size E	Seat Size F	Seat Size G	Seat Size H
GM Breaker	0.05–0.20	0.06–0.23	0.07–0.26	0.08–0.32	0.10–0.35
GS Breaker	0.03–0.15	0.04–0.17	0.05–0.20	0.06–0.22	0.08–0.25

Cutting Off Feed per Revolution

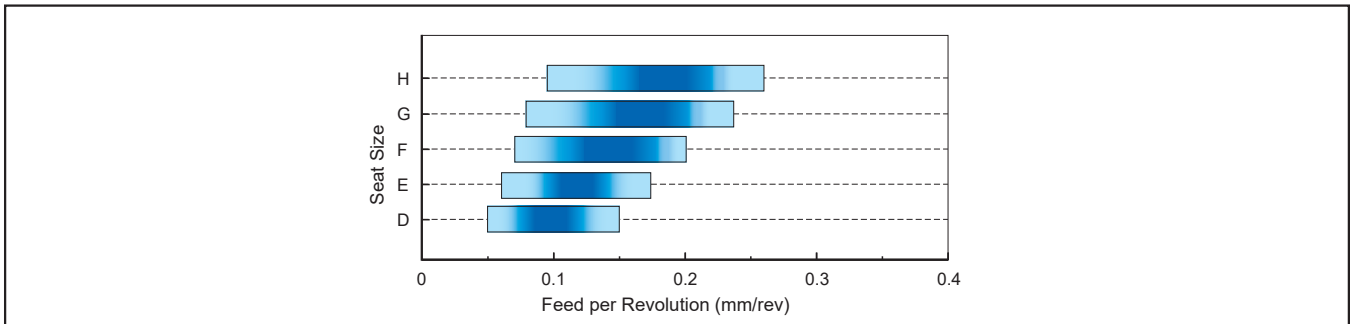
R05-GS Breaker



R08-GS Breaker



R/L05-GM Breaker



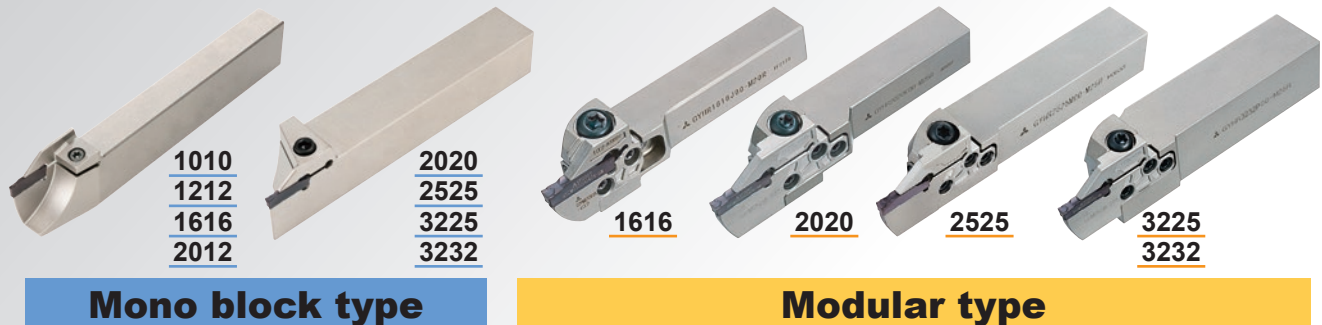
Chip Breaker	PSIPR	Hand	Feed per Revolution (mm/rev)				
			Seat Size D	Seat Size E	Seat Size F	Seat Size G	Seat Size H
R05-GS	5°	R	0.03–0.10	0.03–0.12	0.03–0.14	—	—
R08-GS	8°	R	0.03–0.08	0.03–0.09	0.03–0.14	—	—
R05-GM	5°	R/L	0.05–0.15	0.06–0.17	0.07–0.20	0.08–0.23	0.10–0.26

GY Series

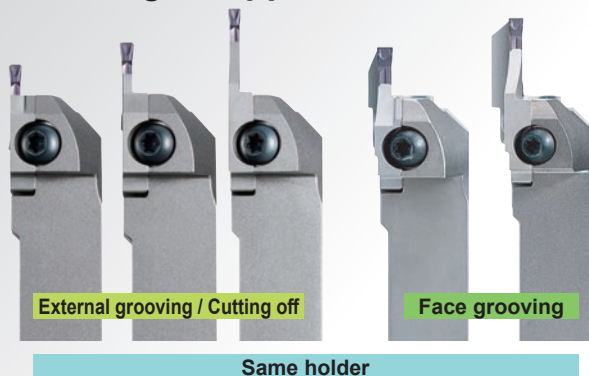
A wide selection of holders and inserts available for diverse grooving and cutting off applications

External • Face holders

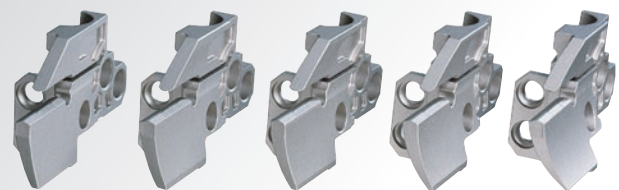
Corresponding blades for a variety of modular holders with different shank sizes



A wide selection of holders and inserts available for diverse grooving and cutting off applications



Applicable for various diameters of face grooves by the wide array of modular blades with different grooving diameters

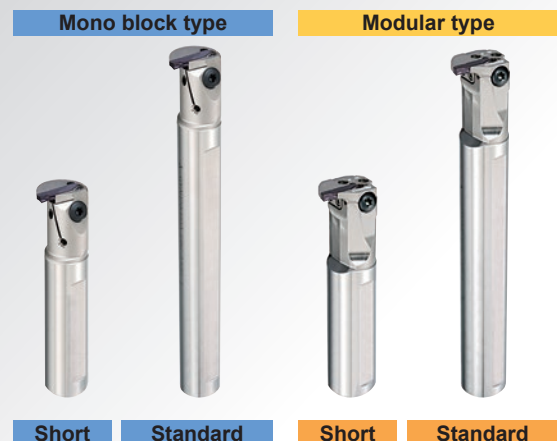


Internal holders

A wide range of holders available from minimum diameter of $\phi 25\text{mm}$



Short shank types are standard stock items

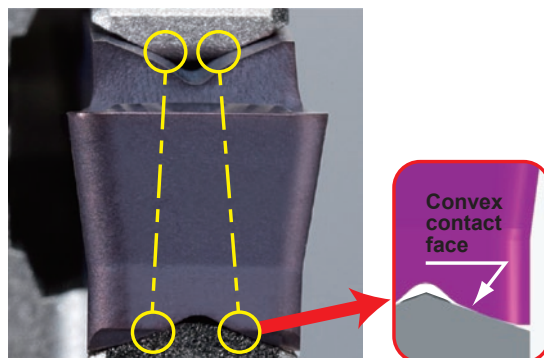
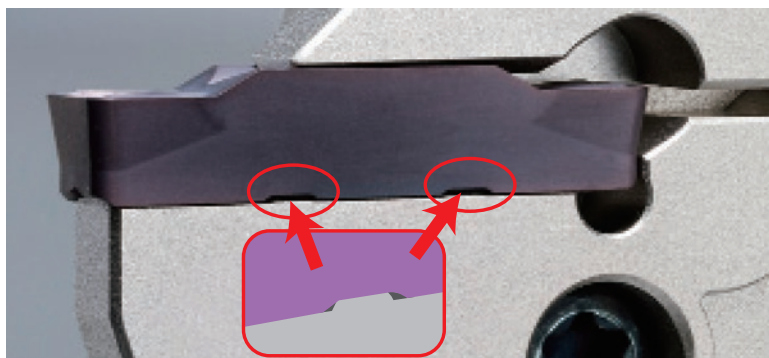


Original insert design leading the way to new grooving and cutting off applications

Highly reliable insert clamping

Safety keys prevent insert movement.

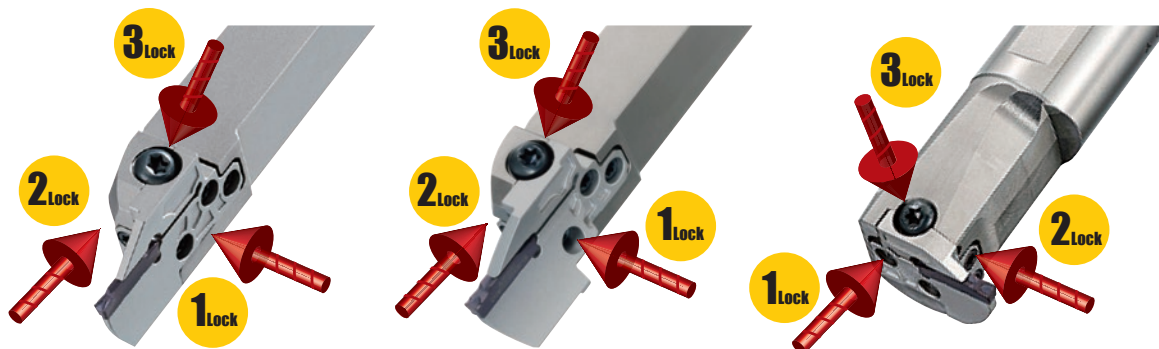
The convex geometry ensures high precision clamping.



New TRI-LOCK System for increased stability and performance!

TRI-LOCK System

The TRI-LOCK system ensures the blade is securely fixed in 3 directions (side, front and top), giving high rigidity for stable grooving and cutting off performance.



GW Series

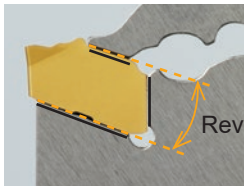
Long Lasting, Easy to Use Cutting Off & Grooving System

Easy to Utilize Configuration that Improves Tool Handling

Clamp

**Simple insert clamping
method offering high
rigidity.**

To prevent the insert from being pulled out during machining a reverse taper angle has been designed from the front of the insert, additionally the design also includes 3 large locating faces between the insert and the blade offering increased cutting edge reliability. The blade itself is made from a special alloy steel to suit this application.



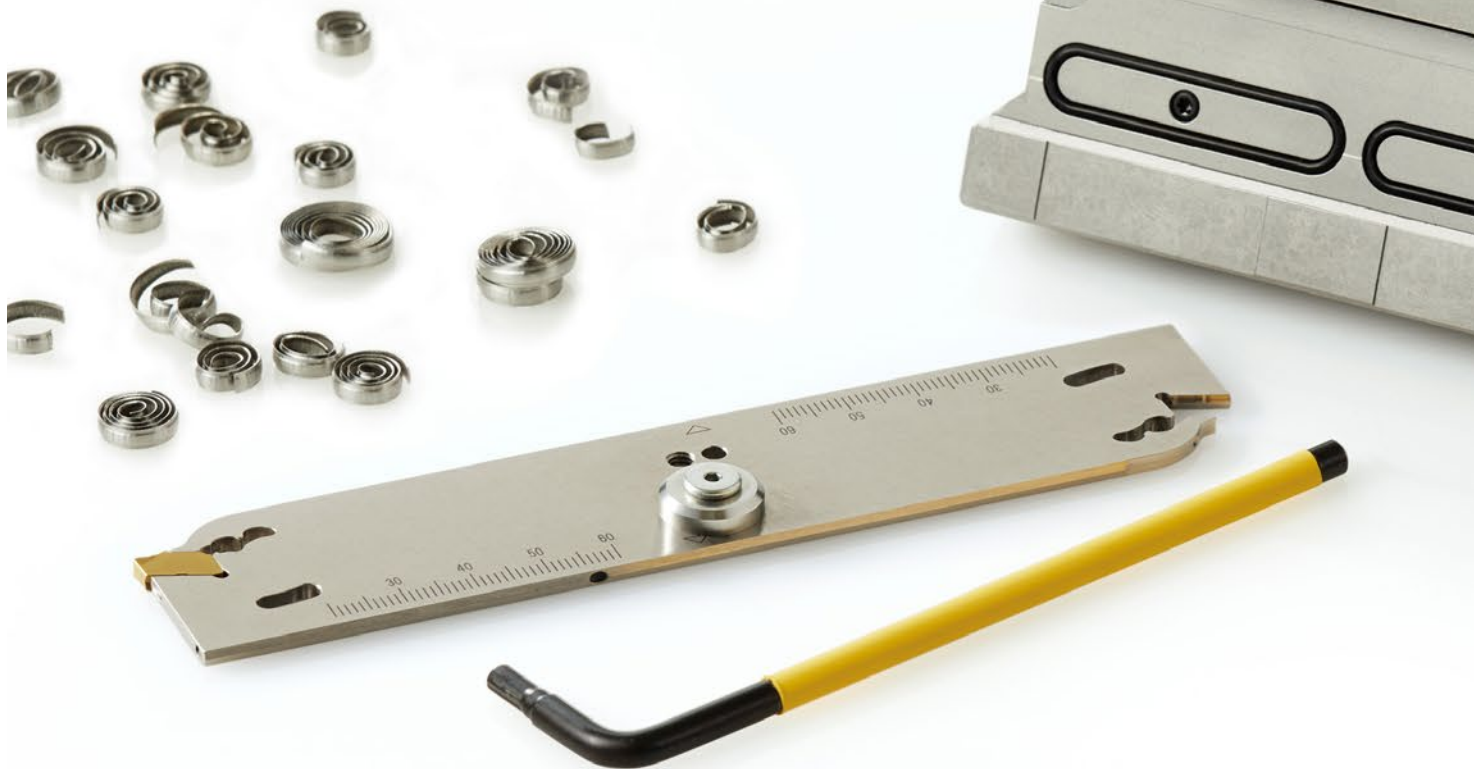
Reverse Taper Angle

In respect to insert indexing a unique wrench is supplied to ensure ease when changing the insert.

Voice of Developer

Just how easy is it to set an insert?

With the use of a unique wrench, it is possible to locate and remove the insert with one simple action making it easier for use in the workshop.



Through Coolant Blade

Increased wear resistance due to the use of 2 through coolant ejection holes.

2 through coolant holes supply the coolant to both the rake and flank face, leading to effective cutting edge cooling and increased wear resistance.

Additionally this blade can also be used for both low pressure and high pressure coolant (7MPa).



Voice of Developer

How is it possible to reduce heat generation?

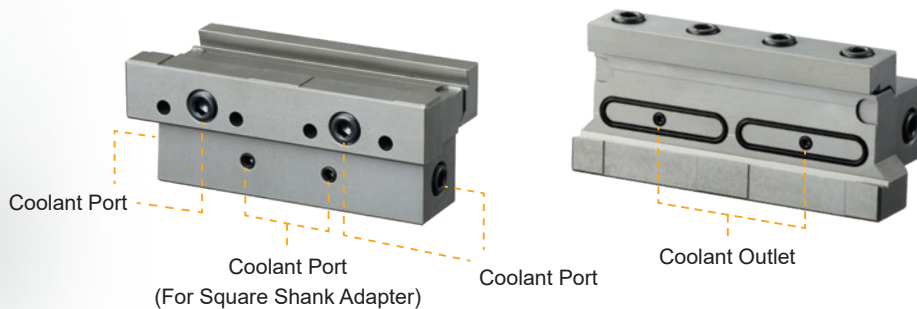
The 2 coolant holes used in the blade are capable of using high coolant pressures of up to (7MPa), this is achieved by using as large as possible through coolant hole diameter. The ejection holes are located close to the cutting edge to improve the cutting edge cooling effect and increase wear resistance.



Coolant Ports

Flexible set up possible with the use of 6 coolant ports.

There are 6 coolant ports designed into the tool block. This makes it easier for the end user to set up the tool block and blade to a configuration that suits their needs. If necessary it is also possible to use a coolant hose. The direct type coolant also improves cutting edge cooling and chip evacuation.



Voice of Developer

Further adaptability to workshop conditions.

In response to end user feedback, the coolant outlet has been improved to prevent leaks. The O-ring material and shape have been modified and the length of hose adjusted for more effective everyday use.

Cutting Off & Grooving System

C009B 2020-2021

B225G TOOL NEWS

General Catalogue

GW Series



For Your Safety

●Don't handle inserts and chips without gloves. ●Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage. ●Please use safety covers and wear safety glasses. ●When using compounded cutting oils, please take fire precautions. ●When attaching inserts or spare parts, please use only the correct wrench or driver. ●When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

MITSUBISHI MATERIALS CORPORATION

MMC HARDMETAL INDIA PVT LTD

Head Office

Prasad Enclave, #118/119, 1st Floor, 2nd Stage BBMP Ward #11,
(New #38), Industrial Suburb, Yeshwanthpura, Bengaluru-560 022
Karnataka, India, Tel : +91 80 2204 3600
E-mail : mb-mmci@mmc.co.jp

REGIONAL OFFICES:

Pune Office

Plot No, A-27 & A-28, H-Block,
Pimpri Waghere, Pimpri Industrial Area MIDC,
Pune - 411018, Maharashtra, India
Tel :: +91 020-27456959

Gurugram Office

#407, 4th Floor, JMD Galleria, Sohna Road,
Opposite Malibu Town, Sector-48,
Gurgaon-122 001 Haryana, India.
Tel : +91 124 4089163

Chennai Office

MM Complex, 2nd Floor, Part 30/10 Hopman 2nd Street,
100 Feet Main Road, Alandur,
Chennai - 600 016 Tamilnadu, India.
Tel: +91 44 4550 7006

Ahmedabad Office

210, Sigma Arcade, 2nd Floor, Visat Circle, Ahmedabad-
Mehsana Road, Chandkheda, Ahmedabad - 382 424,
Gujarat, India.
Tel : +91 79 2329 9300

<http://www.mitsubishicarbide.com/en/>
(Tools specifications subject to change without notice.)

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