DIA EDGE TOOL NEWS 2022.9 Update B255G-H

Cutting Off and Grooving System **GY/GW** Series

Monoblock Holder for Swiss-Type Automatic Lathes

Series Expansion

Solutions to Cutting Off Problems

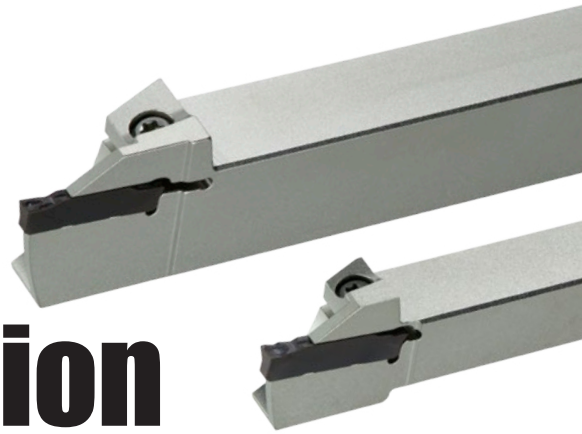
New high rigidity geometry is ideal for deep grooving.

MITSUBISHI MATERIALS CORPORATION

Grooving System

GY Series

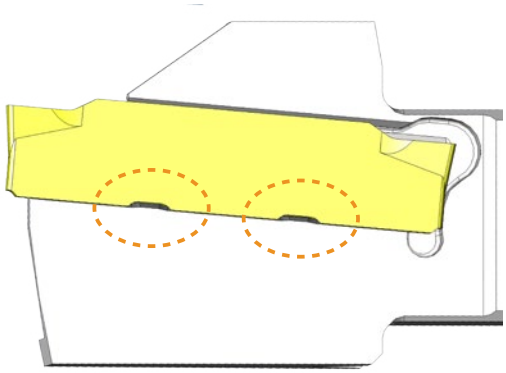
Grooving Revolution



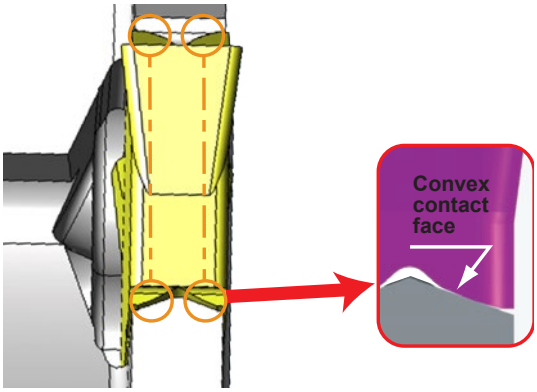
Innovative clamping system ensures reliable grooving.

Highly Reliable Insert Clamp

The safety key locks the insert and prevents movement.



The convex geometry ensures high precision clamping.

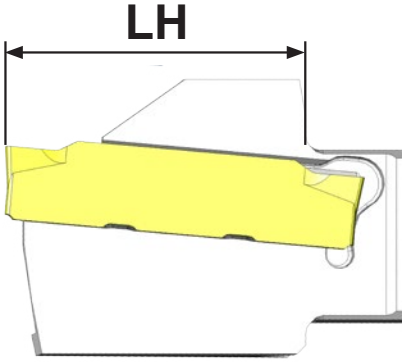


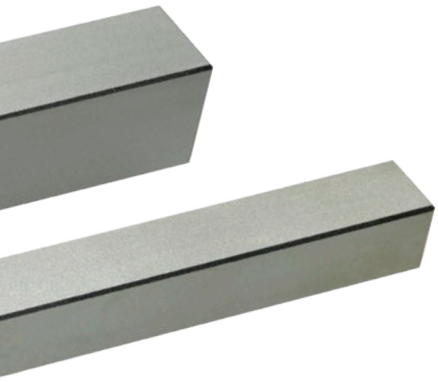
Monoblock Holder for Swiss-Type Automatic Lathes

The new geometry with greatly improved rigidity suppresses vibrations and dimensional changes, thereby solving common cutting off problems.

Overhang Length Compatible with Swiss-Type Automatic Lathes

Head length corresponding to the maximum machining diameter of CNC Swiss-type automatic lathes and turret machines.

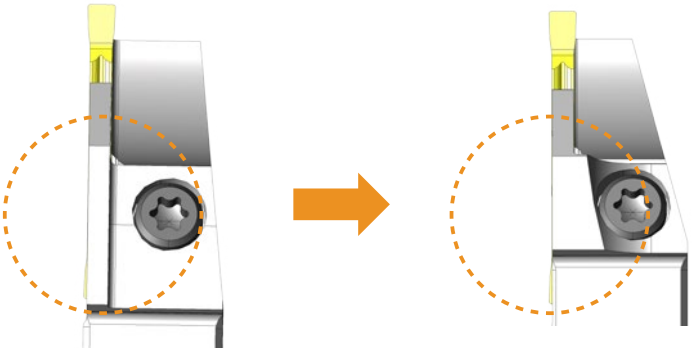




Features of the High Rigidity Holder

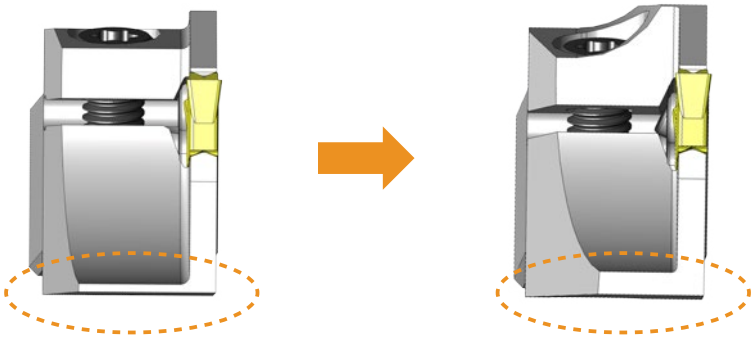
Strong Clamp Bridge

The strong design of the clamp bridge suppresses chatter and vibration.



Thicker Tool Base

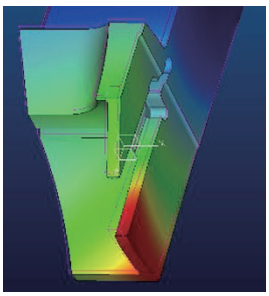
Tool deflection caused by cutting resistance is greatly reduced.



Analysis by Simulation
Deflection Measurement : 0.044

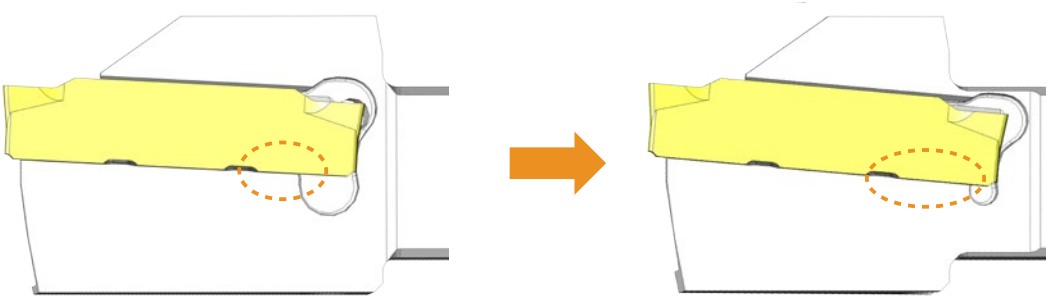
Analysis by Simulation
Deflection Measurement : 0.013

Analysis by Simulation



Strengthening of the Insert Clamp

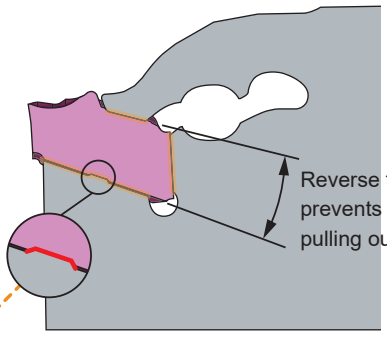
The seating face of the insert becomes wider, reducing the deformation of the workpiece material.



Cutting Off and Grooving System

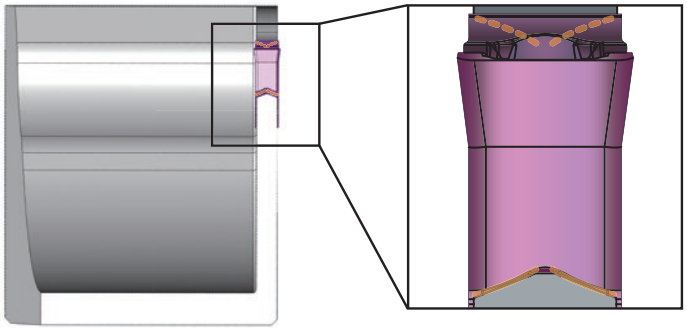
GW Series

Highly Reliable Insert Clamping



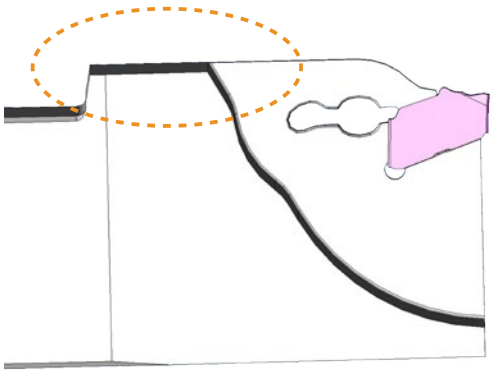
Safety key prevents insert movement.

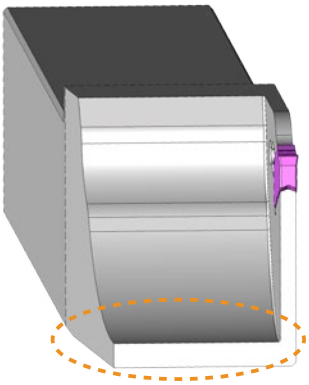
Convex geometry ensures
high precision clamping.



High Rigidity Holder

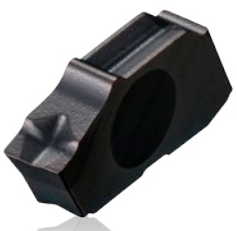
Tool deflection caused by cutting resistance and the remaining material pip in the centre are greatly reduced.





New Low Resistance and High Lead Angle Insert

New inserts with a lead angle of 8º have been added to the range to reduce burrs and the remaining material pip in the centre.



Lead Angle 5°

Lead Angle 8°

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

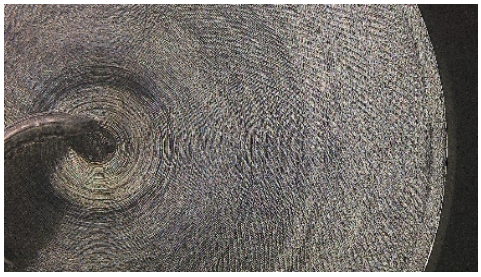
SUS304 Comparison of Cutting Off and Remaining Material

GY
GS Breaker

Completely cut off

Remaining pip in the centre : ø0.49 mm
RZ : 0.009 mm

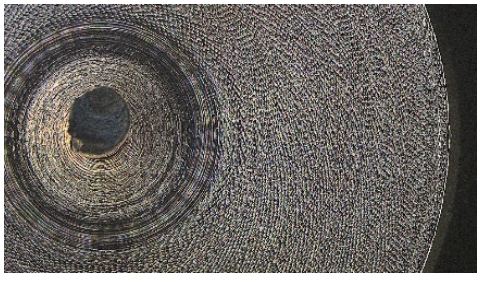
Conventional A



Not completely cut off

Remaining pip in the centre : ø0.58 mm
RZ : 0.043 mm

Conventional B



Not completely cut off

Remaining pip in the centre : ø1.42 mm
RZ : 0.015 mm

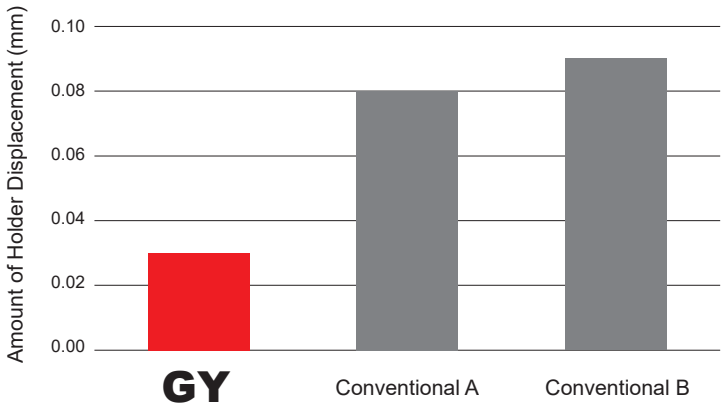
<Cutting Conditions>
Workpiece Material : SUS304 ø16mm
Tool : Cutting Width CW=2mm
Lead Angle 15°
Cutting Speed : vc=100m/min
Feed per Rev. : f=0.03mm/rev
Cutting Mode : Wet Cutting

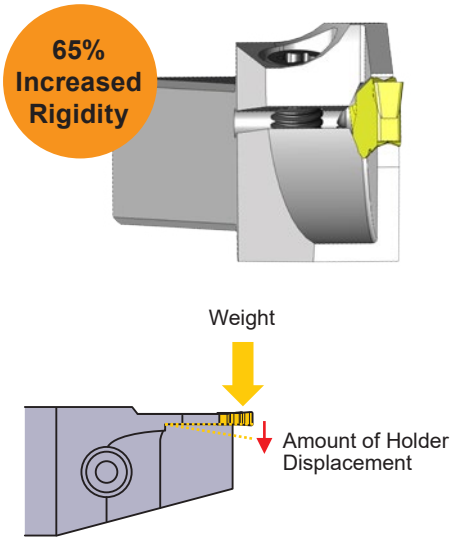
Cutting Performance

Tool Holder Deflection Comparison

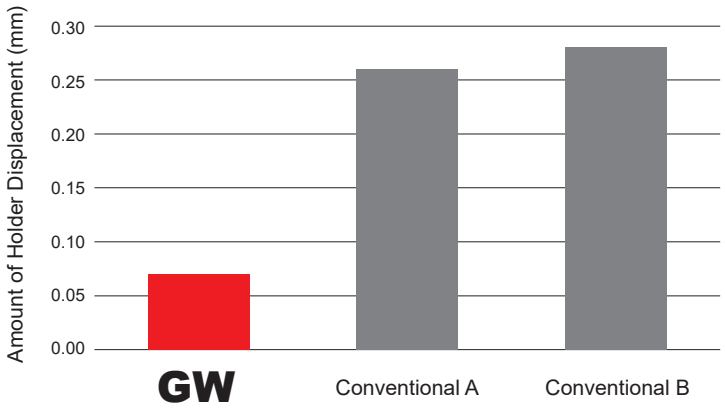
The high rigidity of the tool reduces chatter and vibration thereby improving the component surface finish and also reduces the remaining pip in the centre.

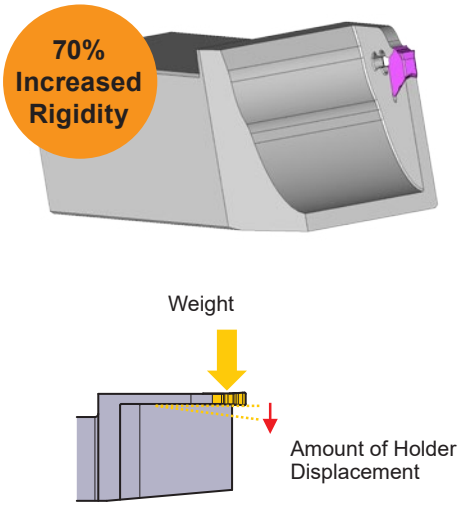
GY Holder





GW Holder



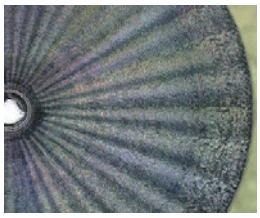


Surface Finish Comparison when Cutting Off : JIS SUS304

The high rigidity holder suppresses vibration and tool deflection, improving the finished surface.

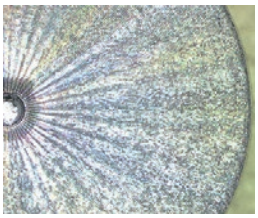
GY Holder

GY



Rz 1.8 µm

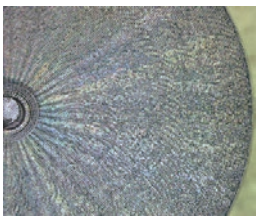
Conventional A



Rz 5.6 µm

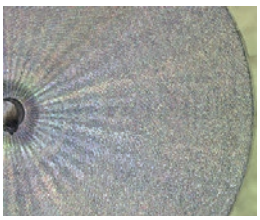
Excellent Surface Finish

Conventional B



Rz 4.1 µm

Conventional C

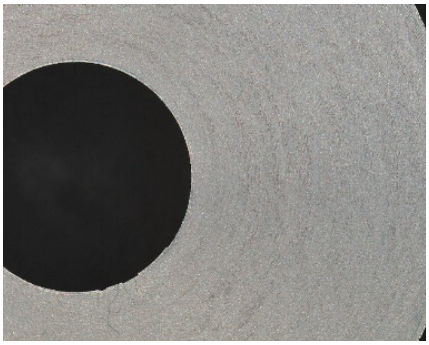


Rz 5.7 µm

<Cutting Conditions>
Workpiece Material : SUS304 ø25mm
Tool : Cutting Width CW=2mm
RE=0.2mm
16×16
Cutting Speed : vc=120m/min
Feed per Rev. : f=0.10mm/rev
Cutting Mode : Wet Cutting

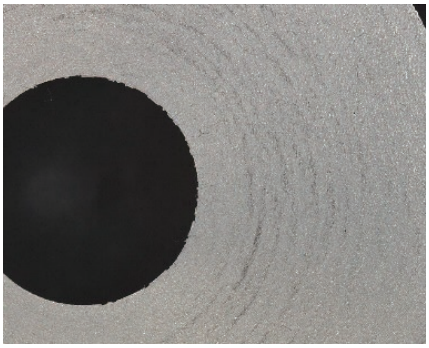
GW Holder

GW Lead Angle 8°



Rz 7.9 µm

Conventional Lead Angle 6°



Rz 11.3 µm

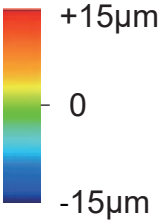
High Lead Angle Effect

<Cutting Conditions>
Workpiece Material : SUS304 ø38mm
Tool : Cutting Width CW=2mm
Cutting Speed : vc=120m/min
Feed per Rev. : f=0.11mm/rev
Cutting Mode : Wet Cutting

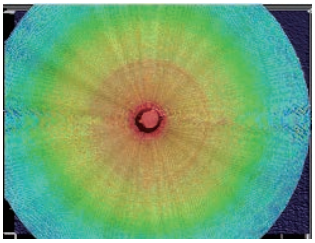
Comparison of the Accuracy of the Workpiece When Cutting Off : JIS SUS304

GY Holder

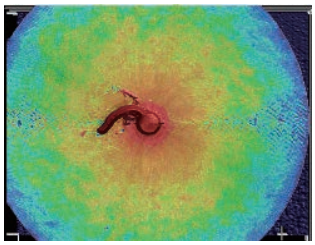
Height Difference Colour



GY

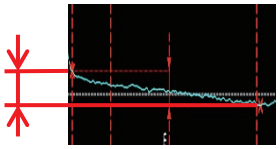


Conventional

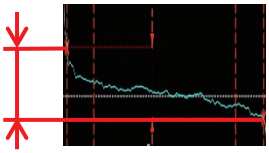


1/2 of Conventional Products

20μm



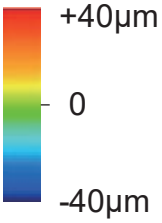
40μm



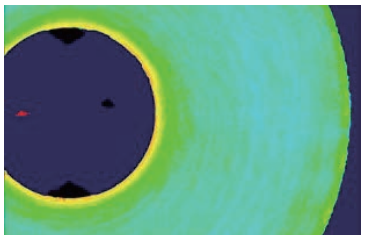
<Cutting Conditions>
Workpiece Material : SUS304 ø25mm
Tool : Cutting Width CW=2mm
RE=0.2mm
16×16
Cutting Speed : vc=120m/min
Feed per Rev. : f=0.10mm/rev
Cutting Mode : Wet Cutting

GW Holder

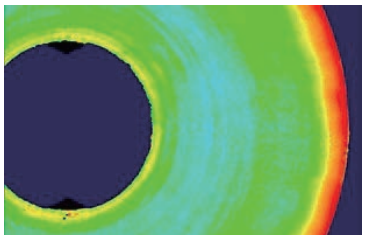
Height Difference Colour



GW Lead Angle 8°

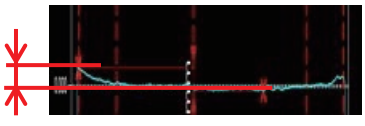


Conventional Lead Angle 8°

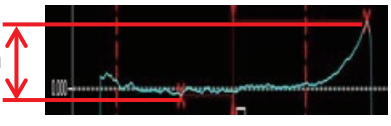


High accuracy with same lead angle

30μm



70μm



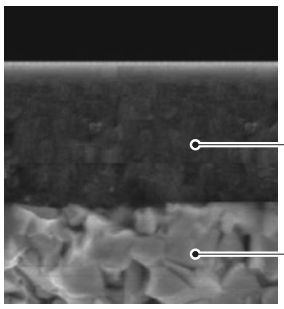
<Cutting Conditions>
Workpiece Material : SUS304 ø38mm
Tool : Cutting Width CW=2mm
Cutting Speed : vc=120m/min
Feed per Rev. : f=0.11mm/rev
Cutting Mode : Wet Cutting

ISO Turning Inserts for Difficult-to-Cut Materials

PVD Coated Carbide Grades

MP9015/MP9025

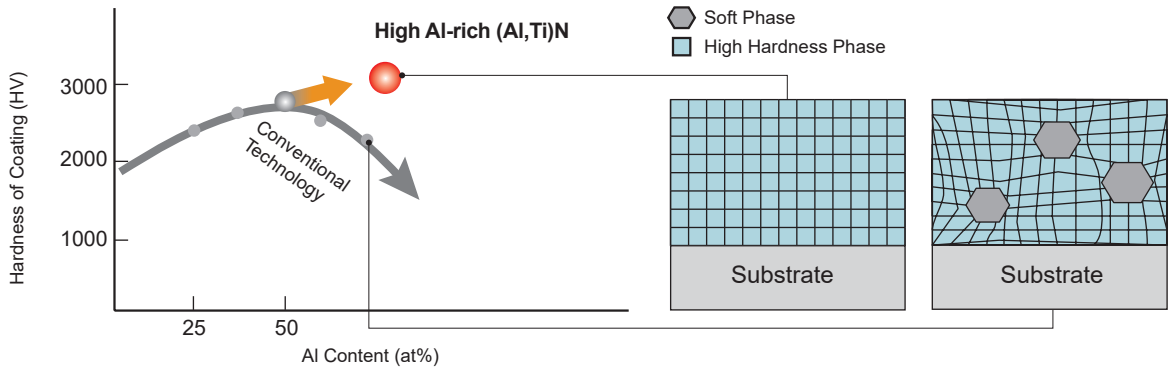
Excellent Wear Resistance when Machining Heat Resistant Super Alloys



MP9015/MP9025

Comparison of High Al and Conventional Coating

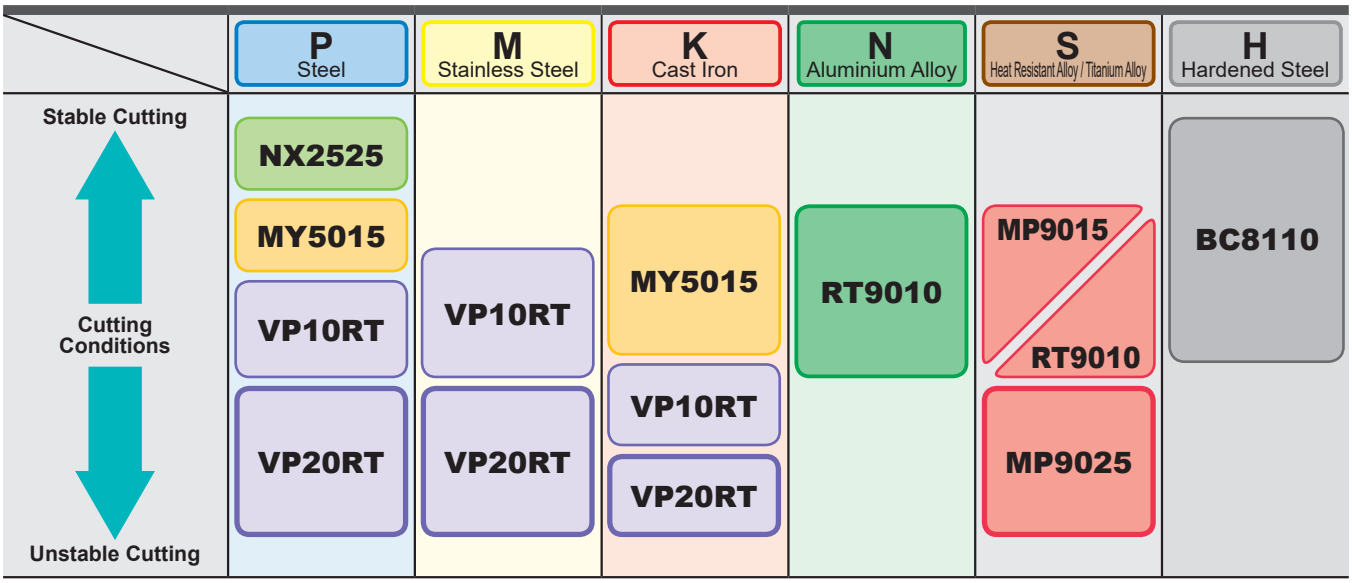
The high Al-rich (Al,Ti)N single layer coating provides stabilization of the high hardness phase and succeeds in dramatically improving wear, crater and welding resistance.



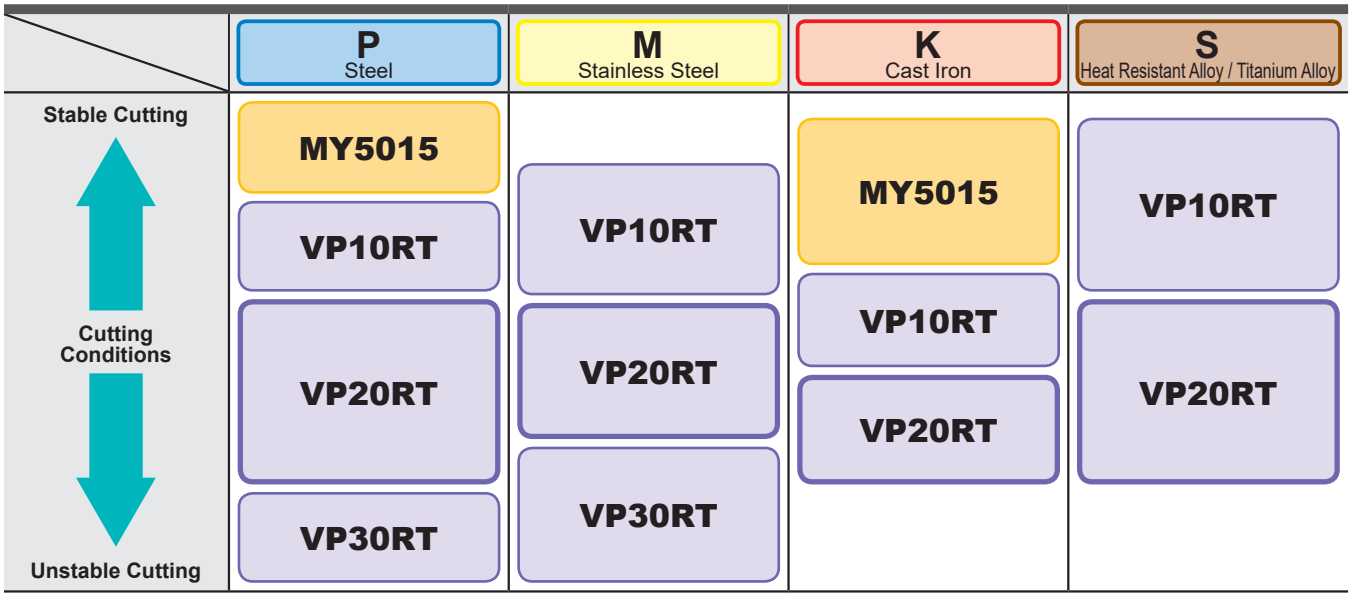
ISO Grade	Grade	Concept	Application
S10	**MP9015**	First recommendation for general applications.	Heat Resistant Alloys
S30	**MP9025**	Prevents severe damage for increased stability.	Heat Resistant Alloys

Insert Grade

GY Series

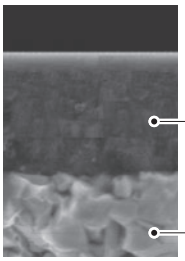


GW Series



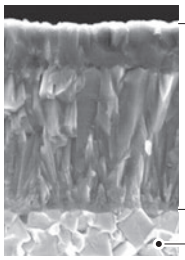
GY/GW Series Insert Grade

MP9000 Series



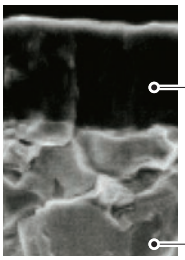
The high Al-rich (Al,Ti)N single layer coating provides stabilization of the high hardness phase and succeeds in dramatically improving wear, crater and welding resistance.

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.

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.

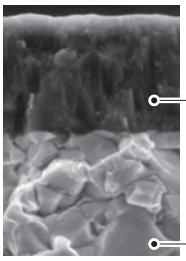
RT9010

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

NX2525

NX2525, 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.

BC8110

A CBN coated grade for continuous cutting, which provides longer life when machining hardened steel.

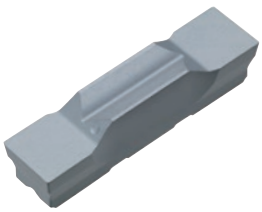
MB8025

MB8025 is a sintered CBN grade for hardened steel.

BLANK INSERTS

Blank inserts for custom grinding

1 Edge Type



2 Edge Type

*** Blank Inserts are not suitable for machining without grinding.**

RT9010/RT9020 for insert blank

First recommendation for blank inserts is RT9020 due to the tougher carbide substrate and is suitable for a wide range of applications.
RT9010 is a harder substrate than RT9020 and is ideal for long tool life on stable cutting applications.
Coating is recommended for machining steel, stainless steel and cast iron materials.

GY Series

Breaker System

Grooving / Cutting Off

GUBreaker
(For Gummy Steel)

GSBreaker
(Low feeds)

GMBreaker
(Medium feeds)

GLBreaker
(For Aluminium Alloys)

Cutting Off

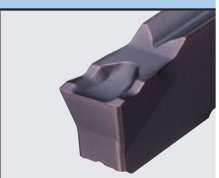
NEW

R08-GS Breaker
(Low feeds)

NEW

R15-GS Breaker
(Low feeds)

GMBreaker
(Medium feeds)



R/L05-GM Breaker
(Medium feeds)

Grooving

GFGS
(For hardened steel)

For Multifunctional Grooving

MFBreaker
(G class)

MSBreaker
(Low feeds)

MMBreaker
(Medium feeds)

Copying/For Recessing

BMBreaker

For Grooving / Cutting Off

GL Breaker (For Aluminium Alloys)

G Class Breaker

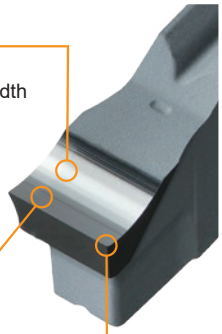
Improved chip control by narrowing the breaker width

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

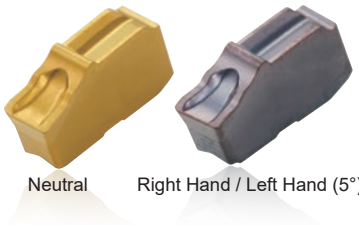
Breaker System Offering Excellent Chip Disposal Properties

Low Feeds

Neutral | Right Hand (5°) | Right Hand (8°)

GS Breaker

Medium Feeds



Neutral | Right Hand / Left Hand (5°)

GM Breaker

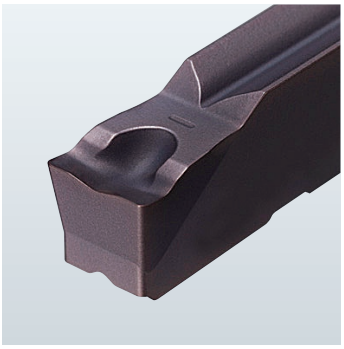
Correct Use of GY Series GS Breaker

First Recommendation

Reduction of Cutting Resistance

Lead Angle
PSIRR=0°

Improved Fracture Resistance

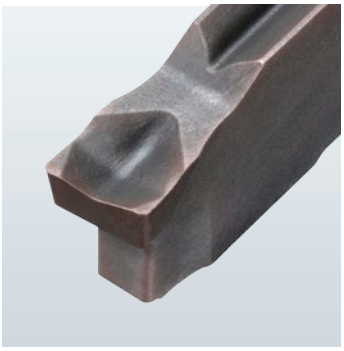


Cutting Off of Holes and Small Parts

Reduction of Burrs and Core Residue

Lead Angle
PSIRR=8°

Improved Fracture Resistance



Lead Angle
PSIRR=15°

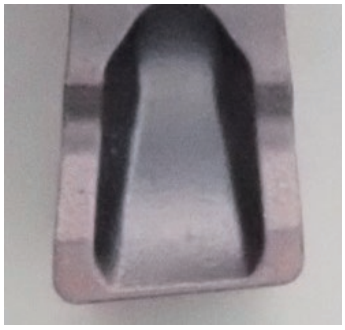
Correct Use of GW Series Inserts

First Recommendation

Improved Fracture Resistance

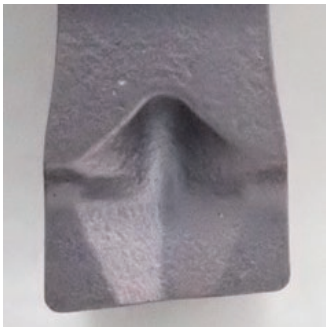
GM Breaker
PSIRR=5°

Reduction of Cutting Resistance



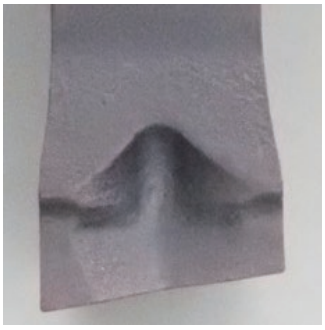
Reduction of Burrs and Core Residue

GS Breaker
PSIRR=5°



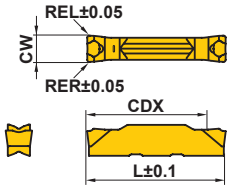
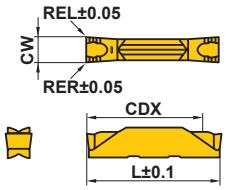
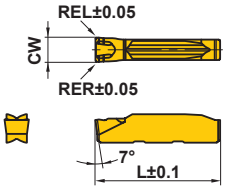
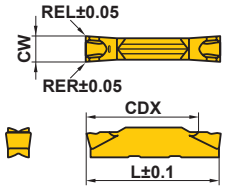
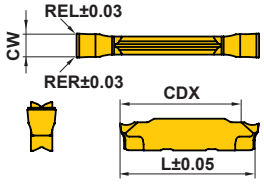
GS Breaker
PSIRR=8°

Improved Fracture Resistance



GY Series Inserts

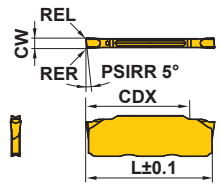
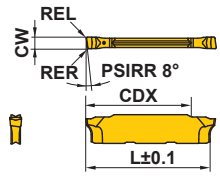
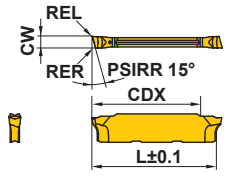
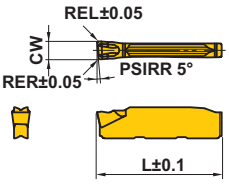
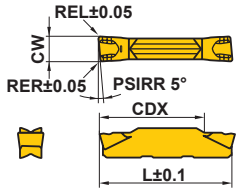
(mm)

Applications	Geometry	Order Number	Stock: Coated MP9015	Coated MP9025	Coated VP10RT	Coated VP20RT	Coated MY5015	Cermet NX2525	Carbide RT9010	Carbide RT9020	Seat Size	CW: Cutting Width	CW: Tolerance	RER/L	CDX	*2 L
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
	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
	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
	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
	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 16 “L dimension tolerance conversion table”.

● : Inventory maintained in Japan.
(10 inserts in one case) (CBN inserts are available in 1 piece in one case.)

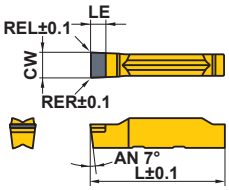
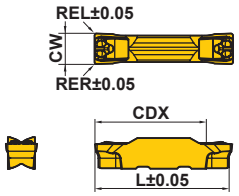
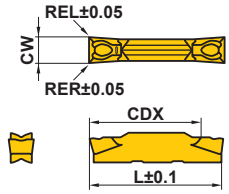
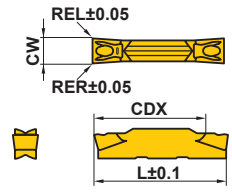
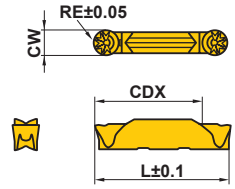
(mm)

Applications	Geometry	Order Number	Stock: Coated MP9015	MP9025	VP10RT	VP20RT	MY5015	Seat Size	CW: Cutting Width	CW: Tolerance	Corner R: REL	Corner R: Tolerance	Corner R: RER	Corner R: Tolerance	CDX	*2 L
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

*2 The dimension depends on the breaker. Refer to page 16 “L dimension tolerance conversion table”.

GY Series Inserts

(mm)

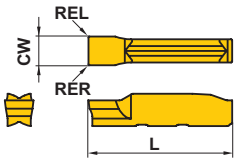
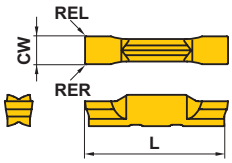
Applications	Geometry	Order Number	Stock: Coated MP9015	Coated MP9025	Coated VP10RT	Coated VP20RT	Coated MY5015	Cermet NX2525	Carbide RT9010	Carbide RT9020	CBN BC8110	Seat Size	CW: Cutting Width	CW: Tolerance	RER/L	CDX	∗2 L	LE
For Grooving	**Flat Top** (For hardened steel) 	GY1G0200D020N-GFGS									●	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
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	—
	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	—
	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	—
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	—

∗1 Circlip corresponding width of cut

● : 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			
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
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**	3.60	±0.10	0.2	0.2	21.28

*** Insert blank is not suitable for machining without grinding.**

GY Series " L " Dimension Tolerance Conversion Table

(mm)

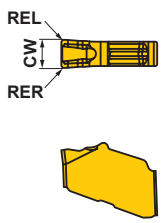
Cutting Width **CW**	*1 Dimensions **L**	*2 Dimensional tolerance versus standard dimension " L " of each breaker									
		GU	**GS/GM**	**MS/MM**	**R05-GS**	**R08/15-GS**	**R/L-GM**	Flat Top	**MF**	**BM**	**GL**
1.20	14.70		0		0						
1.50	14.70		0			0.50					
2.00	20.70	0	0	0		0.60	0.10	0	0.35	0.20	0.35
2.24	*3 (20.70)								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 (20.70)								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 (20.70)								0.35		

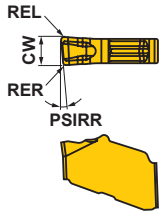
*1 This value is used at the described holder dimension.
*2 ■ when there is no applicable breaker.
*3 The standard dimensions shown here use an approximate insert width.

GW Series Inserts

(mm)

Application	Order Number	Stock: Coating MY5015	Stock: Coating VP10RT	Stock: Coating VP20RT	Stock: Coating VP30RT	Stock: Carbide RT9010	Stock: Carbide RT9020	CW: Cutting Width	CW: Tolerance	REL	RER	PSIRR PSIRL	Geometry
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	**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	–	
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	



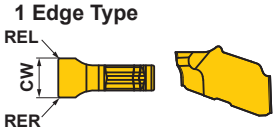


Right hand insert shown.

Blank Inserts

(mm)

Geometry	Order Number	Carbide RT9010	Carbide RT9020	CW: Grooving Width	CW: Tolerance	RER	REL
1 Edge Type	**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



Note 1) Blank inserts to be ground by customers.

● : Inventory maintained in Japan.
(10 inserts in one case) (CBN inserts are available in 1 piece in one case.)

Cutting Conditions ➢ P28

GY SERIES (External for Swiss-Type lathes)

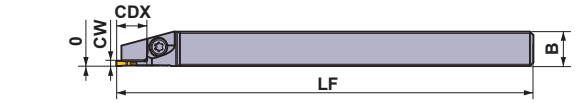


Fig. 1

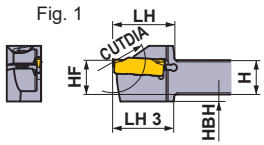


Fig. 2

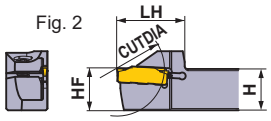
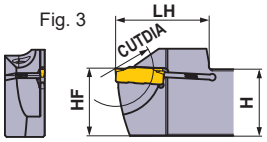


Fig. 3



Right hand tool holder shown.

Spare Parts

Holder Type	Clamp Screw	Wrench
GYSR/L1010JX00	CS350990T	TKY10R
GYSR/L1212JX00	CS350990T	TKY10R
GYSR/L1616JX00	TS4SBL	TKY15R
GYSR/L1915K00	TS4SBL	TKY15R
GYSR/L2012JX00	CS350990T	TKY10R
GYSR/L2020K00	HSC05018	HKY40R
GYSR/L2525K00	HSC05018	HKY40R

(mm)

Seat Size	CW	∗4 CDX	CUTDIA	Type	Hand (R/L)	Order Number	Stock	Dimensions (mm) ∗3 H	B	LF	LH	LH 3	HF	HBH	Fig.
B	1.20	8	16	Mono Block	R	NEW **GYSR1010JX00-B08**	●	10	10	120	17.5	17.5	10	2	1
		8	16		L	NEW **GYSL1010JX00-B08**	●	10	10	120	17.5	17.5	10	2	1
		8	16	Mono Block	R	NEW **GYSR1212JX00-B08**	●	12	12	120	19.5	—	12	—	2
		8	16		L	NEW **GYSL1212JX00-B08**	●	12	12	120	19.5	—	12	—	2
		12	24	Mono Block	R	NEW **GYSR1212JX00-B12**	●	12	12	120	19.5	19.5	12	2	1
		12	24		L	NEW **GYSL1212JX00-B12**	●	12	12	120	19.5	19.5	12	2	1
		8	16	Mono Block	R	NEW **GYSR1616JX00-B08**	●	16	16	120	25	—	16	—	2
		8	16		L	NEW **GYSL1616JX00-B08**	●	16	16	120	25	—	16	—	2
		13	26	Mono Block	R	NEW **GYSR1616JX00-B13**	●	16	16	120	25	—	16	—	2
		13	26		L	NEW **GYSL1616JX00-B13**	●	16	16	120	25	—	16	—	2
C	1.50	8	16	Mono Block	R	**GYSR1010JX00-C08**	●	10	10	120	17.5	17.5	10	2	1
		8	16		L	**GYSL1010JX00-C08**	●	10	10	120	17.5	17.5	10	2	1
		8	16	Mono Block	R	**GYSR1212JX00-C08**	●	12	12	120	19.5	—	12	—	2
		8	16		L	**GYSL1212JX00-C08**	●	12	12	120	19.5	—	12	—	2
		12	24	Mono Block	R	**GYSR1212JX00-C12**	●	12	12	120	19.5	19.5	12	2	1
		12	24		L	**GYSL1212JX00-C12**	●	12	12	120	19.5	19.5	12	2	1
		13	26	Mono Block	R	**GYSR1616JX00-C13**	●	16	16	120	25	—	16	—	2
		13	26		L	**GYSL1616JX00-C13**	●	16	16	120	25	—	16	—	2
		13	26	Mono Block	R	**GYSR2012JX00-C13**	●	20	12	120	28	—	20	—	3
		13	26		L	**GYSL2012JX00-C13**	●	20	12	120	28	—	20	—	3
D	2.00 2.24	10	20	Mono Block	R	**GYSR1010JX00-D10**	●	10	10	120	17.5	17.5	10	2	1
		10	20		L	**GYSL1010JX00-D10**	●	10	10	120	17.5	17.5	10	2	1
		12	24	Mono Block	R	**GYSR1212JX00-D12**	●	12	12	120	19.5	19.5	12	2	1
		12	24		L	**GYSL1212JX00-D12**	●	12	12	120	19.5	19.5	12	2	1
		13	26	Mono Block	R	**GYSR1616JX00-D13**	●	16	16	120	25	—	16	—	2
		13	26		L	**GYSL1616JX00-D13**	●	16	16	120	25	—	16	—	2
		16	32	Mono Block	R	**GYSR1616JX00-D16**	●	16	16	120	28	—	16	—	2
		16	32		L	**GYSL1616JX00-D16**	●	16	16	120	28	—	16	—	2
		17	34	Mono Block	R	**GYSR1915K00-D17**	●	19.05	15.875	125	28	—	19.05	—	3
		17	34		L	**GYSL1915K00-D17**	●	19.05	15.875	125	28	—	19.05	—	3
		17	34	Mono Block	R	**GYSR2012JX00-D17**	●	20	12	120	28	—	20	—	3
		17	34		L	**GYSL2012JX00-D17**	●	20	12	120	28	—	20	—	3
		17	34	Mono Block	R	**GYSR2020K00-D17**	●	20	20	125	35	—	20	—	2
		17	34		L	**GYSL2020K00-D17**	●	20	20	125	35	—	20	—	2
		17	34	Mono Block	R	**GYSR2525M00-D17**	●	25	25	150	40	—	25	—	2
		17	34		L	**GYSL2525M00-D17**	●	25	25	150	40	—	25	—	2

CW = Cutting Width **CDX =** Max. Groove Depth **CUTDIA =** Max. Cut Off Diameter

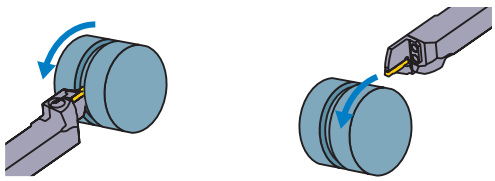
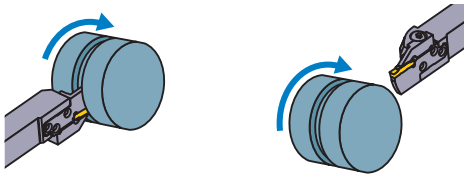
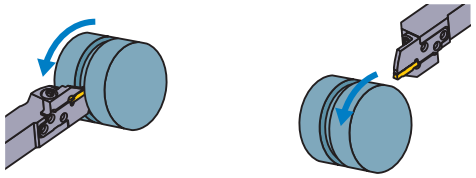
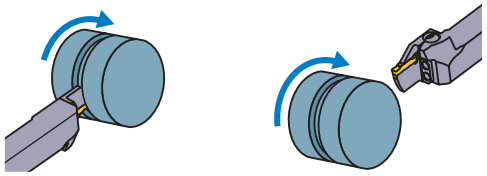
∗1 The maximum groove depth (**CDX**) varies according to the insert used. Please refer to the maximum groove depth (**CDX**) of inserts on pages 13—15.
∗2 The maximum cut off diameter (**CUTDIA**) varies according to the insert used. The cut off diameter is double the maximum groove depth (**CDX**) of inserts on pages 13—15.
∗3 Dimensions shown are when the standard insert is used. If other insert geometries are used then **LF**, **LH** and **LH 3** values may vary.
∗4 The maximum groove depth (**CDX**) is limited by the workpiece diameter. For details, please refer to page 13—15.

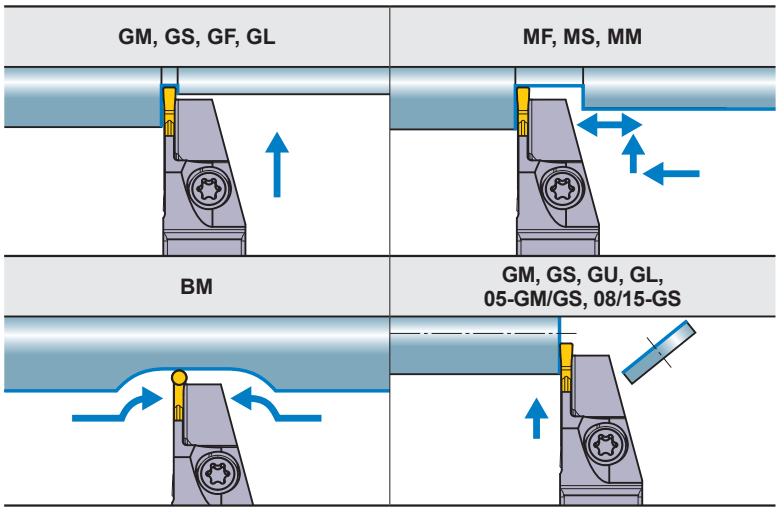
GY SERIES (External for Swiss-Type lathes)

(mm)

Seat Size	CW	*4 CDX	CUTDIA	Type	Hand (R/L)	Order Number	Stock	Dimensions (mm) *3 H	B	LF	LH	LH 3	HF	HBH	Fig.
E	2.39 2.50 2.74	10	20	Mono Block	R	GYSR1010JX00-E10	●	10	10	120	17.5	17.5	10	2	1
		10	20		L	GYSL1010JX00-E10	●	10	10	120	17.5	17.5	10	2	1
		12	24	Mono Block	R	GYSR1212JX00-E12	●	12	12	120	19.5	19.5	12	2	1
		12	24		L	GYSL1212JX00-E12	●	12	12	120	19.5	19.5	12	2	1
		13	26	Mono Block	R	GYSR1616JX00-E13	●	16	16	120	25	—	16	—	2
		13	26		L	GYSL1616JX00-E13	●	16	16	120	25	—	16	—	2
		16	32	Mono Block	R	GYSR1616JX00-E16	●	16	16	120	28	—	16	—	2
		16	32		L	GYSL1616JX00-E16	●	16	16	120	28	—	16	—	2
		17	34	Mono Block	R	GYSR1915K00-E17	●	19.05	15.875	125	28	—	19.05	—	3
		17	34		L	GYSL1915K00-E17	●	19.05	15.875	125	28	—	19.05	—	3
		17	34	Mono Block	R	GYSR2012JX00-E17	●	20	12	120	28	—	20	—	3
		17	34		L	GYSL2012JX00-E17	●	20	12	120	28	—	20	—	3
		17	34	Mono Block	R	GYSR2020K00-E17	●	20	20	125	35	—	20	—	2
		17	34		L	GYSL2020K00-E17	●	20	20	125	35	—	20	—	2
		17	34	Mono Block	R	GYSR2525M00-E17	●	25	25	150	40	—	25	—	2
		17	34		L	GYSL2525M00-E17	●	25	25	150	40	—	25	—	2
F	3.00 3.18 3.24	12	24	Mono Block	R	GYSR1212JX00-F12	●	12	12	120	19.5	19.5	12	2	1
		12	24		L	GYSL1212JX00-F12	●	12	12	120	19.5	19.5	12	2	1
		13	26	Mono Block	R	GYSR1616JX00-F13	●	16	16	120	25	—	16	—	2
		13	26		L	GYSL1616JX00-F13	●	16	16	120	25	—	16	—	2
		16	32	Mono Block	R	GYSR1616JX00-F16	●	16	16	120	28	—	16	—	2
		16	32		L	GYSL1616JX00-F16	●	16	16	120	28	—	16	—	2
		17	34	Mono Block	R	GYSR1915K00-F17	●	19.05	15.875	125	28	—	19.05	—	3
		17	34		L	GYSL1915K00-F17	●	19.05	15.875	125	28	—	19.05	—	3
		17	34	Mono Block	R	GYSR2012JX00-F17	●	20	12	120	28	—	20	—	3
		17	34		L	GYSL2012JX00-F17	●	20	12	120	28	—	20	—	3

Cutting Mode

	Clockwise	Anticlockwise
R		
L		



● : Inventory maintained in Japan.

Insert Selection

Seat Size	Insert Type
B	GY○○0120B○○○○−Breaker shown below
C	GY○○0150C○○○○−Breaker shown below
D	GY○○0200/0224D○○○○−Breaker shown below
E	GY○○0239/0250/0274E○○○○−Breaker shown below
F	GY○○0300/0318/0324F○○○○−Breaker shown below

For grooving/cutting off breaker

Seat Size	Breaker / CW	GU (For gummy steel)	GS (Low)	GM (Medium)	GL (Aluminium)	GFGS (Hardened steel)
		Neutral	Neutral	Neutral	Neutral	Neutral
B	1.20mm		●			
C	1.50mm		●	●		
D	2.00mm	●	●	●	●	●
E	2.39mm	●	●	●		●
	2.50mm	●	●	●	●	●
F	3.00mm	●	●	●	●	●
	3.18mm	●	●	●		●

For cutting off breaker

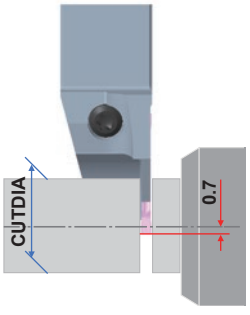
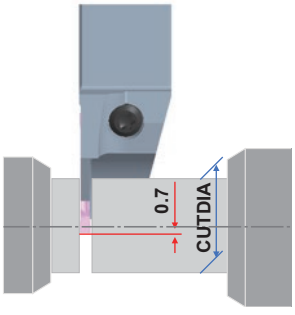
Seat Size	Breaker / CW	05-GS (Low)	08-GS (Low)	15-GS (Low)	05-GM (Medium)
		R	R	R	R/L
B	1.20mm	●			
C	1.50mm		●	●	
D	2.00mm		●	●	●
E	2.39mm				
	2.50mm		●	●	●
F	3.00mm		●	●	●
	3.18mm				

For multifunctional grooving breaker

Seat Size	Breaker / CW	MF (Finish)	MS (Low)	MM (Medium)	BM (Copying)
					Ball shape
D	2.00mm	●	●	●	●
	2.24mm	●			
E	2.39mm	●			
	2.50mm	●	●	●	●
	2.74mm	●			
F	3.00mm				●
	RE 0.2	●	●	●	
	RE 0.4	●	●	●	
	RE 0.8			●	
	3.18mm				●
	RE 0.2	●			
	RE 0.4	●			
	3.24mm	●			

● : Standard insert with dimensions

Regarding Cutting Off Depth and Maximum Cutting Off Diameter

Main Spindle Tooling	Sub Spindle Tooling
	
Main Spindle	Sub Spindle / Main Spindle

In case of parting off operations, when the cutting edge exceeds the centre of the workpiece material, keep it to 0.7 mm or less.

CUTDIA = maximum parting diameter

GW SERIES (External for Swiss-Type lathes)

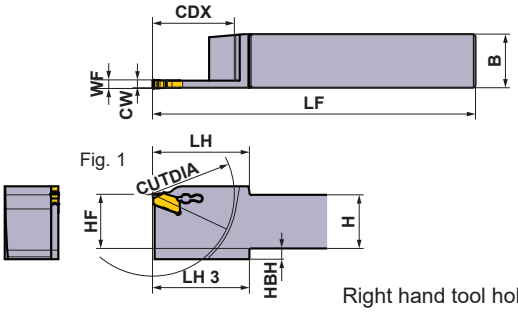


Fig. 1

Right hand tool holder shown.

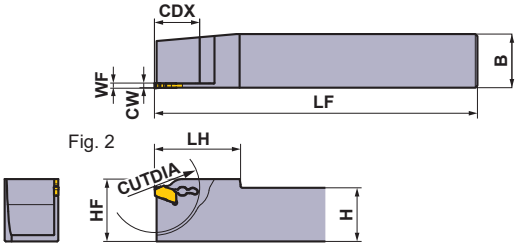


Fig. 2

Right hand tool holder shown.

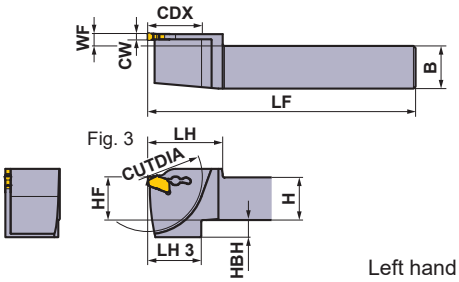
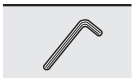


Fig. 3

Left hand tool holder shown.

Spare Parts



Wrench
GWY39L

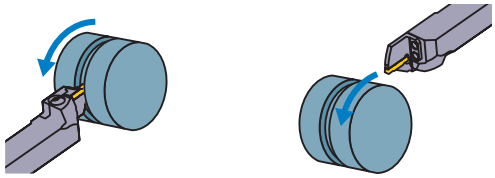
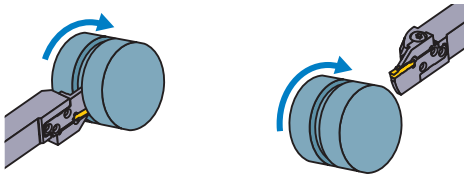
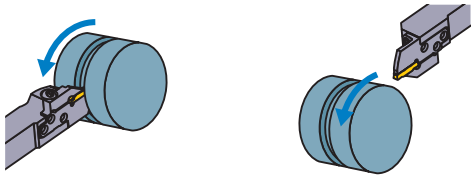
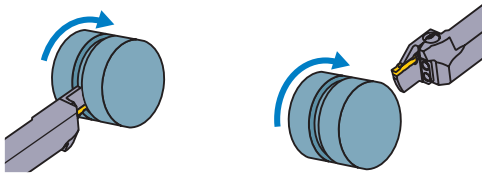
(mm)

Seat Size	CW	CDX	CUTDIA	Type	Hand (R/L)	Order Number	Stock	Dimensions (mm)								Fig.
								H	B	LF	LH	LH 3	HF	WF	HBH	
D	2.00	19	38	Mono Block	R	GWSR1616JX00-D38	●	16	16	120	30	30	16	0.3	6	1
		19	38		L	GWSL1616JX00-D38	●	16	16	120	30	30	16	0.3	6	1
		19	38	Mono Block	R	GWSR1915K00-D38	●	19.05	15.875	125	35	35	19.05	0.3	3	1
		19	38		L	GWSL1915K00-D38	●	19.05	15.875	125	35	35	19.05	0.3	3	1
		21	42	Mono Block	R	GWSR2020K00-D42	●	20	20	125	35	25	20	0.3	4	1
		21	42		L	GWSL2020K00-D42	●	20	20	125	35	25	20	0.3	4	1
		21	42	Mono Block	R	GWSR2012K00-D42	●	20	12	125	35	25	20	0.3	4	1
		21	42		L	GWSL2012K00-D42	●	20	12	125	35	25	20	0.3	4	1
		21	42	Mono Block	R	GWSR2525M00-D42	●	25	25	150	40	—	25	0.3	—	2
		21	42		L	GWSL2525M00-D42	●	25	25	150	40	—	25	0.3	—	2
E	2.39	19	38	Mono Block	R	GWSR1915K00-E38	●	19.05	15.875	125	35	35	19.05	0.2	3	1
		19	38		L	GWSL1915K00-E38	●	19.05	15.875	125	35	35	19.05	0.2	3	1
		21	42	Mono Block	R	GWSR2020K00-E42	●	20	20	125	35	25	20	0.2	4	1
		21	42		L	GWSL2020K00-E42	●	20	20	125	35	25	20	0.2	4	1
		21	42	Mono Block	L	GWSL2020K00-E42-M	●	20	20	125	35	25	20	5.7	8	3
		21	42	Mono Block	R	GWSR2012K00-E42	●	20	12	125	35	25	20	0.2	4	1
		21	42		L	GWSL2012K00-E42	●	20	12	125	35	25	20	0.2	4	1
		21	42	Mono Block	R	GWSR2525M00-E42	●	25	25	150	40	—	25	0.2	—	2
		21	42		L	GWSL2525M00-E42	●	25	25	150	40	—	25	0.2	—	2
F	3.00	19	38	Mono Block	R	GWSR1915K00-F38	●	19.05	15.875	125	35	35	19.05	0.3	3	1
		19	38		L	GWSL1915K00-F38	●	19.05	15.875	125	35	35	19.05	0.3	3	1
		21	42	Mono Block	R	GWSR2012K00-F42	●	20	12	125	35	25	20	0.3	4	1
		21	42		L	GWSL2012K00-F42	●	20	12	125	35	25	20	0.3	4	1
		21	42	Mono Block	R	GWSR2020K00-F42	●	20	20	125	35	25	20	0.3	4	1
		21	42		L	GWSL2020K00-F42	●	20	20	125	35	25	20	0.3	4	1
		21	42	Mono Block	L	GWSL2020K00-F42-M	●	20	20	125	35	25	20	5.8	8	3
		25.5	51	Mono Block	R	GWSR2020K00-F51	●	20	20	125	35	25	20	0.3	8	1
		25.5	51		L	GWSL2020K00-F51	●	20	20	125	35	25	20	0.3	8	1
		25.5	51	Mono Block	L	GWSL2020K00-F51-M	●	20	20	125	35	25	20	5.8	8	3
		25.5	51	Mono Block	R	GWSR2525M00-F51	●	25	25	150	40	40	25	0.3	3	1
		25.5	51		L	GWSL2525M00-F51	●	25	25	150	40	40	25	0.3	3	1
		32.5	65	Mono Block	R	GWSR2020M00-F65	●	20	20	150	40	33	20	0.3	10	1
		32.5	65		L	GWSL2020M00-F65	●	20	20	150	40	33	20	0.3	10	1
		38	76	Mono Block	R	GWSR2525M00-F76	●	25	25	150	45	45	25	0.3	5	1
		38	76		L	GWSL2525M00-F76	●	25	25	150	45	45	25	0.3	5	1
G	4.00	38	76	Mono Block	R	GWSR2525M00-G76	●	25	25	150	45	45	25	0.4	5	1
		38	76		L	GWSL2525M00-G76	●	25	25	150	45	45	25	0.4	5	1

CW = Cutting Width **CDX =** Max. Groove Depth **CUTDIA =** Max. Cut Off Diameter

● : **Inventory maintained in Japan.**

Cutting Mode

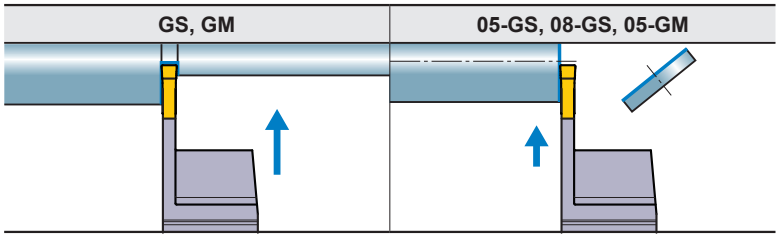
	Clockwise	Anticlockwise
R		
L		

Insert Selection

Seat Size	Insert Type
D	GW1M0200D
E	GW1M0239E
F	GW1M0300F
G	GW1M0400G

For grooving/cutting off breaker						
Seat Size	Breaker / CW	GS (Low)	GM (Medium)	05-GS (Low)	08-GS (Low)	05-GM (Cutting off)
		Neutral	Neutral	R	R	R/L
D	2.00mm	●	●	●	●	●
E	2.39mm	●	●	●	●	●
F	3.00mm	●	●	●	●	●
G	4.00mm	●	●			●

● : Standard insert with dimensions



GY Series

RECOMMENDED CUTTING SPEED [For External Grooving / Cutting Off]

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

Cutting Speed vc (m/min): 50 100 150 200 250 300

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

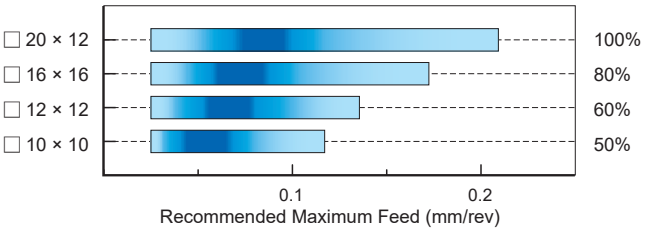
	Workpiece Material	Properties	Grade	Cutting Speed vc (m/min)
N	Aluminium Alloys (A6061, 7075)	Content Si<5%	RT9010	200–500
	Aluminium Alloys (AC4B)	Content 5%≤Si≤10%	RT9010	200–500
	Aluminium Alloys (ADC12, A390)	Content Si>10%	RT9010	100–200

Cutting Speed vc (m/min): 50 100 200 300 400 500

RECOMMENDED CUTTING CONDITIONS [For External Grooving / Cutting Off]

Recommended cutting conditions when combining a GYHR/L2525M00/90-M24R/L modular holder and GYM25R/LA-○○○ modular blade.

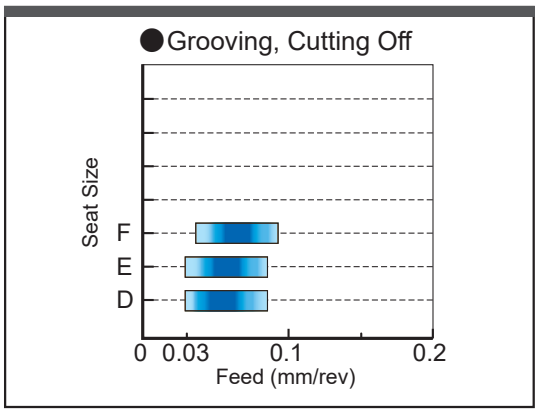
■ In the case of mono block type holder for Swiss style lathes



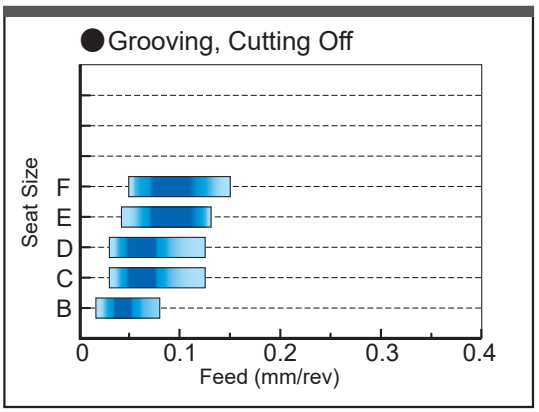
Please refer to the tables above on recommended cutting conditions for external grooving and cutting off.
Apply the percentage ratio shown on each shank size with the values in the table.

■ Recommended feed rate and depth of cut

GU BREAKER

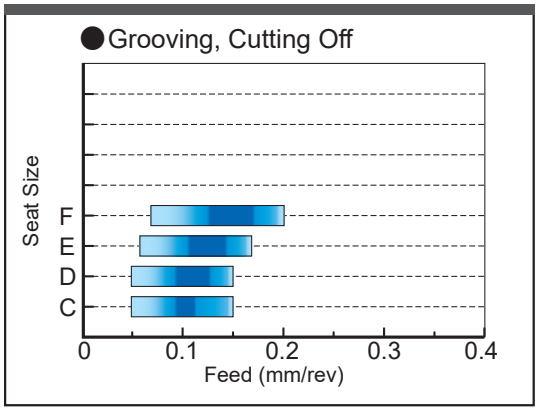


GS BREAKER

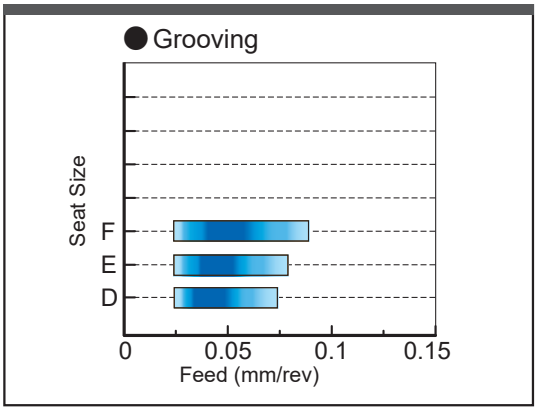


Seat Size	Insert Width (mm)
B	1.20
C	1.50
D	2.00 2.24
E	2.39 2.50 2.74
F	3.00 3.18 3.24

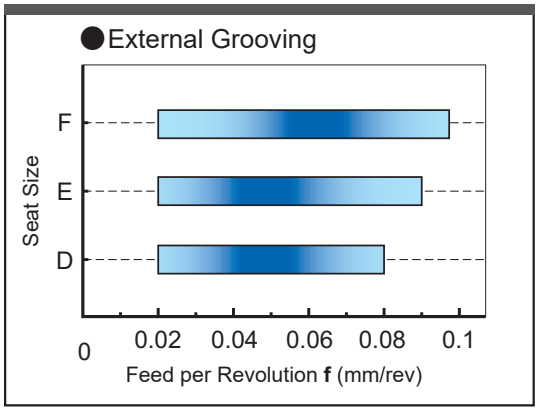
GM BREAKER



FLAT TOP GFGS (CBN)



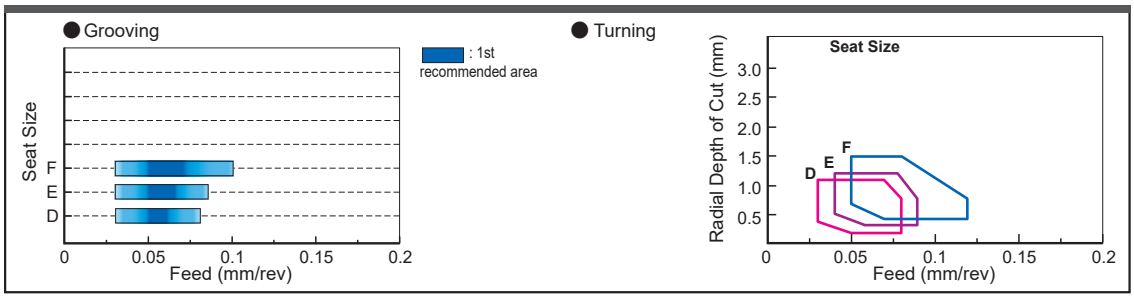
GL BREAKER



: 1st recommended area

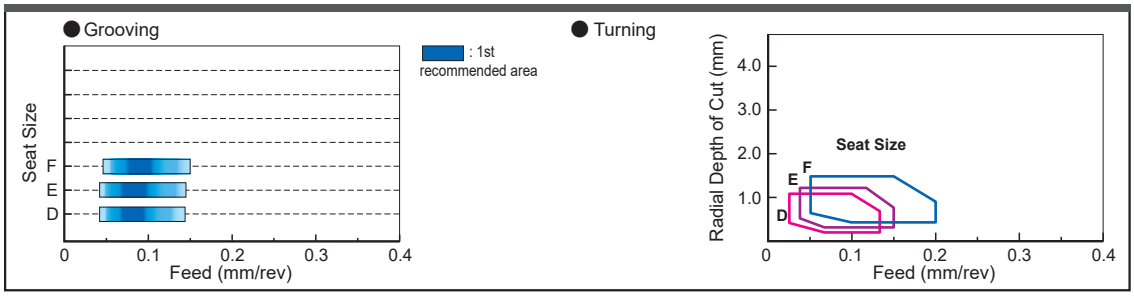
GY Series

MF BREAKER

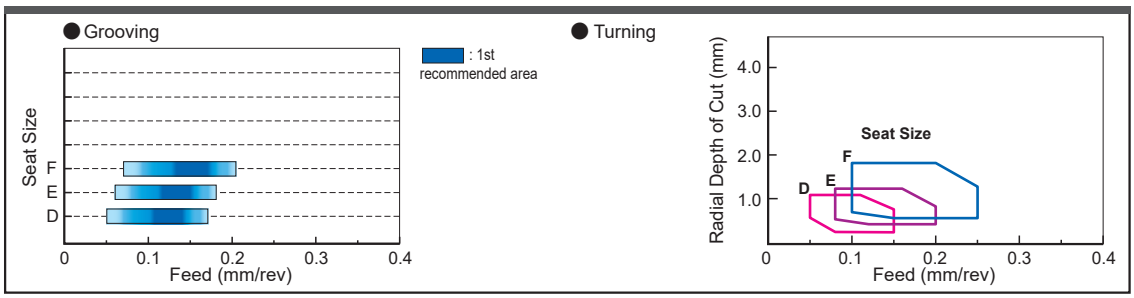


	Seat Size
	Insert Width (mm)
B	1.20
C	1.50
D	2.00 2.24
E	2.39 2.50 2.74
F	3.00 3.18 3.24

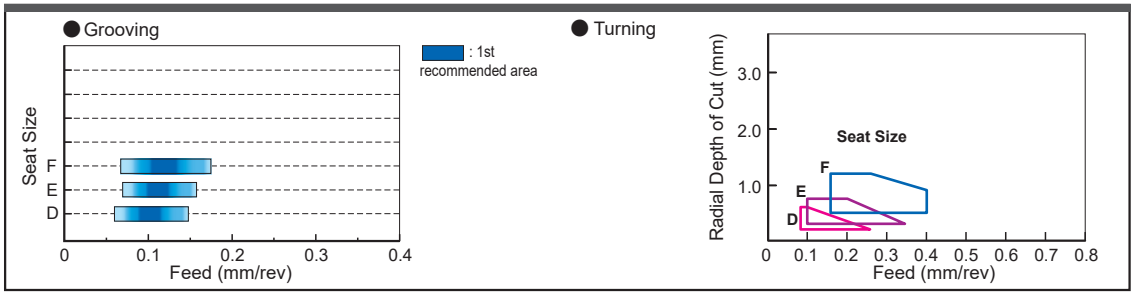
MS BREAKER



MM BREAKER



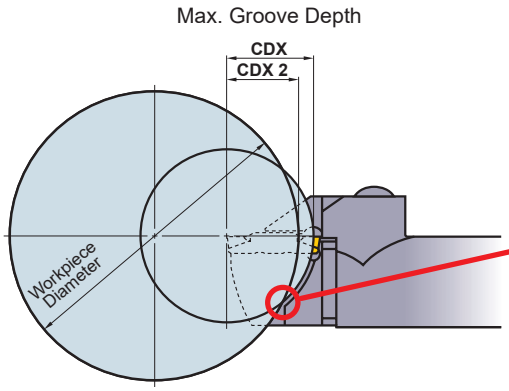
BM BREAKER



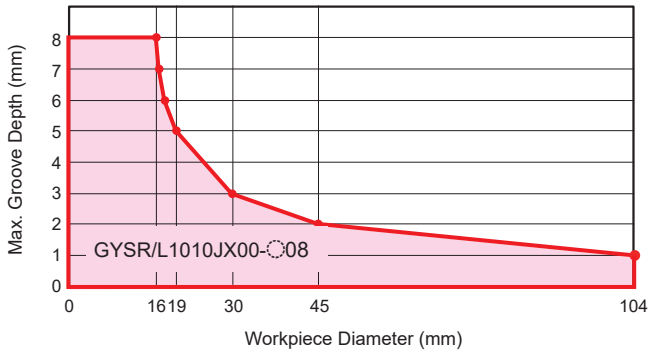
LIMITATION OF THE MAXIMUM GROOVE DEPTH [For External Grooving]

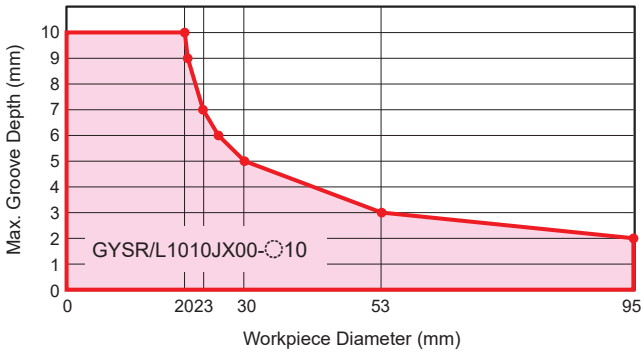
•In The Case of Mono Block Type Holder for Swiss-Type Lathes

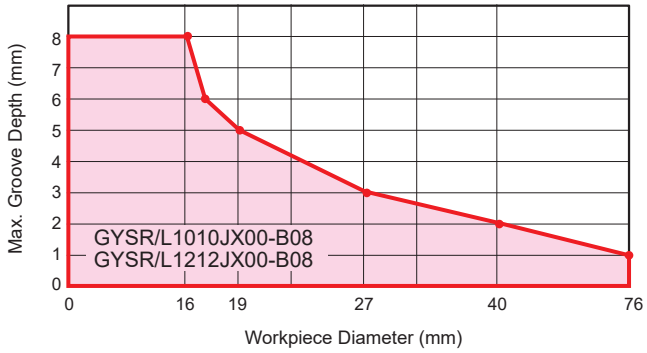
The maximum groove depth is limited by the workpiece diameter.

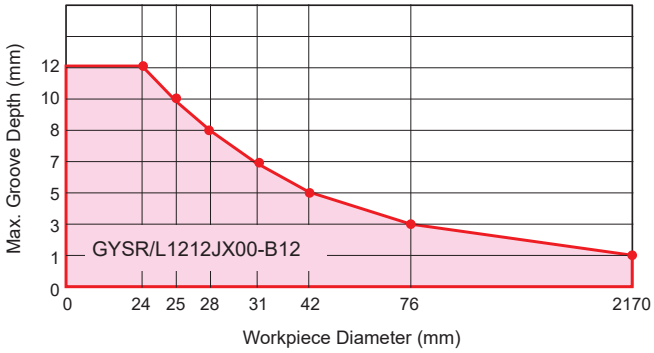


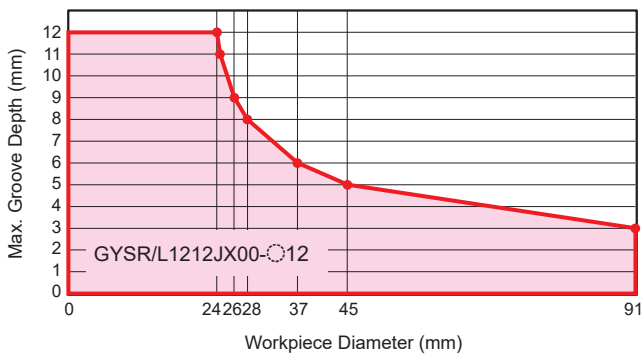
Due to interference, the maximum groove depth is limited by the workpiece diameter.

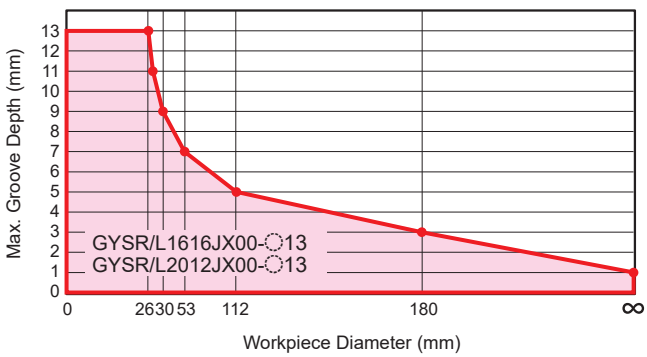






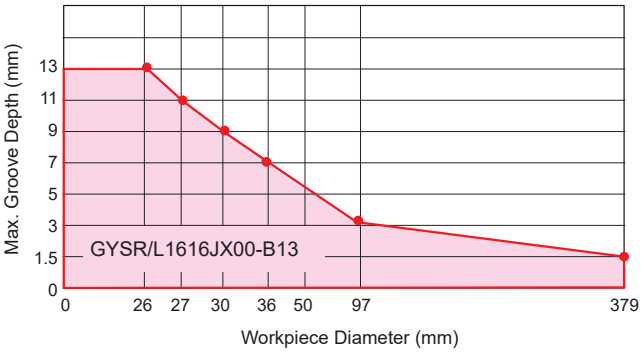


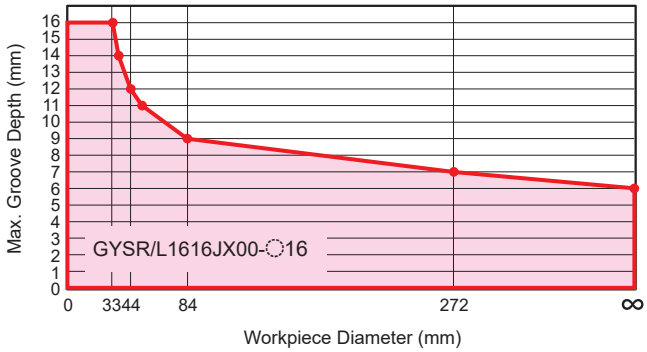


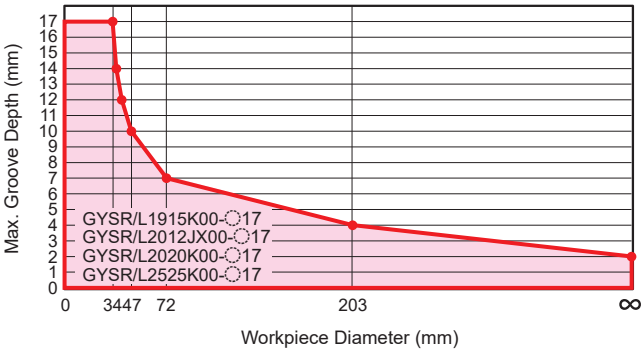


GY Series


Max. Groove Depth (mm)
0
1
2
3
4
5
6
7
8
GYSR/L1616JX00-B08
0
16
19
22
27
40
76
Workpiece Diameter (mm)


Max. Groove Depth (mm)
0
1.5
3
5
7
9
11
13
GYSR/L1616JX00-B13
0
26
27
30
36
50
97
379
Workpiece Diameter (mm)


Max. Groove Depth (mm)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
GYSR/L1616JX00-○16
0
3344
84
272
∞
Workpiece Diameter (mm)


Max. Groove Depth (mm)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
GYSR/L1915K00-○17
GYSR/L2012JX00-○17
GYSR/L2020K00-○17
GYSR/L2525K00-○17
0
3447
72
203
∞
Workpiece Diameter (mm)

GW Series

RECOMMENDED CUTTING CONDITIONS

■ Cutting Speed

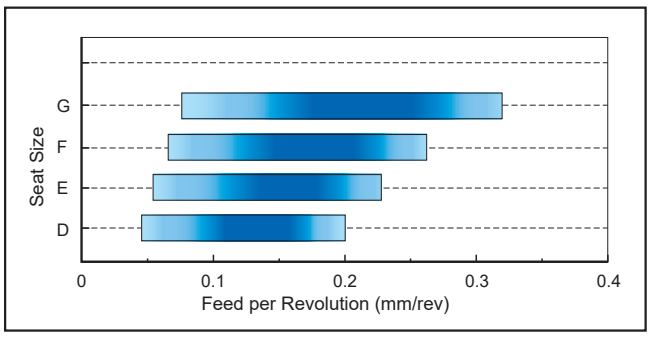
	Workpiece Material	Hardness	Grade	Cutting Speed (m/min)
P	Mild Steel	≤160HB	VP20RT	100–240
			VP10RT	110–250
	Carbon Steel Alloy Steel	160–280HB	VP20RT	80–200
			VP10RT	90–210
			VP30RT	60–180
			MY5015	110–250
		≥280HB	VP20RT	60–160
			VP10RT	70–170
			VP30RT	40–140
			MY5015	90–210
M	Stainless Steel	≤270HB	VP20RT	60–180
			VP10RT	70–190
			VP30RT	40–160
K	Gray Cast Iron	Tensile Strength ≤300MPa	VP20RT	80–200
			VP10RT	90–210
			MY5015	140–300
	Ductile Cast Iron	Tensile Strength ≤800MPa	VP20RT	60–160
			VP10RT	70–170
			MY5015	90–210
S	Heat Resistant Alloy Titanium Alloy	–	VP20RT	30–60
			VP10RT	40–70

Cutting Speed (m/min): 50, 100, 150, 200, 250, 300

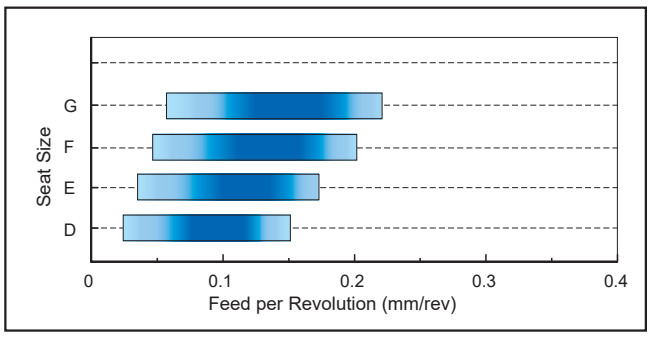
Note 1) VP20RT is the first recommended grade for all materials.
Note 2) For VP10RT, VP20RT, VP30RT and MY5015, wet cutting is recommended.

■ Feed per Revolution

GM Breaker



GS Breaker

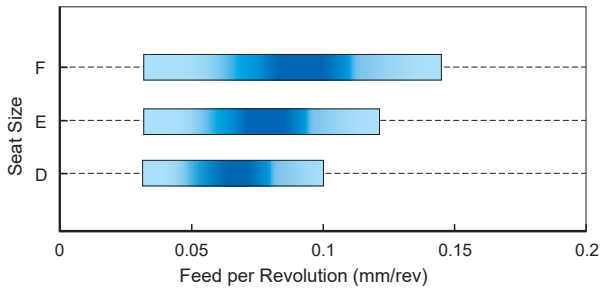


Chip Breaker	Feed per Revolution (mm/rev)			
	Seat Size D	Seat Size E	Seat Size F	Seat Size G
GM Breaker	0.05–0.20	0.06–0.23	0.07–0.26	0.08–0.32
GS Breaker	0.03–0.15	0.04–0.17	0.05–0.20	0.06–0.22

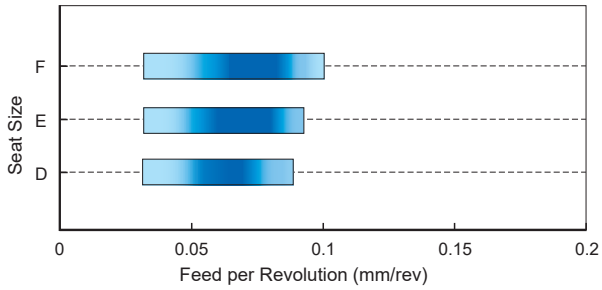
GW Series

Cutting Off Feed per Revolution

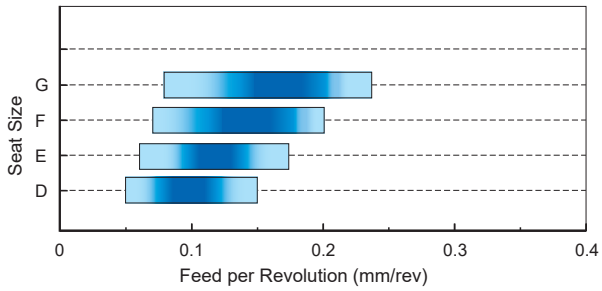
R05-GS Breaker



R08-GS Breaker



R/L05-GM Breaker

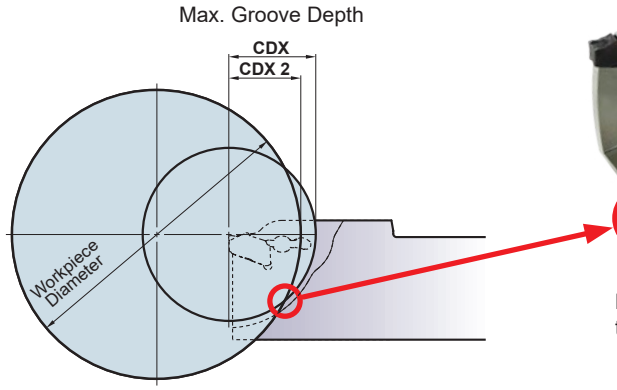


Chip Breaker	PSIPR	Hand	Feed per Revolution (mm/rev)			
			Seat Size D	Seat Size E	Seat Size F	Seat Size G
R05-GS	5°	R	0.03–0.10	0.03–0.12	0.03–0.14	–
R08-GS	8°	R	0.03–0.08	0.03–0.09	0.03–0.10	–
R05-GM	5°	R/L	0.05–0.15	0.06–0.17	0.07–0.20	0.08–0.23

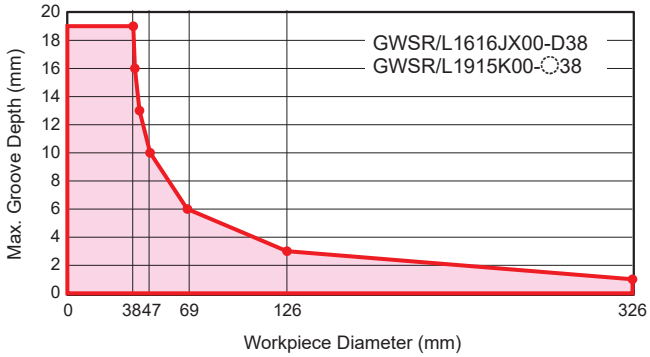
LIMITATION OF THE MAXIMUM GROOVE DEPTH [For External Grooving]

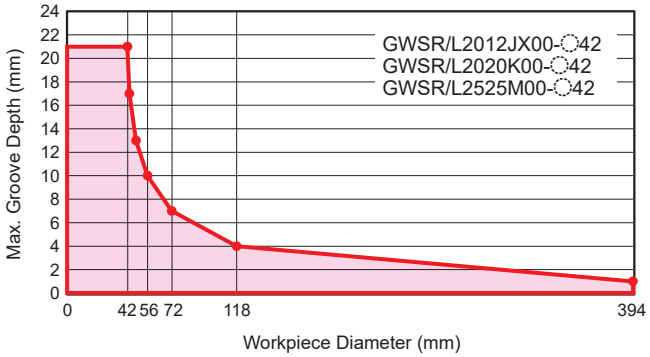
•In The Case of Mono Block Type Holder for Swiss-Type Lathes

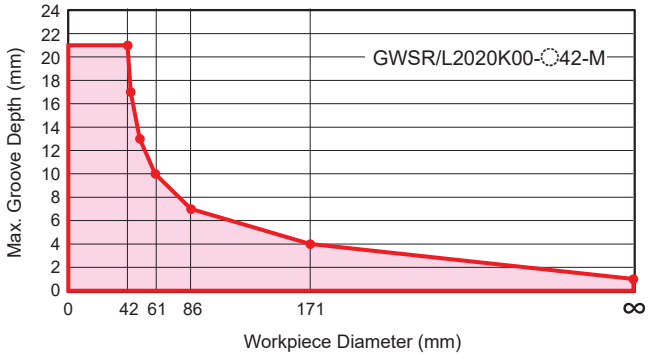
The maximum groove depth is limited by the workpiece diameter.

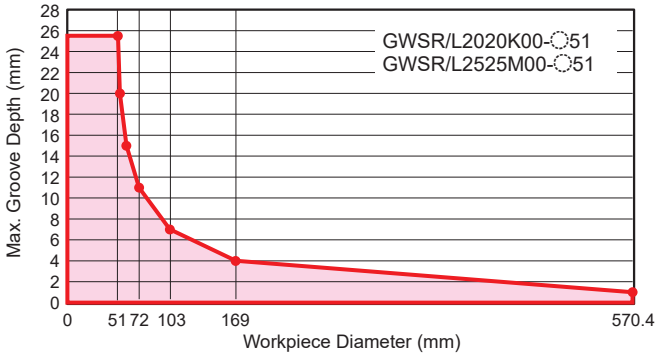


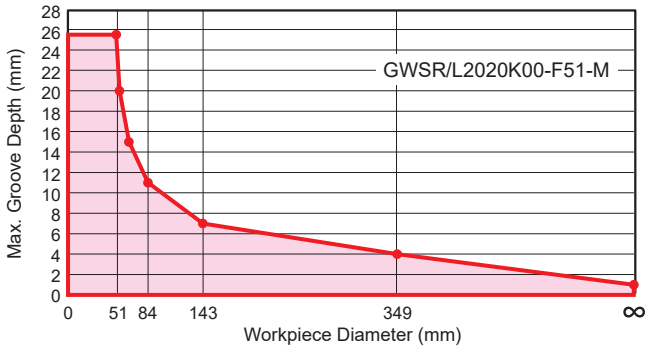
Due to interference, the maximum groove depth is limited by the workpiece diameter.

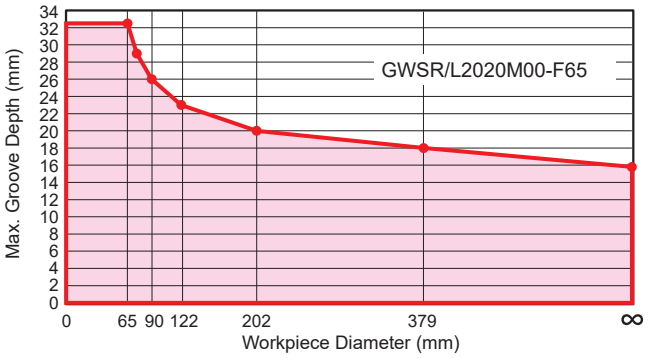


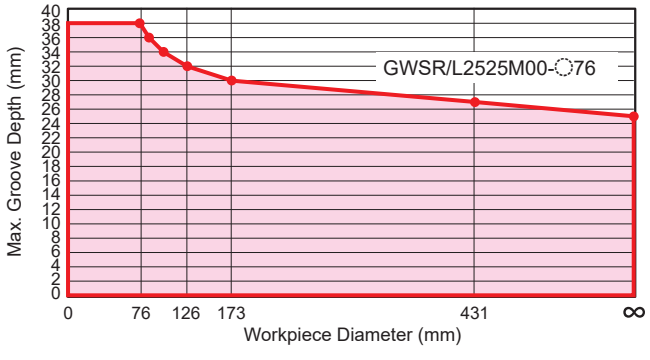








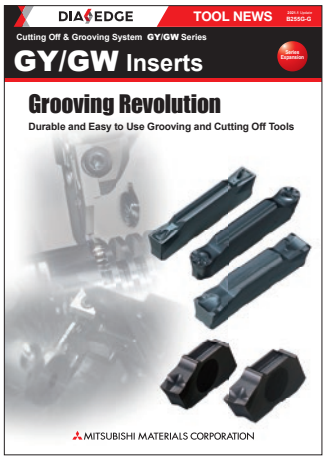




Cutting Off & Grooving System

B225G-G TOOL NEWS

GY/GW Inserts



B225G TOOL NEWS

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

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Overseas Sales Dept, Asian Region
Marunouchi Nijubashi Building 22F, 3-2-3, Marunouchi, Chiyoda-ku, Tokyo 100-8117, Japan

Overseas Sales Dept, European & American Region
Marunouchi Nijubashi Building 22F, 3-2-3, Marunouchi, Chiyoda-ku, Tokyo 100-8117, Japan

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

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