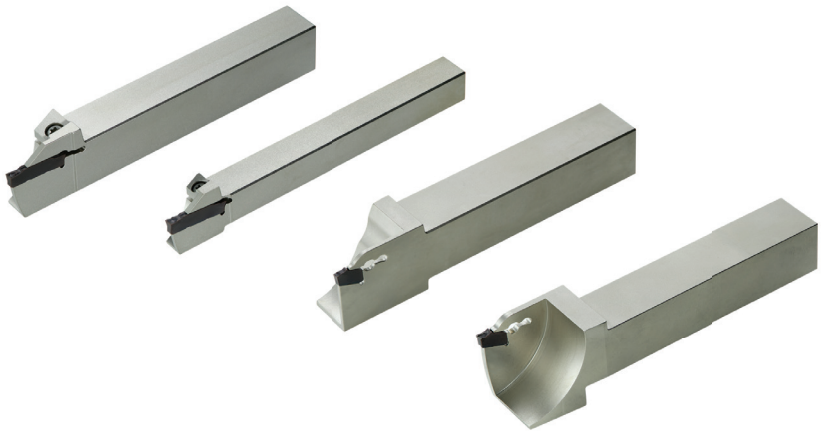
MITSUBISHI MATERIALS

GY/GW Series

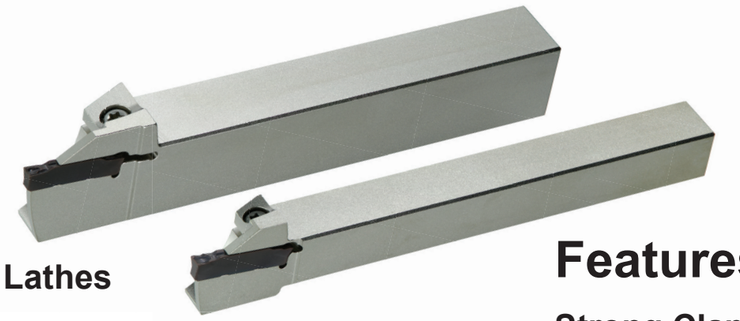
MONOBLOCK HOLDERS FOR SWISS-TYPE AUTOMATIC LATHES



TOOL NEWS B255A-H

Cutting Off and Grooving System

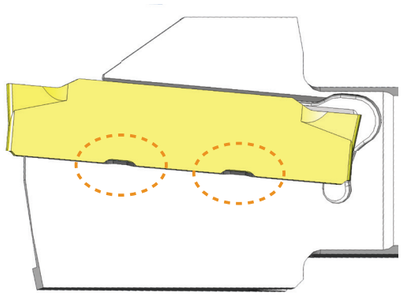
GY Series



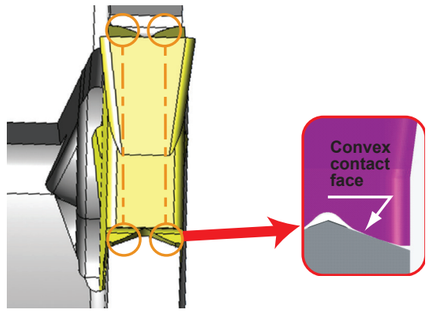
Monoblock Holder for Swiss-type Automatic Lathes

Highly Reliable Insert Clamp

The safety key locks the insert and prevents movement.



The convex geometry ensures high precision clamping.

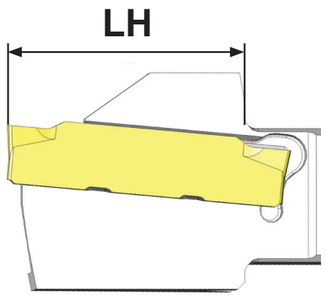


Monoblock Holder for Swiss-type Automatic Lathe

The new geometry with greatly improved rigidity suppresses vibrations and dimensional changes thereby solving problems during cutting off and grooving operations.

Overhang Length Compatible with Swiss-type Automatic Lathes

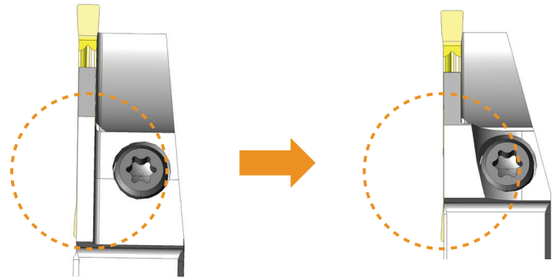
Head length corresponding to the maximum machining diameter of CNC Swiss-type automatic lathes and turret machines.



Features of High-Rigidity Holder

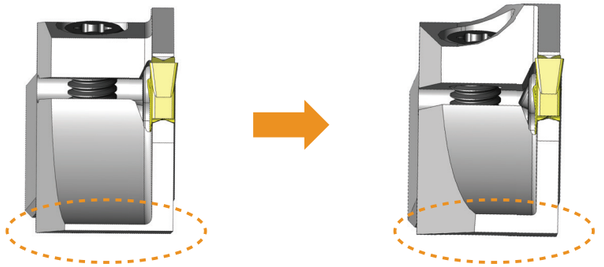
Strong Clamp Bridge

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



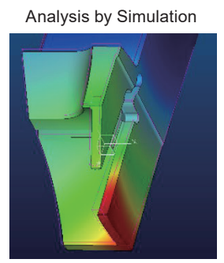
Thicker Tool Base

Tool deflection caused by cutting resistance is greatly reduced.



Analysis by Simulation
Deflection Measurement : .0017"

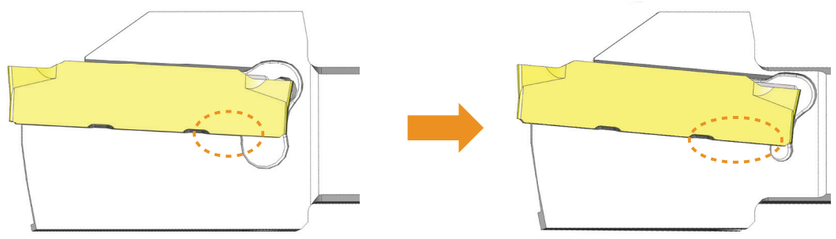
Analysis by Simulation
Deflection Measurement : .0005"



Analysis by Simulation

Strengthening of the Insert Clamp

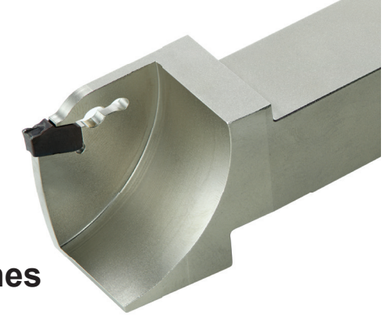
The seating face of the insert becomes wider reducing the deformation of the workpiece material.



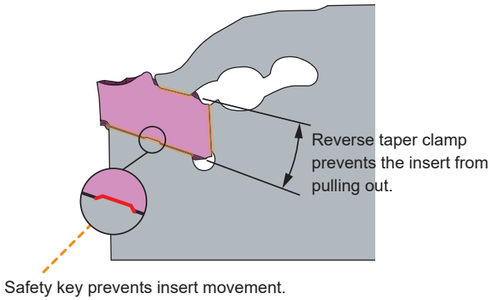
Cutting Off and Grooving System

GW Series

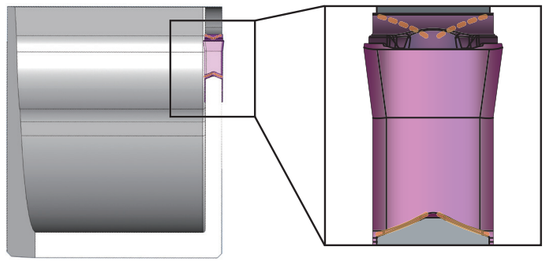
Monoblock Holder for Swiss-type Automatic Lathes



Highly Reliable Insert Clamping

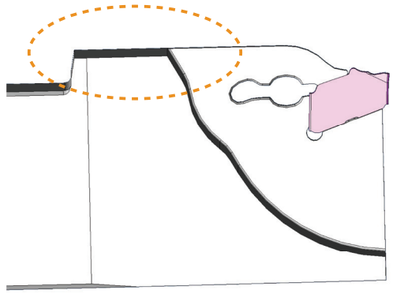


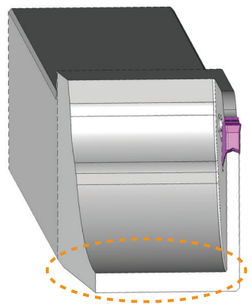
Convex geometry ensures
high precision clamping.



High-Rigidity Holder

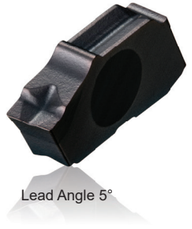
Tool deflection caused by cutting resistance and the remaining material pip in the center are greatly reduced.





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 center.



Lead Angle 5°

Lead Angle 8°

New Line-up

NEW

Low Feed Breaker

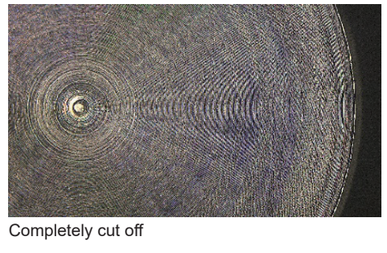
GS Breaker for Lead Angles 8°and 15°

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

Cutting Performance

SUS304 Comparison of Cutting Off and Remaining Material

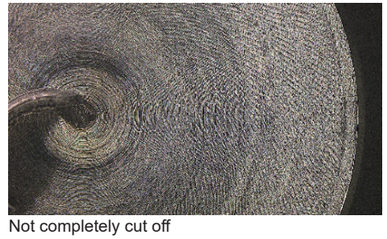
GY
GS Breaker



Completely cut off

Remaining pip in the center : ø.019 inch
RZ : .0004 inch

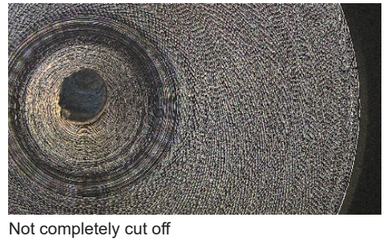
Conventional A



Not completely cut off

Remaining pip in the center : ø.023 inch
RZ : .0017 inch

Conventional B



Not completely cut off

Remaining pip in the center : ø.056 inch
RZ : .0006 inch

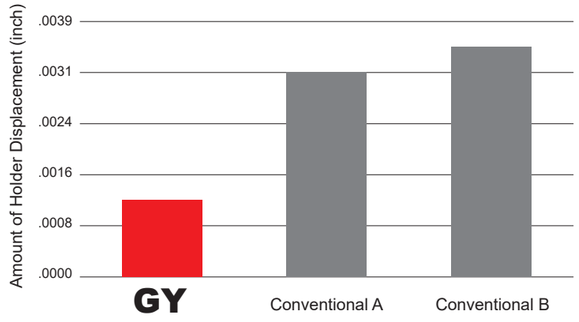
<Cutting Conditions>
Workpiece Material : AISI 304 ø.630 inch
Tool : Cutting Width CW=.079 inch
Lead Angle 15°
Cutting Speed : vc=330 SFM
Feed per Rev. : f=.0012 IPR
Cutting Mode : Wet Cutting

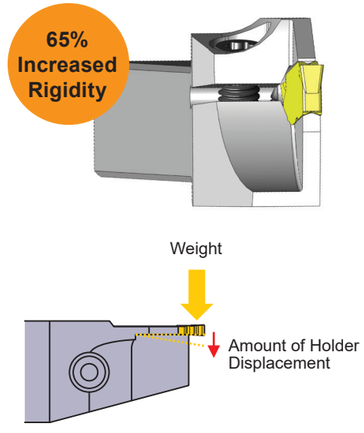
Cutting Performance

Tool Holder Deflection Comparison

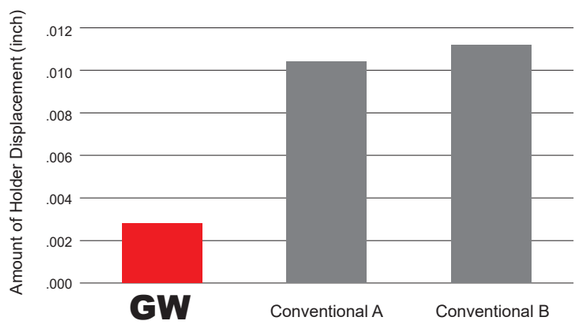
The high rigidity of the tool reduces chatter and vibration thereby improving the component surface finish and also reducing the remaining pip in the center.

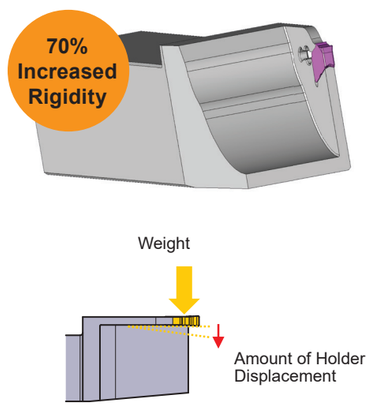
GY Holder





GW Holder





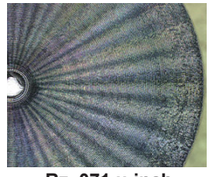
Cutting Performance

Surface Finish Comparison when Cutting Off : AISI 304

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

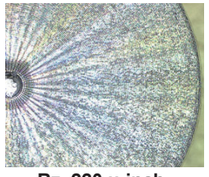
GY Holder

GY



Rz .071 µ-inch

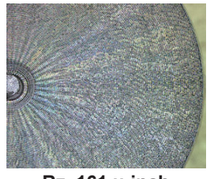
Conventional A



Rz .220 µ-inch

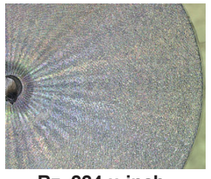
Excellent Surface Finish

Conventional B



Rz .161 µ-inch

Conventional C

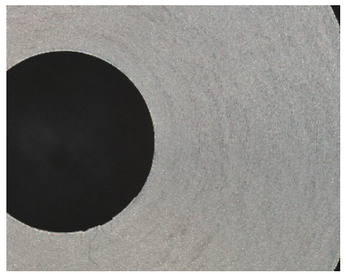


Rz .224 µ-inch

<Cutting Conditions>
Work Material : AISI 304 ø.984 inch
Tool : Cutting Width CW=.079 inch
RE=.008 inch
630 inch x .630 inch
Cutting Speed : vc=395 SFM
Feed per Rev. : f=.0039 IPR
Cutting Mode : Wet Cutting

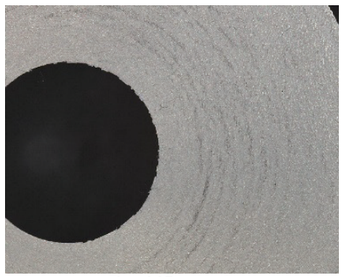
GW Holder

GW Lead Angle 8°



Rz .311 µ-inch

Conventional Lead Angle 6°



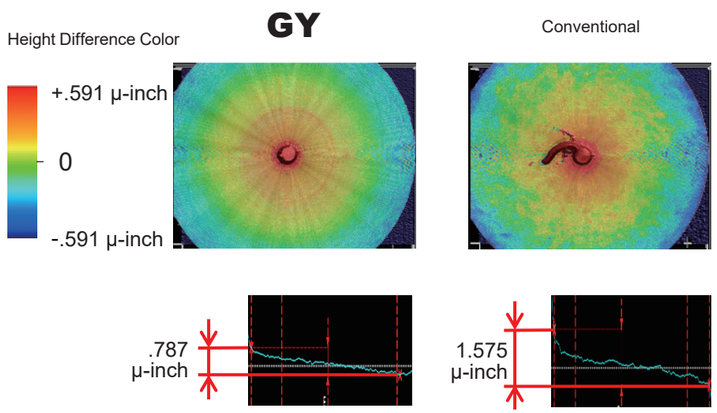
Rz .445 µ-inch

High Lead Angle Effect

<Cutting Conditions>
Work Material : AISI 304 ø1.496 inch
Tool : Cutting Width CW=.079 inch
Cutting Speed : vc=395 SFM
Feed per Rev. : f=.0043 IPR
Cutting Mode : Wet Cutting

Comparison of the Accuracy of Workpiece When Cutting Off : AISI 304

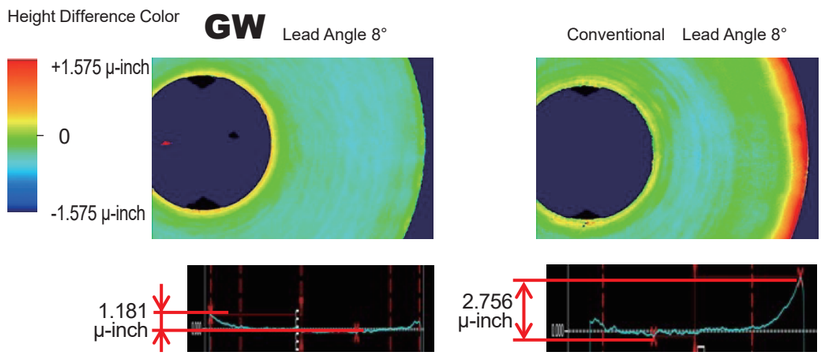
GY Holder



1/2 of Conventional Products

<Cutting Conditions>
Work Material : AISI 304 ø.984 inch
Tool : Cutting Width CW=.079 inch
RE=.008 inch
.630 inch x .630 inch
Cutting Speed : vc=395 SFM
Feed per Rev. : f=.0039 IPR
Cutting Mode : Wet Cutting

GW Holder



High accuracy with same lead angle

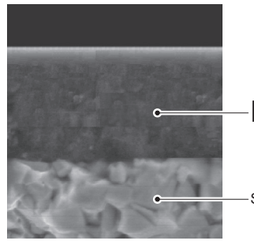
<Cutting Conditions>
Work Material : AISI 304 ø1.496 inch
Tool : Cutting Width CW=.079 inch
Cutting Speed : vc=395 SFM
Feed per Rev. : f=.0043 IPR
Cutting Mode : Wet Cutting

ISO Turning Inserts for Difficult-to-cut Materials

PVD Coated Carbide Grade

MP9015/MP9025

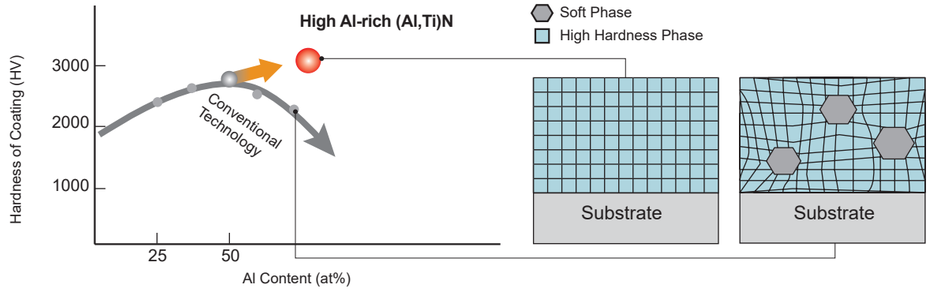
Excellent Wear Resistance when Machining Heat Resistant Super Alloys



MP9015/MP9025

High Al and Conventional Coating Comparison

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

GY/GW Series Insert Grades

GY Series

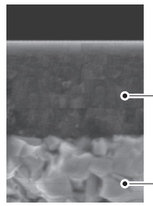
	P Steel	M Stainless Steel	K Cast Iron	N Aluminum Alloy	S Heat Resistant Alloy / Titanium Alloy	H Hardened Steel
Stable Cutting ↑ Cutting Conditions ↓ Unstable Cutting	NX2525					BC8110
	MY5015		MY5015	RT9010	MP9015 / RT9010	MB8025
	VP10RT	VP10RT	VP10RT			
	VP20RT	VP20RT	VP20RT		MP9025	

GW Series

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

GY/GW Series Insert Grades

MP9000 Series

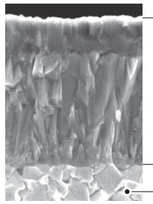


The high Al-rich (Al,Ti)N single layer coating provides stabilization of the high hardness phase and succeeds in dramatically improving wear, crater and welding resistance.

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

Special Cemented Carbide Substrate

MY5015

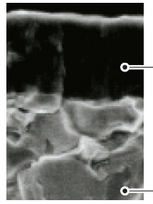


MY5015 is a CVD coated grade with excellent wear resistance even at high temperatures. It provides longer tool life when machining cast and ductile cast irons. Also suitable for high speed continuous cutting of steel.

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)

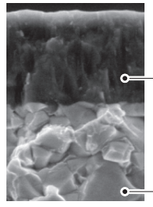
RT9010

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

NX2525

NX2525, 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

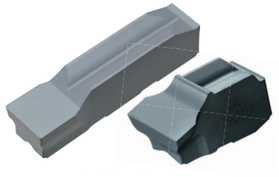
A CBN coated grade for continuous cutting, which provides longer life when machining hardened steel.

MB8025

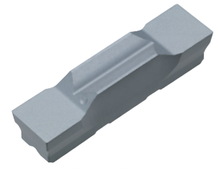
MB8025 is a sintered CBN grade for hardened steel.

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 suitable for a wide range of application.
RT9010 is a harder substrate than RT9020 and is ideal for long tool life on stable cutting applications.
Coating is recommended for application on steel, stainless steel and cast iron materials.

GY Series

Breaker System

Grooving / Cutting Off

GUBreaker
(For Gummy Steel)

GSBreaker
(Low feeds)

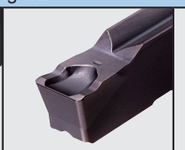
GMBreaker
(Medium feeds)

GLBreaker
(For Aluminum Alloys)

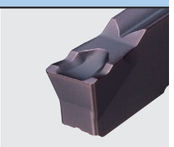
Cutting Off

NEW
R08-GS Breaker
(Low feeds)

NEW
R15-GS Breaker
(Low feeds)

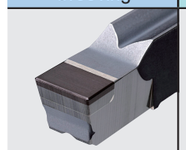


GMBreaker
(Medium feeds)



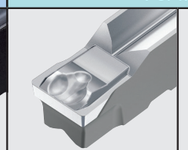
R/L05-GM Breaker
(Medium feeds)

Grooving



GFGS
(For hardened steel)

For Multifunctional Grooving

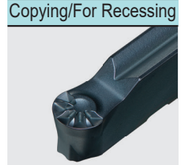


MFBreaker
(G class)

MSBreaker
(Low feeds)

MMBreaker
(Medium feeds)

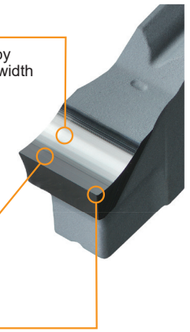
Copying/For Recessing



BMBreaker

For Grooving / Cutting Off

GL Breaker (For Aluminum Alloys)



G Class Breaker

Improved chip control by narrowing the breaker width

High Rake Angle

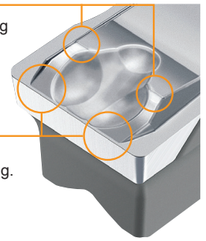
Achieves low cutting resistance

Sharp Edge

Improved welding resistance for aluminum alloys

For Multifunctional Grooving

MF Breaker (For Finish Machining)



Efficient chip breaking when cross-feed machining.

Chips are controlled when finish machining.

GW Series

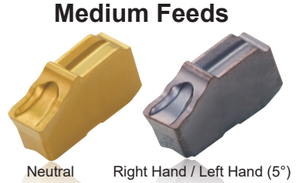
Breaker System Offering Excellent Chip Disposal Properties

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

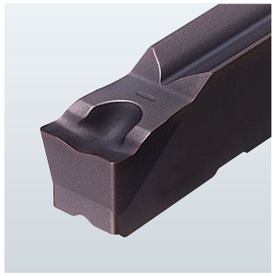
Cutting Off of Holes and Small Parts

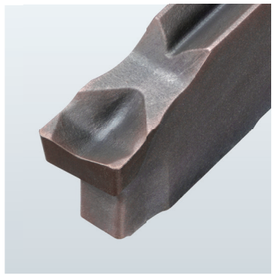
Reduction of Burrs and Core Residue

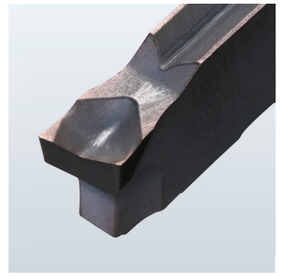
Lead Angle PSIRR=8°

Lead Angle PSIRR=15°

Improved Fracture Resistance







Correct Use of GW Series Inserts

First Recommendation

Improved Fracture Resistance

GM Breaker PSIRR=5°

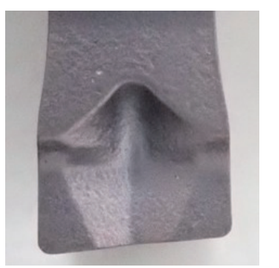
Reduction of Cutting Resistance

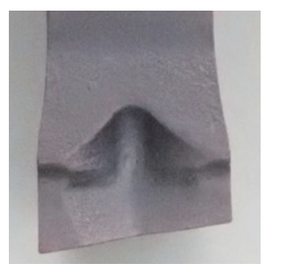
Reduction of Burrs and Core Residue

GS Breaker PSIRR=5°

Improved Fracture Resistance

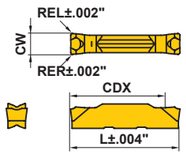
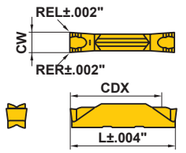
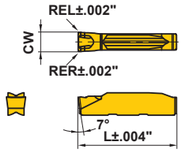
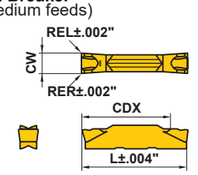
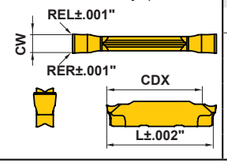
GS Breaker PSIRR=8°





GY Series Inserts

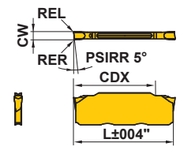
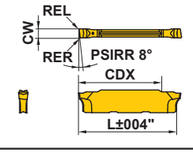
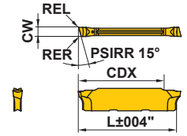
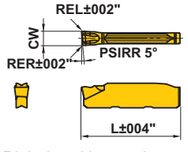
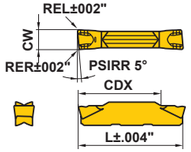
(inch)

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 inch	CW: Cutting Width (mm)	CW: Tolerance	RER/L	CDX	*2 L
For Grooving / Cutting Off	**GU Breaker** (For gummy steel) 	GY2M0200D020N-GU			●	●		●			D	.079	(2.00)	±.0012	.008	.776	.815
		GY2M0239E020N-GU			●	●		●			E	.094	(2.39)	±.0012	.008	.780	.815
		GY2M0250E020N-GU			●	●		●			E	.098	(2.50)	±.0012	.008	.768	.815
		GY2M0300F030N-GU			●	●		●			F	.118	(3.00)	±.0012	.012	.760	.815
		GY2M0318F030N-GU			●	●		●			F	.125	(3.18)	±.0012	.012	.760	.815
	GS Breaker (Low feeds) 	NEW GY2M0120B010N-GS			●	●					B	.047	(1.20)	±.0012	.004	.480	.579
		GY2M0150C010N-GS			●	●		●			C	.059	(1.50)	±.0012	.004	.528	.579
		GY2M0200D020N-GS			●	●		●			D	.079	(2.00)	±.0012	.008	.736	.815
		GY2M0239E020N-GS			●	●		●			E	.094	(2.39)	±.0012	.008	.728	.815
		GY2M0250E020N-GS			●	●		●			E	.098	(2.50)	±.0012	.008	.728	.815
		GY2M0300F020N-GS			●	●		●			F	.118	(3.00)	±.0012	.008	.728	.815
		GY2M0318F020N-GS			●	●		●			F	.125	(3.18)	±.0012	.008	.728	.815
	GM Breaker (Medium feeds) 	GY1M0200D020N-GM	●	●	●	●	●				D	.079	(2.00)	±.0012	.008	–	.815
		GY1M0250E020N-GM	●	●	●	●	●				E	.098	(2.50)	±.0012	.008	–	.815
		GY1M0300F030N-GM	●	●	●	●	●				F	.118	(3.00)	±.0012	.012	–	.815
	GM Breaker (Medium feeds) 	GY2M0150C020N-GM	●	●	●	●		●			C	.059	(1.50)	±.0012	.008	.547	.579
		GY2M0200D020N-GM	●	●	●	●	●	●			D	.079	(2.00)	±.0012	.008	.764	.815
		GY2M0239E020N-GM	●	●	●	●	●	●			E	.094	(2.39)	±.0012	.008	.764	.815
		GY2M0250E020N-GM	●	●	●	●	●	●			E	.098	(2.50)	±.0012	.008	.764	.815
		GY2M0300F030N-GM	●	●	●	●	●	●			F	.118	(3.00)	±.0012	.012	.764	.815
		GY2M0318F030N-GM	●	●	●	●	●	●			F	.125	(3.18)	±.0012	.012	.764	.815
	GL Breaker (For Aluminum Alloys) 	GY2G0200D005N-GL							●		D	.079	(2.00)	±.0008	.002	.768	.829
		GY2G0250E005N-GL							●		E	.098	(2.50)	±.0008	.002	.752	.829
		GY2G0300F005N-GL							●		F	.118	(3.00)	±.0008	.002	.744	.829

*2 The dimension depends on the breaker. Refer to page 17 “L dimension tolerance conversion table”.

● : USA Stock
(10 inserts in one case) (CBN inserts are with 1 piece in one case.)

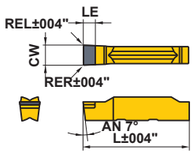
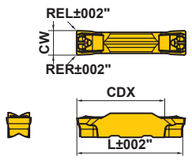
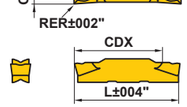
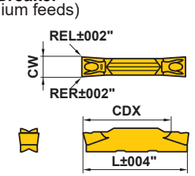
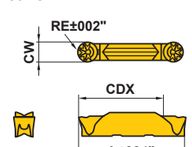
(inch)

Applications	Geometry	Order Number	Stock: Coated MP9015	Coated MP9025	Coated VP10RT	Coated VP20RT	Coated MY5015	Seat Size	CW: Cutting Width inch	CW: Cutting Width (mm)	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	.047	(1.20)	±.0012	.004	±.0020	.004	±.0020	.481	
	R08-GS Breaker NEW (Low feeds) 	GY2G0150C010R08-GS			●	●		C	.059	(1.50)	±.0008	.004	±.0012	.004	–	.519	.598
		GY2G0200D020R08-GS			●	●		D	.079	(2.00)	±.0012	.008	±.0020	.008	–	.742	.839
		GY2G0250E020R08-GS			●	●		E	.098	(2.50)	±.0012	.008	±.0020	.008	–	.750	.846
		GY2G0300F020R08-GS			●	●		F	.118	(3.00)	±.0012	.008	±.0020	.008	–	.733	.846
	R15-GS Breaker NEW (Low feeds) 	GY2G0150C003R15-GS			●	●		C	.059	(1.50)	±.0008	.0012	+.0012, -.0008	.004	–	.519	.598
		GY2G0150C010R15-GS			●	●		C	.059	(1.50)	±.0008	.004	±.0012	.004	–	.519	.598
		GY2G0200D003R15-GS			●	●		D	.079	(2.00)	±.0012	.0012	+.0012, -.0008	.004	–	.742	.839
		GY2G0200D010R15-GS			●	●		D	.079	(2.00)	±.0012	.004	±.0012	.004	–	.742	.839
		GY2G0250E003R15-GS			●	●		E	.098	(2.50)	±.0012	.0012	+.0012, -.0008	.004	–	.750	.846
		GY2G0250E020R15-GS			●	●		E	.098	(2.50)	±.0012	.008	±.0020	.004	–	.750	.846
		GY2G0300F003R15-GS			●	●		F	.118	(3.00)	±.0012	.0012	+.0012, -.0008	.004	–	.733	.846
		GY2G0300F020R15-GS			●	●		F	.118	(3.00)	±.0012	.008	±.0020	.004	–	.733	.846
	R/L05-GM Breaker  Right hand insert shown.	GY1M0200D020R05-GM			●	●		D	.079	(2.00)	±.0012	.008	±.0020	.008	±.0020	–	.819
		GY1M0200D020L05-GM			●	●		D	.079	(2.00)	±.0012	.008	±.0020	.008	±.0020	–	.819
		GY1M0300F030R05-GM			●	●		F	.118	(3.00)	±.0012	.012	±.0020	.012	±.0020	–	.819
		GY1M0300F030L05-GM			●	●		F	.118	(3.00)	±.0012	.012	±.0020	.012	±.0020	–	.819
	R/L05-GM Breaker  Right hand insert shown.	GY2M0200D020R05-GM			●	●		D	.079	(2.00)	±.0012	.008	±.0020	.008	±.0020	.768	.819
		GY2M0200D020L05-GM			●	●		D	.079	(2.00)	±.0012	.008	±.0020	.008	±.0020	.768	.819
		GY2M0250E020R05-GM			●	●		E	.098	(2.50)	±.0012	.008	±.0020	.008	±.0020	.768	.820
		GY2M0250E020L05-GM			●	●		E	.098	(2.50)	±.0012	.008	±.0020	.008	±.0020	.768	.820
		GY2M0300F030R05-GM			●	●		F	.118	(3.00)	±.0012	.012	±.0020	.012	±.0020	.768	.821
		GY2M0300F030L05-GM			●	●		F	.118	(3.00)	±.0012	.012	±.0020	.012	±.0020	.768	.821

*2 The dimension depends on the breaker. Refer to page 17 “L dimension tolerance conversion table”.

GY Series Inserts

(inch)

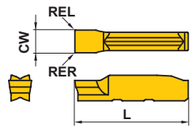
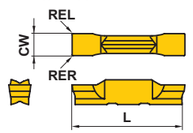
Applications	Geometry	Order Number	Stock: Coated MP9015	Coated MP9025	Coated VP10RT	Coated VP20RT	Coated MY5015	Cermet NX2525	Carbide RT9010	Carbide RT9020	CBN BC8110	Seat Size	CW: Cutting Width inch	CW: Cutting Width (mm)	CW: Tolerance	RER/L	CDX	∗2 L	LE
For Grooving	**Flat Top** (For hardened steel) 	GY1G0200D020N-GFGS									●	D	.079	(2.00)	±.0012	.008	—	.815	.106
		GY1G0239E020N-GFGS									●	E	.094	(2.39)	±.0012	.008	—	.815	.106
		GY1G0250E020N-GFGS									●	E	.098	(2.50)	±.0012	.008	—	.815	.106
		GY1G0300F020N-GFGS									●	F	.118	(3.00)	±.0012	.008	—	.815	.106
		GY1G0318F020N-GFGS									●	F	.125	(3.18)	±.0012	.008	—	.815	.106
For Multifunctional Grooving	**MF Breaker** (Finishing) 	GY2G0200D020N-MF			●	●		●	●			D	.079	(2.00)	±.0008	.008	.768	.829	—
		∗1 GY2G0224D015N-MF			●	●		●	●			D	.088	(2.24)	±.0008	.006	.780	.829	—
		GY2G0239E020N-MF			●	●		●	●			E	.094	(2.39)	±.0008	.008	.756	.829	—
		GY2G0250E020N-MF			●	●		●	●			E	.098	(2.50)	±.0008	.008	.764	.829	—
		∗1 GY2G0274E020N-MF			●	●		●	●			E	.108	(2.74)	±.0008	.008	.776	.829	—
		GY2G0300F020N-MF			●	●		●	●			F	.118	(3.00)	±.0008	.008	.768	.829	—
		GY2G0300F040N-MF			●	●		●	●			F	.118	(3.00)	±.0008	.016	.760	.829	—
		GY2G0318F020N-MF			●	●		●	●			F	.125	(3.18)	±.0008	.008	.768	.829	—
		GY2G0318F040N-MF			●	●		●	●			F	.125	(3.18)	±.0008	.016	.760	.829	—
		∗1 GY2G0324F020N-MF			●	●		●	●			F	.128	(3.24)	±.0008	.008	.768	.829	—
	MS Breaker (Low feeds) 	GY2M0200D020N-MS			●	●	●	●				D	.079	(2.00)	±.0012	.008	.752	.815	—
		GY2M0250E020N-MS			●	●	●	●				E	.098	(2.50)	±.0012	.008	.752	.815	—
		GY2M0300F020N-MS			●	●	●	●				F	.118	(3.00)	±.0012	.008	.756	.815	—
		GY2M0300F040N-MS			●	●	●	●				F	.118	(3.00)	±.0012	.008	.744	.815	—
	MM Breaker (Medium feeds) 	GY2M0200D020N-MM	●	●	●	●	●	●				D	.079	(2.00)	±.0012	.008	.752	.815	—
		GY2M0250E020N-MM	●	●	●	●	●	●				E	.098	(2.50)	±.0012	.008	.752	.815	—
		GY2M0300F020N-MM	●	●	●	●	●	●				F	.118	(3.00)	±.0012	.008	.752	.815	—
		GY2M0300F040N-MM	●	●	●	●	●	●				F	.118	(3.00)	±.0012	.016	.744	.815	—
		GY2M0300F080N-MM	●	●	●	●	●	●				F	.118	(3.00)	±.0012	.031	.728	.815	—
For Copying / For Recessing	**BM Breaker** 	GY2M0200D100N-BM	●	●	●	●	●	●				D	.079	(2.00)	±.0012	.039	.768	.823	—
		GY2M0250E125N-BM	●	●	●	●	●	●				E	.098	(2.50)	±.0012	.049	.760	.823	—
		GY2M0300F150N-BM	●	●	●	●	●	●				F	.118	(3.00)	±.0012	.059	.748	.823	—
		GY2M0318F159N-BM	●	●	●	●	●	●				F	.125	(3.18)	±.0012	.063	.744	.823	—

∗1 Circlip corresponding width of cut

● : USA Stock
(10 inserts in one case) (CBN inserts are with 1 piece in one case.)

Blank Inserts

(inch)

Geometry	Order Number	Cermet NX2525	Carbide RT9010	Carbide RT9020	Seat Size	CW: Groove Width inch	CW: Groove Width (mm)	CW: Tolerance	RER/L	L
1 Edge Type 	GY1B0220D020N	★	★	★	D	.087	(2.20)	±.0039	.008	.830
	GY1B0270E020N	★	★	★	E	.106	(2.70)	±.0039	.008	.831
	GY1B0340F020N	★	★	★	F	.134	(3.40)	±.0039	.008	.827
2 Edge Type 	GY2B0220D020N	★	★	★	D	.087	(2.20)	±.0039	.008	.829
	GY2B0250D020N	★	★	★	D	.098	(2.50)	±.0039	.008	.838
	GY2B0270E020N	★	★	★	E	.106	(2.70)	±.0039	.008	.829
	GY2B0300E020N	★	★	★	E	.118	(3.00)	±.0039	.008	.838
	GY2B0340F020N	★	★	★	F	.134	(3.40)	±.0039	.008	.829
	GY2B0360F020N	★	★	★	F	.142	(3.60)	±.0039	.008	.838

∗ Insert blank is not suitable for machining without grinding.

GY Series " L " Dimension Tolerance Conversion Table

(inch)

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
.047", 1.20 mm	.579		0		0						
.059", 1.50 mm	.579		0			.020					
.079", 2.00 mm	.815	0	0	0		.024	.004	0	.014	.008	.014
.088", 2.24 mm	∗3 (.815)								.014		
.094", 2.39 mm	.815	0	0					0	.014		
.098", 2.50 mm	.815	0	0	0		.031	.005	0	.014	.008	.014
.108", 2.74 mm	∗3 (.815)								.014		
.118", 3.00 mm	.815	0	0	0		.031	.006	0	.014	.008	.014
.125", 3.18 mm	.815	0	0					0	.014	.008	
.128", 3.24 mm	∗3 (.815)								.014		

∗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

(inch)

Application	Order Number	Stock Coating MY5015	VP10RT	VP20RT	VP30RT	CW Cutting Width inch	CW Cutting Width (mm)	CW Tolerance	RER REL	PSIRR PSIRL	Geometry
Grooving, Cutting Off	**GW1M0200D020N-GS**		●	●	●	.079	(2.00)	±.0012	.008	—	
Grooving, Cutting Off	**GW1M0239E020N-GS**		●	●	●	.094	(2.39)	±.0012	.008	—	
Grooving, Cutting Off	**GW1M0300F020N-GS**		●	●	●	.118	(3.00)	±.0012	.008	—	
Grooving, Cutting Off	**GW1M0400G020N-GS**		●	●	●	.157	(4.00)	±.0016	.008	—	
Grooving, Cutting Off	**GW1M0200D020N-GM**	●	●	●	●	.079	(2.00)	±.0012	.008	—	
Grooving, Cutting Off	**GW1M0239E020N-GM**	●	●	●	●	.094	(2.39)	±.0012	.008	—	
Grooving, Cutting Off	**GW1M0300F030N-GM**	●	●	●	●	.118	(3.00)	±.0012	.012	—	
Grooving, Cutting Off	**GW1M0400G030N-GM**	●	●	●	●	.157	(4.00)	±.0016	.012	—	
Cutting off, Low Feed	**GW1M0200D020R05-GS**		●	●	●	.079	(2.00)	±.0012	.008	5	
Cutting off, Low Feed	**GW1M0239E020R05-GS**		●	●	●	.094	(2.39)	±.0012	.008	5	
Cutting off, Low Feed	**GW1M0300F020R05-GS**		●	●	●	.118	(3.00)	±.0012	.008	5	
Cutting off Low Feed, Lead Angle 8°	**GW1M0200D003R08-GS**		●	●	●	.079	(2.00)	±.0012	.0012	8	
Cutting off Low Feed, Lead Angle 8°	**GW1M0239E003R08-GS**		●	●	●	.094	(2.39)	±.0012	.0012	8	
Cutting off Low Feed, Lead Angle 8°	**GW1M0300F003R08-GS**		●	●	●	.118	(3.00)	±.0012	.0012	8	
Cutting Off	**GW1M0200D020R05-GM**		●	●	●	.079	(2.00)	±.0012	.008	5	
Cutting Off	**GW1M0200D020L05-GM**		●	●	●	.079	(2.00)	±.0012	.008	5	
Cutting Off	**GW1M0239E020R05-GM**		●	●	●	.094	(2.39)	±.0012	.008	5	
Cutting Off	**GW1M0239E020L05-GM**		●	●	●	.094	(2.39)	±.0012	.008	5	
Cutting Off	**GW1M0300F030R05-GM**		●	●	●	.118	(3.00)	±.0012	.012	5	
Cutting Off	**GW1M0300F030L05-GM**		●	●	●	.118	(3.00)	±.0012	.012	5	
Cutting Off	**GW1M0400G030R05-GM**		●	●	●	.157	(4.00)	±.0016	.012	5	
Cutting Off	**GW1M0400G030L05-GM**		●	●	●	.157	(4.00)	±.0016	.012	5	

Right hand insert shown.

Blank Inserts

(inch)

Geometry	Order Number	Carbide RT9010	Carbide RT9020	Seat Size	CW Grooving Width inch	CW Grooving Width (mm)	CW Tolerance	RER	REL
1 Edge Type	**GW1B0320D020N**	★	★	**D**	.128	(3.24)	±0.10	.008	.008
	GW1B0440F020N	★	★	**F**	.175	(4.44)	±0.10	.008	.008
	GW1B0540G020N	★	★	**G**	.214	(5.44)	±0.10	.008	.008

∗ Insert blank is not suitable for machining without grinding.

● : USA Stock ★ : Stocked in Japan
(10 inserts in one case) (CBN inserts are available in 1 piece in one case.)

Cutting Conditions ➢ P29

GY SERIES (External for Swiss-type Automatic Lathes)

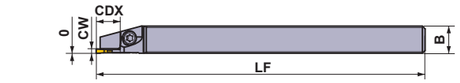


Fig. 1

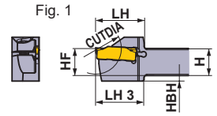


Fig. 2

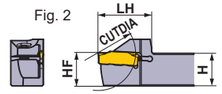
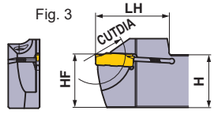


Fig. 3



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 .047"**	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
		13	16	Mono Block	R	NEW **GYSR1616JX00-B08**	●	16	16	120	25	—	16	—	2
		13	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 .059"**	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 .079" .088"**	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

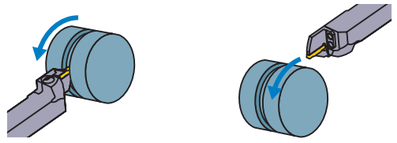
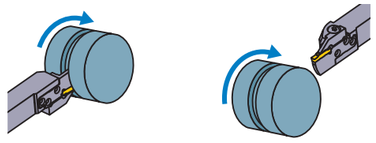
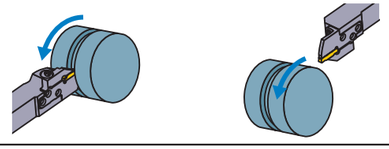
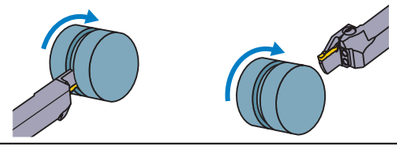
∗1 The maximum groove depth (**CDX**) varies according to the insert used. Please refer to the maximum groove depth (**CDX**) of inserts on pages 14—16.
∗2 The maximum cut off diameter (**CUTDIA**) varies according to the insert used. The cut off diameter is double the maximum groove depth (**CDX**) of inserts on pages 14—16.
∗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 14—16.

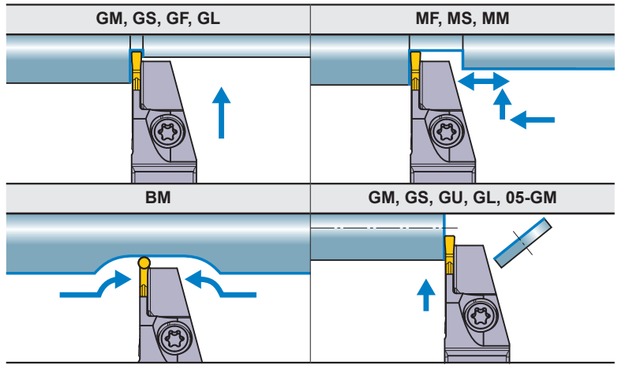
GY SERIES (External for Swiss-type Automatic Lathes)

(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 .094" .098" .108"	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 .118" .125" .128"	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 	R 
L 	L 



● : USA Stock ★ : Stocked 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	CW \ Breaker	GU (Gummy steel)	GS (Low)	GM (Medium)	GL (Aluminum)	GFGS (Hardened steel)
		Neutral	Neutral	Neutral	Neutral	Neutral
B	.047", 1.20 mm		●			
C	.059", 1.50 mm		●	●		
D	.079", 2.00 mm	●	●	●	●	●
E	.094", 2.39 mm	●	●	●		●
	.098", 2.50 mm	●	●	●	●	●
F	.118", 3.00 mm	●	●	●	●	●
	.125", 3.18 mm	●	●	●		●

For cutting off breaker

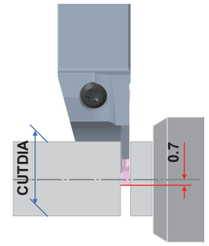
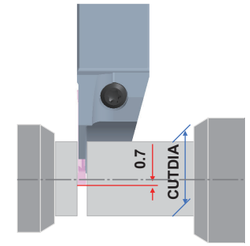
Seat Size	CW \ Breaker	05-GS (Low)	08-GS (Low)	15-GS (Low)	05-GM (Medium)
		R	R	R	R/L
B	.047", 1.20 mm	●			
C	.059", 1.50 mm		●	●	
D	.079", 2.00 mm		●	●	●
E	.094", 2.39 mm				
	.098", 2.50 mm		●	●	●
F	.118", 3.00 mm		●	●	●
	.125", 3.18 mm				

For multifunctional grooving breaker

Seat Size	CW \ Breaker	MF (Finish)	MS (Low)	MM (Medium)	BM (Copying)
					Ball shape
D	.079", 2.00 mm	●	●	●	●
	.088", 2.24 mm	●			
E	.094", 2.39 mm	●			
	.098", 2.50 mm	●	●	●	●
	.108", 2.74 mm	●			
F	.118", 3.00 mm				●
	RE .008", 0.2 mm	●	●	●	
	RE .016", 0.4 mm	●	●	●	
	RE .031", 0.8 mm			●	
	.125", 3.18 mm				●
	RE .008", 0.2 mm	●			
	RE .016", 0.4 mm	●			
	.128", 3.24 mm	●			

● : Standard insert with dimensions

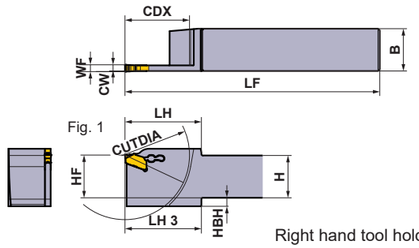
Regarding Cutting Off Depth and Maximum Cutting Off Diameter

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

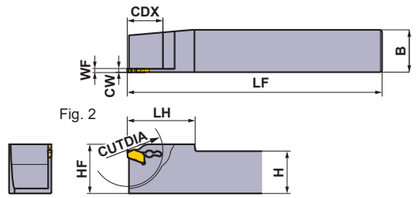
In case of parting off operations, when the cutting edge exceeds the center of the workpiece material, keep it to .028 inch, 0.7 mm or less.

CUTDIA = maximum parting diameter

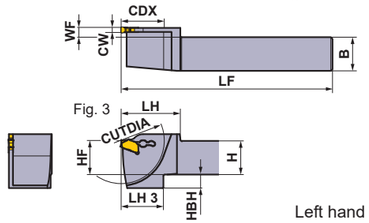
GW SERIES (External for Swiss-Type Automatic Lathes)



Right hand tool holder shown.



Right hand tool holder shown.



Left hand tool holder shown.

Spare Parts

Wrench
GWY39L

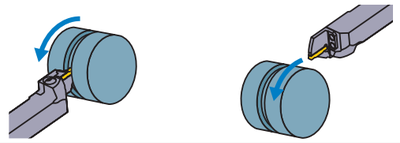
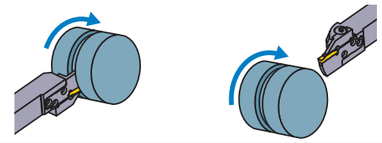
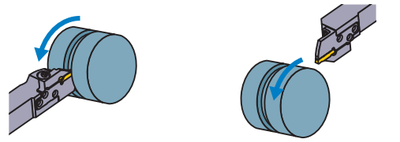
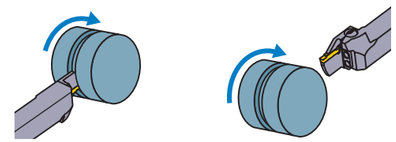
(mm)

Seat Size	CW	CDX	CUTDIA	Type	Hand (R/L)	Order Number	Stock	Dimensions (mm) H	B	LF	LH	LH 3	HF	WF	HBH	Fig.
D	2.00 .079"	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 .094"	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 .118"	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

● : USA Stock ★ : Stocked in Japan

Cutting Mode

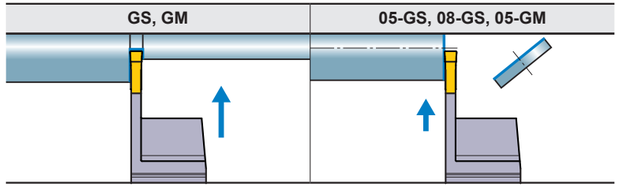
	Clockwise	Anticlockwise
R		
L		

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	With hand	With hand	With hand
D	.079", 2.00 mm	●	●	●	●	●
E	.094", 2.39 mm	●	●	●	●	●
F	.118", 3.00 mm	●	●	●	●	●
G	.157", 4.00 mm	●	●			●

● : Standard insert with dimensions



Recommended Cutting Speed [For External Grooving / Cutting Off]

	Workpiece Material	Properties	Grade	Cutting Speed **vc** (SFM) 165 330 490 655 820 985
P	Mild Steel	Hardness ≤160HB	VP20RT	330 – 720
			VP10RT	360 – 755
			NX2525	295 – 690
	Carbon Steel Alloy Steel	Hardness 160–280HB	VP20RT	260 – 590
			VP10RT	295 – 620
			MY5015	360 – 820
			NX2525	230 – 560
		Hardness 280HB≤	VP20RT	195 – 460
			VP10RT	230 – 490
			MY5015	295 – 690
			NX2525	180 – 440
M	Stainless Steels	Hardness ≤270HB	VP20RT	195 – 460
			VP10RT	230 – 490
K	Gray Cast Irons	Tensile Strength ≤300MPa	VP20RT	260 – 590
			VP10RT	295 – 620
			MY5015	460 – 985
	Ductile Cast Irons	Tensile Strength ≤800MPa	VP20RT	195 – 460
			VP10RT	230 – 490
			MY5015	295 – 690
S	Heat Resistant Alloys Titanium Alloys	–	MP9015	130 – 330
			MP9025	100 – 295
			VP20RT	100 195
			VP10RT/ RT9010	130 230
H	Hardened Steel	50HRC≤	BC8110/MB8025	260 – 395

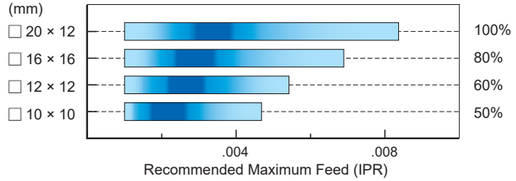
Note 1) For MP9015, MP9025, VP10RT, VP20RT and MY5015, wet cutting is recommended.

	Workpiece Material	Properties	Grade	Cutting Speed **vc** (SFM) 165 330 655 985 1310 1640
N	Aluminum Alloys	Content Si<5%	RT9010	655 – 1640
	Aluminum Alloys	Content 5%≤Si≤10%	RT9010	655 – 1640
	Aluminum Alloys	Content Si>10%	RT9010	330 – 655

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.

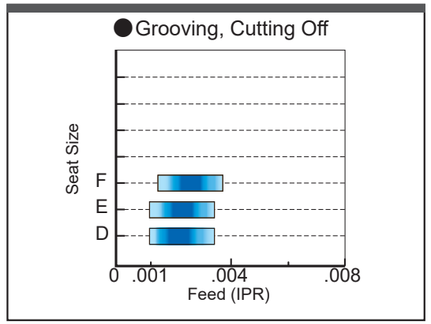
■ In the case of mono block type holder for Swiss-type lathes



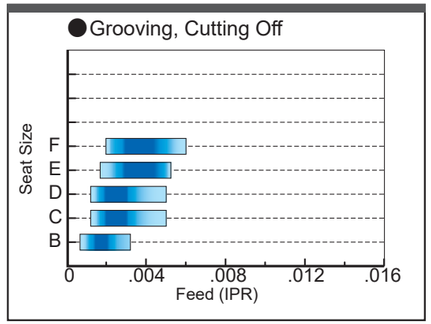
Please refer to the tables above on recommended cutting conditions for external grooving and cutting off.
Apply the percentage ratio shown on each shank size with the values in the table.

■ Recommended feed rate and depth of cut

GU BREAKER

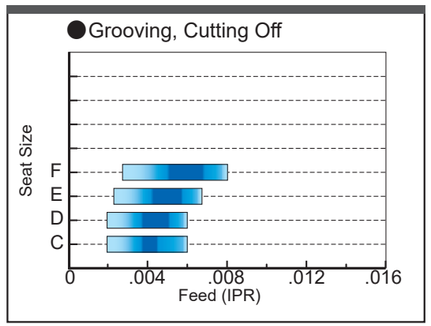


GS BREAKER

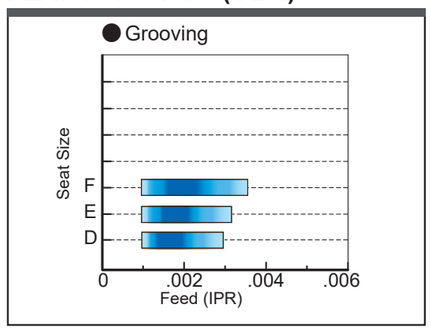


Seat Size	Insert Width
B	.047", 1.20 mm
C	.059", 1.50 mm
D	.079", 2.00 mm .088", 2.24 mm
E	.094", 2.39 mm .098", 2.50 mm .108", 2.74 mm
F	.118", 3.00 mm .125", 3.18 mm .128", 3.24 mm

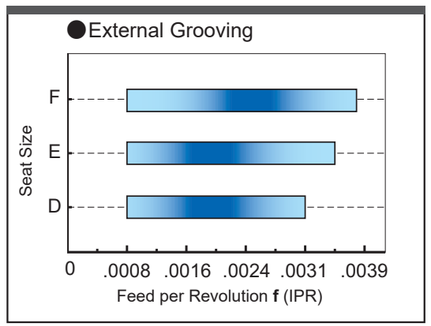
GM BREAKER



FLAT TOP GFGS (CBN)

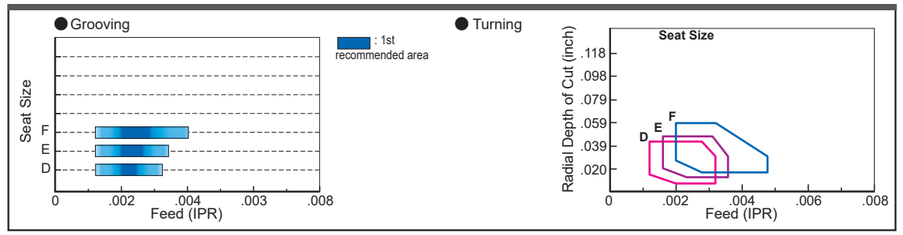


GL BREAKER



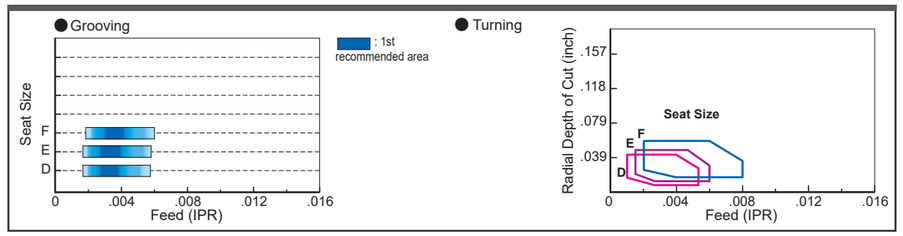
: 1st recommended area

MF BREAKER

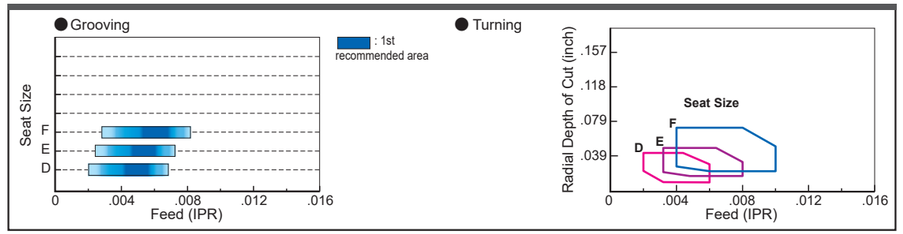


Seat Size	Insert Width
C	.059", 1.50 mm
D	.079", 2.00 mm .088", 2.24 mm
E	.094", 2.39 mm .098", 2.50 mm .108", 2.74 mm
F	.118", 3.00 mm .125", 3.18 mm .128", 3.24 mm

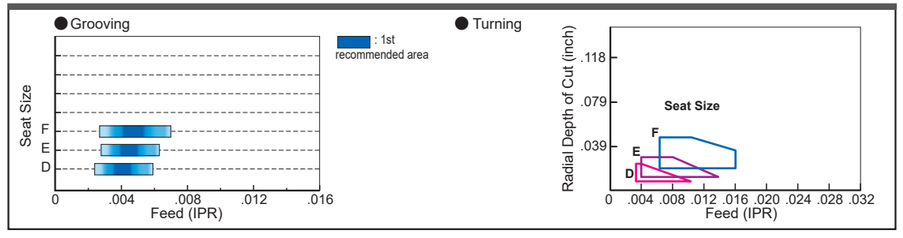
MS BREAKER



MM BREAKER



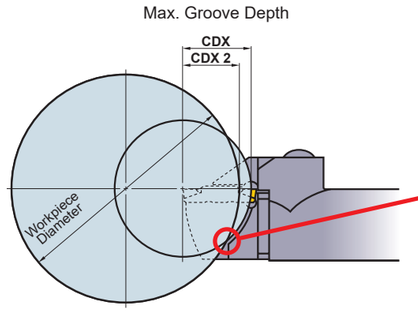
BM BREAKER



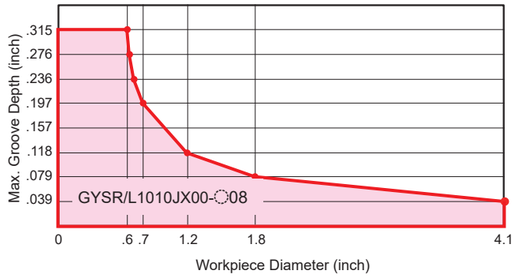
LIMITATION OF THE MAXIMUM GROOVE DEPTH [For External Grooving]

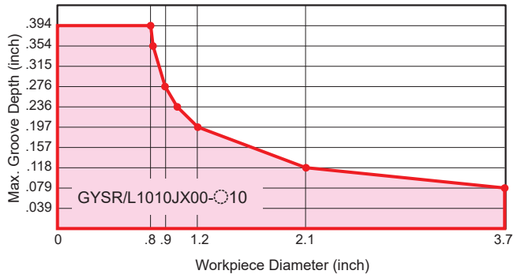
●In The Case of Mono Block Type Holder for Swiss-Type Lathes

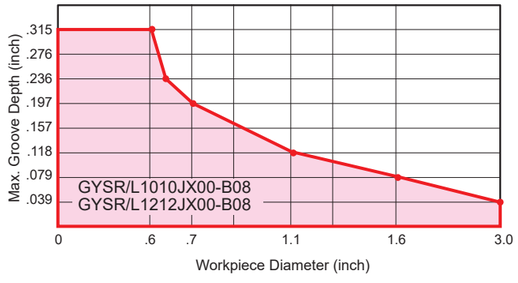
The maximum groove depth is limited by the workpiece diameter.

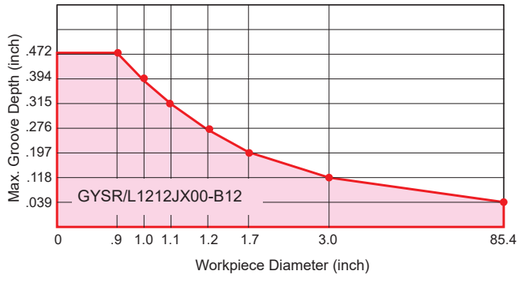


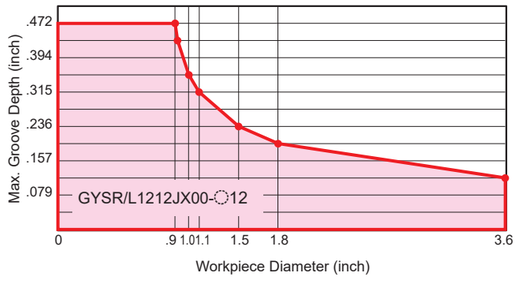
Due to interference, the maximum groove depth is limited by the workpiece diameter.

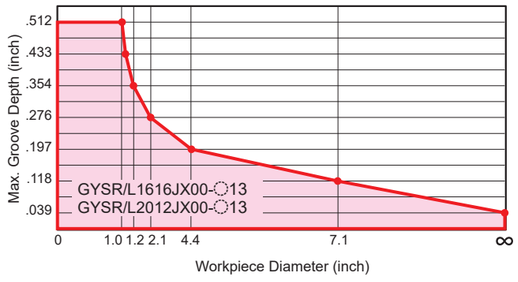




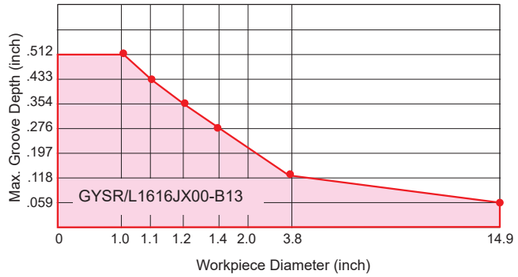


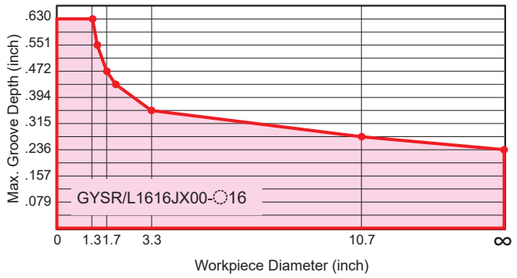


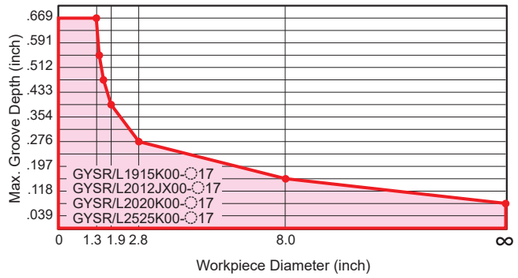




GY Series







GW Series

Recommended Cutting Conditions

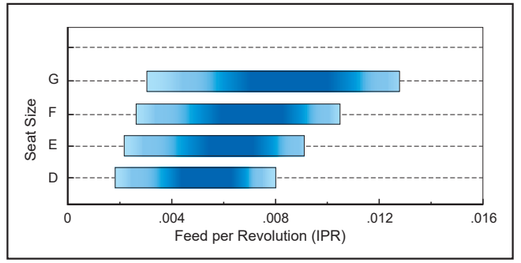
■ Cutting Speed

	Workpiece Material	Properties	Grade	Cutting Speed **vc** (SFM) 165 330 490 655 820 985
P	Mild Steel	Hardness ≤160HB	VP20RT	330 – 785
			VP10RT	360 – 820
	Carbon Steel Alloy Steel	Hardness 160−280HB	VP20RT	260 – 655
			VP10RT	295 – 690
			VP30RT	195 – 590
			MY5015	360 – 820
		Hardness ≥280HB	VP20RT	195 – 525
			VP10RT	230 – 560
			VP30RT	130 – 460
			MY5015	295 – 690
M	Stainless Steels	Hardness ≤270HB	VP20RT	195 – 590
			VP10RT	230 – 620
			VP30RT	130 – 525
K	Gray Cast Irons	Tensile Strength ≤300MPa	VP20RT	260 – 655
			VP10RT	295 – 690
			MY5015	460 – 985
	Ductile Cast Irons	Tensile Strength ≤800MPa	VP20RT	195 – 525
			VP10RT	230 – 560
			MY5015	295 – 690
S	Heat Resistant Alloys Titanium Alloys	–	VP20RT	100 – 195
			VP10RT	130 – 230

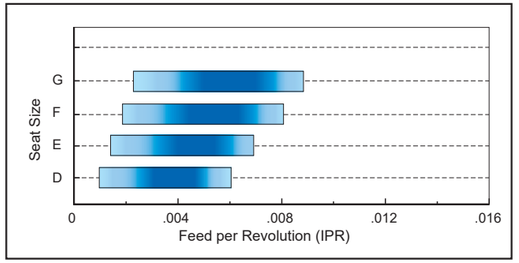
Note 1) VP20RT is the first recommended grade for materials.
Note 2) For VP10RT, VP20RT, VP30RT and MY5015, wet cutting is recommended.

■ Feed per Revolution

GM Breaker



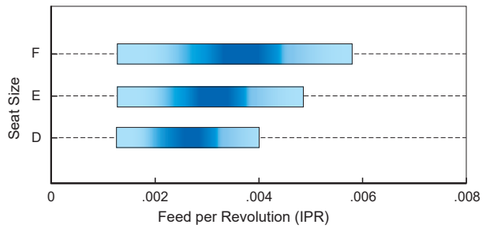
GS Breaker



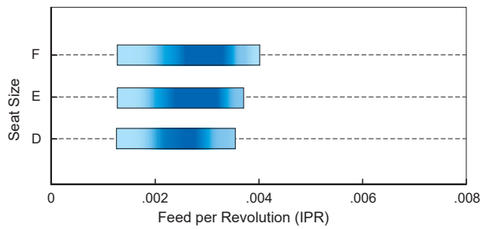
Chip Breaker	Feed per Revolution (IPR)			
	Seat Size D	Seat Size E	Seat Size F	Seat Size G
GM Breaker	.0020 – .0079	.0024 – .0091	.0028 – .0102	.0031 – .0126
GS Breaker	.0012 – .0059	.0016 – .0067	.0020 – .0079	.0024 – .0087

Cutting Off Feed per Revolution

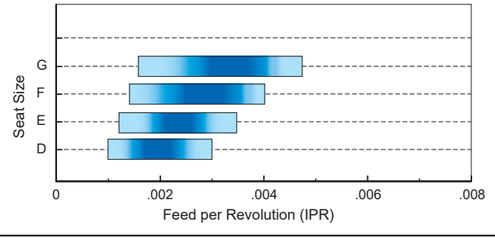
R05-GS Breaker



R08-GS Breaker



R/L05-GM Breaker

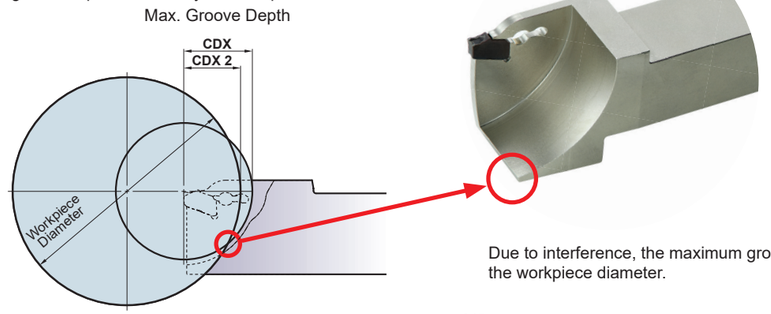


Chip Breaker	PSIPR	Hand	Feed per Revolution (IPR)			
			Seat Size D	Seat Size E	Seat Size F	Seat Size G
R05-GS	5°	R	.0012 – .0039	.0012 – .0047	.0012 – .0055	–
R08-GS	8°	R	.0012 – .0031	.0012 – .0035	.0012 – .0055	–
R05-GM	5°	R/L	.0020 – .0059	.0024 – .0067	.0028 – .0079	.0031 – .0091

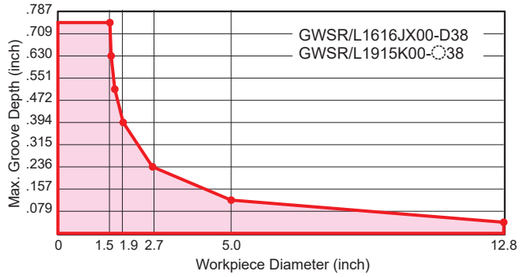
LIMITATION OF THE MAXIMUM GROOVE DEPTH [For External Grooving]

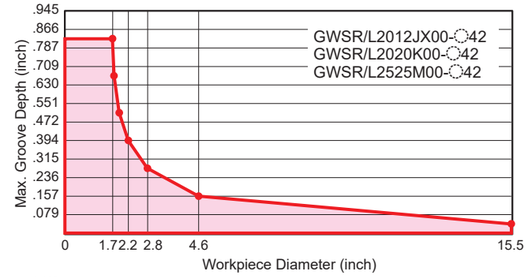
•In The Case of Mono Block Type Holder for Swiss-Type Lathes

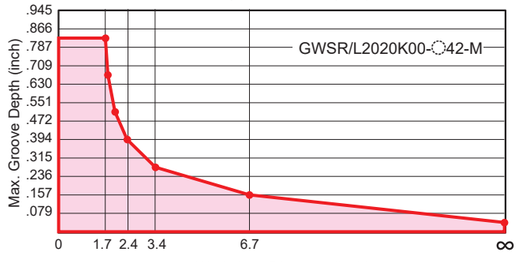
The maximum groove depth is limited by the workpiece diameter.

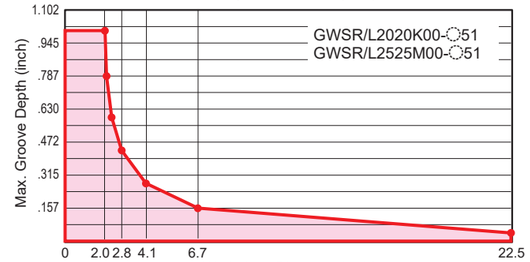


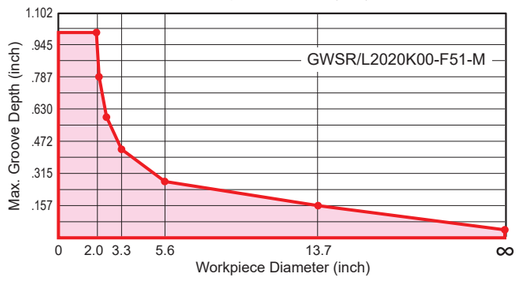
Due to interference, the maximum groove depth is limited by the workpiece diameter.

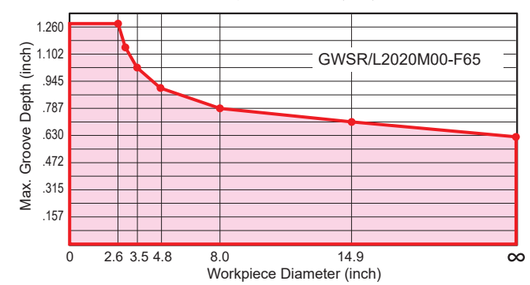


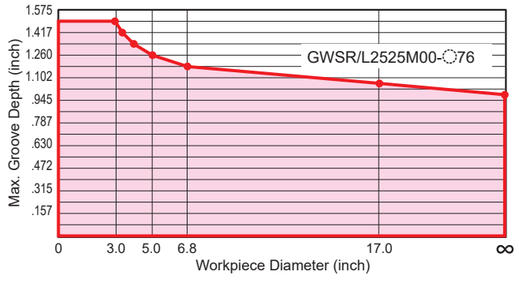












Cutting Off & Grooving System

C009A 2019-2020

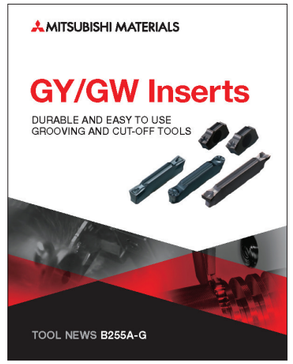
General Catalog

B225A TOOL NEWS

GW Series

B255A-G TOOL NEWS

GY/GW Insert



Memo

MTEC

MACHINING TECHNOLOGY AND EDUCATION CENTER

Welcome to our new world-class Machining Technology and Education Center (MTEC) in Mooresville, NC providing year round support and services to North America.

ABOUT MTEC

TOOLING PROPOSALS & EVALUATION
We will review your current processes or outline a new process. From this review, we will improve productivity, analyze programming methods and output a solution with programming, tooling and time savings.

MACHINING SIMULATION
Using the latest CAD/CAM software and our cutting tool experience, we will outline a new process using proper machining techniques to maximize tool life and productivity.

TECHNICAL SUPPORT
Dedicated local professionals to answer any of your order, product or technical questions.

TRAINING
We are excited to offer several levels of training with goals to reach our highest level--Craftsman Machining Technology. At MTEC NC, we will train using a combination of classroom and hands-on machine time to develop skills and real-world understanding of materials, tools and applications. In addition to multi-day courses, we will have Machining Technology skills seminars, as well as seminars from our partners to complement our apprentice level courses, our journeyman courses, and up to our craftsman level courses.

PROCESS IMPROVEMENTS
Review of the complete part processing and recommend changes of speed, feed, new tooling, reduction of passes, modifying programming and other solutions to reduce cycle time, save money and be proactive.

WEBINARS

Our FREE online webinar series is available anytime on-demand. Narrated by the MTEC training staff, you will receive in-depth knowledge of the topic. Simply register online at the link below for access. You will receive a certificate upon completion of each course.

mmusnewsstand.com/register

ONLINE TRAINING

Our FREE e-learning program offers 11 courses in drilling, milling, turning, threading, tool grades and workpiece materials. Once each course is completed, you will be given the opportunity to print a certificate.

- Basic Drilling
- Basic Milling
- Basic Turning
- Advanced Drilling
- Advanced End Milling
- Advanced Turning
- Basic Threading
- Advanced Face Milling
- Basic Workpiece Materials
- Tool Grades
- Advanced Workpiece Materials

TRAINING COURSES

Programs are designed for several levels of skill development – from basic understanding to advance manufacturing with digital solutions, complementing to your valued experience in CNC machining environment. Participate in machining demonstrations with Mitsubishi Materials' skilled engineers. Discover methods to reduce setup and cycle time, optimize programs and enhance your knowledge base.

Information on course schedule, course description, and accommodations

MTECTRAINING.INFO

Follow the QR Code for a virtual facility tour

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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.

www.mmc-carbide.com/us

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