

Grooving System

GY/GW Series


Insert
Expansion

GY Series Chip Breaker for Aluminium Alloys

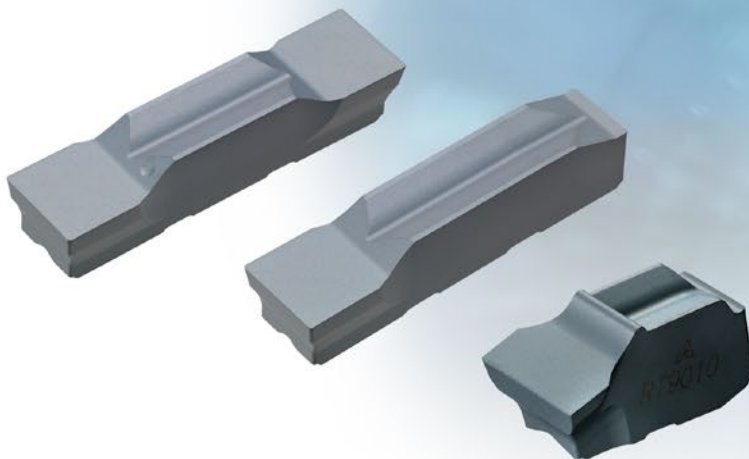
GL Breaker



Sharp Edge
Low Cutting Resistance
Ideal for Cut Off Small Diameter

GY/GW Series

Blank Insert



GY Series Chip Breaker for Aluminium Alloys

GL Breaker

Excellent Chip Control and Welding Resistance

Features

G Class Breaker

Improved chip control by narrowing the breaker width

High Rake Angle

Achieve low cutting resistance

Sharp Edge

Improved welding resistance for aluminium alloys



Cutting Performance

Grooving comparison of A5052 material

Enhance finishing surface due to suppressed vibration and reduced welding.



GL Braker

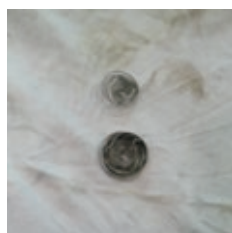


Conventional Large Welding

<Cutting Conditions>
Workpiece Material : A5052
Groove Width : CW=3mm
Cutting Methods : Grooving
Cutting Speed : vc=150m/min
Feed per Rev. : f=0.1mm
Depth of Cut : ap=0.2mm
Cutting Mode : Wet Cutting
Machine : Vertical Lathe

Chip comparison at grooving process of A5056 material

Good chip control leading to excellent bottom surface.



GL Braker

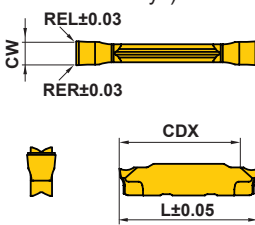


Conventional

<Cutting Conditions>
Workpiece Material : A5056
Groove Width : CW=2mm
Cutting Methods : Grooving
Cutting Speed : vc=300-450m/min
Feed per Rev. : f=0.10-0.12mm
Cutting Mode : Wet Cutting
Machine : Composite Lathe

Inserts

(mm)

Applications	Geometry	Order Number	Carbide	Seat Size	CW		RER/L	CDX	L
			RT9010		Groove Width	Tolerance			
For Grooving / Cutting Off	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

L Dimension Tolerance Conversion Table

(mm)

CW	Standard * Dimensions	Dimension Difference with Standard Dimension L
		GL
2.00	20.7	0.35
2.50	20.7	0.35
3.00	20.7	0.35

*Holder dimension shows standard dimensions.

Recommended Cutting Conditions

External Grooving

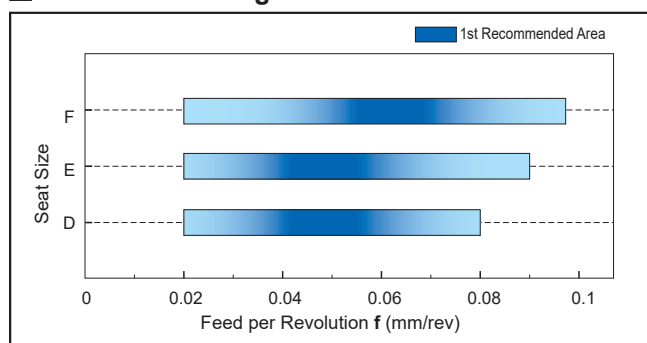
	Workpiece Material	Properties	Grade	Cutting Speed v_c (m/min)					
				50	100	200	300	400	500
N	Aluminium Alloys (A6061, 7075)	Content Si<5%	RT9010			200			500
	Aluminium Alloys (AC4B)	Content 5%≤Si≤10%	RT9010			200			500
	Aluminium Alloys (ADC12, A390)	Content Si>10%	RT9010		100	200			

Internal Grooving

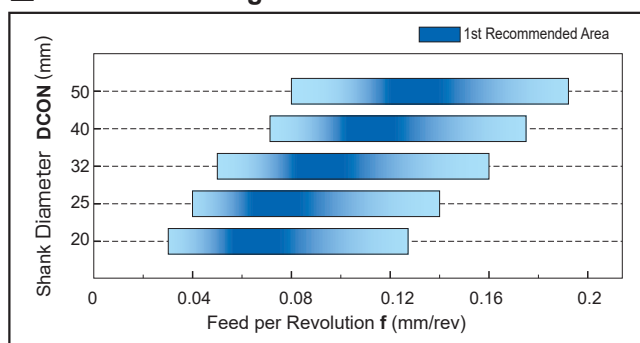
	Workpiece Material	Properties	Grade	Cutting Speed v_c (m/min)					
				50	100	200	300	400	500
N	Aluminium Alloys (A6061, 7075)	Content Si<5%	RT9010			150		400	
	Aluminium Alloys (AC4B)	Content 5%≤Si≤10%	RT9010			150		400	
	Aluminium Alloys (ADC12, A390)	Content Si>10%	RT9010		80	160			

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

External Grooving



Internal Grooving

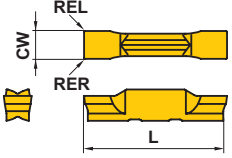
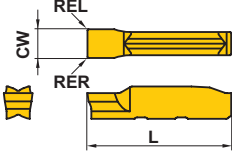


● : Inventory maintained in Japan. (10 inserts in one case)

Blank Inserts

GY Series

(mm)

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

GW Series

(mm)

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

Note 1) Blank inserts to be ground by customers.

● : Inventory maintained in Japan. (10 inserts in one case)

For Your Safety

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

MITSUBISHI MATERIALS CORPORATION

MMC Hardmetal (Thailand) Co., Ltd.
CTI Tower 24th Floor, 191/32 Ratchadapisek Road,
Klongtoey, Klongtoey, Bangkok, 10110 Thailand
Tel : +66-2661-8170 Fax : +66-2661-8175

Thailand Rayong Branch
24/1 Moo4 ESIE PLaza 1, 1st Flor., unit G6-B and G6-C,
Tambon Pluak Daeng, Rayong 21140 Thailand
Tel : +66-3895-5658 Fax : +66-3895-5659

Singapore Branch
33 Ubi Avenue3, #05-14 Vertex, Singapore
408868
Tel : +65-6634-8250 Fax : +65-6634-8257

Ho Chi Minh Representative Office
1205 12th Floor SROC, 2A-4A Ton Duc Thang, Ben
Nghe, Dist. 1, Ho Chi Minh City, Vietnam
Tel : +84-28-3829-7700 Fax : +84-28-3824-3344

Thailand Amata Nakorn Branch
Amata Nakorn Industrial Estate Phase 9
700/843 Moo 5, Tambon Nongkakha, Amphur
Phanrong, Chonburi, 20160 Thailand
Tel : +66-3821-0728 Fax : +66-3821-0732

Thailand Korat Branch
1444/2 Moo13, Tambon Choho, Amphur Muang Nakhon
Ratchasima, Nakhon Ratchasima 30310 Thailand
Tel : +66-6-1416-7246

Indonesia Representative Office
MM2100 Industrial Town
Jl. Jawa Blok GG-6 No.2 Jatiwangi, Cikarang,
Bekasi Indonesia 17520
Tel : +62-21-2214-3639 Fax : +62-21-2214-3745

Hanoi Representative Office
201 2nd Floor, International Center, 17 Ngo Quyen,
Hoan Kiem District, Hanoi, Vietnam
Tel : +84-24-3772-8362 Fax : +84-24-3772-8299

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

EXP-XX-EXXX
2019.4.T(-)