

ISO Polygon Cassette Grooving System

GND-Series



- High repeatability
- Stable connection between machine and tool
- Compact design
- Applications:
Grooving, Cut-Off, Profiling, Turning

GND-Series ISO Polygon Cassette Grooving System

General Features

Already established GND grooving system in the version with polygon shank and a flexible and economical cassette system for inserts.



Advantages

- ISO Polygon shank holder
- Economic cassettes
- Compact and stable construction
- Repeatability of $\pm 2 \mu\text{m}$ interface
- Internal coolant supply directly from the holder to the cutting edge

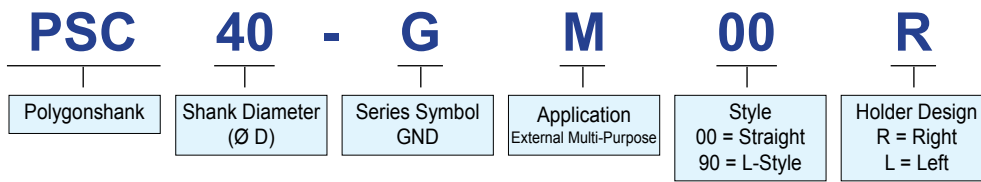


Product Range - Holders

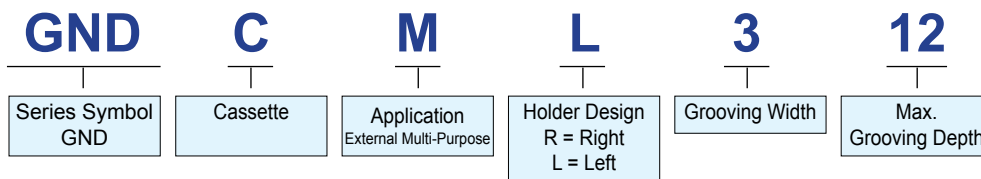
Application	Series	Shape	Grooving Width (mm)					Grooving Depth (mm)
			2	3	4	5	6	
External Grooving 	PSC_0M00R/L Straight		2	3				12
					4	5	6	18
	PSC_0M90R/L L-Style		2	3				12
					4	5	6	18

Note: 2mm Grooving width - please use only for grooving not for turning!

■ Identification Details - Polygon-Toolholder



■ Identification Details - Cassette



■ Selection Chart

Cassette	Grooving Width (mm)					Max. Grooving Depth	Chipbreaker						
	2	3	4	5	6		MG	ML	GG	GL	GF	RG	CG
GNDCM R	Stock					12			○	○	○		○
GNDCM L	Stock					12			○	○	○		○
GNDCM R		Stock				12	○	○	○	○	○	○	○
GNDCM L		Stock				12	○	○	○	○	○	○	○
GNDCM R			Stock			18	○	○	○	○	○	○	○
GNDCM L			Stock			18	○	○	○	○	○	○	○
GNDCM R				Stock		18	○	○	○	○	○	○	
GNDCM L				Stock	Stock	18	○	○	○	○	○	○	

■ Stock

○ Recommendation

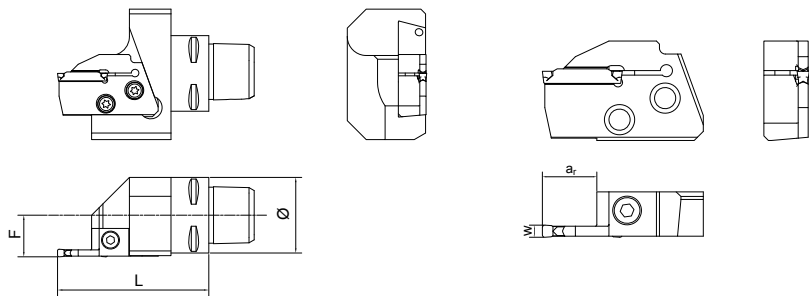
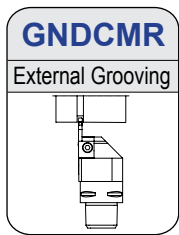
■ Identification Details – Inserts

G C M N 30 02 - G G

Series Symbol Grooving	Tolerance M Class	Insert Width	Nose Radius	Chipbreaker
①	②	⑤	⑥	⑦
Front Relief Angle C: 7°	Insert Design	Symbol Groov. Width (mm)	Symbol R (mm)	Symbol Application
	Symbol Direction			
	N Neutral	20 2,0	02 0,2	MG Multi-Purpose: General Feed
	R Right Hand	30 3,0	04 0,4	ML Multi-Purpose: Low Feed
	L Left Hand	40 4,0	08 0,8	GG Grooving: General Feed
		50 5,0	15 1,5	GL Grooving: Low Feed
		60 6,0	20 2,0	GF Grooving: Low Cutting Forces
		70 7,0	25 2,5	CG Cut-Off
		80 8,0	30 3,0	RG Profiling

GND-Series

External Multi-Purpose Type (Grooving, Turning, Profiling)



Use for multi-purpose or profiling insert for turning (wide grooves).

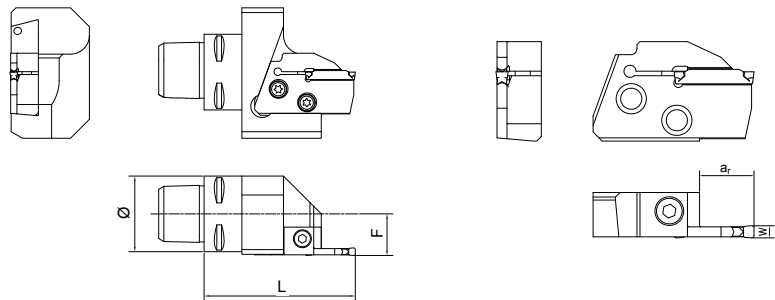
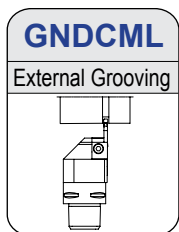
Holder

Above figures show right hand tools.

Cat. No.	∅	Direction	F	L	Cap Screw	Tightening Torque (N·m)	Spanner
PSC40GM00R	40 mm	right	22 mm	80 mm	BFTX0619N	7,5 $\text{N}\cdot\text{m}$	TRD25
PSC50GM00R	50 mm	right	27 mm	80 mm			

Cassette

Cat. No.	Direction	Grooving Width w (mm)	Grooving Depth a _r (mm)	Inserts	Cap Screw	Tightening Torque (N·m)	Spanner
GNDCMR212	right	2	12	GCM □2002-□□	BX0515	5,0 $\text{N}\cdot\text{m}$	LH040
GNDCMR312	right	3	12	GCM □30□□-□□			
GNDCMR418	right	4	18	GCM □40□□-□□		6,0 $\text{N}\cdot\text{m}$	
GNDCMR518	right	5	18	GCM □50□□-□□			
GNDCMR618	right	6	18	GCM □60□□-□□			



Use for multi-purpose or profiling insert for turning (wide grooves).

Holder

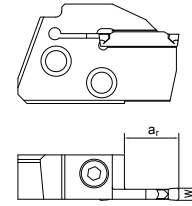
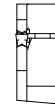
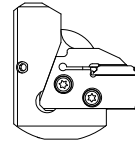
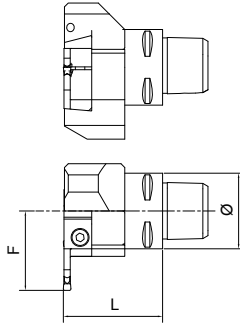
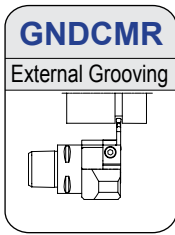
Above figures show right hand tools.

Cat. No.	∅	Direction	F	L	Cap Screw	Tightening Torque (N·m)	Spanner
PSC40GM00L	40 mm	links	22 mm	80 mm	BFTX0619N	7,5 $\text{N}\cdot\text{m}$	TRD25
PSC50GM00L	50 mm	links	27 mm	80 mm			

Cassette

Cat. No.	Direction	Grooving Width w (mm)	Grooving Depth a _r (mm)	Inserts	Cap Screw	Tightening Torque (N·m)	Spanner
GNDMCL212	left	2	12	GCM □2002-□□	BX0515	5,0 $\text{N}\cdot\text{m}$	LH040
GNDMCL312	left	3	12	GCM □30□□-□□			
GNDMCL418	left	4	18	GCM □40□□-□□		6,0 $\text{N}\cdot\text{m}$	
GNDMCL518	left	5	18	GCM □50□□-□□			
GNDMCL618	left	6	18	GCM □60□□-□□			

External Multi-Purpose Type (Grooving, Turning, Profiling)



Use for multi-purpose or profiling insert for turning (wide grooves).

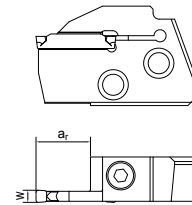
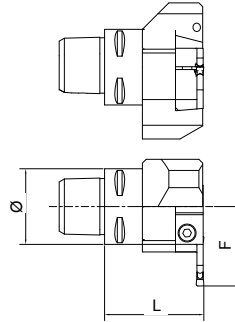
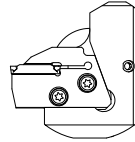
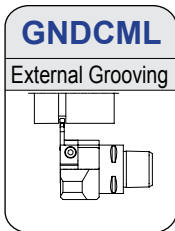
Holder

Above figures show right handed holder with a left handed cassette.

Cat. No.	Ø	Direction	F	L	Cap Screw	Tightening Torque (N·m)	Spanner
PSC40GM90R	40 mm	right	22 mm	80 mm	BFTX0619N	7,5 $\text{N}\cdot\text{m}$	TRD25
PSC50GM90R	50 mm	right	27 mm	80 mm			

Cassette

Cat. No.	Direction	Grooving Width w (mm)	Grooving Depth a _r (mm)	Inserts	Cap Screw	Tightening Torque (N·m)	Spanner
GNDCML212	left	2	12	GCM □2002-□□	BX0515	5,0 $\text{N}\cdot\text{m}$	LH040
GNDCML312	left	3	12	GCM □30□□-□□			
GNDCML418	left	4	18	GCM □40□□-□□		6,0 $\text{N}\cdot\text{m}$	
GNDCML518	left	5	18	GCM □50□□-□□			
GNDCML618	left	6	18	GCM □60□□-□□			



Use for multi-purpose or profiling insert for turning (wide grooves).

Holder

Above figures show left handed holder with a right handed cassette.

Cat. No.	Ø	Direction	F	L	Cap Screw	Tightening Torque (N·m)	Spanner
PSC40GM90L	40 mm	left	22 mm	80 mm	BFTX0619N	7,5 $\text{N}\cdot\text{m}$	TRD25
PSC50GM90L	50 mm	left	27 mm	80 mm			





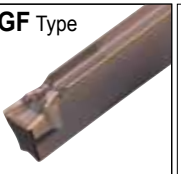


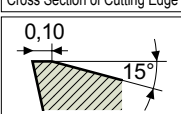
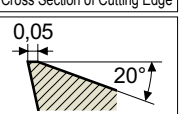
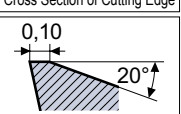
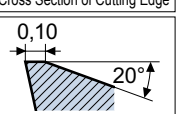
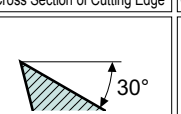
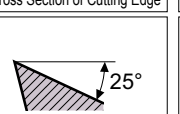
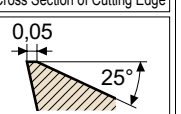
Cassette

Cat. No.	Direction	Grooving Width w (mm)	Grooving Depth a _r (mm)	Inserts	Cap Screw	Tightening Torque (N·m)	Spanner
GNDCMR212	right	2	12	GCM □2002-□□	BX0515	5,0 $\text{N}\cdot\text{m}$	LH040
GNDCMR312	right	3	12	GCM □30□□-□□			
GNDCMR418	right	4	18	GCM □40□□-□□		6,0 $\text{N}\cdot\text{m}$	
GNDCMR518	right	5	18	GCM □50□□-□□			
GNDCMR618	right	6	18	GCM □60□□-□□			

GND-Series

■ Inserts - Chipbreaker Series

Achieving stability and longer tool life. A variety of chipbreakers ensures outstanding chip control performance in many different types of applications.

Grooving / Turning			Grooving / Cut-Off			Profiling
General Type	Low Feed Type	General Type	Low Feed Type	Low Cutting Force Type	Cut-Off Type	General Type
MG Type	ML Type	GG Type	GL Type	GF Type	CG Type	RG Type
						
Cross Section of Cutting Edge	Cross Section of Cutting Edge	Cross Section of Cutting Edge	Cross Section of Cutting Edge	Cross Section of Cutting Edge	Cross Section of Cutting Edge	Cross Section of Cutting Edge
						
Grooving Width (mm)	Grooving Width (mm)	Grooving Width (mm)	Grooving Width (mm)	Grooving Width (mm)	Grooving Width (mm)	Grooving Width (mm)
1,25 1,5 2,0	1,25 1,5 2,0	1,25 1,5 2,0	1,25 1,5 2,0	1,25* 1,5* 2,0*	1,25 1,5 2,0	1,25 1,5 2,0
3,0 4,0 5,0	3,0 4,0 5,0	3,0 4,0 5,0	3,0 4,0 5,0	3,0 4,0 5,0	3,0 4,0 5,0	3,0 4,0 5,0
6,0 7,0 8,0	6,0 7,0 8,0	6,0 7,0 8,0	6,0 7,0 8,0	6,0 7,0 8,0	6,0 7,0 8,0	6,0 7,0 8,0
Grade	Grade	Grade	Grade	Grade	Grade	Grade
AC830P AC425K	AC830P AC425K	AC830P AC425K	AC830P AC425K	AC830P AC425K	AC830P AC425K	AC830P AC425K
AC520U AC530U	AC520U AC530U	AC520U AC530U	AC520U AC530U	AC520U AC530U	AC520U AC530U	AC520U AC530U

Stock *Only AC530U is on stock

■ Recommended Cutting Conditions

Work Material	P Carbon Steel / Alloy Steel			M Stainless Steel			K Cast Iron			S Exotic Alloy	
Grade	AC830P	AC520U	AC530U	AC830P	AC520U	AC530U	AC425K	AC520U	AC530U	AC520U	AC530U
Cutting Speed (m/min)	80~200	80~200	50~200	70~150	70~150	50~150	80~200	60~200	50~200	20~80	20~60

■ Excellent Chip Control

Grooving



GND Type
(GG Type Chipbreaker)



Conventional Tool

Work Material: 15CrMo5
Holder: GNDL R2525M 320
Insert: GCM N3002 GG
Cutting Conditions: $v_c=100\text{m/min}$, $f=0,15\text{mm/rev}$, $a_p=12,0\text{mm}$, wet

Turning



GND Type
(ML Type Chipbreaker)



Conventional Tool

Work Material: 15CrMo5
Holder: GNDM R2525M 312
Insert: GCM N3002 ML
Cutting Conditions: $v_c=100\text{m/min}$, $f=0,10\text{mm/rev}$, $a_p=0,5\text{mm}$, wet

Cut-Off



GND Type
(CG Type Chipbreaker)



Conventional Tool

Work Material: X5CrMo17122 (Ø30mm)
Holder: GNDL R2525M 220
Insert: GCM R2002 CG 05
Cutting Conditions: $v_c=100\text{m/min}$, $f=0,15\text{mm/rev}$, wet

Profiling



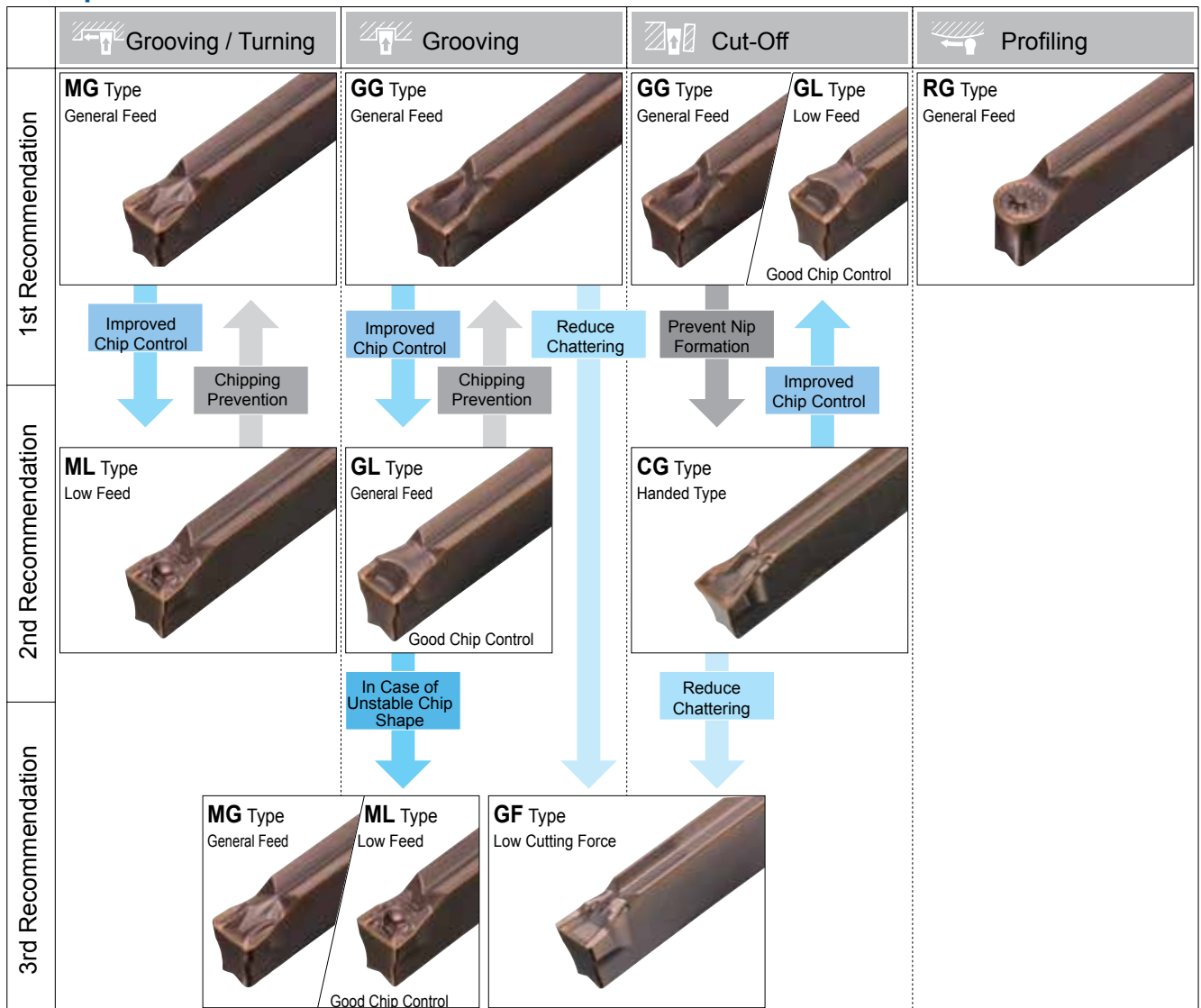
GND Type
(RG Type Chipbreaker)



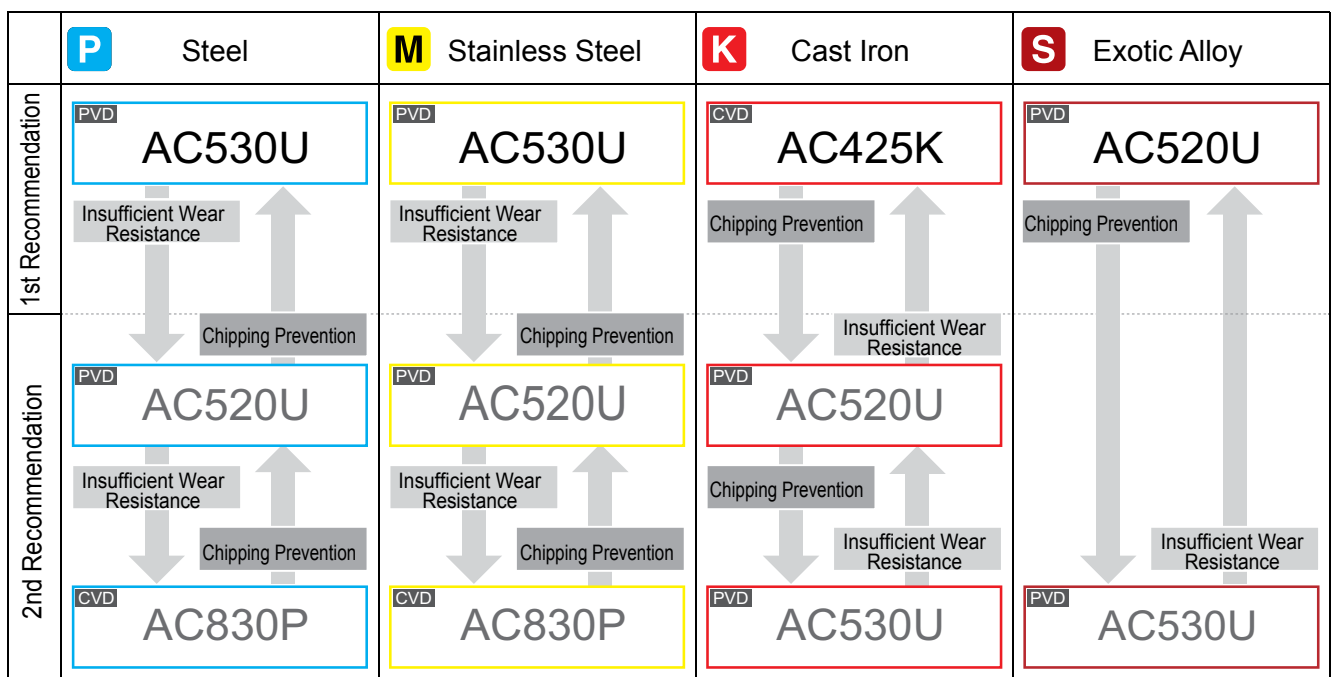
Conventional Tool

Work Material: 15CrMo5
Holder: GNDM R2525M 312
Insert: GCM N3015 RG
Cutting Conditions: $v_c=100\text{m/min}$, $f=0,15\text{mm/rev}$, $a_p=0,1\text{mm}$, wet

Chipbreaker Selection



Grade Selection



GND-Series

Chipbreaker Selection Guide

Groov. Width (mm)	Recommended Cutting Conditions		Nose Radius (mm)	Inserts
	Grooving	Turning		
1,25	Chipbreaker GF 		0,2	GCM N12505 GF
1,5	Chipbreaker GF 		0,2	GCM N150005 GF
2,0	Chipbreaker GG GL GF CG 		0,2	GCM N2002 GG GCM N2002 GL GCM N2002 GF GCM R/L2002 CG05
3,0	Chipbreaker MG ML GG GL GF RG CG 		0,2	GCM N3002 ML GCM N3002 GG GCM N3002 GL GCM N3002 GF GCM R/L3002 CG05
			0,4	GCM N3004 MG GCM N3004 GG
			1,5	GCM N3015 RG
4,0	Chipbreaker MG ML GG GL GF RG CG 		0,2	GCM N4002 GG GCM N4002 GL GCM N4002 GF GCM R/L4002 CG05
			0,4	GCM N4004 ML GCM N4004 GG
			0,8	GGCM N 4008 MG
2,0	GCM N4020 RG			
5,0	Chipbreaker MG ML GG GL GF RG 		0,2	GCM N5002 GG GCM N5002 GL GCM N5002 GF
			0,4	GCM N5004 ML GCM N5004 GG
			0,8	GCM N5008 MG
2,5	GCM N5025 RG			
6,0	Chipbreaker MG ML GG GL GF RG 		0,2	GCM N6002 GG GCM N6002 GL GCM N6002 GF
			0,4	GCM N6004 ML GCM N6004 GG
			0,8	GCM N6008 MG
3,0	GCM N6030 RG			
7,0	Chipbreaker MG ML GG GL RG 		0,4	GCM N7004 ML GCM N7004 GG GCM N7004 GL
			0,8	GCM N7008 MG
			3,5	GCM N7035 RG
8,0	Chipbreaker MG ML GG GL RG 		0,4	GCM N8004 ML GCM N8004 GG GCM N8004 GL
			0,8	GCM N8008 MG
			4,0	GCM N8040 RG

Recommended Cutting Conditions

Work Material	P Carbon Steel / Alloy Steel	M Stainless Steel	K Cast Iron	S Exotic Alloy
Grade	AC830P AC520U AC530U	AC830P AC520U AC530U	AC425K AC520U AC530U	AC520U AC530U
Cutting Speed (m/min)	80~200 80~200 50~200	70~150 70~150 50~150	80~200 60~200 50~200	20~80 20~60

Inserts – GCM Type

Grooving / Turning	Shape	Cat. No.	Coated Carbide				Dimensions (mm)				Pcs./Pack.	Applicable Holder										
			AC830P	AC425K	AC520U	AC530U	W		r_ϵ	ℓ		S	GND	GND	GND	GND	GND	GND	GND	GND		
							Grooving Width	Tolerance													S	S
<p>Fig.1</p> <p>MG Breaker General Type</p> <p>ML Breaker Low Feed Type</p> <p>$w = 4,0\text{mm}$ $w = 5,0\text{mm}$</p>		GCM N3004 MG	●	●	○	●	3,0	$\pm 0,03$	0,4	21,1	3,8	5	■	■	■	■	■	■	■	■	■	■
		GCM N4008 MG	●	●	○	●	4,0	$\pm 0,03$	0,8	26,4	4,0		■	■	■	■	■	■	■	■	■	■
		GCM N5008 MG	●	●	○	●	5,0	$\pm 0,03$	0,8	26,4	4,1		■	■	■	■	■	■	■	■	■	■
		GCM N6008 MG	●	●	○	●	6,0	$\pm 0,03$	0,8	26,4	4,5		■	■	■	■	■	■	■	■	■	■
		GCM N7008 MG	●	●	○	●	7,0	$\pm 0,04$	0,8	28,75	5,5		■	■	■	■	■	■	■	■	■	■
		GCM N8008 MG	●	●	○	●	8,0	$\pm 0,04$	0,8	28,75	6,0		■	■	■	■	■	■	■	■	■	■
		GCM N3002 ML	●	●	○	●	3,0	$\pm 0,03$	0,2	21,1	3,8	5	■	■	■	■	■	■	■	■	■	■
		GCM N4004 ML	●	●	○	●	4,0	$\pm 0,03$	0,4	26,4	4,0		■	■	■	■	■	■	■	■	■	■
		GCM N5004 ML	●	●	○	●	5,0	$\pm 0,03$	0,4	26,4	4,1		■	■	■	■	■	■	■	■	■	■
		GCM N6004 ML	●	●	○	●	6,0	$\pm 0,03$	0,4	26,4	4,5		■	■	■	■	■	■	■	■	■	■
		GCM N7004 ML	●	●	○	●	7,0	$\pm 0,04$	0,4	28,75	5,5		■	■	■	■	■	■	■	■	■	■
		GCM N8004 ML	●	●	○	●	8,0	$\pm 0,04$	0,4	28,75	6,0		■	■	■	■	■	■	■	■	■	■

Grooving / Cut-Off	Shape	Cat. No.	Coated Carbide				Dimensions (mm)				Pcs./Pack.	Applicable Holder									
			AC830P	AC425K	AC520U	AC530U	W		r_ϵ	ℓ		S	GND	GND	GND	GND	GND	GND	GND	GND	
							Grooving Width	Tolerance													S
<p>GG Breaker General Type</p> <p>GL Breaker Low Feed Type</p>		GCM N2002 GG	●	○	○	●	2,0	$\pm 0,03$	0,2	21,1	3,6	5	■	■	■	■	■	■	■	■	■
		GCM N3002 GG	●	○	○	●	3,0	$\pm 0,03$	0,2	21,1	3,8		■	■	■	■	■	■	■	■	■
		GCM N4002 GG	●	○	○	●	4,0	$\pm 0,03$	0,2	26,4	4,0		■	■	■	■	■	■	■	■	■
		GCM N5002 GG	●	○	○	●	5,0	$\pm 0,03$	0,2	26,4	4,1		■	■	■	■	■	■	■	■	■
		GCM N6002 GG	●	○	○	●	6,0	$\pm 0,03$	0,2	26,4	4,5		■	■	■	■	■	■	■	■	■
		GCM N3004 GG	●	○	○	●	3,0	$\pm 0,03$	0,4	21,1	3,8		■	■	■	■	■	■	■	■	■
		GCM N4004 GG	●	○	○	●	4,0	$\pm 0,03$	0,4	26,4	4,0	5	■	■	■	■	■	■	■	■	■
		GCM N5004 GG	●	○	○	●	5,0	$\pm 0,03$	0,4	26,4	4,1		■	■	■	■	■	■	■	■	■
		GCM N6004 GG	●	○	○	●	6,0	$\pm 0,03$	0,4	26,4	4,5		■	■	■	■	■	■	■	■	■
		GCM N7004 GG	●	○	○	●	7,0	$\pm 0,04$	0,4	28,75	5,5		■	■	■	■	■	■	■	■	■
		GCM N8004 GG	●	○	○	●	8,0	$\pm 0,04$	0,4	28,75	6,0		■	■	■	■	■	■	■	■	■
		GCM N2002 GL	●	○	○	●	2,0	$\pm 0,03$	0,2	21,1	3,6		5	■	■	■	■	■	■	■	■
	GCM N3002 GL	●	○	○	●	3,0	$\pm 0,03$	0,2	21,1	3,8	■	■		■	■	■	■	■	■	■	
	GCM N4002 GL	●	○	○	●	4,0	$\pm 0,03$	0,2	26,4	4,0	■	■		■	■	■	■	■	■	■	
	GCM N5002 GL	●	○	○	●	5,0	$\pm 0,03$	0,2	26,4	4,1	■	■		■	■	■	■	■	■	■	
	GCM N6002 GL	●	○	○	●	6,0	$\pm 0,03$	0,2	26,4	4,5	■	■		■	■	■	■	■	■	■	
	GCM N7004 GL	●	○	○	●	7,0	$\pm 0,04$	0,4	28,75	5,5	■	■		■	■	■	■	■	■	■	
		GCM N8004 GL	●	○	○	●	8,0	$\pm 0,04$	0,4	28,75	6,0	5	■	■	■	■	■	■	■	■	■
GCM N125005 GF		●	○	○	●	1,25	$\pm 0,03$	0,05	17,4	3,2	■		■	■	■	■	■	■	■	■	
GCM N150005 GF		●	○	○	●	1,50	$\pm 0,03$	0,05	17,4	3,7	■		■	■	■	■	■	■	■	■	
GCM N2002 GF		●	○	○	●	2,0	$\pm 0,03$	0,2	21,1	3,6	■		■	■	■	■	■	■	■	■	
GCM N3002 GF		●	○	○	●	3,0	$\pm 0,03$	0,2	21,1	3,8	■		■	■	■	■	■	■	■	■	
GCM N4002 GF		●	○	○	●	4,0	$\pm 0,03$	0,2	26,4	4,0	■		■	■	■	■	■	■	■	■	
	GCM N5002 GF	●	○	○	●	5,0	$\pm 0,03$	0,2	26,4	4,1	5	■	■	■	■	■	■	■	■	■	
	GCM N6002 GF	●	○	○	●	6,0	$\pm 0,03$	0,2	26,4	4,5		■	■	■	■	■	■	■	■	■	

Profiling	Shape	Cat. No.	Coated Carbide				Dimensions (mm)				Pcs./Pack.	Applicable Holder									
			AC830P	AC425K	AC520U	AC530U	W		r_ϵ	ℓ		S	GND	GND	GND	GND	GND	GND	GND	GND	
							Grooving Width	Tolerance													S
<p>RG Breaker General Type</p>		GCM N3015 RG	●	●	○	●	3,0	$\pm 0,03$	1,5	21,1	3,8	5	■	■	■	■	■	■	■	■	■
		GCM N4020 RG	●	●	○	●	4,0	$\pm 0,03$	2,0	26,4	4,0		■	■	■	■	■	■	■	■	■
		GCM N5025 RG	●	●	○	●	5,0	$\pm 0,03$	2,5	27,2	4,1		■	■	■	■	■	■	■	■	■
		GCM N6030 RG	●	●	○	●	6,0	$\pm 0,03$	3,0	27,5	4,5		■	■	■	■	■	■	■	■	■
		GCM N7035 RG	●	●	○	●	7,0	$\pm 0,04$	3,5	29,05	5,5		■	■	■	■	■	■	■	■	■
		GCM N8040 RG	●	●	○	●	8,0	$\pm 0,04$	4,0	29,05	6,0		■	■	■	■	■	■	■	■	■

Cut-Off (Handed)	Shape	Cat. No.	Coated Carbide				Dimensions (mm)				Pcs./Pack.	Applicable Holder									
			AC830P	AC425K	AC520U	AC530U	W		r_ϵ	ℓ		S	GND	GND	GND	GND	GND	GND	GND	GND	
							Grooving Width	Tolerance													S
<p>CG Breaker General Type</p>		GCM R/L2002 CG05	●	●	○	○	●	2,0	$\pm 0,03$	0,2	21,1	3,6	5	■	■	■	■	■	■	■	■
		GCM R/L3002 CG05	●	●	○	○	●	3,0	$\pm 0,03$	0,2	21,3	3,8		■	■	■	■	■	■	■	■
		GCM R/L4002 CG05	●	●	○	○	●	4,0	$\pm 0,03$	0,2	26,7	4,0		■	■	■	■	■	■	■	■
			R L	R L	R L	R L	R L														

Drawing shows a right hand tool.
Select holders and inserts with the same grooving widths (w).

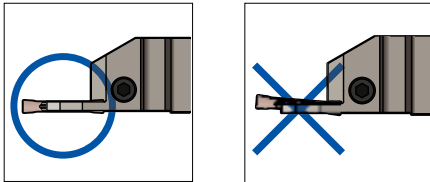
● Euro stock
○ Japan stock

GND-Series

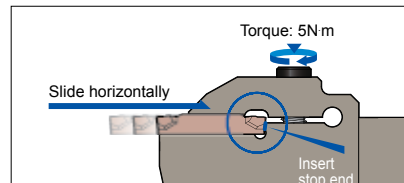
Notes on how to Attach Inserts

- ① Remove any foreign particles or oil from the insert seat before attaching the insert.
- ② Ensure the seat location is clean and free of damage.
- ③ Slide the insert level over its seat.
- ④ Push the insert with its opposite end (the holder side) firmly against the insert stop end.
- ⑤ The recommended tightening torque is 5N·m. Tightening above the recommended torque may damage the insert or the holder which could cause injury and other accidents.

③ Attach insert on the seat flat.



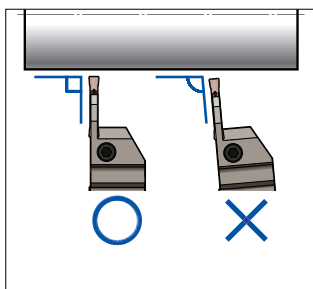
④ Push insert fully into place.



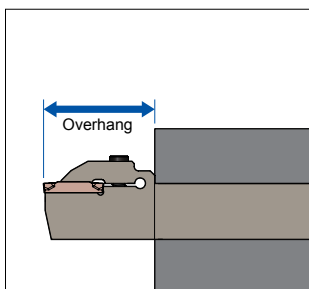
Notes on how to Apply Holders

- ① Remove any foreign particles or oil from the tool post before attaching the holder.
- ② Ensure the seat location is clean and free of damage.
- ③ Attach the holder so that the insert is perpendicular to the workpiece.
- ④ Set holder with shortest possible overhang.
- ⑤ When grooving or turning, adjust the center height of the cutting edge to as close ± 0 mm as possible. (Within $\pm 0,1$ mm is recommended)
- ⑥ Incorrect center height adjustment may cause chattering. (In cut-off applications, adjust the center height of the cutting edge to a value from 0,0 to +0,2mm).
A lower center height will result in larger nip at the center.

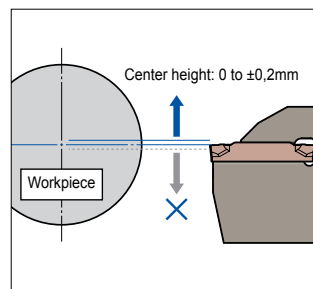
③ Attach at right angle to workpiece.



④ Set with short overhang

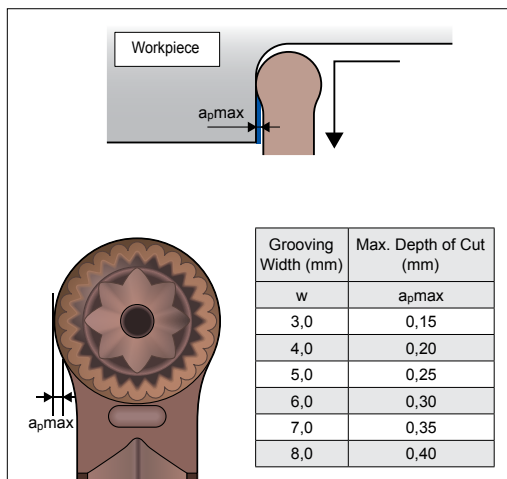


⑥ Center height adjustment in cut-off applications

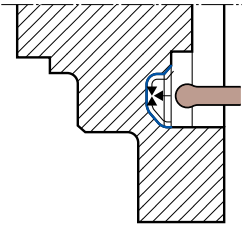


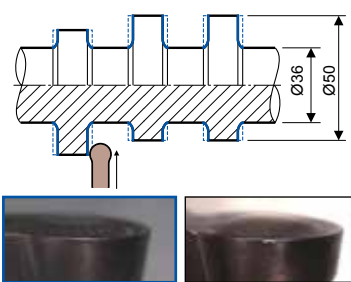
Maximum Depth of Cut

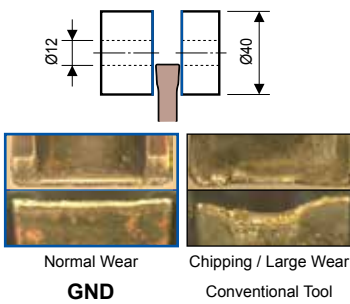
Maximum depth of cut when pulling up with RG chipbreaker

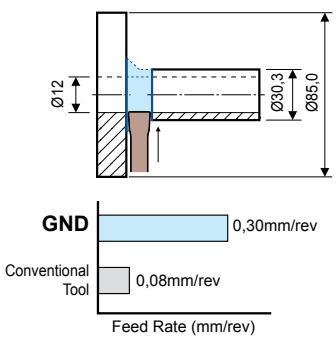


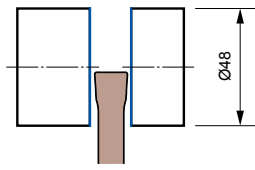
Application Examples

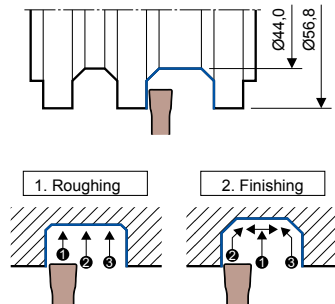
20CrMo5, Automotive Part, Face Profiling	
	Target: - Higher rigidity - Vibration reduction - Chip control - Wear resistance performance
	Holder: GNDF R2525M 423-125 Insert: GCM N4020 RG Grooving width: 4mm Cutting conditions: $v_c = 200\text{m/min}$ $f = 0,14\text{mm/rev}$ wet
Stable machining free of vibration! Excellent chip control using the GND type.	

C53, Cam Shaft Grooving / Finishing (Contin. to Heavy Interrupted)	
	Target: - Higher rigidity - Vibration reduction - Chip control - Fracture resistance
	Holder: GNDM L2525M 618 Insert: GCM N6030 RG Grooving width: 6mm Cutting conditions: $v_c = 130\text{m/min}$ $f = 0,36\text{mm/rev}$ wet
Stable machining free of vibration! Excellent fracture resistance Stable chip control	

C48, Machine Part, Cut-Off	
	Target: - Higher rigidity - Vibration reduction - Fracture resistance
	Holder: GNDL R2525M 320 Insert: GCM N3002 GG Grooving width: 3mm Cutting conditions: $n = 1600\text{min}^{-1}$ $v_c = 200\text{m/min}$ $f = 0,05\text{mm/rev}$ wet
Stable machining free of vibration! Excellent fracture resistance Stable fracture resistance	

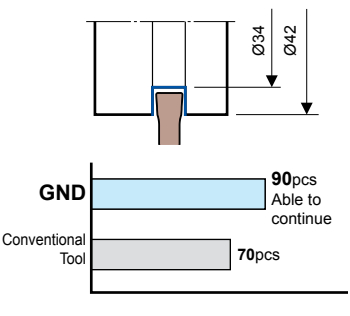
34CrMo4, Crank, Cut-Off	
	Target: - Higher rigidity - Vibration reduction - Chip control
	Holder: GNDL R2525M 320 Insert: GCM N3002 GG Grooving width: 3mm Cutting conditions: $v_c = 115\text{m/min}$ $f = 0,30\text{mm/rev}$ wet
Improved efficiency Stable machining free of vibration! Stable chip control	

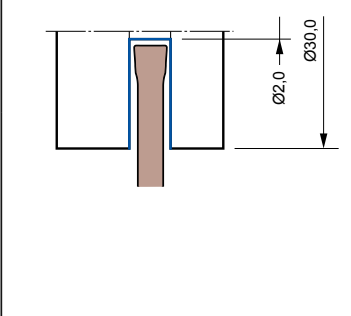
X40CrVMo5-1, (45-48HRC), Machine Part, Cut-Off	
	Target: - Higher rigidity - Vibration reduction - Chip control
	Holder: GNDL R2525M 425 Insert: GCM N4002 GG Grooving width: 4mm Cutting conditions: $v_c = 50\text{m/min}$ $f = 0,03\text{mm/rev}$ wet
Stable machining free of vibration! Excellent chip control using the GND type. No more unexpected breakage!	

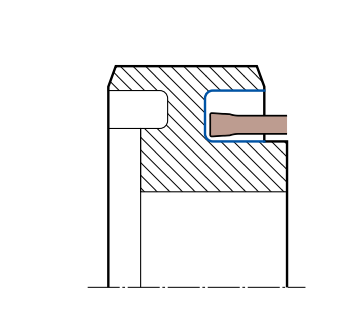
20Cr4, Gear Shaft, Grooving / Pocketing	
	Target: - Higher rigidity - Vibration reduction - Chip control
	Holder: GNDM R2020K 518 Insert: GCM N5008 MG Grooving width: 5mm Cutting conditions: $v_c = 150\text{m/min}$ $f = 0,1\text{mm/rev}$ wet
Stable machining free of vibration! Excellent chip control using the GND type.	

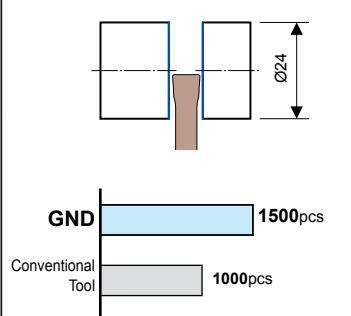
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Application Examples

Sintered Iron Crank Sprocket Gear, Grooving / Finishing	
	<p>Target:</p> <ul style="list-style-type: none"> - Higher rigidity - Vibration reduction - Chip control - Wear resistance <p>Holder: GNDL R2525M 220 Insert: GCM N4002 GG Grooving width: 2mm Cutting conditions: $v_c = 100\text{m/min}$ $f = 0,08\text{mm/rev}$ wet</p>
<p>Stable machining free of vibration! Excellent chip control using the GND type. Excellent wear resistance extends tool life by 130%.</p>	

X5CrNi1810, Measuring Instrument, Grooving	
	<p>Target:</p> <ul style="list-style-type: none"> - Higher rigidity - Vibration reduction - Chip control - Chip evacuation <p>Holder: GNDL R2525M 320 Insert: GCM N3002 GG Grooving width: 3mm Cutting conditions: $v_c = 60\text{m/min}$ $f = 0,025\text{mm/rev}$ wet</p>
<p>Stable machining free of vibration! Excellent chip control using the GND type.</p>	

Sintered Clutch Hub, Face Grooving	
	<p>Target:</p> <ul style="list-style-type: none"> - Higher efficiency - Vibration reduction <p>Holder: GNDF R2020K 523-050 Insert: GCM N5008 MG Grooving width: 5mm Cutting conditions: $n = 500\text{min}^{-1}$ $v_c = 100\text{m/min}$ $f = 0,05\text{mm/rev}$ wet</p>
<p>Reduces cycle time up to 20%. Stable cutting without chattering or vibration.</p>	

Stainless Round Bar, Cutting Off	
	<p>Target:</p> <ul style="list-style-type: none"> - Higher tool life - Adhesion resistance <p>Holder: GNDM L2020K 312 Insert: GCM N3002 GF Grooving width: 3mm Cutting conditions: $n = 1000\text{min}^{-1}$ $f = 0,15-0,03\text{mm/rev}$ wet</p>
<p>Reduces adhesion breakage and achieves 1.5 times longer tool life. Prevents vibration and achieves stable machining.</p>	



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