



CARBIDE - CBN - DIAMOND

Grooving / Cut-off Tools

Grooving Toolholders

GND Series

Wide Range of
Chipbreakers &
High Rigidity
Body Design



Grooving Tool

GND Series

Rigid Body

The GND series features a monoblock structure and die steel bodies, which not only provides for stable processing but controls vibration. Not solely for grooving, the GND series features holders for groove-turn, profiling, and face grooving.

Wide Variety of Chipbreakers

Full lineup of ten different chipbreakers for the GND covers a wide slate of machining operations, conditions and workpiece materials!



Grooving / Traverse machining		Grooving / Cut-off			Cut-Off		External Profiling	Profiling / Necking	Multifunctional
General purpose	Low feed	General purpose	Low feed	Low cutting force	General purpose	Low cutting force	General purpose	General purpose	For non-ferrous metals



■ Features and Benefits

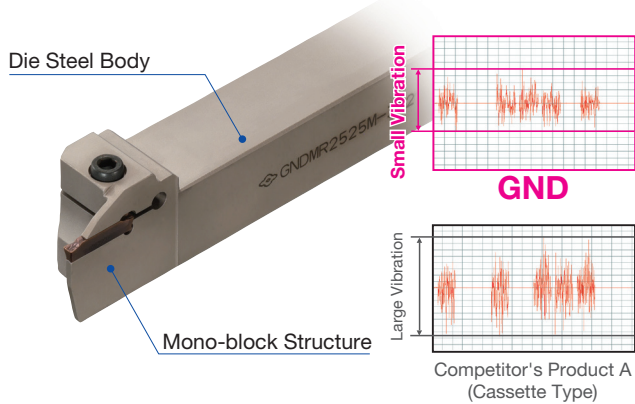
- Wide application range
Applicable for grooving, traverse cutting, profiling, necking, facing and internal boring.
- Expanded Grade Lineup
Featuring new grades: AC8025P / AC8035P / AC5015S / AC5025S
- Stable tool life
A variety of chipbreakers improve chip control in various applications. Prevents sudden breakages due to chip clogging.
- Achieving high efficiency machining with reduced chattering
The mono-block structure and die steel body reduce vibration during machining around 30% compared to conventional tools
- Higher edge width precision even with unground inserts
High-precision sintering technology achieves cutting edge width precision of $\pm 0.03mm$ for seat sizes 1.25mm to 6.0mm (front cutting edge angle of 0° or 5°)
- Internal Coolant Supply Holders for Small Lathes Available
- Expanded 20×12mm Square Holders for Small Lathes

GND Series - Cutting Performance

■ Grooving Toolholders GND - Cutting Performance

Reduced chattering

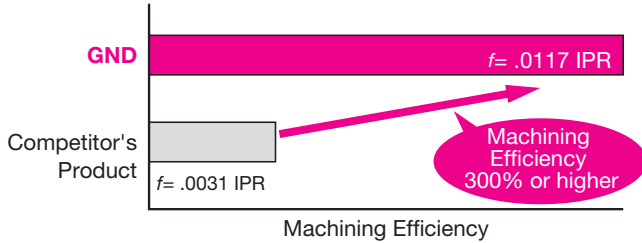
High-rigidity design reduces chattering by up to 30% as compared to conventional tools.



Part Material: Structural Steel
Holder: GNDLR2525M-220 **Insert:** GCMN2002-GG
Cutting Conditions: $v_c = 330$ SFM, $f = .0039$ IPR, $a_p = .79$ ", Wet

Substantially improved machining efficiency

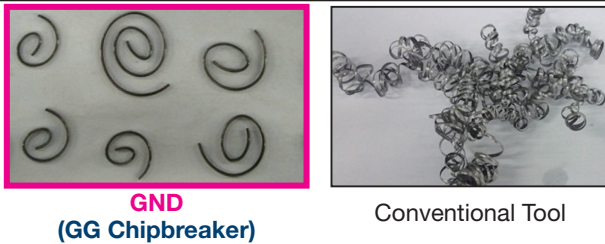
High-rigidity holder enables machining at high feed rates.



Part Material: Cr-Mo Alloy Steel
Holder: GNDLR2525M-320 **Insert:** GCMN3002-GG (AC530U)
Cutting Conditions: $v_c = 430$ SFM, $f = 0.012$ IPR, Wet

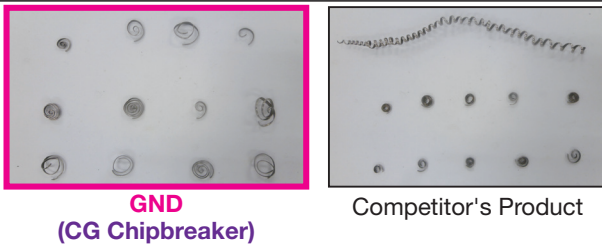
■ Improved Chip Control

Grooving



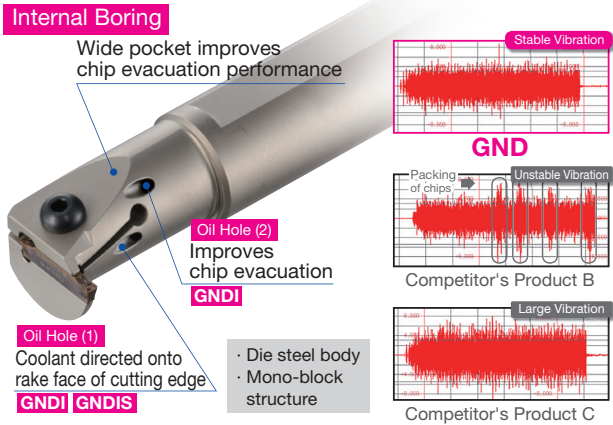
Part Material: Structural Steel
Holder: GNDLR2525M-320 **Insert:** GCMN3002-GG
Cutting Conditions: $v_c = 330$ SFM, $f = 0.0059$ IPR, $a_p = 0.472$ ", Wet

Cut-off



Part Material: Stainless Steel ($\phi 30$ mm)
Holder: GNDLR2525M-220 **Insert:** GCMR2002-CG-05
Cutting Conditions: $v_c = 330$ SFM, $f = 0.0059$ IPR, Wet

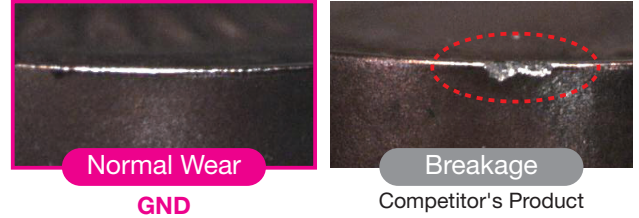
Both high rigidity and good chip evacuation performance



Part Material: Structural Steel
Holder: GNDIR2532-T306 **Insert:** GCMN3002-GG
Cutting Conditions: $v_c = 330$ SFM, $f = .0019$ IPR, $a_p = .118$ ", Wet

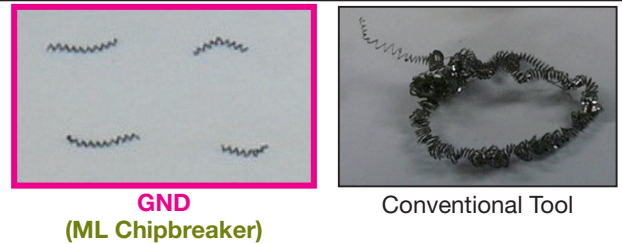
Long, stable tool life ensures reliable functionality even on automatic production lines!

Reduction of chattering prevents unexpected breakage.



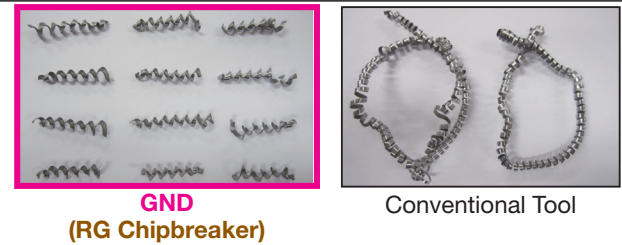
Part Material: Medium Carbon Steel
Holder: GNDML2525M-618 **Insert:** GCMN6030-RG (AC530U)
Cutting Conditions: $v_c = 430$ SFM, $f = 0.012$ IPR, Wet

Traverse cutting



Part Material: Structural Steel
Holder: GNDMR2525M-312 **Insert:** GCMN3002-ML
Cutting Conditions: $v_c = 330$ SFM, $f = 0.0039$ IPR, $a_p = 0.0197$ ", Wet

Profiling



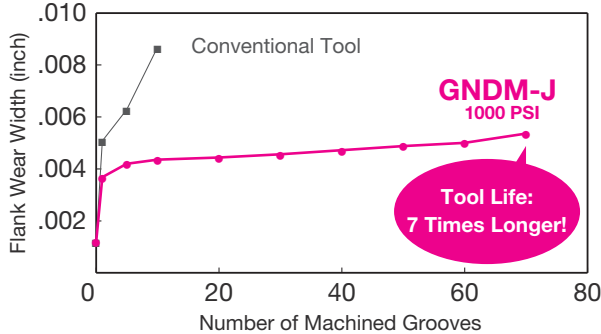
Part Material: Structural Steel
Holder: GNDMR2525M-312 **Insert:** GCMN3015-RG
Cutting Conditions: $v_c = 330$ SFM, $f = 0.0019$ IPR, $a_p = 0.0039$ ", Wet

Internal Coolant Holder GNDM-J / GNDL-J New

- Series expansion of Grooving Series GND with internal coolant holders
- Available seat sizes / grooving widths from .079" (2.0mm) to .236" (6.0mm)
- Effective coolant supply to the cutting edge during grooving, achieving both high-efficiency high-speed machining and longer insert tool life
- Improved chip control through direct coolant supply around the cutting edge

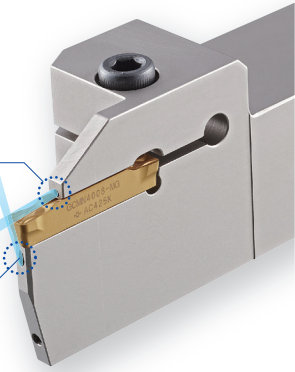


Wear Resistance

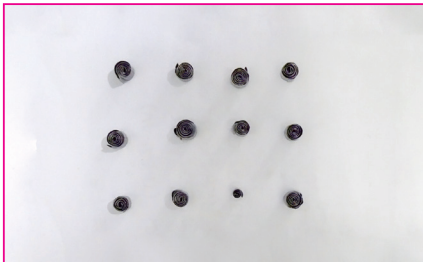


Coolant hole at the top improves chip control

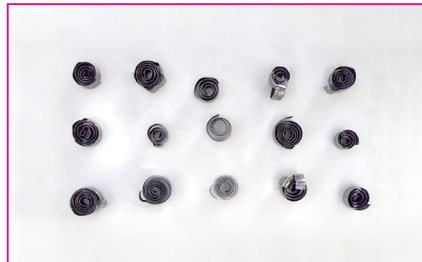
Coolant hole at the bottom effectively suppresses wear



Chip control



Coolant Pressure: 1000 PSI



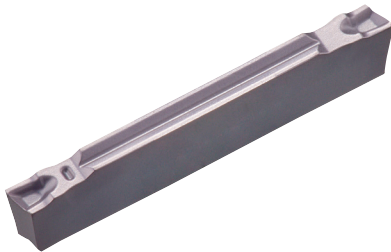
Coolant Pressure: 145 PSI



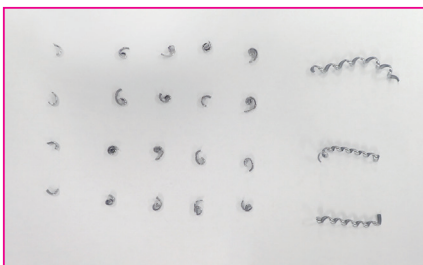
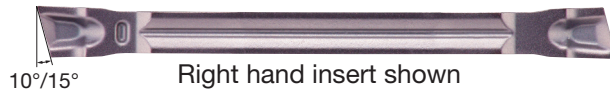
External Coolant Supply

Part Material: Titanium Alloy Holder: GNDM R2525K-312J Insert: GCMN3002-GG (AC530U) Cutting Conditions: $v_c = 200$ SFM, $f = 0.0039$ IPR, $a_p = .197$ " Wet

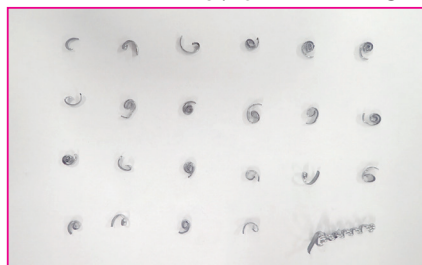
CF Chipbreakers for Cut-Off Machining New



- Chipbreakers with front cutting edge angles $10^\circ/15^\circ$ for cut-off machining now available
- Asymmetric breaker design demonstrates outstanding chip control even on inserts with front cutting edge angles, where chip control is typically difficult



GCMR20003-CF-10



GCMR20003-CF-15







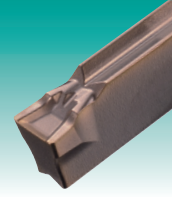
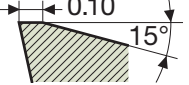
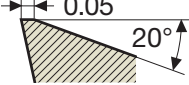
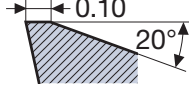
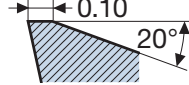
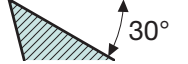





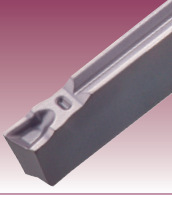


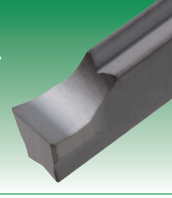
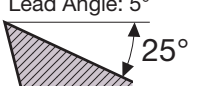
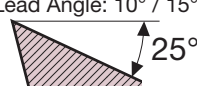
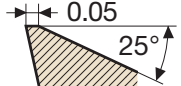
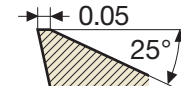
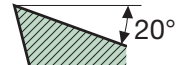


Competitor's Product

Part Material: Structural Steel Holder: GNDM R2525M-220 Insert: GCMR20003-CF-10,15 (AC1030U) Cutting Conditions: $n = 2000$ RPM, $f = 0.0031$ " Wet

GND Series - Chipbreakers

■ Large Selection of chipbreakers ensure outstanding chip control performance in many different types of applications.

 Grooving / Traverse Cutting						 Grooving / Cut-off					
General-Purpose		Low Feed				General-Purpose		Low Feed		Low Cutting Force	
MG		ML				GG		GL		GF	
											
Standard chipbreaker for traverse cutting		For low-feed chip control				1st recommendation for grooving		For low-feed chip control		For low cutting force and chip control at low-feeds	
Cutting Edge Cross Section		Cutting Edge Cross Section				Cutting Edge Cross Section		Cutting Edge Cross Section		Cutting Edge Cross Section	
											
Seat Size		Seat Size				Seat Size		Seat Size		Seat Size	
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
6.0	7.0	8.0	6.0	7.0	8.0	6.0	7.0	8.0	6.0	7.0	8.0
Stock		Stock				Stock		Stock		Stock	
AC8025P	AC8035P	AC8025P	AC8035P	AC8025P	AC8035P	AC8025P	AC8035P	AC8025P	AC8035P	AC8025P	AC8035P
AC830P	AC425K	AC830P	AC425K	AC830P	AC425K	AC830P	AC425K	AC830P	AC425K	AC830P	AC425K
AC5015S	AC5025S	AC5015S	AC5025S	AC5015S	AC5025S	AC5015S	AC5025S	AC5015S	AC5025S	AC5015S	AC5025S
AC520U	AC530U	AC520U	AC530U	AC520U	AC530U	AC520U	AC530U	AC520U	AC530U	AC520U	AC530U
AC1030U	T2500A	AC1030U	T2500A	AC1030U	T2500A	AC1030U	T2500A	AC1030U	T2500A	AC1030U	T2500A
H10		H10		H10		H10		H10		H10	
 Cut-off						 Profiling		 Profiling Necking		 For Non-Ferrous Metals	
General-Purpose		Low Cutting Force				General-Purpose		General-Purpose		General-Purpose	
CG		CF				RG		RN		GA	
											
1st recommendation for cut-off machining		For low-feed chip control				For external profiling and radius grooving		For facing, internal profiling, radius grooving and necking		Ideal for aluminum alloy machining	
Cutting Edge Cross Section		Cutting Edge Cross Section				Cutting Edge Cross Section		Cutting Edge Cross Section		Cutting Edge Cross Section	
											
Seat Size		Seat Size				Seat Size		Seat Size		Seat Size	
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
6.0	7.0	8.0	6.0	7.0	8.0	6.0	7.0	8.0	6.0	7.0	8.0
Stock		Stock				Stock		Stock		Stock	
AC8025P	AC8035P	AC8025P	AC8035P	AC8025P	AC8035P	AC8025P	AC8035P	AC8025P	AC8035P	AC8025P	AC8035P
AC830P	AC425K	AC830P	AC425K	AC830P	AC425K	AC830P	AC425K	AC830P	AC425K	AC830P	AC425K
AC5015S	AC5025S	AC5015S	AC5025S	AC5015S	AC5025S	AC5015S	AC5025S	AC5015S	AC5025S	AC5015S	AC5025S
AC520U	AC530U	AC520U	AC530U	AC520U	AC530U	AC520U	AC530U	AC520U	AC530U	AC520U	AC530U
AC1030U	T2500A	AC1030U	T2500A	AC1030U	T2500A	AC1030U	T2500A	AC1030U	T2500A	AC1030U	T2500A
H10		H10		H10		H10		H10		H10	

Lead Angle: 5°

Lead Angle: 10° / 15°

Items in grey are not available

GND Series - Chipbreaker Selection Guide

Chipbreaker Selection

	Grooving/Traverse Cutting	Grooving	Cut-off	
1st Recommendation	MG General-Purpose	GG General-Purpose	GG General-purpose	
	Improved Chip Control Chipping Prevention	Improved Chip Control Chipping Prevention	Ni B Burr Reduction Improved Chip Control	Improved Chip Control Chipping Prevention
2nd Recommendation	ML Low Feed Chip Control Emphasized	GL General-Purpose Chip Control Emphasized	CG General-Purpose Feed Direction Front Cutting Edge Angle 5°	GL General-Purpose Chip Control Emphasized
		Improved Chip Control Reduced Chattering Chipping Countermeasures	Ni B Burr Reduction Chipping Prevention	Improved Chip Control Reduced Chattering Chipping Prevention
		GF Low Resistance	CF Low Resistance Feed Direction Front Cutting Edge Angle 10°/15°	GF Low Resistance
	External Profiling/External Radius Grooving	Facing/Internal Profiling/Radius Grooving/Necking	For Non-Ferrous Metals	
Recommendation	RG General-Purpose 1st Recommended	RN General-Purpose 2nd Recommended 2mm Width Supported	RN General-Purpose	GA General-purpose For Non-Ferrous Metals

Insert Grade Selection

Application	P Steel	M Stainless Steel	K Cast Iron	S Exotic Alloy	N Non-ferrous Metal
Continuous / High-speed ↑ ↓ Interrupted / Unstable	AC8025P CVD Surface Finish Emphasised	AC8035P (AC830P) CVD	1st Recommendation AC425K CVD	AC5015S PVD	1st Recommendation H10 Uncoated Carbide
	AC8035P (AC830P) CVD	AC5015S PVD	AC8025P CVD	1st Recommendation AC5025S (AC520U) PVD	
	AC5025S (AC520U) PVD	1st Recommendation AC5025S (AC520U) PVD	AC5015S PVD	AC5025S (AC520U) PVD	
	1st Recommendation AC530U/AC1030U PVD	AC530U/AC1030U PVD	AC5025S (AC520U) PVD	AC530U/AC1030U PVD	


GND Series - Holders

 For External Turning (For Small Lathes)

Traverse Cutting / Profiling (Cut-off)

Grooving / Cut-off (Traverse Cutting)

GNDM
Straight Type




Shank Size (H x W)
.625" x .625"
16 x 16mm
20 x 12mm

P22

Seat Size		
1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

GNDM-J Internal Coolant Supply
Straight Type




Shank Size (H x W)
.625" x .625"
16 x 16mm
20 x 12mm

P23

Seat Size		
1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

GNDL
Straight Type




Shank Size (H x W)
.375" x .375"
.500" x .500"
.625" x .625"
10 x 10mm
12 x 12mm
16 x 16mm
20 x 12mm

P26

Seat Size		
1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

GNDL-J Internal Coolant Supply
Straight Type



Shank Size (H x W)
.500" x .500"
.625" x .625"
12 x 12mm
16 x 16mm
20 x 12mm

P27

Seat Size		
1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

For External Turning



For Small Lathes Series Overview

MG: Multi-functional / General-purpose ML: Multi-functional / Low-feed GG: Grooving / General-purpose GL: Grooving / Low-feed GF: Grooving / Low cutting force
CG: Cut-off / General-purpose CF: Cut-off / Low cutting force RG: Profiling / General-purpose RN: Facing / Necking / General-purpose GA: Non-ferrous Metal / General-purpose

Type	Shank Size (Inch)		Seat Size								Series	Maximum Groove Depth (Inch)						Ref. Page	Applicable Chipbreakers											
	Height (H)	Width (B)	1.25	1.5	2	3	4	5	6	7		8	.197	.394	.591	.787	1.000		1.181	MG	ML	GG	GL	GF	CG	CF	RG	RN	GA	
For Small Lathes	.375	.375	1.25	1.5																										
					2																									
						3																								
					1.25	1.5																								
							2																							
								2																						
	.500	.500																												
					2																									
						2																								
							3																							
								3																						
									3																					
.625	.625																													
				1.5																										
					1.5																									
						2																								
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Type	Shank Size (mm)		Seat Size								Series	Maximum Groove Depth (mm)						Ref. Page	Applicable Chipbreakers											
	Height (H)	Width (B)	1.25	1.5	2	3	4	5	6	7		8	5	10	15	20	25		30	MG	ML	GG	GL	GF	CG	CF	RG	RN	GA	
For Small Lathes	10	10	1.25	1.5																										
					2																									
						3																								
					1.25	1.5																								
							2																							
								2																						
	12	12																												
					2																									
						2																								
							3																							
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									3																					
	16	16																												
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 : In Stock

 : Best  : Suitable

GND Series - Holders

For External Turning (Straight Type)

GNDS For Shallow Grooves
Straight Type




Shank Size (H x W)
20 x 20mm
25 x 25mm

P30

Seat Size		
1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

GNDM Straight Type




Shank Size (H x W)
.750" x .750"
1.000" x 1.000"
1.25" x 1.25"
20 x 20mm
25 x 25mm
32 x 25mm
32 x 32mm

P21

Seat Size		
1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

GNDM-J Internal Coolant Supply
Straight Type




Shank Size (H x W)
.750" x .750"
1.00" x 1.00"
1.25" x 1.25"
20 x 20mm
25 x 25mm

P23

Seat Size		
1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

GNDL Straight Type




Shank Size (H x W)
.750" x .750"
1.00" x 1.00"
1.25" x 1.25"
20 x 20mm
25 x 25mm
32 x 25mm
32 x 32mm

P25

Seat Size		
1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

GNDL-J Internal Coolant Supply
Straight Type



Shank Size (H x W)
.750" x .750"
1.00" x 1.00"
1.25" x 1.25"
20 x 20mm
25 x 25mm

P27

Seat Size		
1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

For External Turning Straight Type Series Overview

MG: Multi-functional / General-purpose
 ML: Multi-functional / Low-feed
 GG: Grooving / General-purpose
 GL: Grooving / Low-feed
 GF: Grooving / Low cutting force
CG: Cut-off / General-purpose
 CF: Cut-off / Low cutting force
 RG: Profiling / General-purpose
 RN: Facing / Necking / General-purpose
 GA: Non-ferrous Metal / General-purpose

Type	Shank Size (Inch)		Seat Size								Series	Maximum Groove Depth (Inch)						Ref. Page	Applicable Chipbreakers													
	Height (H)	Width (B)	1.25	1.5	2	3	4	5	6	7		8	.197	.394	.591	.787	1.000		1.181	MG	ML	GG	GL	GF	CG	CF	RG	RN	GA			
Straight Type	.750	.750	2									GNDM	.500						P21	○	○	○	○	○								
			2										GNDM-J	.500						P23	○	○	○	○	○							
			2										GNDL	.750						P25	○	○	○	○	○	○	○	○	○	○	○	
			2										GNDL-J	.750						P27	○	○	○	○	○	○	○	○	○	○	○	
			3											GNDM	.500						P21	○	○	○	○	○	○	○	○	○	○	○
			3											GNDM-J	.500						P23	○	○	○	○	○	○	○	○	○	○	○
	1.00	1.00	3									GNDL	.750						P25	○	○	○	○	○	○	○	○	○	○	○		
			3										GNDL-J	.750						P27	○	○	○	○	○	○	○	○	○	○		
			4										GNDM	.700						P21	○	○	○	○	○	○	○	○	○	○	○	
			4										GNDM-J	.700						P23	○	○	○	○	○	○	○	○	○	○	○	
			4										GNDL	1.000						P25	○	○	○	○	○	○	○	○	○	○	○	
			4										GNDL-J	1.000						P27	○	○	○	○	○	○	○	○	○	○	○	
1.250	1.250	3									GNDM	.500						P21	○	○	○	○	○	○	○	○	○	○	○			
		3										GNDL	.900						P25	○	○	○	○	○	○	○	○	○	○			
		4										GNDM	.700						P21	○	○	○	○	○	○	○	○	○	○	○		
		4										GNDL	1.000						P25	○	○	○	○	○	○	○	○	○	○	○		
		5	6									GNDM	.700						P21	○	○	○	○	○	○	○	○	○	○	○		
		5	6									GNDL	1.000						P25	○	○	○	○	○	○	○	○	○	○	○		

Type	Shank Size (mm)		Seat Size								Series	Maximum Groove Depth (mm)						Ref. Page	Applicable Chipbreakers												
	Height (H)	Width (B)	1.25	1.5	2	3	4	5	6	7		8	5	10	15	20	25		30	MG	ML	GG	GL	GF	CG	CF	RG	RN	GA		
Straight Type	20	20	1.25	1.5								GNDM	10						P21	○	○	○	○	○	○	○	○	○	○	○	
			1.25	1.5									GNDL	16						P25	○	○	○	○	○	○	○	○	○	○	○
			2										GNDS	6						P30	○	○	○	○	○	○	○	○	○	○	○
			2										GNDM	10						P21	○	○	○	○	○	○	○	○	○	○	○
			2										GNDM-J	10						P23	○	○	○	○	○	○	○	○	○	○	○
			2										GNDL	20						P25	○	○	○	○	○	○	○	○	○	○	○
			2										GNDL-J	20						P27	○	○	○	○	○	○	○	○	○	○	○
			3										GNDS	6						P30	○	○	○	○	○	○	○	○	○	○	○
			3										GNDM	12						P21	○	○	○	○	○	○	○	○	○	○	○
			3										GNDM-J	12						P23	○	○	○	○	○	○	○	○	○	○	○
			3										GNDL	20						P25	○	○	○	○	○	○	○	○	○	○	○
			3										GNDL-J	20						P27	○	○	○	○	○	○	○	○	○	○	○
	25	25	4									GNDS	10						P30	○	○	○	○	○	○	○	○	○	○	○	
			4										GNDM	18						P21	○	○	○	○	○	○	○	○	○	○	○
			4										GNDM-J	18						P23	○	○	○	○	○	○	○	○	○	○	○
			4										GNDL	25						P25	○	○	○	○	○	○	○	○	○	○	○
			4										GNDL-J	25						P27	○	○	○	○	○	○	○	○	○	○	○
			5	6									GNDS	10						P30	○	○	○	○	○	○	○	○	○	○	○
	32	32	5	6								GNDM	18						P21	○	○	○	○	○	○	○	○	○	○	○	
			5	6								GNDM-J	18						P23	○	○	○	○	○	○	○	○	○	○	○	
			5	6									GNDL	25						P25	○	○	○	○	○	○	○	○	○	○	○
			5	6									GNDL-J	25						P27	○	○	○	○	○	○	○	○	○	○	○
			7	8									GNDM	18						P21	○	○	○	○	○	○	○	○	○	○	○
			7	8									GNDL	25						P25	○	○	○	○	○	○	○	○	○	○	○

■: In stock * : Made-to-order item (Shank size 32 x 25mm)

◎: Best ○: Suitable

GND Series - Holders

 For Facing

Grooving / Traverse Cutting / Profiling

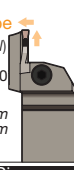
For Facing Straight / L Type Series Overview

GNDF
Straight Type

Shank Size (H x W)
.750" x .750"
1.000" x 1.000"

P32
20mm x 20mm
25mm x 25mm

P33



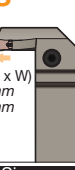
Seat Size		
1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

GNDFS
L Type

Shank Size (H x W)
25mm x 25mm
32mm x 32mm

P34



Seat Size		
1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

- MG**: Multi-functional / General-purpose
- ML**: Multi-functional / Low-feed
- GG**: Grooving / General-purpose
- GL**: Grooving / Low-feed
- GF**: Grooving / Low cutting force
- CG**: Cut-off / General-purpose
- CF**: Cut-off / Low cutting force
- RG**: Profiling / General-purpose
- RN**: Facing / Necking / General-purpose
- GA**: Non-ferrous Metal / General-purpose

Type	Shank Size (Inch)		Seat Size					Series	Maximum Groove Depth (In.)						Max. Work Diameter (In.)						Ref. Page	Applicable Chipbreakers																		
	Height H	Width B	3	4	5	6	7		8	5	10	15	20	25	30	50	100	150	200	250		300	1,000	50	100	150	200	250	300	1,000	MG	ML	GG	GL	GF	CG	CF	RG	RN	GA
			3	4	5	6	7		8																															
Straight Type	.750	.750	3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
		1.00	.750	3	4	5	6	7	8																															
				3	4	5	6	7	8																															
				3	4	5	6	7	8																															
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
	1.00	.750	3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
		1.00	.750	3	4	5	6	7	8																															
				3	4	5	6	7	8																															
				3	4	5	6	7	8																															
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																

Type	Shank Size (mm)		Seat Size					Series	Maximum Groove Depth (mm)						Max. Work Diameter (mm)						Ref. Page	Applicable Chipbreakers																		
	Height H	Width B	3	4	5	6	7		8	5	10	15	20	25	30	50	100	150	200	250		300	1,000	50	100	150	200	250	300	1,000	MG	ML	GG	GL	GF	CG	CF	RG	RN	GA
			3	4	5	6	7		8																															
Straight Type	20	20	3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
		25	20	3	4	5	6	7	8																															
				3	4	5	6	7	8																															
				3	4	5	6	7	8																															
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
	25	20	3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
		25	20	3	4	5	6	7	8																															
				3	4	5	6	7	8																															
				3	4	5	6	7	8																															
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
L Type	20	20	3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																
	25	25	3	4	5	6	7	8																																
			3	4	5	6	7	8																																
			3	4	5	6	7	8																																

 : In Stock  : Made-to-order item

©: Best

GND Series - Holders



For Internal Boring (Work Dia.: $\phi 14\text{mm}$ up)

Grooving / Traverse Cutting / Profiling



For Internal Boring (Work Dia.: $\phi 32\text{mm}$ up)

Grooving / Traverse Cutting / Profiling

GNDIS
Straight Type

Shank Dia.
 $\phi 12\text{mm}$
 $\phi 16\text{mm}$
 $\phi 20\text{mm}$

P36

Seat Size

1.5	2.0	3.0
-----	-----	-----

Applicable Chipbreaker

ML	GF
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Inserts are dedicated products.

GNDI
Straight Type

Shank Dia.
1.000"
1.250"
1.500"
 $\phi 25\text{mm}$
 $\phi 32\text{mm}$
 $\phi 40\text{mm}$

P35

Seat Size

1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker

MG	ML	GG	GL	GF	CG	CF	RG	RN	GA
----	----	----	----	----	----	----	----	----	----

Internal Boring Series Overview (Work Diameter: $\phi 14\text{mm}$ up)

ML: Multi-functional / Low-feed GF: Grooving / Low cutting force

Type	Shank Size DCON (mm)	Seat Size			Series	Maximum Groove Depth (mm)	Min. Bore Dia. (mm)	Ref. Page	Applicable Chipbreakers (GNDIS Type Dedicated)	
		1.5	2	3					ML (GNDIS Type Dedicated)	GF (GNDIS Type Dedicated)
Straight Type	$\phi 12$	1.5			GNDIS	2.6	$\phi 14$	P36		⊙
			1.5				3.6	$\phi 14$	P36	
			2	3		2.6	$\phi 14$	P36	⊙	⊙
	$\phi 16$	1.5			GNDIS	3.6	$\phi 16$	P36		⊙
			1.5				4.6	$\phi 20$	P36	
			2	3		3.6	$\phi 16$	P36	⊙	⊙
$\phi 20$	1.5			GNDIS	4.6	$\phi 20$	P36		⊙	
			2		3	6.6	$\phi 25$	P36		⊙
		2	3		6.6	$\phi 25$	P36	⊙	⊙	

■: In Stock

Note: Only dedicated GXM inserts can be used for GNDIS types.

⊙: Best

Internal Boring Series Overview (Work Diameter: $\phi 1.25"$ / $\phi 32\text{mm}$ up)

MG: Multi-functional / General-purpose ML: Multi-functional / Low-feed GG: Grooving / General-purpose GL: Grooving / Low-feed GF: Grooving / Low cutting force
CG: Cut-off / General-purpose CF: Cut-off / Low cutting force RG: Profiling / General-purpose RN: Facing / Necking / General-purpose GA: Non-ferrous Metal / General-purpose

Type	Shank Size DCON (Inch)	Seat Size						Series	Maximum Groove Depth (In.)	Min. Bore Dia. (In.)	Ref. Page	Applicable Chipbreakers										
		2	3	4	5	6	5					10	15	20	25	30	MG	ML	GG	GL	GF	CG
Straight	$\phi 1.000$	2					GNDI	.250	$\phi 1.250$	P35	⊙	⊙	⊙	⊙	⊙						⊙	⊙
	$\phi 1.250$	2	3	4	5	6		GNDI	.250	$\phi 1.250$	P35	⊙	⊙	⊙	⊙	⊙					⊙	⊙
	$\phi 1.500$	2	3	4	5	6		GNDI	.400	$\phi 1.575$	P35	⊙	⊙	⊙	⊙	⊙					⊙	⊙
Straight	$\phi 25$	2					GNDI	6	$\phi 32$	P35	⊙	⊙	⊙	⊙							⊙	⊙
				3	4	5		6	6	$\phi 32$	P35	⊙	⊙	⊙	⊙							⊙
	$\phi 32$	2					GNDI	6	$\phi 32$	P35	⊙	⊙	⊙	⊙							⊙	⊙
				3	4	5		6	10	$\phi 40$	P35	⊙	⊙	⊙	⊙							⊙
	$\phi 40$		3	4	5	6	GNDI	11	$\phi 50$	P35	⊙	⊙	⊙	⊙							⊙	⊙

■: In Stock

⊙: Best ○: Suitable

For Necking

Necking

GNDN
Straight Type

Shank Size (H x W)
20 x 20mm
25 x 25mm

P31

Seat Size

1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker

ML	GG	GL	GF	CG	CF	RG	RN	GA
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Necking Series Overview

MG: Multi-functional / General-purpose ML: Multi-functional / Low-feed GG: Grooving / General-purpose GL: Grooving / Low-feed GF: Grooving / Low cutting force
CG: Cut-off / General-purpose CF: Cut-off / Low cutting force RG: Profiling / General-purpose RN: Facing / Necking / General-purpose GA: Non-ferrous Metal / General-purpose

Type	Shank Size (mm)	Seat Size						Series	Maximum Groove Depth (mm)	Min. Bore Dia. (mm)	Ref. Page	Applicable Chipbreakers														
		Height H : Width B	2	3	4	5	6					5	10	15	20	25	30	MG	ML	GG	GL	GF	CG	CF	RG	RN
Straight Type	20 : 20	25 : 25	2					GNDN	1.5	$\phi 20$	P31												⊙	⊙		
				3					2.0	$\phi 20$	P31													⊙	⊙	
					4					3.0	$\phi 30$	P31													⊙	⊙
						5				3.5	$\phi 30$	P31													⊙	⊙
							6			4.0	$\phi 30$	P31													⊙	⊙

■: In Stock

GND Series - Recommended Cutting Conditions

Seat Size Grooving Width (Inch / mm)	Recommended Cutting Conditions		Corner Radius (Inch)	Applicable Insert	
	Grooving / Cut-off (Necking)	Traverse Cutting			
.049 / 1.25	Chipbreaker GF 	—	.0020	MG ML GG GL GF CG CF RG RN GA	
	Chipbreaker GF 	—		MG ML GG GL GF CG CF RG RN GA	
.059 / 1.50	Chipbreaker GF 	—	.0020	MG ML GG GL GF CG CF RG RN GA	
	Chipbreaker GF 	—		MG ML GG GL GF CG CF RG RN GA	
	Chipbreaker ML GG GL GF CG CF RG RN GA 	Depth of Cut a_p (inch) 		.0012	MG ML GG GL GF CG CF RG RN GA
					.0078
.079 / 2.0	Chipbreaker ML GG GL GF CG CF RG RN GA 	Depth of Cut a_p (inch) 	.0012	MG ML GG GL GF CG CF RG RN GA	
				.0078	MG ML GG GL GF CG CF RG RN GA
	Chipbreaker ML GG GL GF CG CF RG RN GA 	Depth of Cut a_p (inch) 	.0156	MG ML GG GL GF CG CF RG RN GA	
				.0394	MG ML GG GL GF CG CF RG RN GA
.118 / 3.0	Chipbreaker MG ML GG GL GF CG CF RG RN GA 	Depth of Cut a_p (inch) 	.0012	MG ML GG GL GF CG CF RG RN GA	
				.0078	MG ML GG GL GF CG CF RG RN GA
	Chipbreaker MG ML GG GL GF CG CF RG RN GA 	Depth of Cut a_p (inch) 	.0156	MG ML GG GL GF CG CF RG RN GA	
				.0590	MG ML GG GL GF CG CF RG RN GA
.157 / 4.0	Chipbreaker MG ML GG GL GF CG CF RG RN GA 	Depth of Cut a_p (inch) 	.0078	MG ML GG GL GF CG CF RG RN GA	
				.0156	MG ML GG GL GF CG CF RG RN GA
	Chipbreaker MG ML GG GL GF CG CF RG RN GA 	Depth of Cut a_p (inch) 	.0313	MG ML GG GL GF CG CF RG RN GA	
				.0787	MG ML GG GL GF CG CF RG RN GA
.197 / 5.0	Chipbreaker MG ML GG GL GF CG CF RG RN GA 	Depth of Cut a_p (inch) 	.0078	MG ML GG GL GF CG CF RG RN GA	
				.0156	MG ML GG GL GF CG CF RG RN GA
	Chipbreaker MG ML GG GL GF CG CF RG RN GA 	Depth of Cut a_p (inch) 	.0313	MG ML GG GL GF CG CF RG RN GA	
				.0984	MG ML GG GL GF CG CF RG RN GA
.236 / 6.0	Chipbreaker MG ML GG GL GF CG CF RG RN GA 	Depth of Cut a_p (inch) 	.0078	MG ML GG GL GF CG CF RG RN GA	
				.0156	MG ML GG GL GF CG CF RG RN GA
	Chipbreaker MG ML GG GL GF CG CF RG RN GA 	Depth of Cut a_p (inch) 	.0313	MG ML GG GL GF CG CF RG RN GA	
				.1181	MG ML GG GL GF CG CF RG RN GA
.275 / 7.0	Chipbreaker MG ML GG GL GF RG 	Depth of Cut a_p (inch) 	.0078	MG ML GG GL GF CG CF RG RN GA	
				.0156	MG ML GG GL GF CG CF RG RN GA
	Chipbreaker MG ML GG GL GF RG 	Depth of Cut a_p (inch) 	.0313	MG ML GG GL GF CG CF RG RN GA	
				.1378	MG ML GG GL GF CG CF RG RN GA
.315 / 8.0	Chipbreaker MG ML GG GL GF RG 	Depth of Cut a_p (inch) 	.0078	MG ML GG GL GF CG CF RG RN GA	
				.0156	MG ML GG GL GF CG CF RG RN GA
	Chipbreaker MG ML GG GL GF RG 	Depth of Cut a_p (inch) 	.0313	MG ML GG GL GF CG CF RG RN GA	
				.1575	MG ML GG GL GF CG CF RG RN GA

For face grooving, use cutting conditions closer to the lower limit of the recommended cutting conditions to ensure that chips are long. *Items in grey are not available
 In cut-off applications, reduce the feed rate to around 30% to 50% near the centre of the workpiece.
 As there is less space for chip evacuation when machining internal diameters (particularly small bore diameters), ML/GL/GF chipbreakers are recommended.
 Modifications to inserts and holders are required to perform machining such as radius grooving when using the RG type chipbreaker with the GNDF holder for facing.

See next page for additional Recommended Cutting Conditions

GND Series - Recommended Cutting Conditions and Key Points

Recommended Cutting Conditions

Recommended Cutting Conditions for GNDIS Type **IC P35**

Part Material	P Carbon Steel / Alloy Steel					M Stainless Steel			K Cast Iron				S Exotic Alloy		N Non-ferrous Metal
Insert Grades	AC8025P	AC8035P AC830P	AC5015S AC520U	AC5025S AC530U AC1030U	T2500A	AC8035P AC830P	AC5015S AC520U	AC5025S AC530U AC1030U	AC8025P	AC425K	AC5015S AC520U	AC5025S AC530U AC1030U	AC5015S AC520U	AC5025S AC530U AC1030U	H10
Cutting Speed v_c (SFM)	260 to 820	260 to 650	260 to 650	165 to 650	165 to 650	230 to 500	230 to 500	165 to 500	260 to 660	260 to 660	200 to 660	165 to 660	65 to 265	65 to 200	500 to 990

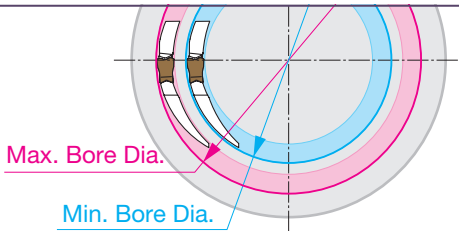
Chipbreaker		MG	ML	GG	GL	RG	CG/CF	GA	
		Feed (IPR)	Feed (IPR)	Feed (IPR)	Feed (IPR)	Feed (IPR)	Feed (IPR)	Feed (IPR)	
Grooving & Cutoff	Seat Size	2	-	-	.002 - .010	.001 - .006	-	.002 - .008	.002 - .010
		3	.003 - .008	.001 - .006	.004 - .012	.002 - .008	.003 - .006	.003 - .010	.004 - .012
		4	.004 - .010	.002 - .008	.006 - .014	.003 - .009	.004 - .008	.004 - .012	.006 - .014
		5	.005 - .012	.003 - .010	.008 - .016	.004 - .010	.006 - .010	-	.008 - .016
		6	.006 - .014	.004 - .012	.008 - .018	.005 - .012	.008 - .012	-	.008 - .018
		7	.007 - .016	.005 - .014	.008 - .020	.006 - .014	.010 - .014	-	-
		8	.008 - .018	.006 - .016	.008 - .022	.007 - .016	.014 - .016	-	-

Chipbreaker		MG		ML		RG		
		Feed (IPR)	Depth (In.)	Feed (IPR)	Depth (In.)	Feed (IPR)	Depth (In.)	
Turning	Seat Size	3	.003 - .010	.016 - .060	.002 - .007	.012 - .060	.004 - .016	.012 - .048
		4	.004 - .012	.020 - .080	.002 - .008	.016 - .080	.006 - .018	.024 - .064
		5	.005 - .014	.030 - .100	.003 - .010	.020 - .100	.008 - .020	.030 - .080
		6	.006 - .016	.040 - .120	.004 - .012	.020 - .120	.012 - .024	.040 - .090
		7	.007 - .016	.048 - .140	.005 - .014	.028 - .140	.014 - .026	.048 - .098
		8	.008 - .018	.060 - .160	.006 - .016	.028 - .160	.014 - .028	.060 - .120

Key Points for Applications

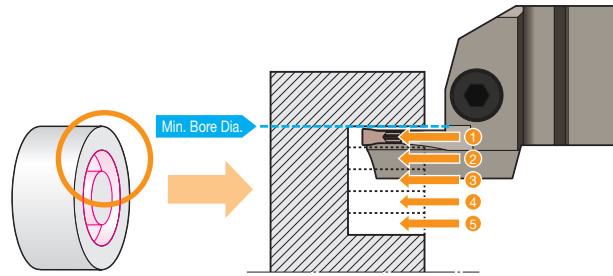
Key Points for Facing

Holder Selection



- Select a holder with which the outer diameter of the first groove to be machined is between the **maximum** and **minimum** grooving diameters of the holder.
- If the machining start point is within the effective work diameter range, the work diameter will not be limited for subsequent passes.

Precautions for Groove Expansion Recommended Chipbreakers **MG ML GG GL GF GA**

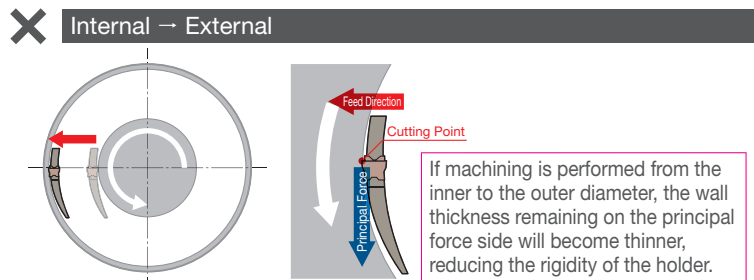
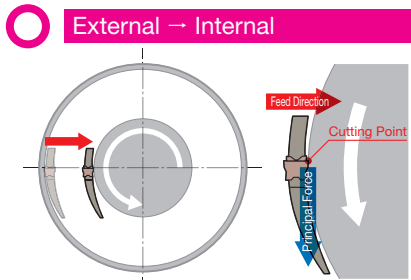


- If the first groove is within the effective work diameter range during groove expansion via plunging, the work diameter will not be limited for subsequent passes.

Precautions for Traverse Cutting

Recommended Chipbreakers **MG ML RN**

Considering the rigidity of the holder, we recommend machining from the outside to the inside.



- If the machining start point for traverse face cutting operation is within the effective work diameter range, the work diameter will not be limited for subsequent passes.
- Select the lower limit of the recommended cutting conditions for the chipbreaker and **lengthen the chips before evacuation**. (In face grooving, **broken chips easily get stuck in grooves**, which causes problems.)
- When breaking chips, step feed is required.

GND Series - Key Points



Key Points in Internal Boring

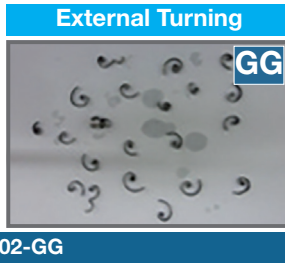
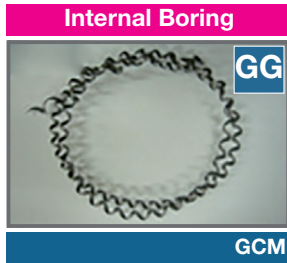
Precautions for Internal Boring

Recommended Chipbreakers **ML** **GL** **GF**

If the prepared hole diameter is small, use an **ML** type or **GL** type low-feed chipbreaker, both of which reduce chip curl diameter, to ensure adequate chip evacuation.



Part Material: 15CrMo Steel Prepared Hole Diameter: $\phi 1.000''$ Holder: GNDIR2532-T306 Insert: GCMN3000-00
Cutting Conditions: $v_c = 330$ SFM, $f = .0039$ IPR, $a_p = .118''$ Wet



! Chip shapes differ between internal boring and external turning even under the same cutting conditions.

Part Material: 15CrMo Steel
Holder: GNDL R2525M-320, Insert: GCMN3002-GG
Cutting Conditions: $v_c = 330$ SFM, $f = .0039$ IPR, $a_p = .197''$ Wet

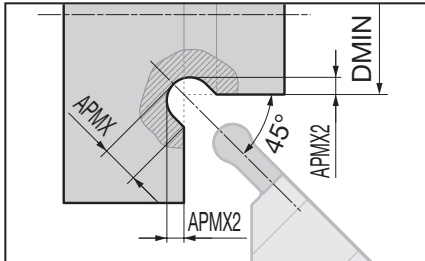


Key Points for Necking

Precautions for Necking

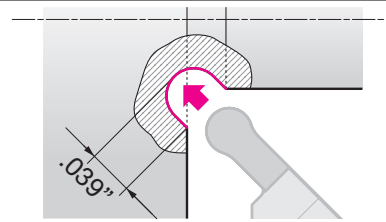
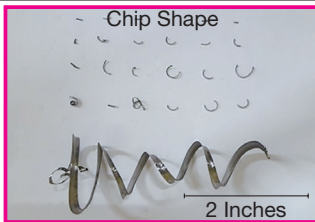
Recommended Chipbreaker **RN**

Distance from Part Material to Necking Depth



Seat Size	Necking Depth APMX (Inch)	Distance from Part Material to Necking Depth APMX2 (Inch)
2.0	.059	.025
3.0	.079	.031
4.0	.118	.051
5.0	.138	.057
6.0	.157	.063

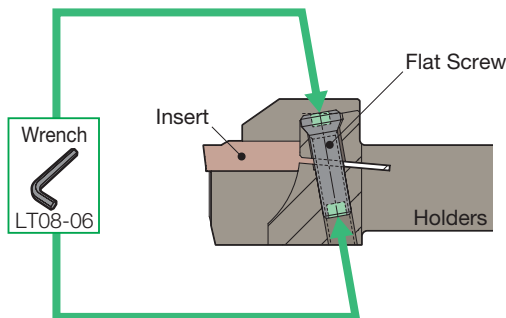
- For necking, these conditions are recommended for each seat size when grooving with RN chipbreakers.
- To prevent interference with the part material, the work diameter for each GNDN holder should be set to the minimum machining diameter (DMIN) or less.



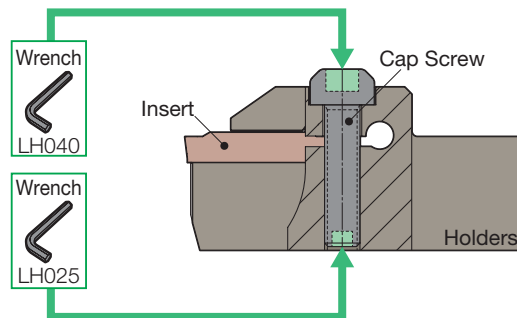
Part Material : 15CrMo Steel
Seat Size : 3.0
Holder : GNDN R2020K-320-020
Insert : GCMN3015-RN
Cutting Conditions : $v_c = 330$ SFM, $f = .0039$ IPR
Necking Depth = .039" Wet

Key Points in Internal Coolant Supply Holders For Small Lathes

- 12mm and 16mm square Internal Coolant Supply Holders for Small Lathes enable insert exchange from both top and bottom.



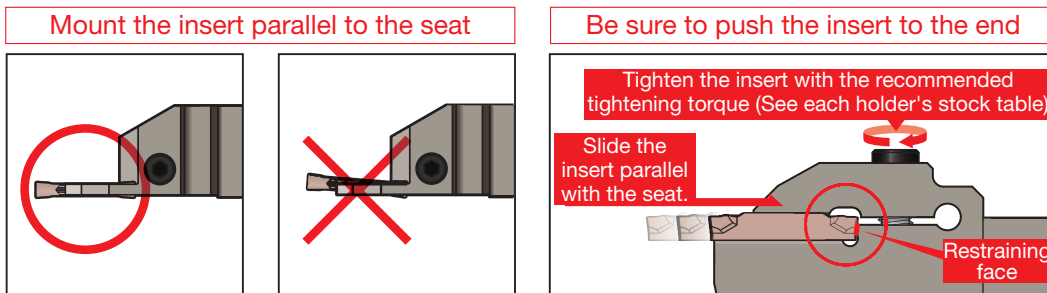
12mm square holder: **GNDL R/L1212JX-000.OJ**



16mm square holder: **GNDM R/L1616JX-000J**
GNDL R/L1616JX-000J

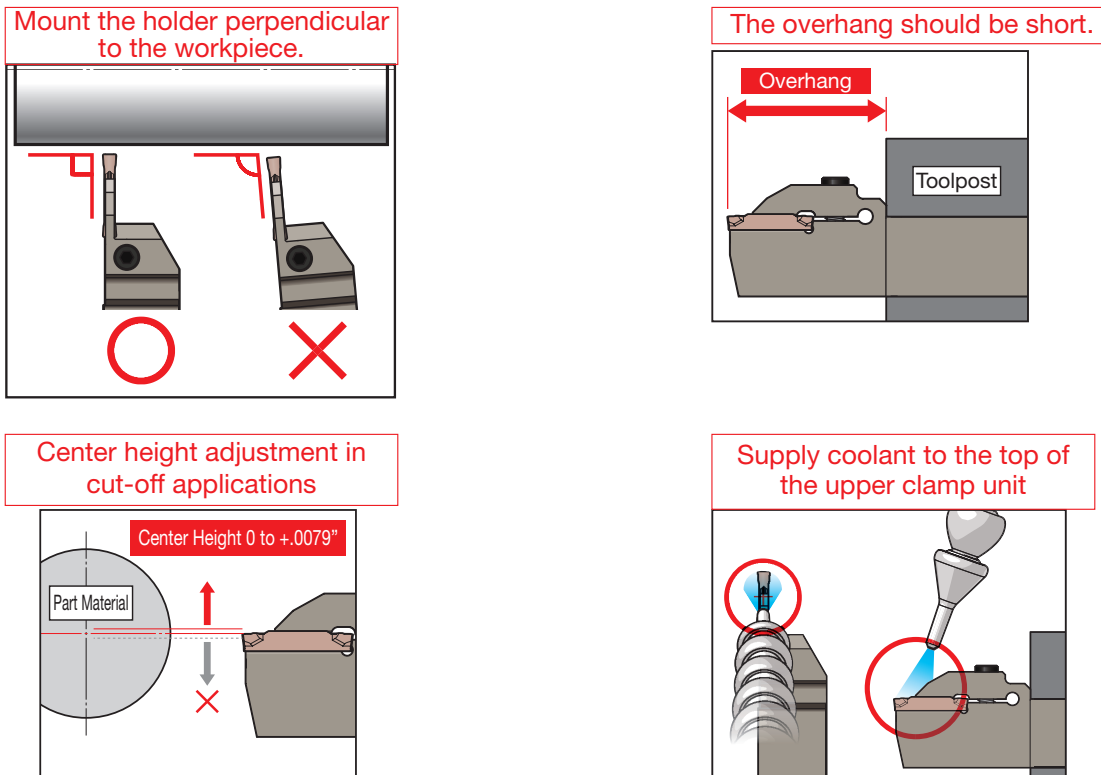
■ Insert Mounting Precautions

- (1) Remove any dust, etc. from the insert seat, bolt, and bolt hole before attaching the insert.
- (2) If there are scratches or burrs on the insert seat, scrape them away.
- (3) Mount the insert by sliding it parallel to the seat.
- (4) Clamp the insert with the opposite side (holder side) of the cutting edge secured on the constraining surface.
- (5) **Tighten the insert with the recommended tightening torque.** If the insert is tightened with excessive torque, it may be damaged, leading to injury.
- (6) **When changing the insert, adjust the cutting edge offset value.**



■ Precautions when Mounting Holders

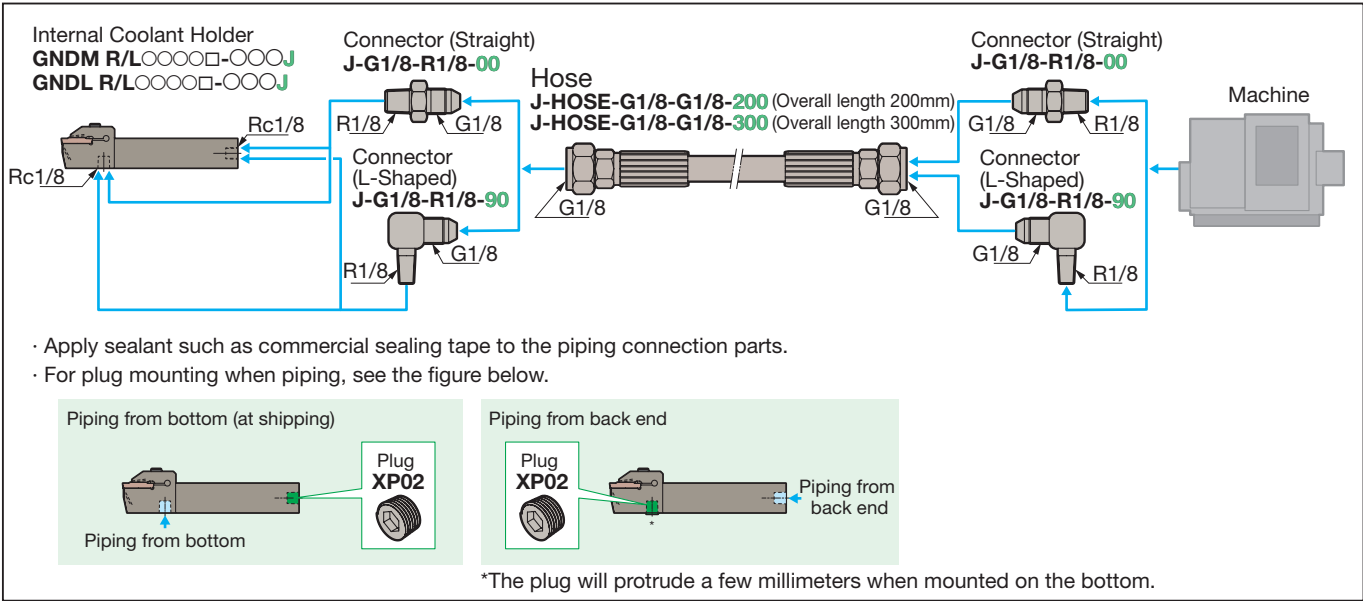
- (1) Remove any dust and oil from the toolpost before setting the holder.
- (2) If there are scratches or burrs on the toolpost, scrape them away.
- (3) Place the holder so that the insert is perpendicular to the workpiece. Failure to do so may bend the machined surface or cause chattering.
- (4) The overhang of the holder should be as short as possible.
- (5) When grooving or traverse cutting, adjust the center height of the cutting edge to as close to ± 0 mm as possible. (Within ± 0.1 mm is recommended.) Incorrect center height adjustment may cause chattering. In cut-off applications, adjust the center height of the cutting edge to a value from 0 to $+0.2$ mm. A lower center height will result in a larger nib at the center.
- (6) Set the oil supply nozzle so that coolant can be supplied from the top of the upper clamp unit.



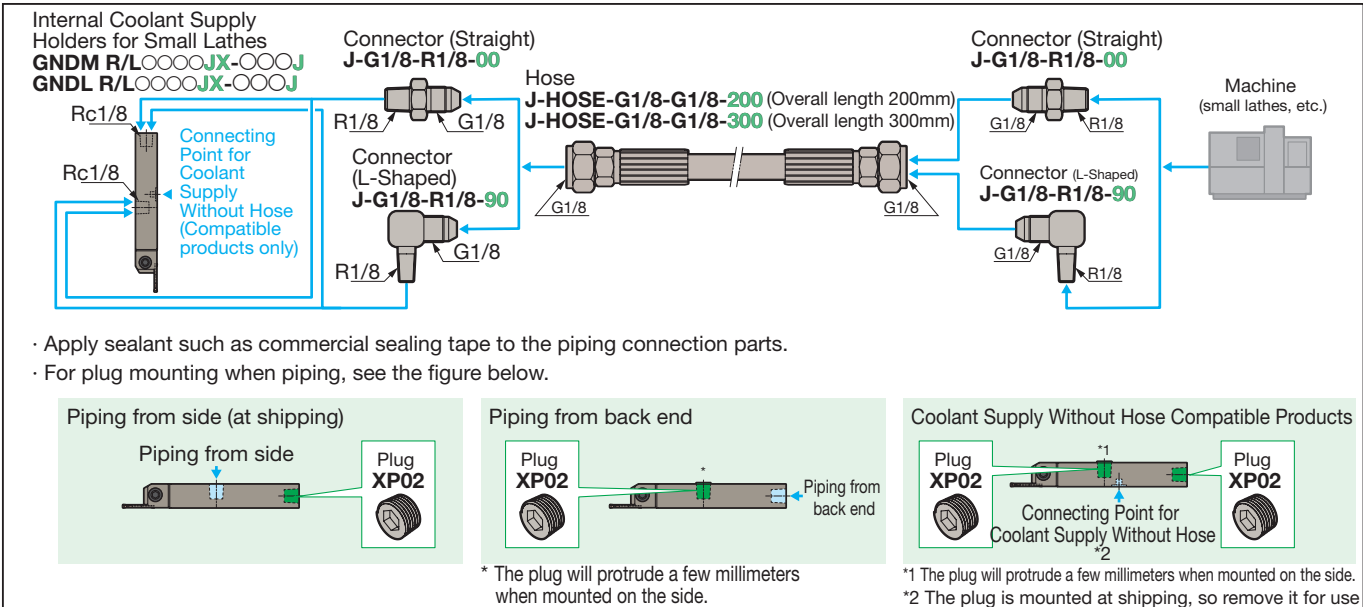
Precautions for Grooving Tool Holders GND Type

Piping Method for Hoses and Connectors

Hoses and Connectors 24

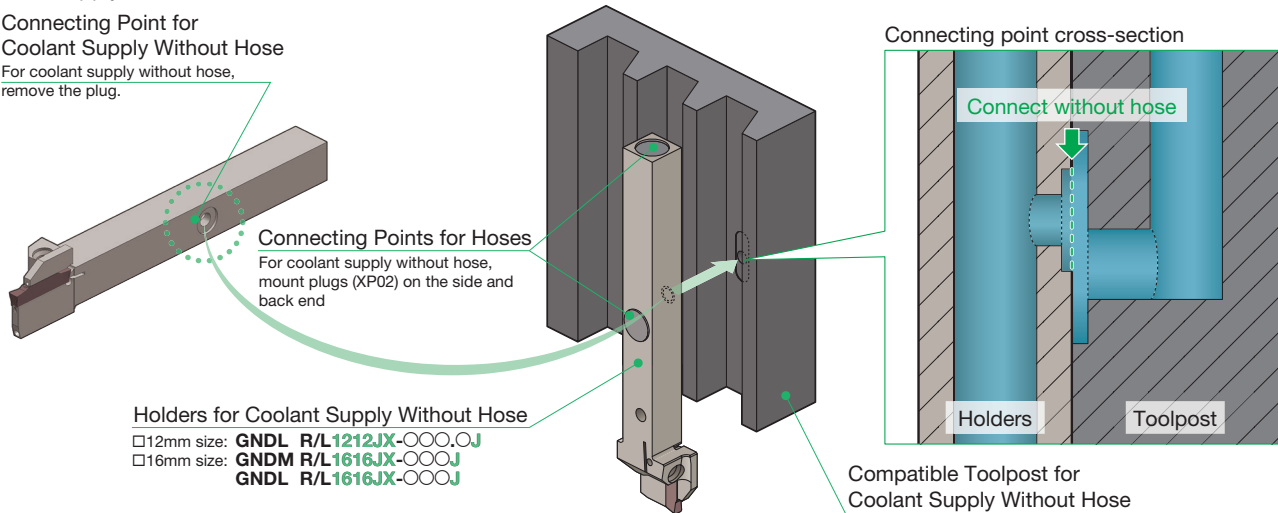


Piping Method for Hoses and Connectors (For Small Lathes)



Coolant Supply to Holders Without Hose

Connecting Point for Coolant Supply Without Hose
 For coolant supply without hose, remove the plug.



GND Series - Inch Nomenclature

■ Nomenclature for OD Groover GND Series

GND M R/L 16 3 M -075 J

#1-3 #4 #5 #6 #7 #8 #9 #10

Series Name	#4 Application	#5 Handedness	#6 Shank Size*16	#7 Seat Size	#8 Overall Length	#9 Max Groove Depth*100	#10 Coolant Specification
#1 Groove #2 New #3 Depth	M: Multi-function L: Deep Groove MS: 90° Multi LS: 90° Deep	R: Right Handed L: Left Handed	12: 0.750 x 0.750" 16: 1.000 x 1.000" 20: 1.250 x 1.250"	1.25 1.5 2 3 4 5 6 7 8	K: 5.0" M: 6.0" P: 7.0" JX: for Small lathes	050: 0.50" 070: 0.70" 075: 0.75" 090: 0.90" 100: 1.00"	J: Coolant Through / Internal Coolant

■ Nomenclature for Face Grooving Holders

GND F R/L 16 3 M -075 -035

#1-3 #4 #5 #6 #7 #8 #9 #10

Series Name	#4 Application	#5 Handedness	#6 Shank Size*16	#7 Seat Size	#8 Overall Length	#9 Max Groove Depth*100	#10 Min. Part Diam. mm (Inch)
#1 Groove #2 New #3 Depth	F: Face Grooving FS: 90° Face	R: Right Handed L: Left Handed	12: 0.750 x 0.750" 16: 1.000 x 1.000" 20: 1.250 x 1.250"	2 3 4 5 6 7 8	K: 5.0" M: 6.0" P: 7.0"	050: 0.50" 070: 0.70" 075: 0.75" 090: 0.90"	035: 35mm (1.378") 040: 40mm (1.575") 045: 45mm (1.772") 050: 50mm (1.969") 065: 65mm (2.559") 085: 85mm (3.346") 090: 90mm (3.543") 100: 100mm (3.937") 125: 125mm (4.921") 140: 140mm (5.512") 180: 180mm (7.087") 280: 280mm (11.024")

■ Insert Nomenclature

GCM N 3 125 R0.5 -GG -AC530U

#1-3 #4 #5 #6 #7 #8 #9

#1-3 Series Name	#4 Handedness	#5 Seat Size	#6 Groove Width*100	#7 Corner Radius in 64ths	#8 Chipbreaker
#1 G: Grooving Insert #2 C: 7° Relief Angle #3 M: Molded Tolerance	R: Right Handed L: Left Handed N: Neutral	1.25 1.5 2 3 4 5 6 7 8	094: 0.094" 125: 0.125" 187: 0.187" 250: 0.250"	R0.5: 0.5/64 = 0.0078" R1.0: 1/64 = 0.0156" R2.0: 2/64 = 0.0313"	GG: Std. Feed Deep Groove GL: Low Feed Deep Groove MG: Std. Feed Traverse ML: Low Feed Traverse RG: Full Radius Profiling RN: For profiling with undercut GF: Low Cutting Force GA: Non-ferrous grooving CG: General Cutoff CF: High Shear Cutoff

*Note: Items with the RG chipbreaker have a radius equal to 1/2 the width (Ex: GCMN3125-RG = 0.0625")

#9: Grade
AC5015S: 1 st Recommended for Heat Resistant Alloys & Exotic Materials
AC5025S: Heavy Interrupted for Heat Resistant Alloys & Exotic Materials
AC520U: Universal Grade for most materials
AC530U: Universal Grade for most materials
AC1030U: Grade for precision machining
AC8025P: General Purpose Cutting of Steel
AC8035P: Heavy Interrupted Cutting of Steel
AC830P: Tough CVD Grade for steels
AC425K: CVD Grade for Cast and Ductile Irons
T2500A: finishing of steels and stainless steels
H10: for non-ferrous materials

See next page for metric nomenclature

GND Series - Metric Nomenclature

Identification Code

Holders

GND M R 25 25 (M) - (T) 3 12 (J) (-) (035)

(1) Series: GND
 (2) Application: Refer to Table 2
 (3) Feed Direction: Refer to Table 3
 (4) Shank Height / Dia.: Refer to Table 4
 (5) Shank Width / Work Dia.: Refer to Table 5
 (6) Shank Length: Refer to Table 6
 (7) Type: T: For Internal Boring
 (8) Insert Cutting Edge Width: Refer to Table 8
 (9) Maximum Groove Depth: Refer to Table 9
 (10) Coolant Supply: J: Internal Coolant Supply
 (11) Work Dia. / Min. Bore Dia. (mm)

Symbol	Application
S	For External Multi-Function Machining Traverse Cutting / Profiling (Grooving / Cut-off)
M	For External Multi-Function Machining Traverse Cutting / Profiling (Grooving / Cut-off)
L	For External Machining Grooving / Cut-off (Traverse Cutting / Profiling)
MS	L type Holder (Side Cut) for External Multi-Functional Machining Grooving / Traverse Cutting / Profiling
LS	L type Holder (Side Cut) for External Machining Grooving
N	For Necking Necking
F	For Face Machining Grooving / Traverse Cutting / Profiling
FS	L type Holder for Face Machining Grooving / Traverse Cutting / Profiling
I	For Internal Boring Grooving / Traverse Cutting / Profiling
IS	For Internal Boring Grooving / Traverse Cutting / Profiling
CM	SumiPolygon Cassette Grooving / Cut-off Traverse Cutting / Profiling

Symbol	Feed Direction
R	Right Hand
L	Left Hand

Application	Height / Dia. (mm)
External Machining / Facing (Shank Height)	10
	12
	16
	20
	25
Internal Boring (Shank Diameter)	25
	32
	40

Application	Width / Work Diameter (mm)
External Machining / Facing (Shank Width)	10
	12
	16
	20
	25
Internal Boring (Min. Bore Diameter)	32
	40
	50

Symbol	Length (mm)
JX	120
K	125
M	150
P	170

Symbol	Width of Cut (mm)	Symbol	Width of Cut (mm)
1.25	1.25	5	5.0
1.5	1.5	6	6.0
2	2.0	7	7.0
3	3.0	8	8.0
4	4.0		

Symbol	Depth (mm)	Symbol	Depth (mm)
06	6.0	14	14.0
08	8.0	16	16.0
10	10.0	18	18.0
11	11.0	20	20.0
12	12.0	23	23.0
12.5	12.5	25	25.0

* Excluding GNDIS Type.
 * Excluding GNDN Type / GNDIS Type.

Insert

G C M N 30 02 (S) - GG (-) (05)

(1) Series: Grooving
 (2) Front Relief Angle: Refer to Table 2
 (3) Tolerance: Refer to Table 3
 (4) Feed Direction: Refer to Table 4
 (5) Insert Cutting Edge Width: Refer to Table 5
 (6) Corner Radius: Refer to Table 6
 (7) Applicable Holder: Refer to Table 7
 (8) Chipbreaker: Refer to Table 8
 (9) Lead Angle: Refer to Table 9

Symbol	Angle
C	7°
X	Others

Symbol	Insert Class
G	G Class
M	M Class

Symbol	Feed Direction
R	Right Hand
L	Left Hand
N	Neutral

Symbol	Width of Cut (mm)
125	1.25
150	1.5
20	2.0
30	3.0
40	4.0
50	5.0
60	6.0
70	7.0
80	8.0

Symbol	RE(mm)
003	0.03
005	0.05
02	0.2
04	0.4
08	0.8
10	1.0
15	1.5
20	2.0
25	2.5
30	3.0

RE = 1.0mm or larger are for profiling.

Symbol	Applicable Holders
S	GNDIS Type

Symbol	Application
MG	Multi-functional: General-purpose
ML	Multi-functional: Low-feed
GG	Grooving: General-purpose
GL	Grooving: Low-feed
GF	Grooving: Low Cutting Force
CG	Cut-off: General-purpose
CF	Cut-off: Low Cutting Force
RG	External Necking
RN	Profiling / Necking
GA	For Non-Ferrous Metals

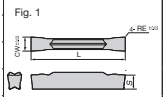
Symbol	PSI
05	5°
10	10°
15	15°

Precautionary Notes on Tool Selection

- Select the largest shank size possible.
- It is recommended to mount the holder upside down.
- Select a chipbreaker according to the cutting conditions.
- To ensure adequate chip evacuation, select the smallest corner radius possible unless restrictions apply.
- To ensure rigidity as well, use a multi-function type holder so long as the maximum groove depth can be achieved.

GND Series - Inserts

GCMN Inserts		Cat. No.	Coated Carbide								Cermet	Uncoated Carbide	Dimensions (inch / mm)				Fig.			
			Precision Machining	S				K	P				N	Insert	Grooving Width	Nose Radius		Overall Length	Thickness	
Function	Chipbreaker		AC1030U	AC5015S	AC5025S	AC520U	AC530U	AC425K	AC8025P	AC8035P	AC830P	T2500A	H10	Seat Size	CW	RE	L	S		
Low Cutting Force	GF	GCMN125005-GF												1.25	.049	.0020	.685	.126		
		GCMN150005-GF													1.5	.059	.0020	.685	.146	
		GCMN2002-GF		★	●		★								2	.078	.0078	.831	.142	
		GCMN2004-GF		★	★										2	.078	.0156	.831	.142	
		GCMN3002-GF		●	●	★	★			★	★	★			3	.118	.0078	.831	.150	
		GCMN3004-GF		★	★					★	★				3	.118	.0156	.831	.150	
		GCMN4002-GF		●	★	★	★			★	★	★			4	.157	.0078	1.039	.157	
		GCMN4004-GF		★	★					★	★				4	.157	.0156	1.039	.157	
		GCMN5002-GF		★	★	★	★			★	★				5	.197	.0078	1.039	.161	
		GCMN5004-GF		★	★					★	★				5	.197	.0156	1.039	.161	
		GCMN6002-GF		★	★	★	★			★	★				6	.236	.0078	1.039	.177	
		GCMN6004-GF		★	★					★	★				6	.236	.0156	1.039	.177	
		GCMN7002-GF		★	★	★	★			★	★				7	.276	.0078	1.132	.217	
		GCMN7004-GF		★	★	★	★			★	★				7	.276	.0156	1.132	.217	
GCMN8002-GF		★	★	★	★			★	★				8	.315	.0078	1.132	.236			
GCMN8004-GF		★	★	★	★			★	★				8	.315	.0156	1.132	.236			
Deep Grooving Cut Off	GG General Feed	GCMN2002-GG		●	●	●	●	●	●	★	●			2	.078	.0078	.831	.142		
		GCMN2094R0.5-GG		●	●	●	●	●	●	●	●	●			2	.094	.0078	.831	.142	
		GCMN3002-GG		●	●	●	●	●	●	●	★	●			3	.118	.0078	.831	.150	
		GCMN3004-GG		●	●	●	●	●	●	●	★	●			3	.118	.0156	.831	.150	
		GCMN3125R0.5-GG		●	●	●	●	●	●	●	●	●			3	.125	.0078	.831	.150	
		GCMN4002-GG		●	●	●	●	●	●	●	★	●			4	.157	.0078	1.039	.157	
		GCMN4004-GG		●	●	●	●	●	●	●	★	●			4	.157	.0156	1.039	.157	
		GCMN5187R0.5-GG		●	●	●	●	●	●	●	●	●			5	.187	.0078	1.039	.161	
		GCMN5002-GG		●	★	●	●	●	●	●	★	●			5	.197	.0078	1.039	.161	
		GCMN5004-GG		●	●	●	●	●	●	●	★	●			5	.197	.0156	1.039	.161	
		GCMN6002-GG		★	★	●	●	●	●	●	★	●			6	.236	.0078	1.039	.177	
		GCMN6004-GG		★	●	●	●	●	●	●	★	●			6	.236	.0156	1.039	.177	
		GCMN6250R0.5-GG		●	●	●	●	●	●	●	●	●			6	.250	.0078	1.039	.177	
		GCMN6250R1.0-GG		●	●	●	●	●	●	●	●	●			6	.250	.0156	1.039	.177	
GCMN7004-GG		★	★	●	●	●	●	●	★	●			7	.276	.0156	1.132	.217			
GCMN8004-GG		★	★	●	●	●	●	●	★	●			8	.315	.0156	1.132	.236			
Multi function (traversing)	MG General Feed	GCMN2002-GL		★	●	●	●	●	●	★	●	●		2	.078	.0078	.831	.142		
		GCMN2004-GL		★	★					★					2	.078	.0156	.831	.142	
		GCMN2094R0.5-GL		●	●	●	●	●	●	●	●	●			2	.094	.0078	.831	.142	
		GCMN3002-GL		●	●	●	●	●	●	●	★	●	●		3	.118	.0078	.831	.150	
		GCMN3004-GL		★	★					★					3	.118	.0156	.831	.150	
		GCMN3125R0.5-GL		●	●	●	●	●	●	●	●	●			3	.125	.0078	.831	.150	
		GCMN4002-GL		●	●	●	●	●	●	●	★	●	●		4	.157	.0078	1.039	.157	
		GCMN4004-GL		★	★					★					4	.157	.0156	1.039	.157	
		GCMN5187R0.5-GL		●	●	●	●	●	●	●	●	●			5	.187	.0078	1.039	.161	
		GCMN5002-GL		★	★	●	●	●	●	●	★	●			5	.197	.0078	1.039	.161	
		GCMN5004-GL		★	★					★					5	.197	.0156	1.039	.161	
		GCMN6002-GL		●	★	●	●	●	●	●	★	●			6	.236	.0078	1.039	.177	
		GCMN6004-GL		★	★					★					6	.236	.0156	1.039	.177	
		GCMN6250R0.5-GL		●	●	●	●	●	●	●	●	●			6	.250	.0078	1.039	.177	
GCMN7004-GL		★	★	●	●	●	●	●	★	●			7	.276	.0156	1.132	.217			
GCMN8004-GL		★	★	●	●	●	●	●	★	●			8	.315	.0156	1.132	.236			
Multi function (traversing)	MG General Feed	GCMN3002-MG		★	★				★	★				3	.118	.0078	.831	.150		
		GCMN3004-MG		★	★	●	●	●	●	★	●				3	.118	.0156	.831	.150	
		GCMN3125R1.0-MG		●	●	●	●	●	●	●	●	●			3	.125	.0156	.831	.150	
		GCMN4002-MG		★	★					★	★				4	.157	.0078	1.039	.157	
		GCMN4004-MG		★	★					★	★				4	.157	.0156	1.039	.157	
		GCMN4008-MG		★	●	●	●	●	●	★	★	●			4	.157	.0313	1.039	.157	
		GCMN5187R2.0-MG		●	●	●	●	●	●	●	●	●			5	.187	.0313	1.039	.161	
		GCMN5004-MG		★	★					★	★				5	.197	.0156	1.039	.161	
		GCMN5008-MG		★	★	●	●	●	●	★	★	●			5	.197	.0313	1.039	.161	
		GCMN6004-MG		★	★					★	★				6	.236	.0156	1.039	.177	
		GCMN6008-MG		★	●	●	●	●	●	●	★	●			6	.236	.0313	1.039	.177	
		GCMN6250R2.0-MG		●	●	●	●	●	●	●	●	●			6	.250	.0313	1.039	.177	
		GCMN7004-MG		★	★					★	★				7	.276	.0156	1.132	.217	
		GCMN7008-MG		★	★	●	●	●	●	★	★	●			7	.276	.0313	1.132	.217	
GCMN8004-MG		★	★					★	★				8	.315	.0156	1.132	.236			
GCMN8008-MG		★	★	●	●	●	●	★	★	●			8	.315	.0313	1.132	.236			



Inserts continued on next page

● = USA Stocked item ★ = World Wide Warehouse Item

Recommended Cutting Conditions 12 & 13

GND Series - Inserts Continued

GCMN Inserts		Cat. No.	Coated Carbide												Cermet	Uncoated Carbide	Dimensions (inch / mm)				Fig.
Function	Chipbreaker		Precision Machining	S				K	P				N	Insert Seat Size	Grooving Width CW	Nose Radius RE	Overall Length L	Thickness S			
				AC1030U	AC5015S	AC5025S	AC520U	AC530U	AC425K	AC8025P	AC8035P	AC830P							T2500A		
Multi function (traversing)	ML Low Feed	GCMN2002-ML	★	★											2	.078	.0078	.831	.142	Fig. 1 	
		GCMN3002-ML	★	●	●	●	●	●	●	★	●	●			3	.118	.0078	.831	.150		
		GCMN3004-ML	★	★							★	★	●	●		3	.118	.0156	.831		.150
		GCMN3125R0.5-ML	●	●	●	●	●	●	●	●	●	●	●	●		3	.125	.0078	.831		.150
		GCMN4002-ML	★	★							★	★	●	●		4	.157	.0078	1.039		.157
		GCMN4004-ML	●	●	●	●	●	●	●	●	★	●	●	●		4	.157	.0156	1.039		.157
		GCMN4008-ML	★	★							★	★	●	●		4	.157	.0313	1.039		.157
		GCMN5187R1.0-ML	●	●	●	●	●	●	●	●	●	●	●	●		5	.187	.0156	1.039		.161
		GCMN5004-ML	●	●	●	●	●	●	●	●	★	★	●	●		5	.197	.0156	1.039		.161
		GCMN5008-ML	★	★							★	★	●	●		5	.197	.0313	1.039		.161
		GCMN6004-ML	●	●	●	●	●	●	●	●	●	●	●	●		6	.236	.0156	1.039		.177
		GCMN6008-ML	★	★							★	★	●	●		6	.236	.0313	1.039		.177
		GCMN6250R1.0-ML	●	●	●	●	●	●	●	●	●	●	●	●		6	.250	.0156	1.039		.177
		GCMN7004-ML	★	★							★	★	●	●		7	.276	.0156	1.132		.217
GCMN7008-ML	★	★							★	★	●	●		7	.276	.0313	1.132	.217			
GCMN8004-ML	★	★	●	●	●	●	●	●	★	★	●	●		8	.315	.0156	1.132	.236			
GCMN8008-ML	★	★							★	★	●	●		8	.315	.0313	1.132	.236			
Profiling / Radius Grooving	RN	GCMN2010-RN		●	●	●	●	●	●	●	★	★	●		2	.078	.0394	.854	.142	Fig. 3 	
		GCMN3015-RN	●	●	●	●	●	●	●	●	★	★	●		3	.118	.0590	.882	.150		
		GCMN4020-RN		●	●	●	●	●	●	●	★	★	●		4	.157	.0787	1.102	.157		
		GCMN5025-RN		★	●	●	●	●	●	●	★	★	●		5	.197	.0984	1.106	.161		
		GCMN6030-RN		●	●	●	●	●	●	●	★	★	●		6	.236	.1181	1.106	.177		
Profiling	RG General Feed	GCMN3015-RG	★	★	●	●	●	●	●	●	★	★	●	●	3	.118	.0590	.831	.150	Fig. 2 	
		GCMN3125-RG	★	★	●	●	●	●	●	●	★	●	●	●	3	.125	.0625	.831	.150		
		GCMN4020-RG	★	★	●	●	●	●	●	●	★	★	●	●	4	.157	.0787	1.039	.157		
		GCMN5187-RG	★	★	●	●	●	●	●	●	★	●	●	●	5	.187	.0938	1.039	.161		
		GCMN5025-RG	★	★	●	●	●	●	●	●	★	★	●	●	5	.197	.0984	1.039	.161		
		GCMN6030-RG	★	★	●	●	●	●	●	●	★	★	●	●	6	.236	.1181	1.039	.177		
		GCMN6250-RG	★	★	●	●	●	●	●	●	★	●	●	●	6	.250	.1250	1.039	.177		
		GCMN7035-RG	★	★	●	●	●	●	●	●	★	★	●	●	7	.276	.1378	1.144	.217		
GCMN8040-RG	★	★	●	●	●	●	●	●	★	★	●	●	8	.315	.1575	1.152	.236				
For Non Ferrous Materials	GA	GCGN2002-GA											●	2	.078	.0078	.831	.142	Fig. 1 		
		GCGN3002-GA											●	3	.118	.0078	.831	.150			
		GCGN4004-GA											●	4	.157	.0156	1.039	.157			
		GCGN5004-GA											●	5	.197	.0156	1.039	.161			
		GCGN6004-GA											●	6	.236	.0156	1.039	.177			
Type	Lead Angle	Cat. No.	R	L	R	L	R	L	R	L	R	L	R	L	R	L	Dimensions (inch / mm)				
Cut-off (Handed)	CG	5°	GCM 2002-CG-05	●	★	●	●	●	●	●	●	●	★	★	●	2	.078	.0078	.831	.142	Fig. 1
			GCM 3002-CG-05	●	★	★	●	●	●	●	●	●	★	★	●	3	.118	.0078	.831	.150	
			GCM 4002-CG-05	●	★	★	●	●	●	●	●	●	★	★	●	4	.157	.0078	1.039	.157	
	CF	10°	GCM 20003-CF-10	●	●	●	●	●	●	●	●	●	●	●	2	.078	.0012	.882	.142		
			GCM 20003-CF-15	●	●	●	●	●	●	●	●	●	●	●	2	.078	.0012	.882	.142		
			GCM 30003-CF-10	●	●	●	●	●	●	●	●	●	●	●	3	.118	.0012	.882	.150		
GCM 30003-CF-15	●	●	●	●	●	●	●	●	●	●	●	3	.118	.0012	.882	.150					

● = USA Stocked item ★ = World Wide Warehouse Item

Recommended Cutting Conditions 12 & 13

■ D.O.C. when Pulling Up with RG/RN Chipbreakers ■ RN vs. RG Insert Length Comparison

*: CW = 2.0 is RN type chipbreakers only

Seat Size (mm)	Maximum Depth of Cut when Pulling Up (inch / mm)
CW	E1
2.0*	0.004 / 0.10
3.0	0.006 / 0.15
4.0	0.008 / 0.20
5.0	0.010 / 0.25
6.0	0.012 / 0.30
7.0	0.014 / 0.35
8.0	0.016 / 0.40

■ RG Chipbreaker (Length : 21.1mm) For external profiling only ■ RN Chipbreaker (Length : 22.4mm) For profiling and necking

Use for necking: GNDNR2525M-325-020

Use for necking: GCMN3015-RN

Interference (Parts - Insert) vs No Interference

Interference (Parts - Holder) vs No Interference

Min. Diameter, APMX2

RN is longer than RG for preventing interference.



* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

External Multi-Function Clamp-on
(Grooving, Traverse Cutting and Profiling)

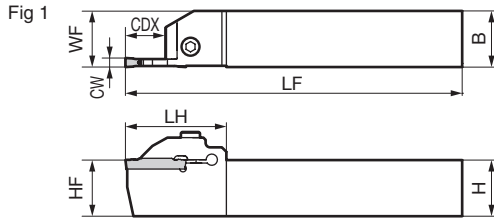
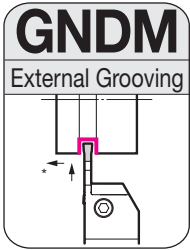


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (inch / mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Seat Size	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L											BX0520	Nm	
GNDM R/L 122K-050	•	•	.750	.750	5.000	.750	.750	1.441	2	.500	GC□□20○○-□□	1	BX0520	5.0	LH040
GNDM R/L 123K-050	•	•	.750	.750	5.000	.750	.750	1.441	3	.500	GC□□3○○○-□□	1			
GNDM R/L 124K-070	•	•	.750	.750	5.000	.750	.750	1.772	4	.700	GC□□40○○-□□	1			
GNDM R/L 125K-070	•	•	.750	.750	5.000	.750	.750	1.772	5	.700	GC□N5○○○-□□	1			
GNDM R/L 126K-070	•	•	.750	.750	5.000	.750	.750	1.772	6	.700	GC□N6○○○-□□	1	BX0520	5.0	LH040
GNDM R/L 162M-050	•	•	1.000	1.000	6.000	1.000	1.000	1.441	2	.500	GC□□20○○-□□	1			
GNDM R/L 163M-050	•	•	1.000	1.000	6.000	1.000	1.000	1.441	3	.500	GC□□3○○○-□□	1			
GNDM R/L 164M-070	•	•	1.000	1.000	6.000	1.000	1.000	1.772	4	.700	GC□□40○○-□□	1			
GNDM R/L 165M-070	•	•	1.000	1.000	6.000	1.000	1.000	1.772	5	.700	GC□N5○○○-□□	1	BX0620	6.0	LH050
GNDM R/L 166M-070	•	•	1.000	1.000	6.000	1.000	1.000	1.772	6	.700	GC□N6○○○-□□	1			
GNDM R/L 203P-050	•	•	1.250	1.250	7.000	1.250	1.250	1.441	3	.500	GC□□3○○○-□□	1			
GNDM R/L 204P-070	•	•	1.250	1.250	7.000	1.250	1.250	1.772	4	.700	GC□□40○○-□□	1			
GNDM R/L 205P-070	•	•	1.250	1.250	7.000	1.250	1.250	1.772	5	.700	GC□N5○○○-□□	1	BX0620	6.0	LH050
GNDM R/L 206P-070	•	•	1.250	1.250	7.000	1.250	1.250	1.772	6	.700	GC□N6○○○-□□	1			
GNDM R/L 207P-070	•	•	1.250	1.250	7.000	1.250	1.250	2.000	7	.700	GCMN70○○-□□	1			
GNDM R/L208P-070	•	•	1.250	1.250	7.000	1.250	1.250	2.000	8	.700	GCMN80○○-□□	1			
GNDM R/L 2020K-1.2510	★	★	20	20	125	20	20	34.0	1.25	10	GCMN125005-GF	1	BX0520	5.0	LH040
GNDM R/L 2020K-1.510	★	★	20	20	125	20	20	34.0	1.5	10	GCMN150005-GF	1			
GNDM R/L 2020K-210	★	★	20	20	125	20	20	33.6	2	10	GC□□20○○-□□	1			
GNDM R/L 2020K-312	★	★	20	20	125	20	20	36.6	3	12	GC□□3○○○-□□	1			
GNDM R/L 2020K-418	★	★	20	20	125	20	20	45.0	4	18	GC□□40○○-□□	1	BX0520	5.0	LH040
GNDM R/L 2020K-518	★	★	20	20	125	20	20	45.0	5	18	GC□N5○○○-□□	1			
GNDM R/L 2020K-618	★	★	20	20	125	20	20	45.0	6	18	GC□N6○○○-□□	1			
GNDM R/L 2525M-1.2510	★	★	25	25	150	25	25	36.0	1.25	10	GCMN125005-GF	1			
GNDM R/L 2525M-1.510	★	★	25	25	150	25	25	36.0	1.5	10	GCMN150005-GF	1	BX0520	5.0	LH040
GNDM R/L 2525M-210	★	★	25	25	150	25	25	33.6	2	10	GC□□20○○-□□	1			
GNDM R/L 2525M-312	★	★	25	25	150	25	25	36.6	3	12	GC□□3○○○-□□	1			
GNDM R/L 2525M-418	★	★	25	25	150	25	25	45.0	4	18	GC□□40○○-□□	1			
GNDM R/L 2525M-518	★	★	25	25	150	25	25	45.0	5	18	GC□N5○○○-□□	1	BX0620	6.0	LH050
GNDM R/L 2525M-618	★	★	25	25	150	25	25	45.0	6	18	GC□N6○○○-□□	1			
GNDM R/L 3225P-312			32	25	170	25	32	36.6	3	12	GC□□3○○○-□□	1			
GNDM R/L 3225P-418			32	25	170	25	32	45.0	4	18	GC□□40○○-□□	1			
GNDM R/L 3225P-518			32	25	170	25	32	45.0	5	18	GC□N5○○○-□□	1	BX0520	5.0	LH040
GNDM R/L 3225P-618			32	25	170	25	32	45.0	6	18	GC□N6○○○-□□	1			
GNDM R/L 3225P-718			32	25	170	25	32	50.0	7	18	GCMN70○○-□□	1			
GNDM R/L 3225P-818			32	25	170	25	32	50.0	8	18	GCMN80○○-□□	1			
GNDM R/L 3232P-312	★	★	32	32	170	32	32	36.6	3	12	GC□□3○○○-□□	1	BX0620	6.0	LH050
GNDM R/L 3232P-418	★	★	32	32	170	32	32	45.0	4	18	GC□□40○○-□□	1			
GNDM R/L 3232P-518	★	★	32	32	170	32	32	45.0	5	18	GC□N5○○○-□□	1			
GNDM R/L 3232P-618	★	★	32	32	170	32	32	45.0	6	18	GC□N6○○○-□□	1			
GNDM R/L 3232P-718	★	★	32	32	170	32	32	50.0	7	18	GCMN70○○-□□	1	GCMN80○○-□□	1	
GNDM R/L 3232P-818	★	★	32	32	170	32	32	50.0	8	18					

Combine the insert with a holder such that the Seat Size matches. Refer to page 19-20 for applicable inserts
See GNDM-JX (holders for small lathes) on next page 22)

GNDM-JX / GNDMS



* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

External Multi-Function Clamp-on for Small Lathes (Grooving, Traverse Cutting and Profiling)

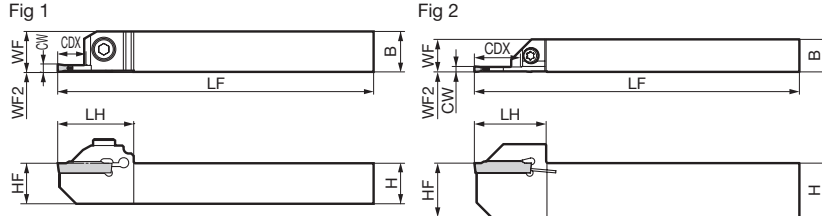
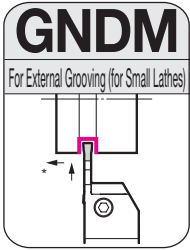


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (inch/ mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Off Set WF2	Seat Size CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw	Wrench		
	R	L															
Inch	GNDM R/L 101.5JX-038	•	•	.625	.625	4.75	.625	-	1.024	0	1.5	.375	GCMN150005-GF	1	BX0515	4.0	LH040
	GNDM R/L 102JX-047	•	•	.625	.625	4.75	.625	-	1.181	0	2	.472	GC□□20○○-□□	1			
	GNDM R/L 103JX-047	•	•	.625	.625	4.75	.625	-	1.181	0	3	.472	GC□□3○○○-□□	1			
Metric	GNDM R/L 1616JX-1.2508	★	★	16	16	120	16	16	26	0	1.25	8.0	GCMN125005-GF	1	BX0515	4.0	LH040
	GNDM R/L 1616JX-1.510	★	★	16	16	120	16	16	26	0	1.5	10.0	GCMN150005-GF	1			
	GNDM R/L 1616JX-212	★	★	16	16	120	16	16	30	0	2	12.0	GC□□20○○-□□	1			
	GNDM R/L 1616JX-312	★	★	16	16	120	16	16	30	0	3	12.0	GC□□3○○○-□□	1			
	GNDM R/L 2012JX-217			20	12	120	12	20	26.5	0	2	17.0	GC□□20○○-□□	2			
	GNDM R/L 2012JX-317			20	12	120	12	20	26.5	0	3	17.0	GC□□3○○○-□□	2			

Combine the insert with a holder such that the Seat Size matches. Refer to page 19-20 for applicable inserts



* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

External L-Shaped (Side Cut) Multi-Function Clamp-on (Grooving, Traverse Cutting and Profiling)

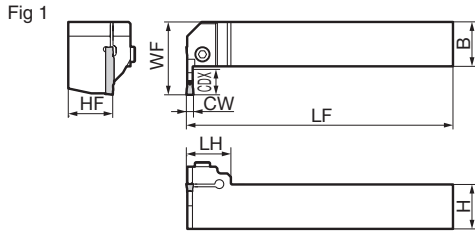
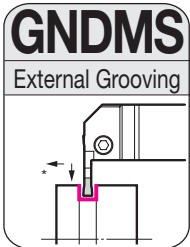


Figure shows right hand (R) tool.

Holder

Parts

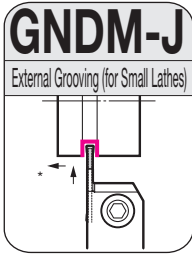
Dimensions (inch/ mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Seat Size CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw	Wrench		
	R	L														
Inch	GNDMS R/L 123K-040	•	•	.750	.750	5.000	1.222	.750	1.000	3	.400	GC□□3○○○-□□	1	BX0520	5.0	LH040
	GNDMS R/L 124K-050	•	•	.750	.750	5.000	1.300	.750	1.000	4	.500	GC□□40○○-□□	1			
	GNDMS R/L 125K-050	•	•	.750	.750	5.000	1.300	.750	1.000	5	.500	GC□□N5○○○-□□	1			
	GNDMS R/L 163M-050	•	•	1.000	1.000	6.000	1.551	1.000	1.000	3	.500	GC□□3○○○-□□	1			
	GNDMS R/L 164M-055	•	•	1.000	1.000	6.000	1.630	1.000	1.000	4	.550	GC□□40○○-□□	1			
	GNDMS R/L 165M-055	•	•	1.000	1.000	6.000	1.630	1.000	1.000	5	.550	GC□□N5○○○-□□	1			
Metric	GNDMS R/L 2020K-310	★	★	20	20	125	32	20	25.0	3	10	GC□□3○○○-□□	1	BX0520	5.0	LH040
	GNDMS R/L 2020K-412	★	★	20	20	125	34	20	25.0	4	12	GC□□40○○-□□	1			
	GNDMS R/L 2020K-512	★	★	20	20	125	34	20	25.0	5	12	GC□□N5○○○-□□	1			
	GNDMS R/L 2525M-312	★	★	25	25	150	39	25	25.0	3	12	GC□□3○○○-□□	1			
	GNDMS R/L 2525M-414	★	★	25	25	150	41	25	25.0	4	14	GC□□40○○-□□	1			
	GNDMS R/L 2525M-514	★	★	25	25	150	41	25	25.0	5	14	GC□□N5○○○-□□	1			
GNDMS R/L 2525M-614	★	★	25	25	150	41	25	25.0	6	14	GC□□N6○○○-□□	1				

Combine the insert with a holder such that the Seat Size matches. Refer to page 19-20 for applicable inserts



GNDM-J



- External
- Zero Offset
- Internal Coolant
- New**

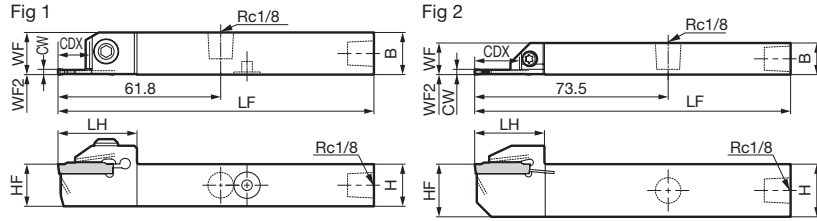


Figure shows right hand (R) tool.

* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

Parts

BFTX0414		LT15-10		
CP-M5-20-1		LH040		

Holder

Dimensions (in. / mm)

	Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Offset WF2	Seat Size CW	Max. Groove Depth CDX	Max. Cut-off Dia.	Applicable Insert	Fig	Flat Screw / Cap Screw	N-m	Plug	Top Hex Wrench	Bottom Hex Wrench
		R	L																	
Inch	GNDM R/L 102JX-047J	•	•	.625	.625	4.750	.625	.625	1.181	0	2	.472	—	GC□□20○○-□□	1	CP-M5-20-1	5.0	XP03	LH040	LH025
	GNDM R/L 103JX-047J	•	•	.625	.625	4.750	.625	.625	1.181	0	3	.472	—	GC□□30○○-□□						
	GNDM R/L 1616JX-212J	★	★	16	16	120	16	16	30.0	0	2.0	12.0	24	GC□□20○○-□□						
	GNDM R/L 1616JX-312J	★	★	16	16	120	16	16	30.0	0	3.0	12.0	24	GC□□30○○-□□						
	GNDM R/L 2012JX-217J	★	★	20	12	120	12	20	26.5	0	2.0	17.0	34	GC□□20○○-□□						
Metric	GNDM R/L 2012JX-317J	★	★	20	12	120	12	20	26.5	0	3.0	17.0	34	GC□□30○○-□□	2	BFTX0414	3.0	XP02	LT15-10	—

Select holders and inserts with matching width of cut (CW). Refer to 19-20 for applicable inserts. The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page 12.

- New**
- External
- Internal Coolant

* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

External Multi-Function
Internal Coolant Supply Clamp-on
(Grooving, Traverse Cutting and Profiling)

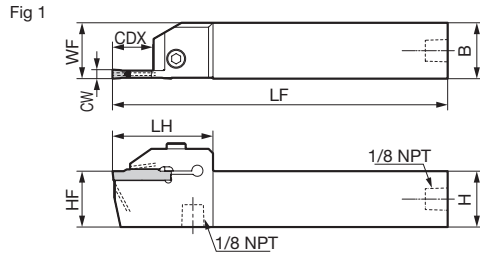
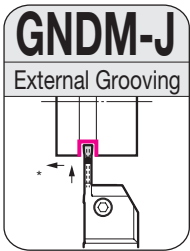


Figure shows right hand (R) tool.

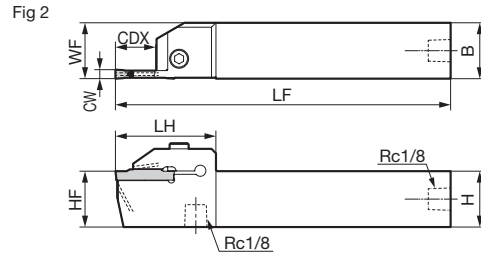


Figure shows right hand (R) tool.

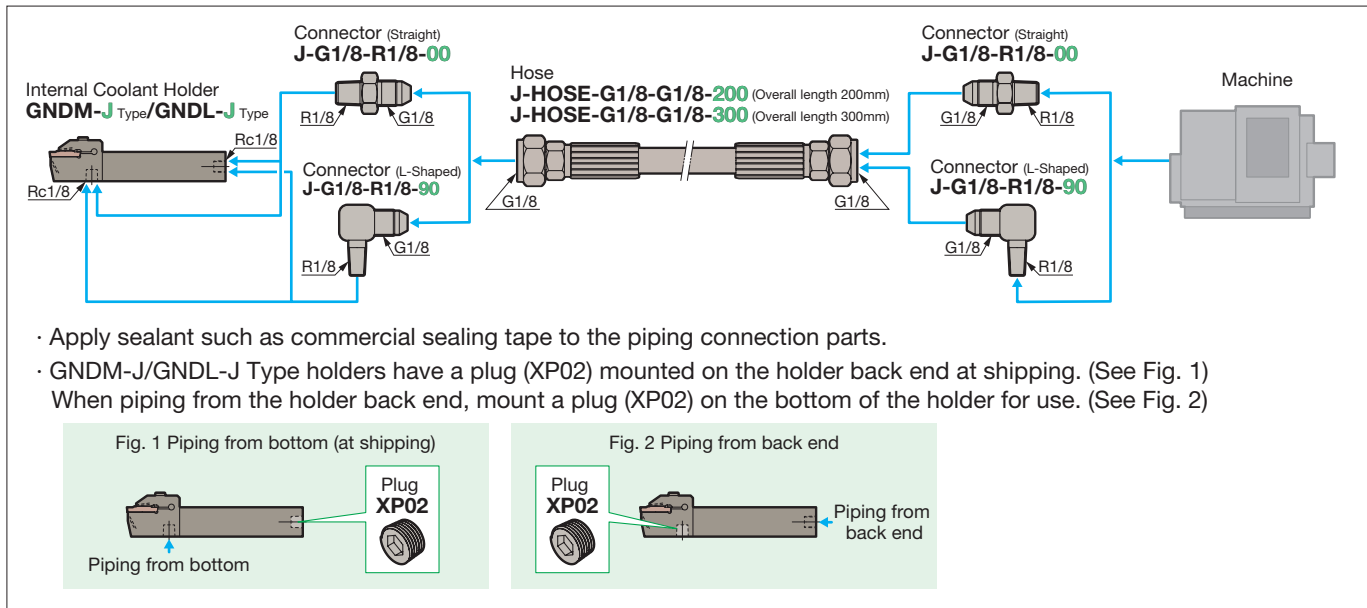
Holder

Parts Dimensions (inch / mm)

	Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Seat Size CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw	N-m	Insert Wrench	Plug	Wrench	
		R	L																
Inch	GNDM R/L 122K-050J	•	•	.750	.750	5.000	.750	.750	1.323	2	.500	GC□□20○○-□□	1	BX0520	6.0			XP03	LH040
	GNDM R/L 123K-050J	•	•	.750	.750	5.000	.750	.750	1.441	3	.500	GC□□30○○-□□							
	GNDM R/L 124K-070J	•	•	.750	.750	5.000	.750	.750	1.772	4	.700	GC□□40○○-□□							
	GNDM R/L 125K-070J	•	•	.750	.750	5.000	.750	.750	1.772	5	.700	GC□N5○○○-□□							
	GNDM R/L 126K-070J	•	•	.750	.750	5.000	.750	.750	1.772	6	.700	GC□N6○○○-□□							
	GNDM R/L 162K-050J	•	•	1.000	1.000	5.000	1.000	1.000	1.323	2	.500	GC□□20○○-□□							
	GNDM R/L 163K-050J	•	•	1.000	1.000	5.000	1.000	1.000	1.441	3	.500	GC□□30○○-□□							
	GNDM R/L 164K-070J	•	•	1.000	1.000	5.000	1.000	1.000	1.772	4	.700	GC□□40○○-□□							
	GNDM R/L 165K-070J	•	•	1.000	1.000	5.000	1.000	1.000	1.772	5	.700	GC□N5○○○-□□							
GNDM R/L 166K-070J	•	•	1.000	1.000	5.000	1.000	1.000	1.772	6	.700	GC□N6○○○-□□								
Metric	GNDM R/L 2020K-210J	★	★	20	20	125	20	20	33.6	2	10	GC□□20○○-□□	2	BX0520	6.0			XP02	LH040
	GNDM R/L 2020K-312J	★	★	20	20	125	20	20	36.6	3	12	GC□□30○○-□□							
	GNDM R/L 2020K-418J	★	★	20	20	125	20	20	45	4	18	GC□□40○○-□□							
	GNDM R/L 2020K-518J	★	★	20	20	125	20	20	45	5	18	GC□N5○○○-□□							
	GNDM R/L 2020K-618J	★	★	20	20	125	20	20	45	6	18	GC□N6○○○-□□							
	GNDM R/L 2525K-210J	★	★	25	25	125	25	25	33.6	2	10	GC□□20○○-□□							
	GNDM R/L 2525K-312J	★	★	25	25	125	25	25	36.6	3	12	GC□□30○○-□□							
	GNDM R/L 2525K-418J	★	★	25	25	125	25	25	45	4	18	GC□□40○○-□□							
	GNDM R/L 2525K-518J	★	★	25	25	125	25	25	45	5	18	GC□N5○○○-□□							
GNDM R/L 2525K-618J	★	★	25	25	125	25	25	45	6	18	GC□N6○○○-□□								

Combine the insert with a holder such that the Seat Size matches. Refer to page 19-20 for applicable inserts

Piping Method for Hoses and Connectors



Parts (Plugs)

		Dimensions (mm)		
Cat. No.	Stock	Description	Thread Pitch	Fig
XP02	●	Plug	BSPT 1/8"	1
XP03	●	Plug	NPT 1/8"	2

Connectors are sold separately.

Parts (Cap Screw/ Wrench)

		Dimensions (mm)		
Cat. No.	Stock	Description	Wrench Size	Fig
BX0520	●	Cap Screw	5mm Hex	1
LH040	●	Wrench	5mm Hex	

Connectors are sold separately.

Fig 1

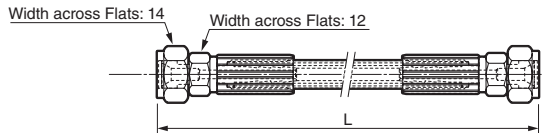


Fig 1

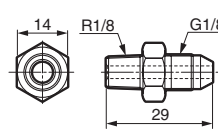
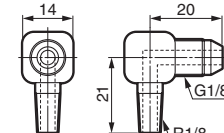


Fig 2



Parts (Hose)

		Dimensions (inch/ mm)			
Cat. No.	Stock	L	Screw Standard	Screw Standard	Fig
J-HOSE-MJIC1/4-NPT1/8-8.0	●	8.0	1/4" MJIC	NPT 1/8"	1
J-HOSE-MJIC1/4-NPT1/8-10.0	●	10.0	1/4" MJIC	NPT 1/8"	1
J-HOSE-G1/8-G1/8-200	●	200	G1/8	G1/8	1
J-HOSE-G1/8-G1/8-300	●	300	G1/8	G1/8	1
J-HOSE-R1/8-G1/8-200	●	200	R1/8	G1/8	1
J-HOSE-R1/8-G1/8-300	●	300	R1/8	G1/8	1

The inch size hoses comes with the connectors. Metric hoses are sold separately.

Parts (Connector)

		Dimensions (mm)		
Cat. No.	Stock	Screw Standard	Screw Standard	Fig
J-G1/8-R1/8-00	●	G1/8	R1/8	1
J-G1/8-R1/8-90	●	G1/8	R1/8	2
J-NPT1/8-R1/8-00	●	NPT 1/8"	R1/8	
J-NPT1/8-G1/8-00	●	NPT 1/8"	G1/8	

The inch size hoses comes with the connectors. Metric connectors are sold separately.



Clamp-on
for External Deep Grooving & Cut-Off

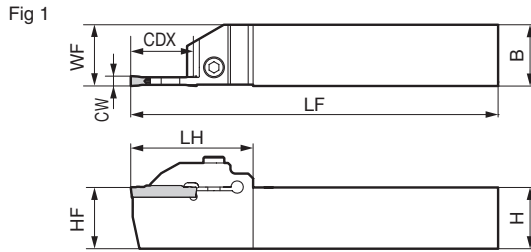
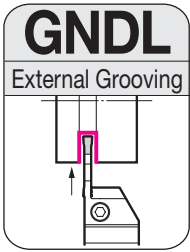


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (inch/ mm)

	Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Seat Size	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw		Wrench
		R	L											BX0520	N·m	
Inch	GNDL R/L 122K-075	•	•	.750	.750	5.00	.750	.750	1.752	2	.750	GC□□20□□-□□	1	BX0520	5.0	LH040
	GNDL R/L 123K-075	•	•	.750	.750	5.00	.750	.750	1.752	3	.750	GC□□3□□□-□□	1			
	GNDL R/L 124K-100	•	•	.750	.750	5.00	.750	.750	1.969	4	1.000	GC□□40□□-□□	1			
	GNDL R/L 125K-100	•	•	.750	.750	5.00	.750	.750	1.969	5	1.000	GC□N5□□□-□□	1			
	GNDL R/L 126K-100	•	•	.750	.750	5.00	.750	.750	1.969	6	1.000	GC□N6□□□-□□	1	BX0520	5.0	LH040
	GNDL R/L 162M-075	•	•	1.00	1.00	6.00	1.00	1.00	1.752	2	.750	GC□□20□□-□□	1			
	GNDL R/L 163M-075	•	•	1.00	1.00	6.00	1.00	1.00	1.752	3	.750	GC□□3□□□-□□	1			
	GNDL R/L 164M-100	•	•	1.00	1.00	6.00	1.00	1.00	1.969	4	1.000	GC□□40□□-□□	1			
	GNDL R/L 165M-100	•	•	1.00	1.00	6.00	1.00	1.00	1.969	5	1.000	GC□N5□□□-□□	1	BX0520	5.0	LH040
	GNDL R/L 166M-100	•	•	1.00	1.00	6.00	1.00	1.00	1.969	6	1.000	GC□N6□□□-□□	1			
	GNDL R/L 203P-090	•	•	1.25	1.25	7.00	1.25	1.25	1.875	3	0.900	GC□□3□□□-□□	1			
	GNDL R/L 204P-100	•	•	1.25	1.25	7.00	1.25	1.25	2.000	4	1.000	GC□□40□□-□□	1			
GNDL R/L 205P-100	•	•	1.25	1.25	7.00	1.25	1.25	2.000	5	1.000	GC□N5□□□-□□	1	BX0520	5.0	LH040	
GNDL R/L 206P-100	•	•	1.25	1.25	7.00	1.25	1.25	2.000	6	1.000	GC□N6□□□-□□	1				
GNDL R/L 207P-100	•	•	1.25	1.25	7.00	1.25	1.25	2.000	7	1.000	GCMN70□□-□□	1				
GNDL R/L 208P-100	•	•	1.25	1.25	7.00	1.25	1.25	2.000	8	1.000	GCMN80□□-□□	1				
Metric	GNDL R/L 2020K-1.2516	★	★	20	20	125	20	20	38.0	1.25	16	GCMN125005-GF	1	BX0520	5.0	LH040
	GNDL R/L 2020K-1.516	★	★	20	20	125	20	20	38.0	1.5	16	GCMN150005-GF	1			
	GNDL R/L 2020K-220	★	★	20	20	125	20	20	44.5	2	20(18)	GC□□20□□-□□	1			
	GNDL R/L 2020K-320	★	★	20	20	125	20	20	44.5	3	20(18)	GC□□3□□□-□□	1			
	GNDL R/L 2020K-425	★	★	20	20	125	20	20	50.0	4	25(23)	GC□□40□□-□□	1	BX0520	5.0	LH040
	GNDL R/L 2020K-525	★	★	20	20	125	20	20	50.0	5	25(23)	GC□N5□□□-□□	1			
	GNDL R/L 2020K-625	★	★	20	20	125	20	20	50.0	6	25(23)	GC□N6□□□-□□	1			
	GNDL R/L 2525M-1.2516	★	★	25	25	150	25	25	40.0	1.25	16	GCMN125005-GF	1			
	GNDL R/L 2525M-1.516	★	★	25	25	150	25	25	40.0	1.5	16	GCMN150005-GF	1	BX0520	5.0	LH040
	GNDL R/L 2525M-220	★	★	25	25	150	25	25	44.5	2	20(18)	GC□□20□□-□□	1			
	GNDL R/L 2525M-320	★	★	25	25	150	25	25	44.5	3	20(18)	GC□□3□□□-□□	1			
	GNDL R/L 2525M-425	★	★	25	25	150	25	25	50.0	4	25(23)	GC□□40□□-□□	1			
	GNDL R/L 2525M-525	★	★	25	25	150	25	25	50.0	5	25(23)	GC□N5□□□-□□	1	BX0520	5.0	LH040
	GNDL R/L 2525M-625	★	★	25	25	150	25	25	50.0	6	25(23)	GC□N6□□□-□□	1			
	GNDL R/L 3225P-320			32	25	170	25	32	44.5	3	20(18)	GC□□3□□□-□□	1			
	GNDL R/L 3225P-425			32	25	170	25	32	50.0	4	25(23)	GC□□40□□-□□	1			
	GNDL R/L 3225P-525			32	25	170	25	32	50.0	5	25(23)	GC□N5□□□-□□	1	BX0520	5.0	LH040
	GNDL R/L 3225P-625			32	25	170	25	32	50.0	6	25(23)	GC□N6□□□-□□	1			
	GNDL R/L 3225P-725			32	25	170	25	32	50.0	7	25(23)	GCMN70□□-□□	1			
	GNDL R/L 3225P-825			32	25	170	25	32	50.0	8	25(23)	GCMN80□□-□□	1			
	GNDL R/L 3232P-320	★	★	32	32	170	32	32	44.5	3	20(18)	GC□□3□□□-□□	1	BX0620	6.0	LH050
	GNDL R/L 3232P-425	★	★	32	32	170	32	32	50.0	4	25(23)	GC□□40□□-□□	1			
	GNDL R/L 3232P-525	★	★	32	32	170	32	32	50.0	5	25(23)	GC□N5□□□-□□	1			
	GNDL R/L 3232P-625	★	★	32	32	170	32	32	50.0	6	25(23)	GC□N6□□□-□□	1			
GNDL R/L 3232P-725	★	★	32	32	170	32	32	50.0	7	25(23)	GCMN70□□-□□	1	BX0620	6.0	LH050	
GNDL R/L 3232P-825	★	★	32	32	170	32	32	50.0	8	25(23)	GCMN80□□-□□	1				

Dimensions in parentheses under maximum groove depth are for profiling inserts (RG type/RN chipbreakers).
Combine the insert with a holder such that the Seat Size matches. Refer to page 19-20 for applicable inserts
See GNDL-JX (holders for small lathes) on next page 26)

GNDL-JX / GNDLS

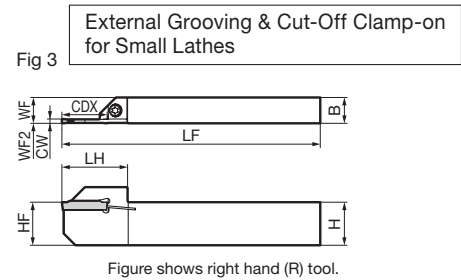
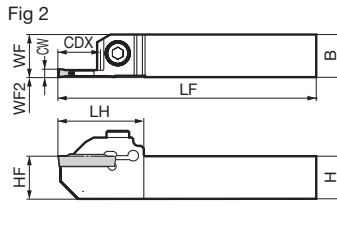
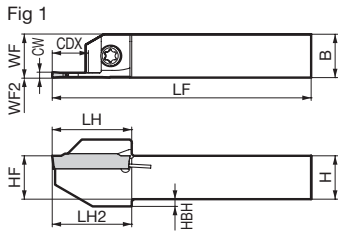
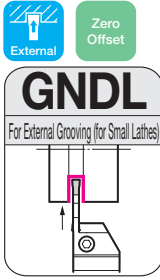


Figure shows right hand (R) tool.

Parts

Dimensions (inch/ mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Step	Head	Head	Off Set	Seat Size	Max. Groove Depth	Applicable Insert	Fig	Flat Screw/ Cap Screw		Wrench
	R	L	H	B	LF	WF	HF	HBH	LH	LH2	WF2	CW	CDX			BFTX0412N	LT15-10	
GNDL R/L 061.25JX-038	•	•	.375	.375	4.75	.375	.375	.079	.709	.720	0	1.25	.375	GCMN125005-GF	1			
GNDL R/L 061.5JX-038	•	•	.375	.375	4.75	.375	.375	.079	.709	.720	0	1.5	.375	GCMN150005-GF	1			
GNDL R/L 062JX-038	•	•	.375	.375	4.75	.375	.375	.079	.866	.878	0	2	.375	GC□20□□□□	1	BFTX0412N	3.0	LT15-10
GNDL R/L 063JX-038	•	•	.375	.375	4.75	.375	.375	.079	.866	.878	0	3	.375	GC□3□□□□□□	1			
GNDL R/L 081.25JX-047	•	•	.500	.500	4.75	.500	.500	.079	.748	.760	0	1.25	.472	GCMN125005-GF	1			
GNDL R/L 081.5JX-047	•	•	.500	.500	4.75	.500	.500	.079	.748	.760	0	1.5	.472	GCMN150005-GF	1			
GNDL R/L 082JX-050	•	•	.500	.500	4.75	.500	.500	.079	.866	.878	0	2	.500	GC□20□□□□	1	BFTX0412N	3.0	LT15-10
GNDL R/L 083JX-050	•	•	.500	.500	4.75	.500	.500	.079	.866	.878	0	3	.500	GC□3□□□□□□	1			
GNDL R/L 101.5JX-050	★	★	.625	.625	4.75	.625	.625	-	1.102	-	0	1.5	.500	GCMN150005-GF	1			
GNDL R/L 102JX-063	★	★	.625	.625	4.75	.625	.625	-	1.26	-	0	2	.625	GC□20□□□□	1	BX0515	4.0	LH040
GNDL R/L 103JX-063	★	★	.625	.625	4.75	.625	.625	-	1.26	-	0	3	.625	GC□3□□□□□□	1			
GNDL R/L 1010JX-1.2510	★	★	10	10	120	10	10	2.0	18	18.3	0	1.25	10.0	GCMN125005-GF	1			
GNDL R/L 1010JX-1.510	★	★	10	10	120	10	10	2.0	18	18.3	0	1.5	10.0	GCMN150005-GF	1	BFTX0412N	3.0	LT15-10
GNDL R/L 1010JX-210	★	★	10	10	120	10	10	2.0	22	22.3	0	2	10.0	GC□20□□□□	1			
GNDL R/L 1010JX-310	★	★	10	10	120	10	10	2.0	22	22.3	0	3	10.0	GC□3□□□□□□	1			
GNDL R/L 1212JX-1.2512	★	★	12	12	120	12	12	2.0	19	19.3	0	1.25	12.0	GCMN125005-GF	1			
GNDL R/L 1212JX-1.512	★	★	12	12	120	12	12	2.0	19	19.3	0	1.5	12.0	GCMN150005-GF	1	BFTX0412N	3.0	LT15-10
GNDL R/L 1212JX-212.5	★	★	12	12	120	12	12	2.0	22	22.3	0	2	12.5	GC□20□□□□	1			
GNDL R/L 1212JX-312.5	★	★	12	12	120	12	12	2.0	22	22.3	0	3	12.5	GC□3□□□□□□	1			
GNDL R/L 1616JX-1.2512.5	★	★	16	16	120	16	16	-	28	-	0	1.25	12.5	GCMN125005-GF	2			
GNDL R/L 1616JX-1.512.5	★	★	16	16	120	16	16	-	28	-	0	1.5	12.5	GCMN150005-GF	2	BX0515	4.0	LH040
GNDL R/L 1616JX-216	★	★	16	16	120	16	16	-	32	-	0	2	16.0	GC□20□□□□	2			
GNDL R/L 1616JX-316	★	★	16	16	120	16	16	-	32	-	0	3	16.0	GC□3□□□□□□	2			
GNDL R/L 2012JX-221	★	★	20	12	120	12	20	-	30.5	-	0	2	21.0	GC□20□□□□	3			
GNDL R/L 2012JX-321	★	★	20	12	120	12	20	-	30.5	-	0	3	21.0	GC□3□□□□□□	3	BFTX0414	3.0	LT15-10

Combine the insert with a holder such that the Seat Size matches. Refer to page 19-20 for applicable inserts

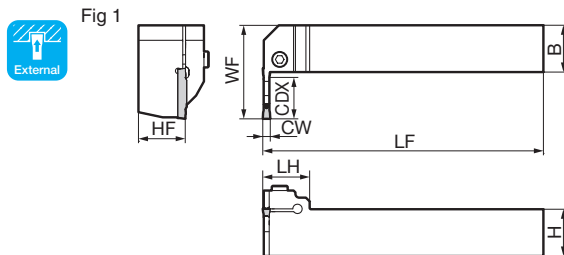
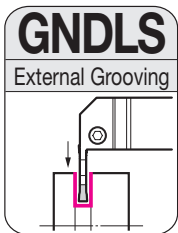


Figure shows right hand (R) tool.

Clamp-on for External L-Shaped (Side Cut) Grooving

Parts

Dimensions (inch/ mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Head	Seat Size	Max. Groove Depth	Applicable Insert	Fig	Cap Screw		Wrench
	R	L	H	B	LF	WF	HF	LH	CDX	BX0520			N·m		
GNDLS R/L 122K-060	•	•	.750	.750	5.00	1.459	.750	-	2	.600	GC□20□□□□	1			
GNDLS R/L 123K-060	•	•	.750	.750	5.00	1.459	.750	-	3	.600	GC□3□□□□□□	1	BX0520	5.0	LH040
GNDLS R/L 124K-070	•	•	.750	.750	5.00	1.787	.750	-	4	.700	GC□40□□□□	1			
GNDLS R/L 162M-070	•	•	1.00	1.00	6.00	1.787	1.00	-	2	.700	GC□20□□□□	1			
GNDLS R/L 163M-070	•	•	1.00	1.00	6.00	1.787	1.00	-	3	.700	GC□3□□□□□□	1			
GNDLS R/L 164M-090	•	•	1.00	1.00	6.00	1.984	1.00	-	4	.900	GC□40□□□□	1	BX0520	5.0	LH040
GNDLS R/L 165M-090	•	•	1.00	1.00	6.00	1.984	1.00	-	5	.900	GC□N5□□□□	1			
GNDLS R/L 166M-090	•	•	1.00	1.00	6.00	1.984	1.00	-	6	.900	GC□N6□□□□	1			
GNDLS R/L 2020K-216	★	★	20	20	125	38	20	25	2	16	GC□20□□□□	1	BX0520	5.0	LH040
GNDLS R/L 2020K-316	★	★	20	20	125	38	20	25	3	16	GC□3□□□□□□	1			
GNDLS R/L 2525M-218	★	★	25	25	150	45	25	25	2	18	GC□20□□□□	1			
GNDLS R/L 2525M-318	★	★	25	25	150	45	25	25	3	18	GC□3□□□□□□	1			
GNDLS R/L 2525M-423	★	★	25	25	150	50	25	25	4	23	GC□40□□□□	1	BX0520	5.0	LH040
GNDLS R/L 2525M-523	★	★	25	25	150	50	25	25	5	23	GC□N5□□□□	1			
GNDLS R/L 2525M-623	★	★	25	25	150	50	25	25	6	23	GC□N6□□□□	1			

Combine the insert with a holder such that the Seat Size matches. Refer to page 19-20 for applicable inserts

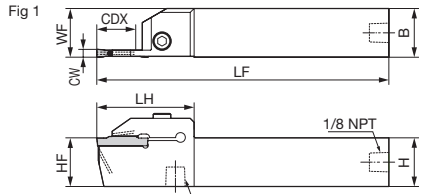
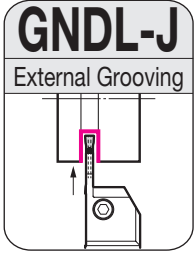


Figure shows right hand (R) tool.

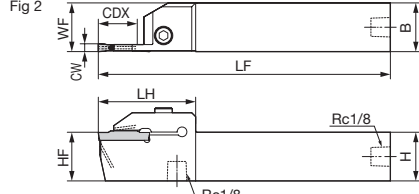


Figure shows right hand (R) tool.

Internal Coolant Supply
Clamp-on
for External Deep Grooving & Cut-Off

Holder

Parts

Dimensions (inch/ mm)

	Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Seat Size	Max. Groove Depth CDX	Applicable Insert	Fig	Dimensions (inch/ mm)				
		R	L											Cap Screw	Insert Wrench	Plug	Wrench	
Inch	GNDL R/L 122K-075J	•	•	.750	.750	5.000	.750	.750	1.752	2	.750	GC□□20□□-□□	1					
	GNDL R/L 123K-075J	•	•	.750	.750	5.000	.750	.750	1.752	3	.750	GC□□3□□□-□□	1					
	GNDL R/L 124K-100J	•	•	.750	.750	5.000	.750	.750	1.969	4	1.000	GC□□40□□-□□	1	BX0520	6.0	—	XP03	LH040
	GNDL R/L 125K-100J	•	•	.750	.750	5.000	.750	.750	1.969	5	1.000	GC□N5□□□□-□□	1					
	GNDL R/L 126K-100J	•	•	.750	.750	5.000	.750	.750	1.969	6	1.000	GC□N6□□□□-□□	1					
	GNDL R/L 162K-075J	•	•	1.000	1.000	5.000	1.000	1.000	1.752	2	.750	GC□□20□□-□□	1					
	GNDL R/L 163K-075J	•	•	1.000	1.000	5.000	1.000	1.000	1.752	3	.750	GC□□3□□□-□□	1					
	GNDL R/L 164K-100J	•	•	1.000	1.000	5.000	1.000	1.000	1.969	4	1.000	GC□□40□□-□□	1	BX0520	6.0	—	XP03	LH040
Metric	GNDL R/L 165K-100J	•	•	1.000	1.000	5.000	1.000	1.000	1.969	5	1.000	GC□N5□□□□-□□	1					
	GNDL R/L 166K-100J	•	•	1.000	1.000	5.000	1.000	1.000	1.969	6	1.000	GC□N6□□□□-□□	1					
	GNDL R/L 2020K-220J	★	★	20	20	125	20	20	44.5	2	20(18)	GC□□20□□-□□	2					
	GNDL R/L 2020K-320J	★	★	20	20	125	20	20	44.5	3	20(18)	GC□□3□□□-□□	2					
	GNDL R/L 2020K-425J	★	★	20	20	125	20	20	50	4	25(23)	GC□□40□□-□□	2	BX0520	6.0	—	XP02	LH040
	GNDL R/L 2020K-525J	★	★	20	20	125	20	20	50	5	25(23)	GC□N5□□□□-□□	2					
	GNDL R/L 2020K-625J	★	★	20	20	125	20	20	50	6	25(23)	GC□N6□□□□-□□	2					
	GNDL R/L 2525K-220J	★	★	25	25	125	25	25	44.5	2	20(18)	GC□□20□□-□□	2					
	GNDL R/L 2525K-320J	★	★	25	25	125	25	25	44.5	3	20(18)	GC□□3□□□-□□	2					
	GNDL R/L 2525K-425J	★	★	25	25	125	25	25	50	4	25(23)	GC□□40□□-□□	2	BX0520	6.0	—	XP02	LH040
GNDL R/L 2525K-525J	★	★	25	25	125	25	25	50	5	25(23)	GC□N5□□□□-□□	2						
GNDL R/L 2525K-625J	★	★	25	25	125	25	25	50	6	25(23)	GC□N6□□□□-□□	2						

Combine the insert with a holder such that the Seat Size matches. Refer to page 19-20 for applicable inserts. Dimensions in parentheses under maximum groove depth are for profiling inserts (RG type/RN type chipbreakers).

See page 24 for GND-J parts and connecting method

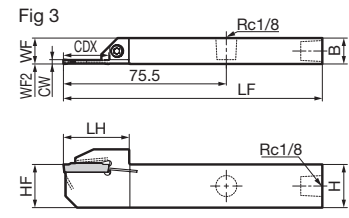
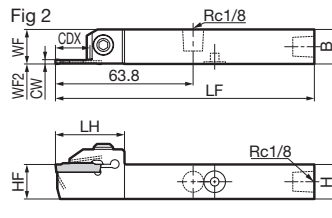
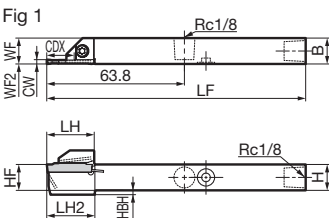
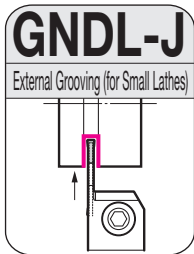


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (inch/ mm)

	Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Seat Size	Max. Groove Depth CDX	Applicable Insert	Fig	Dimensions (inch/ mm)				
		R	L											Cap Screw	Insert Wrench	Plug	Wrench	
Inch	GNDL R/L 082JX-050J	•	•	.500	.500	4.750	.500	.500	.866	2	.500	GC□□20□□-□□	1	BFTX0415T8R	2.0	—	XP03	LT08-06
	GNDL R/L 083JX-050J	•	•	.500	.500	4.750	.500	.500	.866	3	.500	GC□□3□□□-□□	1					
	GNDL R/L 102JX-063J	•	•	.625	.625	4.750	.625	.625	1.260	2	.625	GC□□20□□-□□	1	CP-M5-20-1	3.0	LH025	XP03	LH040
	GNDL R/L 103JX-063J	•	•	.625	.625	4.750	.625	.625	1.260	3	.625	GC□□3□□□-□□	1					
Metric	GNDL R/L 1212JX-212.5J	★	★	12	12	120	12	12	22.0	2	12.5	GC□□20□□-□□	2	BFTX0415T8R	1.5	XP02	LT08-06	—
	GNDL R/L 1212JX-312.5J	★	★	12	12	120	12	12	22.0	3	12.5	GC□□3□□□-□□	2					
	GNDL R/L 1616JX-216J	★	★	16	16	120	16	16	32.0	2	16.0	GC□□20□□-□□	2					
	GNDL R/L 1616JX-316J	★	★	16	16	120	16	16	32.0	3	16.0	GC□□3□□□-□□	2	CP-M5-20-1	5.0	XP02	LH040	LH025
	GNDL R/L 2012JX-221J	★	★	20	12	120	12	12	30.5	2	21.0	GC□□20□□-□□	3	BFTX0414	3.0	XP02	LT15-10	—
	GNDL R/L 2012JX-321J	★	★	20	12	120	12	12	30.5	3	21.0	GC□□3□□□-□□	3					

Select holders and inserts with matching width of cut (CW). Refer to 19-20 for applicable inserts. The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page 12.

See page 24 for GND-J parts and connecting method

GND - Polygon Shank Style

Features and Benefits

- 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

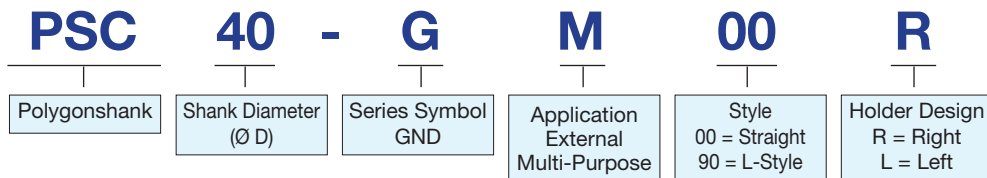


Product Range - Holders

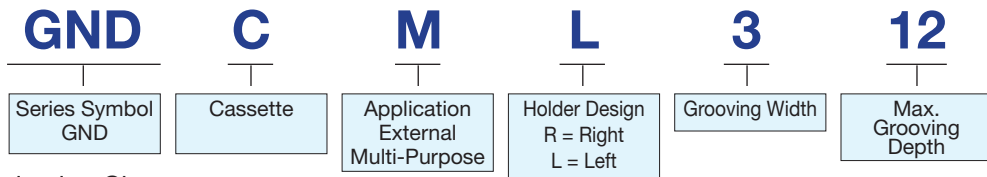
Application	Series	Shape	Grooving Width (mm)					Grooving Depth (mm)
			2	3	4	5	6	
External Grooving 	PSC_0M00R/L Straight		2	3				12
					4	5	6	18
	PSC_0M90R/L L-Style		2	3				12
					4	5	6	18

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

Identification Details - Polygon-Toolholder



Identification Details - Cassette



Selection Chart

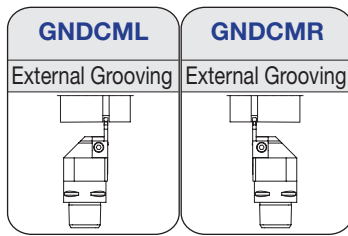
Cassette	Grooving Width (mm)					Max. Grooving Depth	Chipbreaker							
	2	3	4	5	6		MG	ML	GG	GL	GF	RG	CG	GA
GNDCM R	Stock					12		○	○	○	○		○	○
GNDCM L	Stock					12	○	○	○	○	○		○	○
GNDCM R		Stock				12	○	○	○	○	○	○	○	○
GNDCM L		Stock				12	○	○	○	○	○	○	○	○
GNDCM R			Stock			18	○	○	○	○	○	○	○	○
GNDCM L			Stock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

Stock

○ Recommendation

GND - Polygon Shank Style

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



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

Fig 1

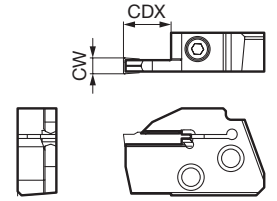
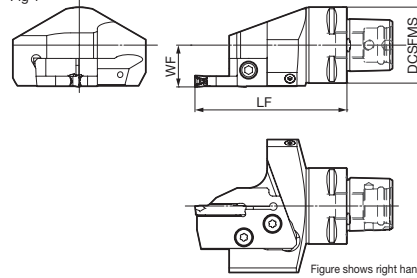


Figure shows right hand (R) tool.

Above figures show right hand tools.

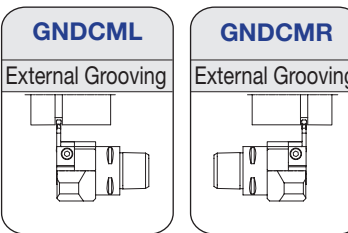
Right handed Cassette goes with right handed holder

Left handed Cassette goes with left handed holder

Dimensions (mm)

Cassette (R/L)	Catalog Number	Stock	Seat Size CW	Grooving Depth CDX	Applicable Insert	Cap Screw	Tightening Torque (N·m)	Wrench
	GNDCM R/L 212	★ ★	2	12	GCM □ 20○○-□□	BX0512	5.0	LH040
	GNDCM R/L 312	★ ★	3	12	GCM □ 3○○○-□□			
	GNDCM R/L 418	★ ★	4	18	GCM □ 40○○-□□		6.0	
	GNDCM R/L 518	★ ★	5	18	GCM □ 5○○○-□□			
	GNDCM R/L 618	★ ★	6	18	GCM □ 6○○○-□□			
Holder (R/L)	Catalog Number	Stock	B	WF	LH	Torx Screw	Tightening Torque (N·m)	Wrench
	PSC40GM00 R/L	★ ★	40 mm	22	80	BFTX0619N	7.5	TRD25
	PSC50GM00 R/L	★ ★	50mm	27	80			

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



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

Fig 1

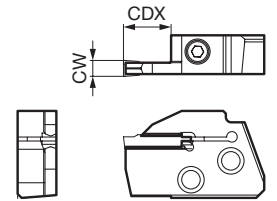
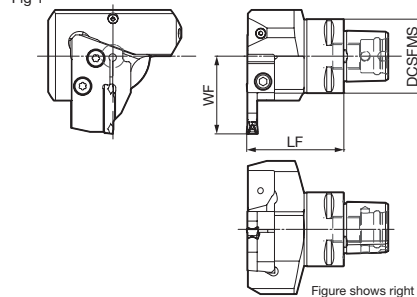


Figure shows right hand (R) tool.

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

Right handed Cassette goes with left handed holder

Left handed Cassette goes with right handed holder

Dimensions (mm)

Cassette (R/L)	Catalog Number	Stock	Seat Size CW	Grooving Depth CDX	Applicable Insert	Cap Screw	Tightening Torque (N·m)	Wrench
	GNDCM L/R 212	★ ★	2	12	GCM □ 20○○-□□	BX0512	5.0	LH040
	GNDCM L/R 312	★ ★	3	12	GCM □ 3○○○-□□			
	GNDCM L/R 418	★ ★	4	18	GCM □ 40○○-□□		6.0	
	GNDCM L/R 518	★ ★	5	18	GCM □ 5○○○-□□			
	GNDCM L/R 618	★ ★	6	18	GCM □ 6○○○-□□			
Holder (R/L)	Catalog Number	Stock	B	WF	LH	Torx Screw	Tightening Torque (N·m)	Wrench
	PSC40GM90 R/L	★ ★	40	43	52.5	BFTX0619N	7.5	TRD25
	PSC50GM90 R/L	★ ★	50	48	55			

GNDS



* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

External Multi-Function Clamp-on for Shallow Grooves (Grooving, Traverse Cutting and Profiling)

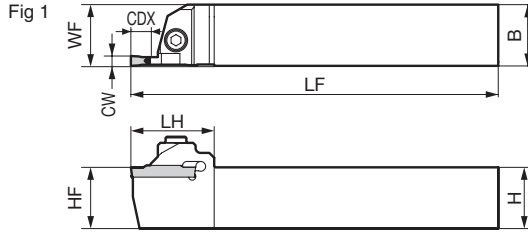
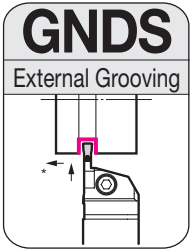


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Seat Size CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L											N-m	Wrench	
GNDS R/L 2020K-206	★	★	20	20	125	20	20	30	2	6	GC□□20○○-□□	1	BX0520	5.0	LH040
GNDS R/L 2020K-306	★	★	20	20	125	20	20	30	3	6	GC□□3○○○-□□	1			
GNDS R/L 2020K-410	★	★	20	20	125	20	20	34	4	10	GC□□40○○-□□	1			
GNDS R/L 2020K-510	★	★	20	20	125	20	20	34	5	10	GC□N5○○○-□□	1			
GNDS R/L 2020K-610	★	★	20	20	125	20	20	34	6	10	GC□N6○○○-□□	1			
GNDS R/L 2525M-206	★	★	25	25	150	25	25	30	2	6	GC□□20○○-□□	1	BX0520	5.0	LH040
GNDS R/L 2525M-306	★	★	25	25	150	25	25	30	3	6	GC□□3○○○-□□	1			
GNDS R/L 2525M-410	★	★	25	25	150	25	25	34	4	10	GC□□40○○-□□	1			
GNDS R/L 2525M-510	★	★	25	25	150	25	25	34	5	10	GC□N5○○○-□□	1			
GNDS R/L 2525M-610	★	★	25	25	150	25	25	34	6	10	GC□N6○○○-□□	1			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to page 19-20 for applicable inserts.



Clamp-on
for Necking

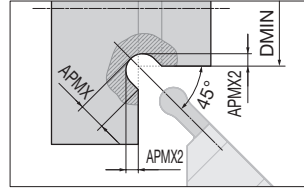
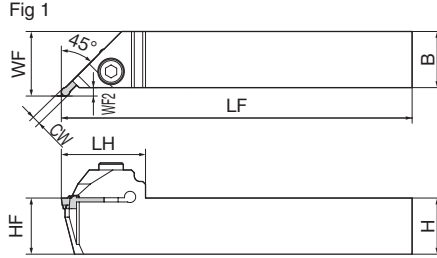
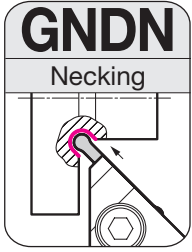


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Off Set WF2	Min. Work Diameter DMIN	Seat Size CW	APMX	APMX2	Applicable Insert	Fig	Dimensions (mm)	
	R	L														Cap Screw	Wrench
GNDN R/L 2020K-215-020	★	★	20	20	125	23	20	35	3.0	20	2.0	1.5	.64	GCMN2010-RN	1		
GNDN R/L 2020K-320-020	★	★	20	20	125	23	20	35	3.0	20	3.0	2.0	.79	GCMN3015-RN	1		
GNDN R/L 2020K-430-030	★	★	20	20	125	24	20	37	4.0	30	4.0	3.0	1.29	GCMN4020-RN	1	BX0520	5.0
GNDN R/L 2020K-535-030	★	★	20	20	125	25	20	40	5.0	30	5.0	3.5	1.44	GCMN5025-RN	1		
GNDN R/L 2020K-640-030	★	★	20	20	125	25	20	40	5.0	30	6.0	4.0	1.59	GCMN6030-RN	1		
GNDN R/L 2525M-215-020	★	★	25	25	150	28	25	35	3.0	20	2.0	1.5	.64	GCMN2010-RN	1		
GNDN R/L 2525M-320-020	★	★	25	25	150	28	25	35	3.0	20	3.0	2.0	.79	GCMN3015-RN	1		
GNDN R/L 2525M-430-030	★	★	25	25	150	29	25	37	4.0	30	4.0	3.0	1.29	GCMN4020-RN	1	BX0520	5.0
GNDN R/L 2525M-535-030	★	★	25	25	150	30	25	40	5.0	30	5.0	3.5	1.44	GCMN5025-RN	1		
GNDN R/L 2525M-640-030	★	★	25	25	150	30	25	40	5.0	30	6.0	4.0	1.59	GCMN6030-RN	1		

Combine the insert with a holder such that the width of cut (CW) matches.
See page 14 for Key Points for Necking

Identification Code

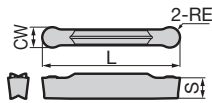
GND N R 20 20 K - 2 15 - 020

Series Application Feed Shank Shank Shank Seat APMX ×10 Min. bore diameter
Symbol: Direction Height Width Length Size (mm) (mm) (mm) (mm)

GNDN Insert

(Coated Carbide)

Fig 1



Profiling / Radius Grooving / Necking

Dimensions (Inch)

Appearance	Cat. No.	AC5015S	AC5025S	AC520U	AC530U	AC425K	AC8025P	AC8035P	AC830P	Seat Size CW			Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
		●	●	●	●	●	★	★	●	Seat Size	Grooving Width	Tolerance					
RN General-Purpose	GCMN2010-RN	●	●	●	●	●	●	●	●	2.0	.078	±.0012	.0394	.854	.142	1	1
	GCMN3015-RN	●	●	●	●	●	★	★	●	3.0	.118	±.0012	.0590	.882	.150	1	1
	GCMN4020-RN	●	●	●	●	●	★	★	●	4.0	.157	±.0012	.0785	1.102	.157	5	1
	GCMN5025-RN	●	★	●	●	●	★	★	●	5.0	.197	±.0012	.0985	1.106	.161	1	1
	GCMN6030-RN	●	●	●	●	●	★	★	●	6.0	.236	±.0012	.1181	1.106	.177	1	1

GNDF - Inch



* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

Clamp-on
for Face Grooving

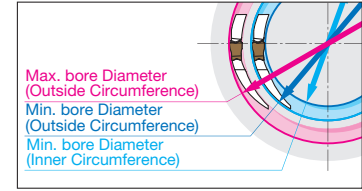
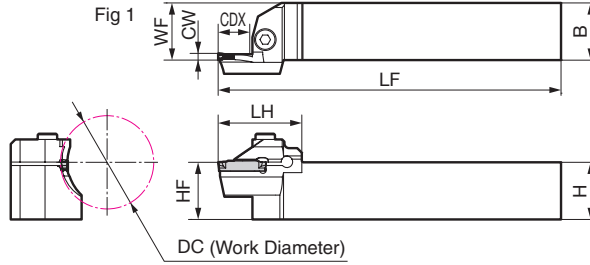


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (Inch)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Work Diameter DC	Seat Size CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw BX0520 5.0 N-m	Wrench LH040	
	R	L														
GNDF R/L 123K-050-035	•	•	.750	.750	5.000	.750	.750	1.402	1.378 - 1.772	3.0	.500		1			
GNDF R/L 123K-050-040	•	•	.750	.750	5.000	.750	.750	1.402	1.575 - 2.165	3.0	.500		1			
GNDF R/L 123K-070-050	•	•	.750	.750	5.000	.750	.750	1.638	1.969 - 2.756	3.0	.700		1			
GNDF R/L 123K-070-065	•	•	.750	.750	5.000	.750	.750	1.638	2.559 - 3.937	3.0	.700	GC□N3○○○-□□	1	BX0520	5.0	LH040
GNDF R/L 123K-070-090	•	•	.750	.750	5.000	.750	.750	1.638	3.543 - 5.906	3.0	.700		1			
GNDF R/L 123K-070-140	•	•	.750	.750	5.000	.750	.750	1.638	5.512 - 7.874	3.0	.700		1			
GNDF R/L 123K-070-180	•	•	.750	.750	5.000	.750	.750	1.638	7.087 - 11.811	3.0	.700		1			
GNDF R/L 124K-070-040	•	•	.750	.750	5.000	.750	.750	1.638	1.575 - 2.165	4.0	.700		1			
GNDF R/L 124K-090-050	•	•	.750	.750	5.000	.750	.750	1.835	1.969 - 2.756	4.0	.900		1			
GNDF R/L 124K-090-065	•	•	.750	.750	5.000	.750	.750	1.835	2.559 - 3.543	4.0	.900		1			
GNDF R/L 124K-090-085	•	•	.750	.750	5.000	.750	.750	1.835	3.346 - 5.118	4.0	.900	GC□N4○○○-□□	1	BX0520	5.0	LH040
GNDF R/L 124K-090-125	•	•	.750	.750	5.000	.750	.750	1.835	4.921 - 7.874	4.0	.900		1			
GNDF R/L 124K-090-180	•	•	.750	.750	5.000	.750	.750	1.835	7.087 - 11.811	4.0	.900		1			
GNDF R/L 124K-090-280	•	•	.750	.750	5.000	.750	.750	1.835	11.024 - 39.370	4.0	.900		1			
GNDF R/L 125K-090-050	•	•	.750	.750	5.000	.750	.750	1.835	1.969 - 2.756	5.0	.900		1			
GNDF R/L 125K-090-065	•	•	.750	.750	5.000	.750	.750	1.835	2.559 - 3.543	5.0	.900		1			
GNDF R/L 125K-090-085	•	•	.750	.750	5.000	.750	.750	1.835	3.346 - 5.118	5.0	.900	GC□N5○○○-□□	1	BX0520	5.0	LH040
GNDF R/L 125K-090-125	•	•	.750	.750	5.000	.750	.750	1.835	4.921 - 7.874	5.0	.900		1			
GNDF R/L 125K-090-180	•	•	.750	.750	5.000	.750	.750	1.835	7.087 - 11.811	5.0	.900		1			
GNDF R/L 125K-090-280	•	•	.750	.750	5.000	.750	.750	1.835	11.024 - 39.370	5.0	.900		1			
GNDF R/L 126K-090-050	•	•	.750	.750	5.000	.750	.750	1.835	1.969 - 2.953	6.0	.900		1			
GNDF R/L 126K-090-070	•	•	.750	.750	5.000	.750	.750	1.835	2.756 - 4.331	6.0	.900		1			
GNDF R/L 126K-090-100	•	•	.750	.750	5.000	.750	.750	1.835	3.397 - 7.874	6.0	.900	GC□N6○○○-□□	1	BX0520	5.0	LH040
GNDF R/L 126K-090-180	•	•	.750	.750	5.000	.750	.750	1.835	7.087 - 11.811	6.0	.900		1			
GNDF R/L 126K-090-280	•	•	.750	.750	5.000	.750	.750	1.835	11.024 - 39.370	6.0	.900		1			
GNDF R/L 163M-050-035	•	•	1.000	1.000	6.000	1.000	1.000	1.402	1.378 - 1.772	3.0	.500		1			
GNDF R/L 163M-050-040	•	•	1.000	1.000	6.000	1.000	1.000	1.402	1.575 - 2.165	3.0	.500		1			
GNDF R/L 163M-070-050	•	•	1.000	1.000	6.000	1.000	1.000	1.638	1.969 - 2.756	3.0	.700		1			
GNDF R/L 163M-070-065	•	•	1.000	1.000	6.000	1.000	1.000	1.638	2.559 - 3.937	3.0	.700	GC□N3○○○-□□	1	BX0520	5.0	LH040
GNDF R/L 163M-070-090	•	•	1.000	1.000	6.000	1.000	1.000	1.638	3.543 - 5.906	3.0	.700		1			
GNDF R/L 163M-070-140	•	•	1.000	1.000	6.000	1.000	1.000	1.638	5.512 - 7.874	3.0	.700		1			
GNDF R/L 163M-070-180	•	•	1.000	1.000	6.000	1.000	1.000	1.638	7.087 - 11.811	3.0	.700		1			
GNDF R/L 164M-070-040	•	•	1.000	1.000	6.000	1.000	1.000	1.638	1.575 - 2.165	4.0	.700		1			
GNDF R/L 164M-090-050	•	•	1.000	1.000	6.000	1.000	1.000	1.835	1.969 - 2.756	4.0	.900		1			
GNDF R/L 164M-090-065	•	•	1.000	1.000	6.000	1.000	1.000	1.835	2.559 - 3.543	4.0	.900		1			
GNDF R/L 164M-090-085	•	•	1.000	1.000	6.000	1.000	1.000	1.835	3.346 - 5.118	4.0	.900	GC□N4○○○-□□	1	BX0520	5.0	LH040
GNDF R/L 164M-090-125	•	•	1.000	1.000	6.000	1.000	1.000	1.835	4.921 - 7.874	4.0	.900		1			
GNDF R/L 164M-090-180	•	•	1.000	1.000	6.000	1.000	1.000	1.835	7.087 - 11.811	4.0	.900		1			
GNDF R/L 164M-090-280	•	•	1.000	1.000	6.000	1.000	1.000	1.835	11.024 - 39.370	4.0	.900		1			
GNDF R/L 165M-090-050	•	•	1.000	1.000	6.000	1.000	1.000	1.835	1.969 - 2.756	5.0	.900		1			
GNDF R/L 165M-090-065	•	•	1.000	1.000	6.000	1.000	1.000	1.835	2.559 - 3.543	5.0	.900		1			
GNDF R/L 165M-090-085	•	•	1.000	1.000	6.000	1.000	1.000	1.835	3.346 - 5.118	5.0	.900	GC□N5○○○-□□	1	BX0520	5.0	LH040
GNDF R/L 165M-090-125	•	•	1.000	1.000	6.000	1.000	1.000	1.835	4.921 - 7.874	5.0	.900		1			
GNDF R/L 165M-090-180	•	•	1.000	1.000	6.000	1.000	1.000	1.835	7.087 - 11.811	5.0	.900		1			
GNDF R/L 165M-090-280	•	•	1.000	1.000	6.000	1.000	1.000	1.835	11.024 - 39.370	5.0	.900		1			
GNDF R/L 166M-090-050	•	•	1.000	1.000	6.000	1.000	1.000	1.835	1.969 - 2.953	6.0	.900		1			
GNDF R/L 166M-090-070	•	•	1.000	1.000	6.000	1.000	1.000	1.835	2.756 - 4.331	6.0	.900		1			
GNDF R/L 166M-090-100	•	•	1.000	1.000	6.000	1.000	1.000	1.835	3.397 - 7.874	6.0	.900	GC□N6○○○-□□	1	BX0520	5.0	LH040
GNDF R/L 166M-090-180	•	•	1.000	1.000	6.000	1.000	1.000	1.835	7.087 - 11.811	6.0	.900		1			
GNDF R/L 166M-090-280	•	•	1.000	1.000	6.000	1.000	1.000	1.835	11.024 - 39.370	6.0	.900		1			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to page 19-20 for applicable inserts.

GNDF - Metric



* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

Clamp-on
for Face Grooving

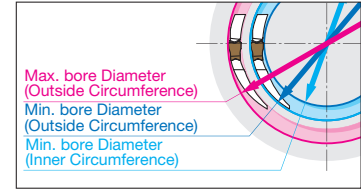
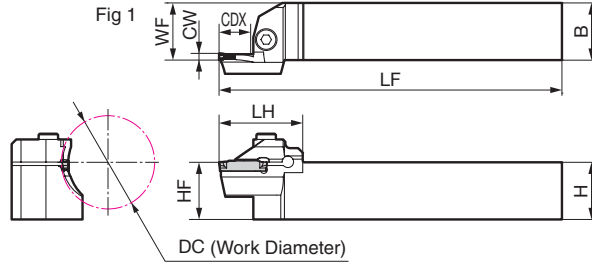
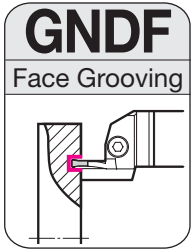


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

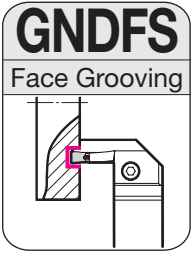
Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Work Diameter DC	Seat Size CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L												N-m		
GNDF R/L 2020K-312-035	★	★	20	20	125	20	20	35.6	35 to 45	3.0	12	GC□N3○○○-□□	1	BX0520	5.0	LH040
GNDF R/L 2020K-312-040	★	★	20	20	125	20	20	35.6	40 to 55	3.0	12		1			
GNDF R/L 2020K-318-050	★	★	20	20	125	20	20	41.6	50 to 70	3.0	18		1			
GNDF R/L 2020K-318-065	★	★	20	20	125	20	20	41.6	65 to 100	3.0	18		1			
GNDF R/L 2020K-318-090	★	★	20	20	125	20	20	41.6	90 to 150	3.0	18		1			
GNDF R/L 2020K-318-140	★	★	20	20	125	20	20	41.6	140 to 200	3.0	18		1			
GNDF R/L 2020K-318-180	★	★	20	20	125	20	20	41.6	180 to 300	3.0	18	1				
GNDF R/L 2020K-418-040	★	★	20	20	125	20	20	41.6	40 to 55	4.0	18	GC□N4○○○-□□	1	BX0520	5.0	LH040
GNDF R/L 2020K-423-050	★	★	20	20	125	20	20	46.6	50 to 70	4.0	23		1			
GNDF R/L 2020K-423-065	★	★	20	20	125	20	20	46.6	65 to 90	4.0	23		1			
GNDF R/L 2020K-423-085	★	★	20	20	125	20	20	46.6	85 to 130	4.0	23		1			
GNDF R/L 2020K-423-125	★	★	20	20	125	20	20	46.6	125 to 200	4.0	23		1			
GNDF R/L 2020K-423-180	★	★	20	20	125	20	20	46.6	180 to 300	4.0	23		1			
GNDF R/L 2020K-423-280	★	★	20	20	125	20	20	46.6	280 to 1000	4.0	23	1				
GNDF R/L 2020K-523-050	★	★	20	20	125	20	20	46.6	50 to 70	5.0	23	GC□N5○○○-□□	1	BX0520	5.0	LH040
GNDF R/L 2020K-523-065	★	★	20	20	125	20	20	46.6	65 to 90	5.0	23		1			
GNDF R/L 2020K-523-085	★	★	20	20	125	20	20	46.6	85 to 130	5.0	23		1			
GNDF R/L 2020K-523-125	★	★	20	20	125	20	20	46.6	125 to 200	5.0	23		1			
GNDF R/L 2020K-523-180	★	★	20	20	125	20	20	46.6	180 to 300	5.0	23		1			
GNDF R/L 2020K-523-280	★	★	20	20	125	20	20	46.6	280 to 1000	5.0	23		1			
GNDF R/L 2020K-623-050	★	★	20	20	125	20	20	46.6	50 to 75	6.0	23	GC□N6○○○-□□	1	BX0520	5.0	LH040
GNDF R/L 2020K-623-070	★	★	20	20	125	20	20	46.6	70 to 110	6.0	23		1			
GNDF R/L 2020K-623-100	★	★	20	20	125	20	20	46.6	100 to 200	6.0	23		1			
GNDF R/L 2020K-623-180	★	★	20	20	125	20	20	46.6	180 to 300	6.0	23		1			
GNDF R/L 2020K-623-280	★	★	20	20	125	20	20	46.6	280 to 1000	6.0	23		1			
GNDF R/L 2525M-312-035	★	★	25	25	150	25	25	35.6	35 to 45	3.0	12		GC□N3○○○-□□			
GNDF R/L 2525M-312-040	★	★	25	25	150	25	25	35.6	40 to 55	3.0	12	1				
GNDF R/L 2525M-318-050	★	★	25	25	150	25	25	41.6	50 to 70	3.0	18	1				
GNDF R/L 2525M-318-065	★	★	25	25	150	25	25	41.6	65 to 100	3.0	18	1				
GNDF R/L 2525M-318-090	★	★	25	25	150	25	25	41.6	90 to 150	3.0	18	1				
GNDF R/L 2525M-318-140	★	★	25	25	150	25	25	41.6	140 to 200	3.0	18	1				
GNDF R/L 2525M-318-180	★	★	25	25	150	25	25	41.6	180 to 300	3.0	18	1				
GNDF R/L 2525M-418-040	★	★	25	25	150	25	25	41.6	40 to 55	4.0	18	GC□N4○○○-□□	1	BX0520	5.0	LH040
GNDF R/L 2525M-423-050	★	★	25	25	150	25	25	46.6	50 to 70	4.0	23		1			
GNDF R/L 2525M-423-065	★	★	25	25	150	25	25	46.6	65 to 90	4.0	23		1			
GNDF R/L 2525M-423-085	★	★	25	25	150	25	25	46.6	85 to 130	4.0	23		1			
GNDF R/L 2525M-423-125	★	★	25	25	150	25	25	46.6	125 to 200	4.0	23		1			
GNDF R/L 2525M-423-180	★	★	25	25	150	25	25	46.6	180 to 300	4.0	23		1			
GNDF R/L 2525M-423-280	★	★	25	25	150	25	25	46.6	280 to 1000	4.0	23	1				
GNDF R/L 2525M-523-050	★	★	25	25	150	25	25	46.6	50 to 70	5.0	23	GC□N5○○○-□□	1	BX0520	5.0	LH040
GNDF R/L 2525M-523-065	★	★	25	25	150	25	25	46.6	65 to 90	5.0	23		1			
GNDF R/L 2525M-523-085	★	★	25	25	150	25	25	46.6	85 to 130	5.0	23		1			
GNDF R/L 2525M-523-125	★	★	25	25	150	25	25	46.6	125 to 200	5.0	23		1			
GNDF R/L 2525M-523-180	★	★	25	25	150	25	25	46.6	180 to 300	5.0	23		1			
GNDF R/L 2525M-523-280	★	★	25	25	150	25	25	46.6	280 to 1000	5.0	23		1			
GNDF R/L 2525M-623-050	★	★	25	25	150	25	25	46.6	50 to 75	6.0	23	GC□N6○○○-□□	1	BX0520	5.0	LH040
GNDF R/L 2525M-623-070	★	★	25	25	150	25	25	46.6	70 to 110	6.0	23		1			
GNDF R/L 2525M-623-100	★	★	25	25	150	25	25	46.6	100 to 200	6.0	23		1			
GNDF R/L 2525M-623-180	★	★	25	25	150	25	25	46.6	180 to 300	6.0	23		1			
GNDF R/L 2525M-623-280	★	★	25	25	150	25	25	46.6	280 to 1000	6.0	23		1			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to page 19-20 for applicable inserts.

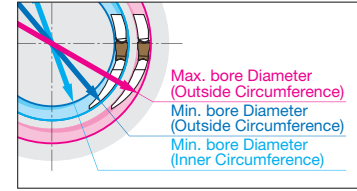
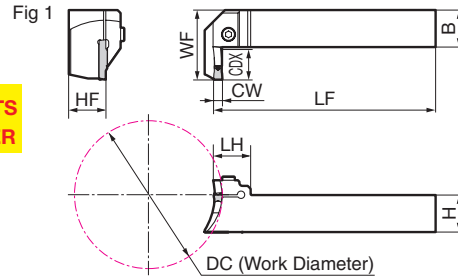


* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

Clamp-on
for Face L-Shaped (Side Cut) Deep Grooving



**GNDFS PRODUCTS
ARE MADE TO ORDER**



Holder

Figure shows right hand (R) tool.

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Work Diameter DC	Seat Size CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L												BX0520	N-m	
GNDFS R/L 2525M-620-070			25	25	150	47	25	25	70 to 100	6.0	20	GC□N6○○○-□□	1	BX0520	5.0	LH040
GNDFS R/L 2525M-620-100			25	25	150	47	25	25	100 to 200	6.0	20		1			
GNDFS R/L 2525M-620-180			25	25	150	47	25	25	180 to 300	6.0	20		1			
GNDFS R/L 2525M-620-280			25	25	150	47	25	25	280 to 1000	6.0	20	1				
GNDFS R/L 2525M-620-450			25	25	150	47	25	25	450 up	6.0	20	1				
GNDFS R/L 3232P-620-070			32	32	170	54	32	25	70 to 100	6.0	20	GC□N6○○○-□□	1	BX0620	6.0	LH050
GNDFS R/L 3232P-620-100			32	32	170	54	32	25	100 to 200	6.0	20		1			
GNDFS R/L 3232P-620-180			32	32	170	54	32	25	180 to 300	6.0	20		1			
GNDFS R/L 3232P-620-280			32	32	170	54	32	25	280 to 1000	6.0	20	1				
GNDFS R/L 3232P-620-450			32	32	170	54	32	25	450 up	6.0	20	1				
GNDFS R/L 2525M-820-070			25	25	150	47	25	30	70 to 100	8.0	20	GCMN80○○○-□□	1	BX0620	6.0	LH050
GNDFS R/L 2525M-820-100			25	25	150	47	25	30	100 to 200	8.0	20		1			
GNDFS R/L 2525M-820-180			25	25	150	47	25	30	180 to 300	8.0	20		1			
GNDFS R/L 2525M-820-280			25	25	150	47	25	30	280 to 1000	8.0	20	1				
GNDFS R/L 2525M-820-450			25	25	150	47	25	30	450 up	8.0	20	1				
GNDFS R/L 3232P-820-070			32	32	170	54	32	30	70 to 100	8.0	20	GCMN80○○○-□□	1	BX0620	6.0	LH050
GNDFS R/L 3232P-820-100			32	32	170	54	32	30	100 to 200	8.0	20		1			
GNDFS R/L 3232P-820-180			32	32	170	54	32	30	180 to 300	8.0	20		1			
GNDFS R/L 3232P-820-280			32	32	170	54	32	30	280 to 1000	8.0	20	1				
GNDFS R/L 3232P-820-450			32	32	170	54	32	30	450 up	8.0	20	1				

Combine the insert with a holder such that the width of cut (CW) matches. **These items are made to order.**



Clamp-on
for Internal Diameter Grooving

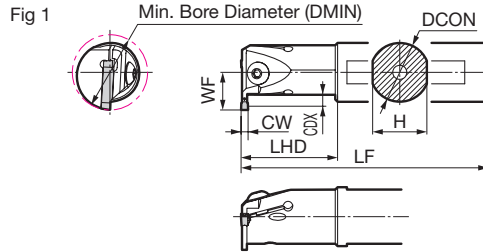


Figure shows right hand (R) tool.

Holder

Parts

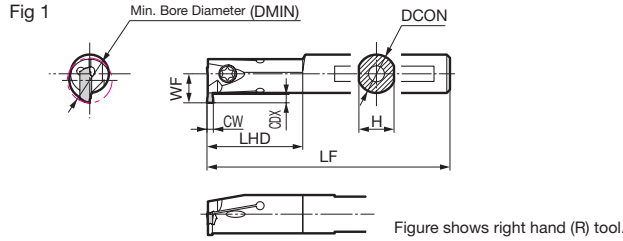
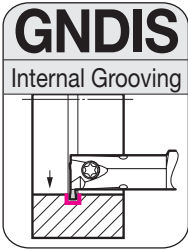
Dimensions (inch / mm)

Cat. No.	Stock		Diameter DCON	Height H	Head LHD	Overall Length LF	Cutting Edge Distance WF	Min. Bore Diameter		Max. Groove Depth CDX	Applicable Insert	Fig	Screw		Wrench
	R	L						DMIN	CW				N-m	Icon	
GNDI R/L 162T-25	●	●	1.000	.906	1.575	8.000	.623	1.250	2	.250	GC□N20○○-□□	1	BH0516	5.0	LH030
GNDI R/L 163T-25	●	●	1.000	.906	1.575	8.000	.623	1.250	3	.250	GC□N3○○○-□□	1			
GNDI R/L 164T-25	●	●	1.000	.906	1.575	8.000	.748	1.250	4	.250	GC□N4○○○-□□	1			
GNDI R/L 165T-25	●	●	1.000	.906	1.575	8.000	.748	1.250	5	.250	GC□N5○○○-□□	1			
GNDI R/L 166T-25	●	●	1.000	.906	1.575	8.000	.748	1.250	6	.250	GC□N6○○○-□□	1			
GNDI R/L 202T-40	●	●	1.250	1.181	1.969	10.000	1.024	1.575	2	.400	GC□N20○○-□□	1	BH0616	6.0	LH040
GNDI R/L 203T-40	●	●	1.250	1.181	1.969	10.000	1.024	1.575	3	.400	GC□N3○○○-□□	1			
GNDI R/L 204T-40	●	●	1.250	1.181	1.969	10.000	1.024	1.575	4	.400	GC□N4○○○-□□	1			
GNDI R/L 205T-40	●	●	1.250	1.181	1.969	10.000	1.024	1.575	5	.400	GC□N5○○○-□□	1			
GNDI R/L 206T-40	●	●	1.250	1.181	1.969	10.000	1.024	1.575	6	.400	GC□N6○○○-□□	1			
GNDI R/L 243T-43	●	●	1.500	1.421	2.362	12.000	1.142	2.000	3	.430	GC□N3○○○-□□	1			
GNDI R/L 244T-43	●	●	1.500	1.421	2.362	12.000	1.142	2.000	4	.430	GC□N4○○○-□□	1			
GNDI R/L 245T-43	●	●	1.500	1.421	2.362	12.000	1.142	2.000	5	.430	GC□N5○○○-□□	1			
GNDI R/L 246T-43	●	●	1.500	1.421	2.362	12.000	1.142	2.000	6	.430	GC□N6○○○-□□	1			
GNDI R/L 2532-T206	★	★	25	23	40	200	16	32	2	6	GC□N20○○-□□	1	BH0516	5.0	LH030
GNDI R/L 2532-T306	★	★	25	23	40	200	16	32	3	6	GC□N3○○○-□□	1			
GNDI R/L 2532-T406	★	★	25	23	40	200	19	32	4	6	GC□N4○○○-□□	1			
GNDI R/L 2532-T506	★	★	25	23	40	200	19	32	5	6	GC□N5○○○-□□	1			
GNDI R/L 3240-T210	★	★	32	30	50	250	26	40	2	10	GC□N20○○-□□	1	BH0616	6.0	LH040
GNDI R/L 3240-T310	★	★	32	30	50	250	26	40	3	10	GC□N3○○○-□□	1			
GNDI R/L 3240-T410	★	★	32	30	50	250	26	40	4	10	GC□N4○○○-□□	1			
GNDI R/L 3240-T510	★	★	32	30	50	250	26	40	5	10	GC□N5○○○-□□	1			
GNDI R/L 4050-T311	★	★	40	38	60	300	31	50	3	11	GC□N3○○○-□□	1	BH0616	6.0	LH040
GNDI R/L 4050-T411	★	★	40	38	60	300	31	50	4	11	GC□N4○○○-□□	1			
GNDI R/L 4050-T511	★	★	40	38	60	300	31	50	5	11	GC□N5○○○-□□	1			
GNDI R/L 4050-T611	★	★	40	38	60	300	31	50	6	11	GC□N6○○○-□□	1			

Combine the insert with a holder such that the Seat Size matches. Refer to page 19-20 for applicable inserts. Not usable with GNDIS inserts.



Clamp-on
for Internal Diameter Grooving



Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Diameter DCON	Height H	Overall Length LF	Head LHD	Cutting Edge Distance WF	Min. Bore Diameter DMIN	Seat Size CW	Max. Groove Depth CDX	Applicable Insert	Fig	Flat Screw		Wrench
	R	L											(N·m)	(N·m)	
GNDIS R/L 1214-T1526	★	★	12	11	150	30	9.0	14	1.5	2.6	GXMN150005S-GF	1	BFTX0409N	3.4	LT15
GNDIS R/L 1214-T1536	★	★	12	11	150	30	10.0	14	1.5	3.6		1			
GNDIS R/L 1616-T1536	★	★	16	15	160	35	11.5	16	1.5	3.6		1			
GNDIS R/L 1620-T1546	★	★	16	15	160	40	14.5	20	1.5	4.6		1			
GNDIS R/L 2025-T1566	★	★	20	19	180	40	19.0	25	1.5	6.6		1			
GNDIS R/L 1214-T2026	★	★	12	11	150	30	9.0	14	2.0	2.6	GXMN2002S-□□	1	BFTX0409N	3.4	LT15
GNDIS R/L 1214-T2036	★	★	12	11	150	30	10.0	14	2.0	3.6		1			
GNDIS R/L 1616-T2036	★	★	16	15	160	35	11.5	16	2.0	3.6		1			
GNDIS R/L 1620-T2046	★	★	16	15	160	40	14.5	20	2.0	4.6		1			
GNDIS R/L 2025-T2066	★	★	20	19	180	40	19.0	25	2.0	6.6		1			
GNDIS R/L 1214-T3026	★	★	12	11	150	30	9.0	14	3.0	2.6	GXMN3002S-□□	1	BFTX0409N	3.4	LT15
GNDIS R/L 1214-T3036	★	★	12	11	150	30	10.0	14	3.0	3.6		1			
GNDIS R/L 1616-T3036	★	★	16	15	160	35	11.5	16	3.0	3.6		1			
GNDIS R/L 1620-T3046	★	★	16	15	160	40	14.5	20	3.0	4.6		1			
GNDIS R/L 2025-T3066	★	★	20	19	180	40	19.0	25	3.0	6.6		1			

Combine the insert with a holder such that the width of cut (CW) matches. **Only GXM inserts can be used.**

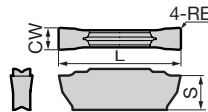
Identification Code

GND IS R 12 14 - T 15 26

Series Application Feed Shank Min. For Seat Maximum Groove
Symbol: Direction Dia. Bore Internal Size x Diameter 10 Depth x 10
Internal (mm) Diameter (mm) Diameter 10 (mm)
Diameter Machining (mm)
Machining

GNDIS Inserts

Fig 1



(Coated Carbide)

Grooving / Traverse Cutting

Dimensions (mm)

Appearance	Cat. No.	AC520U AC1030U	Seat Size CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	
			Seat Size	Tolerance						
ML <small>Low Feed</small>	GXMN2002S-ML	★	★	2.0	±0.03	0.2	11.1	3.1	5	1
	GXMN3002S-ML	★	★	3.0	±0.03	0.2	11.1	3.1	5	1

Grooving / Cut-Off Machining

Dimensions (mm)

Appearance	Cat. No.	AC520U AC1030U	Seat Size CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	
			Seat Size	Tolerance						
GF <small>Low Resistance</small>	GXMN150005S-GF	-	★	1.5	±0.03	0.05	11.1	3.1	5	1
	GXMN2002S-GF	★	★	2.0	±0.03	0.2	11.1	3.1	5	1
	GXMN3002S-GF	★	★	3.0	±0.03	0.2	11.1	3.1	5	1

Combine the insert with a holder such that the width of cut (CW) matches. **GCM/GCG inserts are not mutually compatible.**

Recommended Cutting Conditions - GNDIS

Part Material	P Carbon Steel / Alloy Steel	M Stainless Steel	K Cast Iron	S Exotic Alloy
Insert Grade	AC520U AC1030U	AC520U AC1030U	AC520U AC1030U	AC520U AC1030U
Cutting Speed v_c (SFM)	250-650 150-650	230-500 150-500	200-650 150-650	65-250 65-200

Grooving / Cut-Off / Necking

Chipbreaker	Feed Rate f (IPR)	
	ML	GF
Seat Size	1.5	0.001 to 0.004
CW (mm)	2.0	0.001 to 0.005
	3.0	0.002 to 0.006

Traverse Cutting

Chipbreaker	ML	
	Feed Rate f (IPR)	Depth of Cut a_p (Inch)
Seat Size	2.0	0.001 to 0.005
CW (mm)	3.0	0.002 to 0.006
		0.008 to 0.030
		0.012 to 0.050

Grooving Tool GND: Special Grooving Insert Request Form

Applicable Tool Holders (Seat Size: 2 to 6mm)
 External Turning: GNDS (→ P30), GNDM (→ P21, P22, P23), GNDMS (→ P22), GNDL (→ P25, P26, P27),
 GNDLS (→ P26), GNDCM (→ P29)
 Internal Boring: GNDI (→ P35) *GNDIS cannot be used as the insert shape is different
 Facing: GNDF (→ P32, P33), GNDFS (→ P34)

Special inserts with ground chipbreaker (customized seat sizes / width of cut and insert corner radius) can be made-to-order. To order, fill out the form below (indicate preference by circling the item or specify dimensions), and send it to a Sumitomo Electric Carbide, Inc. Sales Engineer or Authorized Distributor. (Make a copy of this form.) For grooving inserts with shape, width of cut or grade other than those listed below, contact your nearest Sumitomo Electric Carbide, Inc. Sales Engineer.

Your Company / Contact Information (Phone / Fax / Address, etc.)

Shape	Item	Description
	Seat Size CW (mm) (2.00 to 6.59mm)	
	Corner Radius RER (mm)	
	Corner Radius REL (mm)	
	Grade (Select from right)*1	AC530U / AC520U / EH520 / H10 / KH03 CBN Grade / PCD Grade - Inquire about other grades
	Grooving Depth CDX (mm)*2	
<p>*1 If H10 is selected as the grade, the cutting edge will have a sharp edge. *2 Set the breaker width based on CDX. The actual groove depth can only be less than or equal to the maximum groove depth configurable by each holder.</p>		

Form instructions

- The applicable standard holder depends on the seat size. Refer to the chart on the right for manufacturable seat sizes and corner radius range for facing. (If using a corner radius exceeding this for facing, modification is required to prevent the holder from interfering with the work material.)
- The corner radius maximum value for external turning and internal boring is 1/2 the width of cut.
- Seat Size (CW) tolerance is $\pm 0.025\text{mm}$ when manufactured.
- WF dimensions for each holder are the CWS value for the applicable holder standard insert seat size as follows.

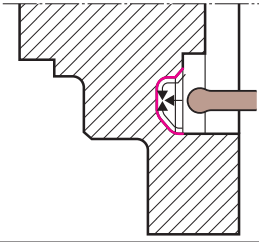
$$(\text{Standard holder dimension WF}) + (\text{WF} - \text{CWS}) / 2$$
- For inch widths of cut, inserts can also be supplied partially unground.

Contact your local sales engineer for details.

Seat Size CW (Nominal Value)	Applicable Standard Holder	Corner radius (RER, REL) maximum value when used for facing (standard holder applicable)
2.00 to 2.59mm	2mm Width Holder	0.2mm
2.60 to 3.59mm	3mm Width Holder	0.4mm
3.60 to 4.59mm	4mm Width Holder	0.8mm
4.60 to 5.59mm	5mm Width Holder	
5.60 to 6.59mm	6mm Width Holder	

GND Series - Application Examples

4130H Steel Automotive Component Face Profiling



- High rigidity
- Chip evacuation
- Wear resistance

Holder: GNDFR2525M-423-125

Insert: GCMN4020-RN

Seat Size: 4.0

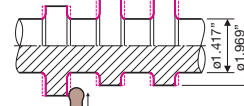
Cutting Conditions

$v_c = 660$ SFM

$f = .0055$ IPR, Wet

- Excellent chip evacuation performance
- Stable cutting without chattering or vibration

1050 Steel Camshaft Grooving / Finishing (Continuous to Heavy Interrupted)



- High rigidity and chatter
- Chip evacuation
- Fracture resistance

Holder: GNDML2525M-618

Insert: GCMN6030-RG

Seat Size: 6.0

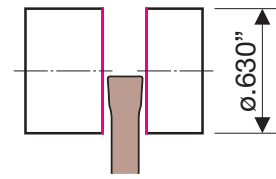
Cutting Conditions

$v_c = 430$ SFM

$f = .014$ IPR, Wet

- Stable cutting without chattering or vibration
- Excellent fracture resistance and stable chip evacuation

4135 Steel Tempered Hydraulic Component Cut-off



- Chip evacuation
- Wear resistance

Holder: GNDL R2525M-320

Insert: GCMN3002-GG

Seat Size: 3.0

Cutting Conditions

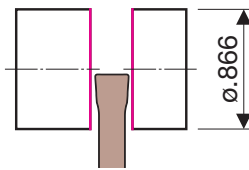
$n = 4,000$ min⁻¹

$v_c = 660$ SFM

$f = .002$ IPR, Wet

- Stable chip evacuation
- Excellent wear resistance

1045 Steel Valve Cut-off



- High rigidity for chatter
- Chip evacuation

Holder: GNDMR2525M-312

Insert: GCMN3002-ML

Seat Size: 3.0

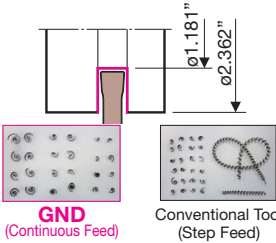
Cutting Conditions

$v_c = 500$ SFM

$f = .002$ to $.006$ IPR, Wet

- Stable cutting without chattering or vibration
- Stable chip evacuation

4140 Steel Office Machine Component Grooving



- Chip evacuation
- Machining efficiency

Holder: GNDLR2525M-320

Insert: GCMN3002-GG

Seat Size: 3.0

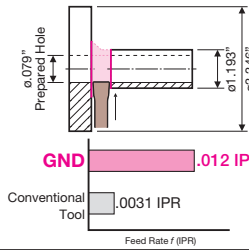
Cutting Conditions

$v_c = 300$ SFM

$f = .0039$ IPR, Wet

- Excellent chip evacuation performance
- 20% greater machining efficiency

4135 Steel Crank Cut-off



- High rigidity for chatter
- Chip evacuation

Holder: GNDLR2525M-320

Insert: GCMN3002-GG

Seat Size: 3.0

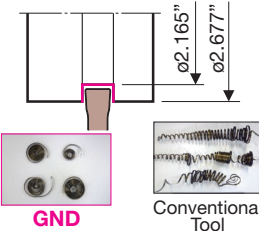
Cutting Conditions

$v_c = 375$ SFM

$f = .012$ IPR, Wet

- Improved machining efficiency
- Stable cutting without chattering or vibration

5120 Steel Gearshaft Grooving



- High rigidity for chatter
- Chip evacuation

Holder: GNDMR2525M-312

Insert: GCMN3004-GG

Seat Size: 3.0

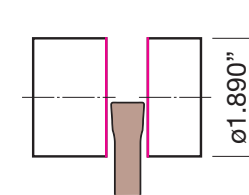
Cutting Conditions

$v_c = 330$ SFM

$f = .0039$ IPR, Wet

- Stable cutting without chattering or vibration
- Excellent chip evacuation performance

H13 Steel (45 to 48HRC) Machine Component Cut-off



- High rigidity for chatter
- Chip evacuation

Holder: GNDL R2525M-425

Insert: GCMN4002-GG

Seat Size: 4.0

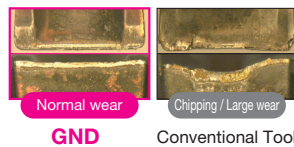
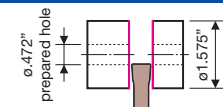
Cutting Conditions

$v_c = 165$ SFM

$f = .0012$, Wet

- Stable cutting without chattering or vibration
- Excellent chip evacuation performance
- Unexpected fractures prevented

1042 Steel Tempered Machine Component Cut-off



- High rigidity
- Chatter
- Fracture resistance

Holder: GNDL R2525M-320

Insert: GCMN3002-GG

Seat Size: 3.0

Cutting Conditions

$n = 1,600$ min⁻¹

$v_c = 660$ SFM

$f = .002$ IPR, Wet

- Stable cutting without chattering or vibration
- Stable fracture resistance

GND Series - Application Examples

4130 Steel Gearshaft Grooving / Profiling

- High rigidity for chatter
- Chip evacuation

Holder: GNDMR2020K-518
Insert: GCMN5008-MG
Seat Size: 5.0
Cutting Conditions
 $v_c = 500$ SFM
 $f = .0039$ IPR, Wet

- Stable cutting without chattering or vibration
- Excellent chip evacuation performance

Sintered Ferrous Material Crank Sprocket Gear Grooving / Finishing

- High rigidity for chatter
- Chip evacuation
- Wear resistance

Holder: GNDLR2525M-220
Insert: GCMN2002-GG
Seat Size: 2.0
Cutting Conditions
 $v_c = 330$ SFM
 $f = .003$ IPR, Wet

- Stable cutting without chattering or vibration
- Excellent chip evacuation performance
- Excellent wear resistance increasing tool life by 130% or more

Sintered Component Clutch Hub Face Grooving

- Machining efficiency
- Chatter

Holder: GNDFR2020K-523-050
Insert: GCMN5008-MG
Seat Size: 5.0
Cutting Conditions
 $n = 500$ min⁻¹
 $v_c = 330$ SFM
 $f = .0019$ IPR, Wet

- Reduces cycle time by up to 20%
- Stable cutting without chattering or vibration

304 Stainless Measuring Component Grooving

- High rigidity for chatter
- Chip evacuation

Holder: GNDLR2525M-320
Insert: GCMN3002-GG
Seat Size: 3.0
Cutting Conditions
 $v_c = 195$ SFM
 $f = .001$ IPR, Wet

- Stable cutting without chattering or vibration
- Excellent chip evacuation performance

303 Steel Hollow Round Bar Pipe Cut-off

- Machining efficiency
- Chatter

Holder: GNDLR2020K-220
Insert: GCMR2002-CG-05
Seat Size: 2.0
Cutting Conditions
 $n = 1,000$ min⁻¹
 $v_c = 460$ SFM
 $f = .0012$ IPR, Wet

- Sharp cutting edge provides stable cutting
- Stable chip control for stable cutting

Stainless Steel Round Bar Cut-off

- Tool life
- Adhesion resistance

Holder: GNDML2020K-312
Insert: GCMN3002-GF
Seat Size: 3.0
Cutting Conditions
 $n = 1,000$ min⁻¹
 $f = .0059 \rightarrow .0012$ IPR, Wet

- Suppressed adhesion fracture achieves 150% tool life
- Stable cutting without chattering or vibration

4130 Steel Valve Spool Cut-off

- Tool life
- Chip evacuation

Holder: GNDLR1212JX-1.2512
Insert: GCMN125005-GF
Seat Size: 1.25mm
Cutting Conditions
 $n = 2,000$ min⁻¹
 $f = .0019$ IPR, Wet

- Slight damage and able to continue even after 7,500 uses
- Excellent chip evacuation performance

1045 Steel Motorcycle Transmission Component (Collar) Internal Grooving

- Tool life
- Chip evacuation

Holder: GNDISR1620-T2046
Insert: GXMN2002S-GF
Seat Size: 2.0
Cutting Conditions
 $v_c = 500$ SFM
 $f = .0012$ IPR
 $a_p = .067$ ", Wet

- Realizes stable chip evacuation and longer tool life through high-rigidity tools and 3D chipbreaker

4118 Steel Automotive Component (Coupling) Internal Grooving

- Machining efficiency
- Chip evacuation

Holder: GNDISR1620-T2046
Insert: GXMN2002S-GF
Seat Size: 2.0
Cutting Conditions
 $v_c =$ Roughing 165 to Finishing 265 SFM
 $f =$ Roughing .0027 to Finishing .0019 IPR
 $a_p = .110$ ", Wet

- Good chip evacuation means step feed in the roughing process, required with competitors' products, is no longer needed

Stainless Cast Steel Turbine Housing Face Grooving / Groove Expansion

- High rigidity
- Tool life

Holder: GNDSL2525M-410
Insert: GCMN4004-GF
Seat Size: 4.0
Cutting Conditions
 $v_c = 260$ SFM
 $f = .004$ IPR
 $a_p =$ up to .303", Dry

- Stable cutting without chattering or vibration
- Excellent wear resistance for 5 times longer tool life

GND Series - Application Examples

1015 Steel Automotive Component Grooving

· Machining efficiency
· Tool life

Holder: GNDMR2525K-312J
Insert: GCMN3004-GG
Seat Size: 3.0
Cutting Conditions
 $v_C = 500$ (300) SFM
 $f = .0039$ (.0019) IPR
 $a_p = .374$ "
Wet → Internal Coolant Supply 305 PSI
(*()) competitors running parameters

GND 1.2 sec/pc
Competitor's Product 3.6 sec/pc
Cutting Time (sec/pc)

GND 1,000 pcs.
Competitor's Product 250 pcs.
Tool Life (pcs.)

- Double the feed rate of competitor tools, with no chatter
- 1.5 times the cutting speed thanks to an internal coolant holder, achieving 4 times longer tool life

Sintered Component Tap Component Grooving

· Tool life
· Chip evacuation

Holder: GNDLL2020K-220J
Insert: GCMN2002-GF
Seat Size: 2.0
Cutting Conditions
 $v_C = 300$ SFM
 $f = .0008$ IPR
 $a_p = .079$ "
Wet → Internal Coolant Supply 218 PSI

GND 50 pcs.
Competitor's Product 30 pcs.
Tool Life (pcs.)

- Coolant supply from near the cutting edge directly to the cutting point, achieves 1.7 times longer tool life
- Internal coolant supply realizes stable chip evacuation even at low feed machining

4804 Steel Free-cutting Steel Machine Component Cut-off

· Tool life
· Central burrs

Holder: GNDLR1212JX-212.5
Insert: GCMR20003-CF-10
Seat Size: 2.0
Cutting Conditions
 $v_C = 400$ SFM
 $f = .0019$ IPR
 $a_p = .250$ ", Wet

GND 2,800 pcs.
Competitor's Product 2,500 pcs.
Tool Life (pcs.)

- Excellent cutting edge sharpness for 1.12 times longer tool life
- Central burrs eliminated with handed insert

4135 Steel Machine Component Cut-off

· Machined surface
· Tool life

Holder: GNDMR2020K-210
Insert: GCMR20003-CF-15
Seat Size: 2.0
Cutting Conditions
 $n = 2,500$ min⁻¹
 $f = .0016$ IPR
Wet

GND 1,800 pcs.
Competitor's Product 1,000 pcs.
Tool Life (pcs.)

- Excellent chip control improves machined surface
- Outstanding cutting edge sharpness for 1.8 times longer tool life

Pure Iron Automotive Component Cut-off

· Machining efficiency
· Tool life

Holder: GNDMR616JX-216J (Special Type)
Insert: GCMN2002-GF
Seat Size: 2.0
Cutting Conditions
 $v_C = \text{up to } 475$ SFM
 $f = .0023$ IPR
 $a_p = .197$ "
Wet → Internal Coolant Supply (Normal Pressure)

GND 10,000 pcs.
Competitor's Product 2,500 pcs.
Tool Life (pcs.)

- Effective cutting edge cooling via internal coolant supply, achieving 4 times longer tool life
- Tool change reduced, enabling longer automatic operation
- Improved productivity through change to high-speed conditions

1045 Steel Equivalent Automotive Component Grooving / Traverse Cutting

· Machined surface
· Tool life

Holder: GNDMR2020K-418J
Insert: GCMN4004-ML
Seat Size: 4.0
Cutting Conditions
 $n = 2,500$ min⁻¹
 $f = 0.0039$ IPR
 $a_p = .019$ " to $.079$ "
Wet → Internal Coolant Supply (Normal Pressure)

GND 1,500 pcs.
Competitor's Product 500 pcs.
Tool Life (pcs.)

- Effective cutting edge cooling via internal coolant supply, achieving 3 times longer tool life
- Cutting edge sharpness maintained for significantly improved post-machining tearing as well



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