

Grooving / Cut-Off Threading Tools

F1 to F86

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Grooving
Tools

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Grooving Tools

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Stock Markings and Symbols

- : Standard stocked item
- ★: Worldwide Warehouse Item
- ▲: Limited Availability Item, made to order, or discontinued (please confirm stock availability).

Blank: Made-to-order item
— mark: Not available

F1

F Grooving Tools

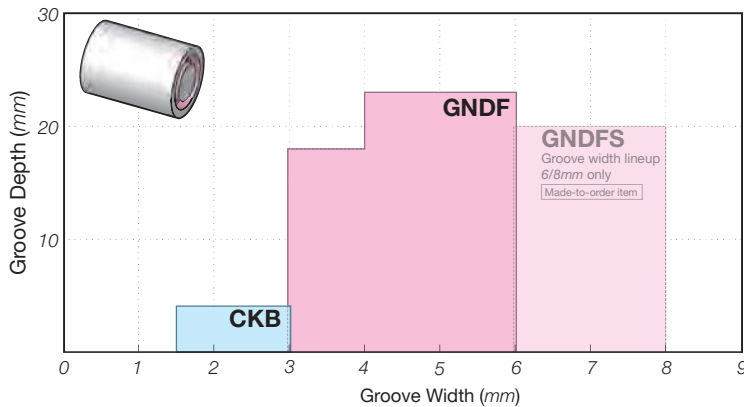


* mark: For groove depths and width combinations, refer to the above figures or the relevant page.

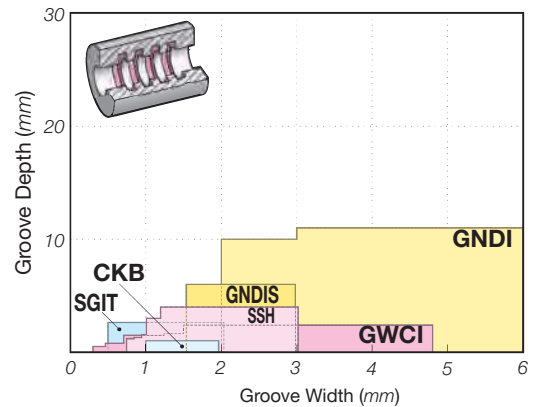
*1: For hardened steel, refer to page F57 for CBN / SUMIBORON Grooving Holder BNGG series. *2: Width of cut 2.0mm is a made-to-order item.

Grooving Tools Selection Guide

Face Grooving



Internal Grooving



Face Grooving Tools

Note: * mark: For groove depths and width combinations, refer to the above figures or the relevant page.

Applications	Series	Shape	Structure	Insert Shape	Groove Depth* (Inch/mm)	Groove Width* (Inch/mm)	Machining diameter (Inch/mm)	Features
Very Small Diameter	CKB	 → F49	●	 (1)	.157" / 4.0 .059" / 1.5	.118" / 3.0	ø.236" ø6 ~	· Face grooving for small lathes
For General Grooves to Deep Grooves	GNDF	 → F34	●	 (2)	.905" / 23.0	.236" / 6.0	ø1.378 - ø39.370" ø35 - ø1,000	· High-rigidity design reduces vibration
	GNDFS Made-to-order item	 → F36	●	 (2) Traverse Cutting Possible	.787" / 20.0 .236" / 6.0	.315" / 8.0	ø2.756" ø70 ~	· L-shape (horizontal) type · For wide grooves

Internal Grooving Tools

* mark: For groove depths and width combinations, refer to the above figures or the relevant page.

Applications	Series	Shape	Structure	Insert Shape	Groove Depth* (Inch/mm)	Groove Width* (Inch/mm)	Min. bore diameter (Inch/mm)	Features
For Small Diameter Grooves	CKB	 → F50	●	 (1)	.039" / 1.0 .039" / 1.0	.079" / 2.0	ø.157" ø4	· Very small diameter grooving · High clamping force · Wide variety of tool holders
	SGIT	 → F53	●	 (3)	.126" / 3.2 .0197" / .5	.079" / 2.0	ø.394" ø10	· 3-cornered type
	SSH	 → F51	●	 (1) Traverse Cutting Possible	.157" / 4.0 .029" / .74	.118" / 3.0	ø.315" ø8	· Internal coolant supply for outstanding chip evacuation · Wide range of grooving widths · Tough carbide body for stable grooving
For Shallow Grooves	GWCI	 → F44	●	 (3) (Standard, with Chipbreaker)	.098" / 2.5 .013" / .33	.189" / 4.8	ø1.378" ø35	· Using same inserts as GWC series holders · Inserts with chipbreakers now in stock
For General Grooves to Deep Grooves	GNDIS	 → F38	●	 (2) Traverse Cutting Possible	.260" / 6.6 .059" / 1.5	.118" / 3.0	ø.551" ø14	· Supports grooving with minimum bore diameter from ø14
	GNDI	 → F37	●	 (2) Traverse Cutting Possible	.433" / 11.0 .079" / 2.0	.236" / 6.0	ø1.260" ø32	· High-rigidity design reduces vibration

Necking Tools

* mark: For groove depths and width combinations, refer to the above figures or the relevant page.

Applications	Series	Shape	Structure	Insert Shape	Groove Depth* (Inch/mm)	Groove Width* (Inch/mm)	Machining diameter (Inch/mm)	Features
Facing Necking	GNDN	 → F32	●	 (2)	.157" / 4.0 .079" / 2.0	.236" / 6.0	ø.787" ø20 ~	· Necking at corners possible



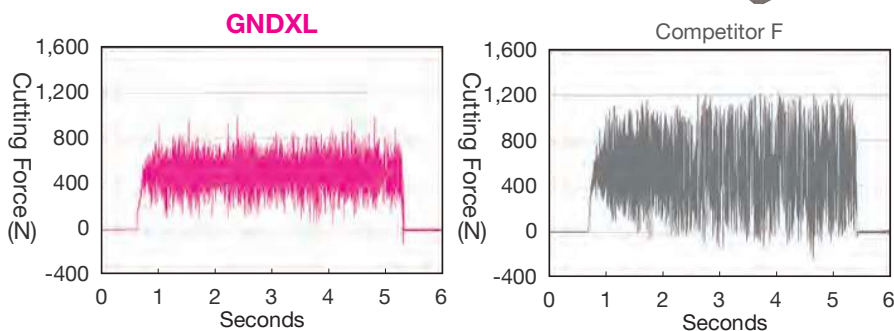
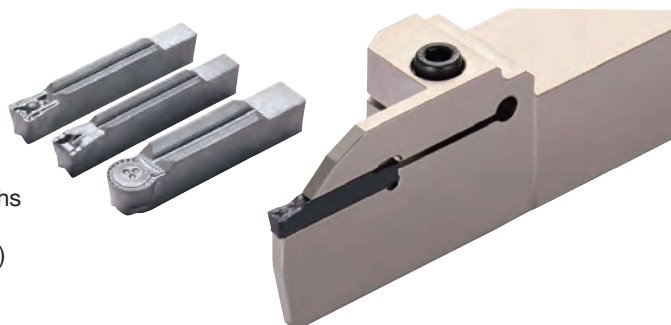
■ Features and Benefits

- Wide application range: applicable for grooving, traverse cutting, profiling, necking, facing and internal boring
- Expanded Grade Lineup: featuring grades: AC8025P / AC8035P / AC5015S / AC5025S
- Stable tool life and a large chipbreaker offering 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 $\pm 0.03\text{mm}$ 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 lineup: 20x12mm Square Holders for Small Lathes

■ GNDXL Deep Grooving (page 33)

New

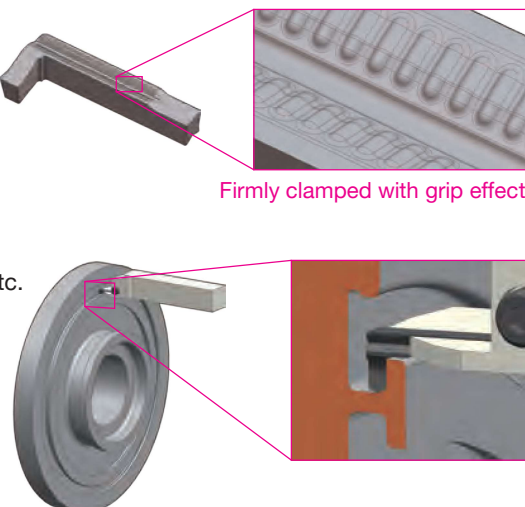
- GNDXL now available with a deep groove holder that can support groove depths up to 1.260" / 32 mm
- The integrated high-rigidity body and insert provide strong clamp-on specifications for excellent vibration resistance.
- Lineup of .750" / 1.000" / 20mm / 25mm square shank widths
- Applied 1-corner insert for deep grooving.
Seat Size 3.0 to 6.0mm is in stock (2.0mm is made-to-order)
- Lineup of three chipbreakers: ML / GF / RN



■ GND 90° Insert (Made to Order Item)

New

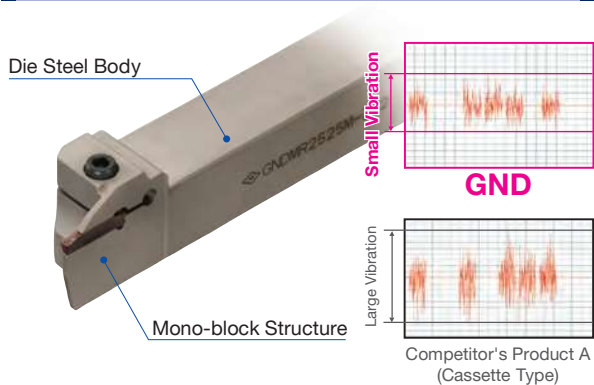
- Ideal for grooving narrow parts and facing, O/D, and I/D applications that require unique approaches due to interference
- Unique design of the inserts prevent pullout for specific applications
- End shape of the insert is offered in different forms based on application needs: square, full radius, with a chamfer, etc.
- Available in 5mm (.197") or less seat sizes (groove widths)



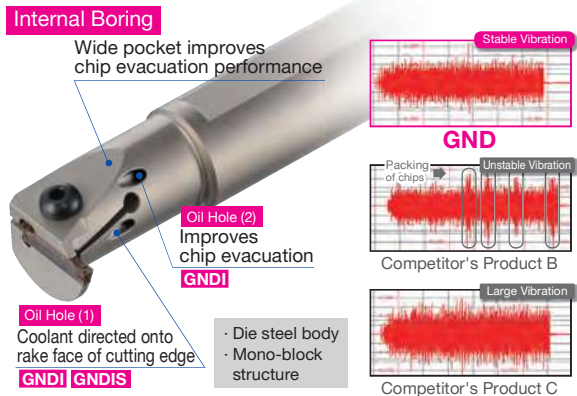
Grooving Toolholders GND - Cutting Performance

Reduced chattering

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



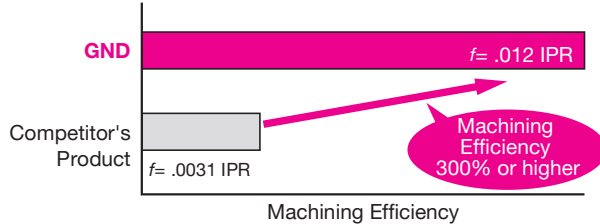
Both high rigidity and good chip evacuation performance



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

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!

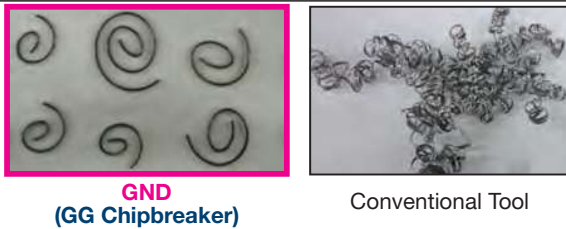
Reduction of chattering prevents unexpected breakage.



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

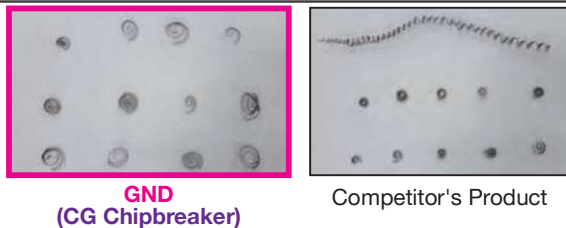
Improved Chip Control

Grooving



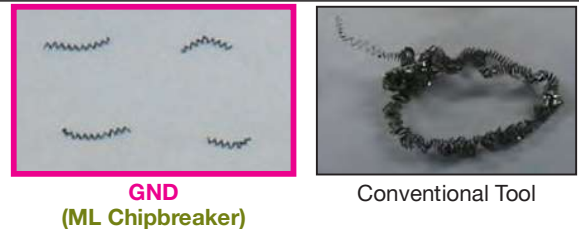
Part Material: Structural Steel
Holder: GNDLR2525M-320 **Insert:** GCMN3002-GG
Cutting Conditions: $v_c = 330$ SFM, $f = 0.0059$ IPR, $a_p = 0.472"$, Wet

Cut-off



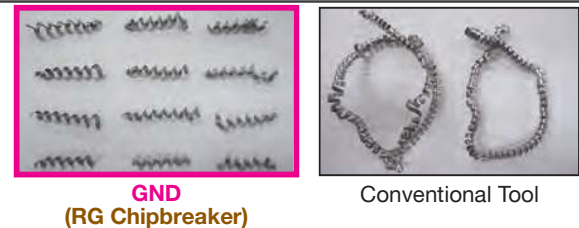
Part Material: Stainless Steel ($\phi 30mm$)
Holder: GNDLR2525M-220 **Insert:** GCMR2002-CG-05
Cutting Conditions: $v_c = 330$ SFM, $f = 0.0059$ IPR, Wet

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



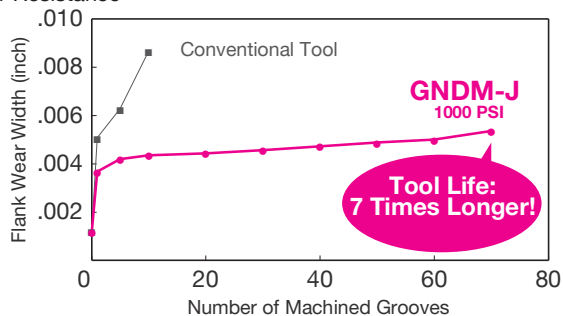
Part Material: Structural Steel
Holder: GNDMR2525M-312 **Insert:** GCMN3015-RG
Cutting Conditions: $v_c = 330$ SFM, $f = 0.0019$ IPR, $a_p = 0.0039"$, Wet

Internal Coolant Holder GNDM-J / GNDL-J

- 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

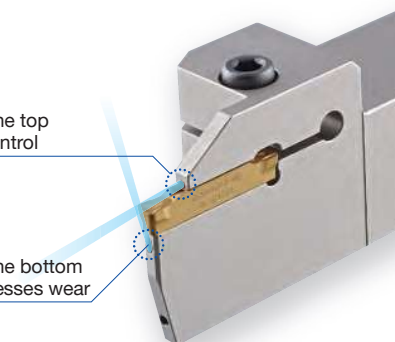


Wear Resistance



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



- 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



Right hand insert shown



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

Grooving / Traverse Cutting			Grooving / Cut-off		
General-Purpose			Low Feed		
MG			GG		
Standard chipbreaker for traverse cutting			1st recommendation for grooving		
Cutting Edge Cross Section			Cutting Edge Cross Section		
Seat Size			Seat Size		
1.25	1.5	2.0	1.25	1.5	2.0
3.0	4.0	5.0	3.0	4.0	5.0
6.0	7.0	8.0	6.0	7.0	8.0
Stock			Stock		
AC8025P	AC8035P		AC8025P	AC8035P	
AC830P	AC425K		AC830P	AC425K	
AC5015S	AC5025S		AC5015S	AC5025S	
AC520U	AC530U		AC520U	AC530U	
AC1030U	T2500A		AC1030U	T2500A	
H10			H10		

Low Feed			Low Cutting Force		
ML			GL		
For low-feed chip control			For low-feed chip control		
Cutting Edge Cross Section			Cutting Edge Cross Section		
Seat Size			Seat Size		
1.25	1.5	2.0	1.25	1.5	2.0
3.0	4.0	5.0	3.0	4.0	5.0
6.0	7.0	8.0	6.0	7.0	8.0
Stock			Stock		
AC8025P	AC8035P		AC8025P	AC8035P	
AC830P	AC425K		AC830P	AC425K	
AC5015S	AC5025S		AC5015S	AC5025S	
AC520U	AC530U		AC520U	AC530U	
AC1030U	T2500A		AC1030U	T2500A	
H10			H10		

						For low cutting force and chip control at low-feeds		
Cutting Edge Cross Section			Cutting Edge Cross Section			Cutting Edge Cross Section		
Seat Size			Seat Size			Seat Size		
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
6.0	7.0	8.0	6.0	7.0	8.0	6.0	7.0	8.0
Stock			Stock			Stock		
AC8025P	AC8035P		AC8025P	AC8035P		AC8025P	AC8035P	
AC830P	AC425K		AC830P	AC425K		AC830P	AC425K	
AC5015S	AC5025S		AC5015S	AC5025S		AC5015S	AC5025S	
AC520U	AC530U		AC520U	AC530U		AC520U	AC530U	
AC1030U	T2500A		AC1030U	T2500A		AC1030U	T2500A	
H10			H10			H10		

Lead Angle: 5°								
Lead Angle: 10° / 15°								
Items in grey are not available								

Cut-off			Profiling			Profiling Necking			For Non-Ferrous Metals		
General-Purpose			Low Cutting Force			General-Purpose			General-Purpose		
CG			CF			RG			RN		
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		
Cutting Edge Cross Section			Cutting Edge Cross Section			Cutting Edge Cross Section			Cutting Edge Cross Section		
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		
AC8025P	AC8035P		AC8025P	AC8035P		AC8025P	AC8035P		AC8025P	AC8035P	
AC830P	AC425K		AC830P	AC425K		AC830P	AC425K		AC830P	AC425K	
AC5015S	AC5025S		AC5015S	AC5025S		AC5015S	AC5025S		AC5015S	AC5025S	
AC520U	AC530U		AC520U	AC530U		AC520U	AC530U		AC520U	AC530U	
AC1030U	T2500A		AC1030U	T2500A		AC1030U	T2500A		AC1030U	T2500A	
H10			H10			H10			H10		

| Lead Angle: 20° | | | | | | | | | | | |

Grooving Tools GND - Chipbreaker Selection & Grade Selection Guide

■ Chipbreaker Selection

	Grooving/Traverse Cutting	Grooving	Cut-off
Grooving Tools F	1st Recommendation MG General-Purpose Improved Chip Control Chipping Prevention	1st Recommendation GG General-Purpose Improved Chip Control Chipping Prevention	1st Recommendation GG General-purpose Improved Chip Control Chipping Prevention Nib, Burr Reduction
	2nd Recommendation ML Low Feed Chip Control Emphasized Improved Chip Control Chipping Prevention	2nd Recommendation GL General-Purpose Chip Control Emphasized Improved Chip Control Reduced Chattering Chipping Countermeasures	2nd Recommendation CG General-Purpose Feed Direction Front Cutting Edge Angle 5° Improved Chip Control Chipping Prevention Nib, Burr Reduction
		2nd Recommendation GF Low Resistance Improved Chip Control Reduced Chattering Chipping Prevention	2nd Recommendation GL General-Purpose Chip Control Emphasized Improved Chip Control Reduced Chattering Chipping Prevention
		2nd Recommendation CF Low Resistance Feed Direction Front Cutting Edge Angle 10°/15° Improved Chip Control Chipping Prevention Nib, Burr Reduction	2nd Recommendation GF Low Resistance Improved Chip Control Reduced Chattering Chipping Prevention
	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 	AC8035P (AC830P) CVD 	AC425K CVD 	AC5015S PVD 	H10 Uncoated Carbide
	AC8035P (AC830P) CVD 	AC5015S PVD 	AC8025P CVD 	AC5025S (AC520U) PVD 	
	AC5025S (AC520U) PVD 	AC5025S (AC520U) PVD 	AC5015S PVD 	AC5025S (AC520U) PVD 	
	AC530U/AC1030U PVD 	AC530U/AC1030U PVD 	AC5025S (AC520U) PVD 	AC530U/AC1030U PVD 	

Only AC520U and AC1030U inserts are stocked for GNDIS holders. Also see CBN grade: BN7500 for powdered metal.



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

F23

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
Straight Type

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

F24

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

F23

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
Straight Type

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

F24

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								GNDL		.375						F23					⊙						
					2									.375						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
						3								.375						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
	.500	.500	1.25	1.5								GNDL		.500						F23					⊙						
					2									.500						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙		
						2						GNDL-J		.500						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
						3								.500						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙		
							3					GNDL-J		.500						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
	.625	.625	1.5									GNDM		.375						F23					⊙						
					1.5									.500						F23					⊙						
						2						GNDM		.472						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
						2							GNDM-J		.472						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
							2					GNDL		.625						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
							2						GNDL-J		.625						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
								3				GNDM		.472						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
								3					GNDM-J		.472						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
									3			GNDL		.625						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
									3				GNDL-J		.625						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙

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								GNDL		10						F23					⊙						
					2									10						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
						3								10						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
	12	12	1.25	1.5								GNDL		12						F23					⊙						
					2									12.5						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙		
						2						GNDL-J		12.5						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
						3								12.5						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙		
							3					GNDL-J		12.5						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
	16	16	1.25									GNDM		8						F23					⊙						
			1.25	1.5										12.5						F23					⊙						
												GNDM		10						F23					⊙						
					2									12						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
						2						GNDM-J		12						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
							2							12						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
								2				GNDL		16						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
									2				GNDL-J		16						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
										3		GNDM		12						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
													GNDM-J		12						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	20	12										GNDL		16						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
													16						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙		
												GNDM		17						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
													GNDM-J		17						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
												GNDL		21						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
													GNDL-J		21						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
												GNDM		17						F23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
													GNDM-J		17						F24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙

⊙: In Stock

⊙: Best ○: Suitable

Grooving Tools

GND

Grooving Tools

F

For External Turning (Straight Type)

Traverse Cutting / Profiling (Cut-off)

GNDS Straight Type
For Shallow Grooves
Shank Size (H x W)
20 x 20mm
25 x 25mm
32 x 25mm
F32

GNDM 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
F25

GNDM-J Straight Type
Internal Coolant Supply
Shank Size (H x W)
.750" x .750"
1.00" x 1.00"
20 x 20mm
25 x 25mm
32 x 25mm
F26

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

Grooving / Cut-off (Traverse Cutting)

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
F27

GNDL-J Straight Type
Internal Coolant Supply
Shank Size (H x W)
.750" x .750"
1.00" x 1.00"
20 x 20mm
25 x 25mm
32 x 25mm
F28

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

Grooving/Cut-off (Horizontal Feed)

GNDXL Straight Type
Single Sided Insert
Shank Size (H x W)
.750" x .750"
1.00" x 1.00"
20 x 20mm
25 x 25mm
F33

Seat Size

2.0	3.0	4.0
5.0	6.0	

Applicable Chipbreaker
ML GF RN

GNDXL: For Outer Diameter Machining (Straight Type) Groove Depth ~1.260" / 32mm

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)	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	F25	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		2	GNDM-J	.500	F26	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		2	GNDL	.750	F27	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		2	GNDL-J	.750	F28	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		3	GNDM	.500	F25	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		3	GNDM-J	.500	F26	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		3	GNDL	.750	F27	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		3	GNDL-J	.750	F28	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
	1.00 1.00	4	GNDM	.700	F25	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		4	GNDM-J	.700	F26	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		4	GNDL	.700	F27	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		4	GNDL-J	.700	F28	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		5 6	GNDM	1.000	F25	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		5 6	GNDM-J	1.000	F26	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		5 6	GNDL	1.000	F27	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		5 6	GNDL-J	1.000	F28	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
Straight Type	1.250 1.250	3	GNDM	.500	F25	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		3	GNDL	.900	F27	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		4	GNDM	.700	F25	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		4	GNDL	1.000	F27	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		5 6	GNDM	.700	F25	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		5 6	GNDL	1.000	F27	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		7 8	GNDM	.700	F25	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙
		7 8	GNDL	1.000	F27	⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙

Straight Series for Outer Diameter Machining
(Groove Depth ~1.260" / 32mm)

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

ML: Multi-Functional / General-Purpose GF: Grooving / Low Cutting Force RN: Facing / Necking / General-Purpose

Type	Shank Size (Inch)	Seat Size	Series	Maximum Groove Depth (Inch)	Ref. Page	Applicable Chipbreakers (GNDXL Only)
	Height (H) Width (B)	2 3 4 5 6		.197 .394 .591 .787 1.000 1.181 1.378		ML GF RN
Straight	.750 .750	2	GNDXL	1.023	F33	⊙ ⊙ ⊙
	1.00 1.00	3 4 5 6	GNDXL	1.260	F33	⊙ ⊙ ⊙
Type	Shank Size (mm)	Seat Size	Series	Maximum Groove Depth (mm)	Ref. Page	Applicable Chipbreakers (GNDXL Only)
	Height (H) Width (B)	2 3 4 5 6		5 10 15 20 25 30 35		ML GF RN
Straight	20 20	2	GNDXL	26	F33	⊙ ⊙ ⊙
	25 25	3 4 5 6	GNDXL	32	F33	⊙ ⊙ ⊙

Available (USA or WWW)

Made to Order Item

Note: Only the dedicated one-corner insert (insert part number ending with "1") can be used with the GNDXL. ⊙: Best ○: Suitable

F10

 For External Turning (L Type)

Traverse Cutting / Profiling (Cut-off)

Grooving / Cut-off (Traverse Cutting)

GNDMS
L Type

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

F26

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 L Type Series Overview

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

GNDLS
L Type

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

F28

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

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		
L Type	.750	.750			2							GNDLS							F28												
					3							GNDMS							F26												
					3							GNDLS							F28												
						4						GNDMS							F26												
						4						GNDLS							F28												
							5					GNDMS							F26												
			1.00	1.00			2							GNDLS							F28										
							3							GNDMS							F26										
					3							GNDLS							F28												
						4						GNDMS							F26												
						4						GNDLS							F28												
							5	6				GNDMS							F26												
							5	6				GNDLS							F28												

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
L Type	20	20			2							GNDLS							F28										
					3							GNDMS							F26										
					3							GNDLS							F28										
						4						GNDMS							F26										
							5					GNDMS							F26										
					2							GNDLS							F28										
					3							GNDMS							F26										
					3							GNDLS							F28										
	25	25				4						GNDMS							F26										
						4						GNDLS							F28										
							5	6				GNDMS							F26										
							5	6				GNDLS							F28										

■ : In Stock

◎ : Best ○ : Suitable

 For External Turning (SUMIBORON Cassette)

Grooving / Cut-off / Traverse Cutting / Profiling

GNDCM
Cassette

Applicable Holders
SumiPolygon
GND00 (Straight)
GND90 (L-Shaped)

F31

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

SumiPolygon Cassette 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	Applicable SumiPolygon Holders	Seat Size								Series	Maximum Groove Depth (mm)						Ref. Page	Applicable Chipbreakers											
		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	
Cassette	GND00 GND90			2						GNDCM								F31											
				3														F31											
					4													F31											
						5	6											F31											

■ : In Stock

◎ : Best ○ : Suitable

Grooving Tools

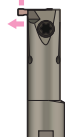
GND Grooving Toolholders

Grooving
Tools
F

 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.
 $\phi 12\text{mm}$
 $\phi 16\text{mm}$
 $\phi 20\text{mm}$
F38

Seat Size		
1.5	2.0	3.0

Applicable Chipbreaker
ML GF

Inserts are dedicated products.

GNDI
Straight
Type



Shank Dia.
1.000"
1.250"
1.500"
 $\phi 25\text{mm}$
 $\phi 32\text{mm}$
 $\phi 40\text{mm}$
F37

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		5	10	15	20	25	30			ML (GNDIS Type Dedicated)	GF (GNDIS Type Dedicated)
Straight Type	$\phi 12$	1.5			GNDIS	2.6						$\phi 14$	F38		⊙
		1.5				3.6						$\phi 14$	F38		⊙
			2	3		2.6						$\phi 14$	F38	⊙	⊙
			2	3		3.6						$\phi 14$	F38	⊙	⊙
	$\phi 16$	1.5			GNDIS	3.6						$\phi 16$	F38		⊙
		1.5				4.6						$\phi 20$	F38		⊙
			2	3		3.6						$\phi 16$	F38	⊙	⊙
			2	3		4.6						$\phi 20$	F38	⊙	⊙
	$\phi 20$	1.5			GNDIS	6.6						$\phi 25$	F38		⊙
			2	3		6.6						$\phi 25$	F38	⊙	⊙

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	CF	RG	RN	GA	
Straight	ø1.000	2					GNDI		.250					ø1.250	F37											
			3	4	5	6				.250					ø1.250	F37										
	ø1.250	2	3	4	5	6	GNDI		.400					ø1.575	F37											
	ø1.500		3	4	5	6	GNDI		.430					ø2.000	F37											

Type	Shank Size DCON (mm)	Seat Size					Series	Maximum Groove Depth (mm)						Min. Bore Dia. (mm)	Ref. Page	Applicable Chipbreakers										
		2	3	4	5	6		5	10	15	20	25	30			MG	ML	GG	GL	GF	CG	CF	RG	RN	GA	
Straight	ø25	2					GNDI		6					ø32	F37											
			3	4	5					6					ø32	F37										
	ø32	2					GNDI		6					ø32	F37											
			3	4	5		GNDI		10					ø40	F37											
	ø40		3	4	5	6	GNDI		11					ø50	F37											

In Stock

⊙: Best ○: Suitable

 For Necking
Necking

GNDN
Straight
Type



Shank Size (H x W)
20 x 20mm
25 x 25mm
F32

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

Necking Series Overview

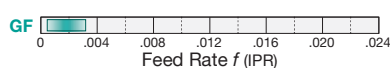
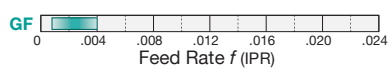
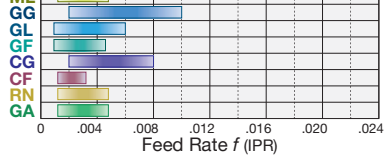
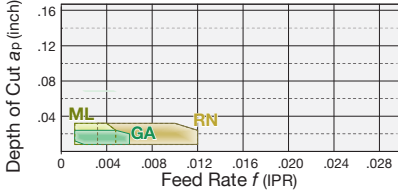
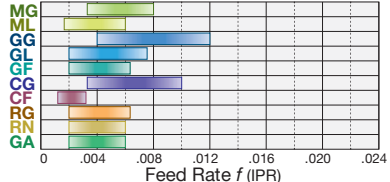
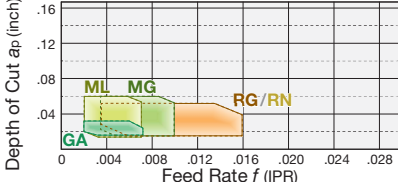
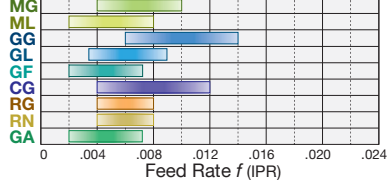
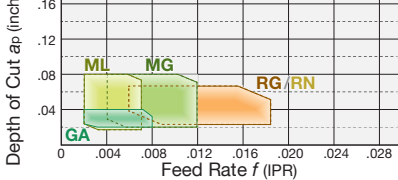
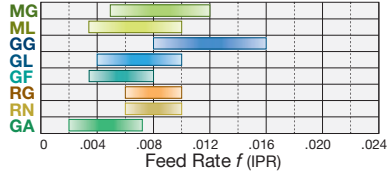
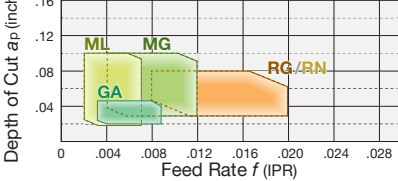
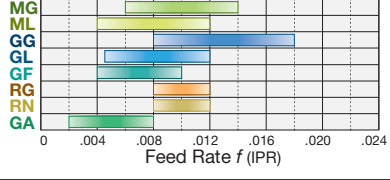
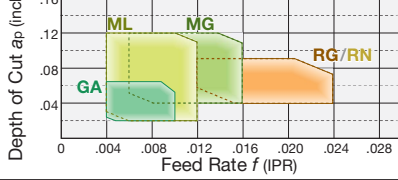
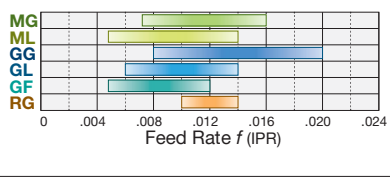
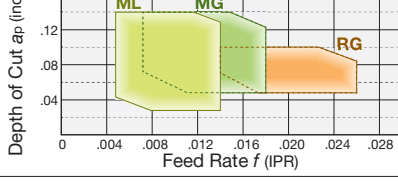
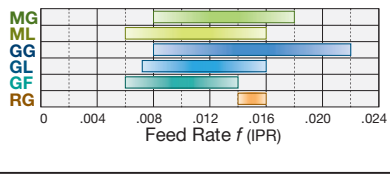
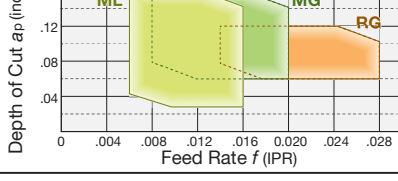
MG: Multi-functional / General-purpose ML: Multi-functional / Low-feed GG: Grooving / General-purpose GL: Grooving / Low-feed GF: Grooving / Low cutting force
CG: Cut-off / General-purpose CF: Cut-off / Low cutting force RG: Profiling / General-purpose RN: Facing / Necking / General-purpose GA: Non-ferrous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

Overview																											
Type	Shank Size (mm)		Seat Size					Series	Maximum Groove Depth (mm)						Min. Bore Dia. (mm)	Ref. Page	Applicable Chipbreakers										©: Besi
	Height	Width	2	3	4	5	6		5	10	15	20	25	30			MG	ML	GG	GL	GF	CG	CF	RG	RN	GA	
Straight Type			2					GNDN	1.5							ø20	F32								⊙	⊙	
	20	20		3					2.0							ø20	F32								⊙	⊙	
	25	25			4				3.0							ø30	F32								⊙	⊙	
						5				3.5							ø30	F32								⊙	⊙
						6			4.0							ø30	F32								⊙	⊙	

In Stock

Grooving Tools

GND - Recommended Cutting Conditions

Seat Size Grooving Width (Inch / mm)	Recommended Cutting Conditions		Corner Radius (Inch)	Applicable Insert
	Grooving / Cut-off (Necking)	Traverse Cutting		
F Grooving Tools	.049 / 1.25 Chipbreaker GF 	—	.0020	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
	.079 / 2.0 Chipbreaker ML GG GL GF CG CF RG RN GA 	Depth of Cut a_p (inch) 	.0012 .0078 .0156 .0394	MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA 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 .0078 .0156 .0590	MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA 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 .0156 .0313 .0787	MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA 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 .0156 .0313 .0984	MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA 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 .0156 .0313 .1181	MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA
	.275 / 7.0 Chipbreaker MG ML GG GL GF CG CF RG RN GA 	Depth of Cut a_p (inch) 	.0078 .0156 .0313 .1378	MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA
	.315 / 8.0 Chipbreaker MG ML GG GL GF CG CF RG RN GA 	Depth of Cut a_p (inch) 	.0078 .0156 .0313 .1575	MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA MG ML GG GL GF CG CF RG RN GA 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 center 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 chipbreaker with the GND holder for facing.

See next page for additional Recommended Cutting Conditions

■ Recommended Cutting Conditions

Recommended Cutting Conditions for GNDIS F36

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

■ Recommended Cutting Conditions CBN - BN7500

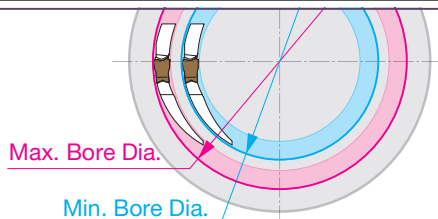
Part Material	Cutting Speed v_c (SFM)	Feeds (IPM)	
		Groove	Traverse $a_p \leq .020$
General Sintered Alloy	250 - 800	.001 - .006	.003 - .008
High Density Sintered Alloy	250 - 600	.001 - .003	.002 - .006
CoCr - Cobalt Chrome	250 - 600	.001 - .006	.002 - .008

■ Key Points for Applications



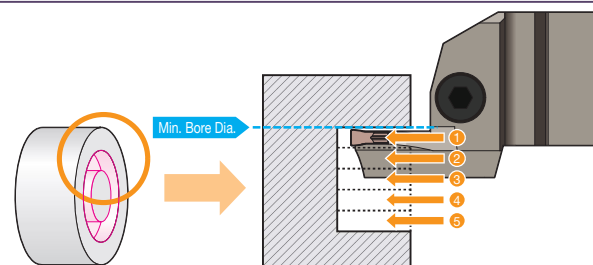
Key Points for Facing

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

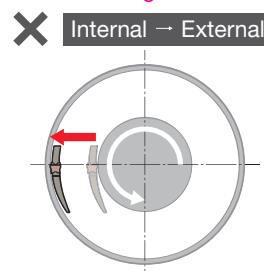
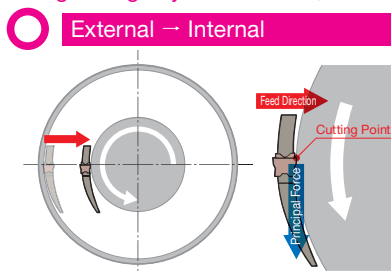
Recommended Chipbreakers **MG** **ML** **GG** **GL** **GF** **GA**

- 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 machining is performed from the inner to the outer diameter, the wall thickness remaining on the principal force side will become thinner, reducing the rigidity of the holder.

- 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.

Grooving Tools GND Key Points



Key Points in Internal Boring

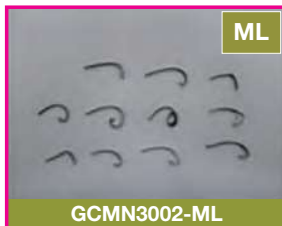
Precautions for Internal Boring

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.



MG



ML



GG



GL

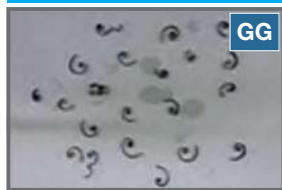
Part Material: 15CrMo Steel Prepared Hole Diameter: $\phi 1.000''$ Holder: GNDIR2532-T306 Insert: GCMN3000-00
Cutting Conditions: $v_c = 330$ SFM, $f = .0039$ IPR, $a_p = .118''$ Wet

Internal Boring



GCMN3002-GG

External Turning



GG



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

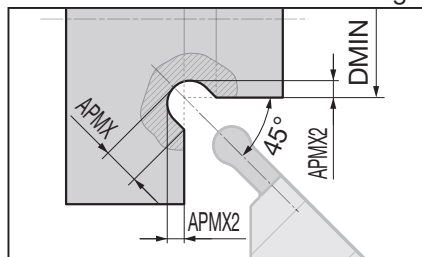


Key Points for Necking

Precautions for Necking

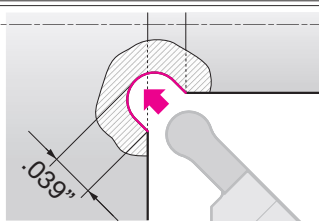
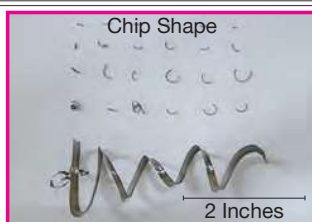
Recommended Chipbreaker **RN**

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

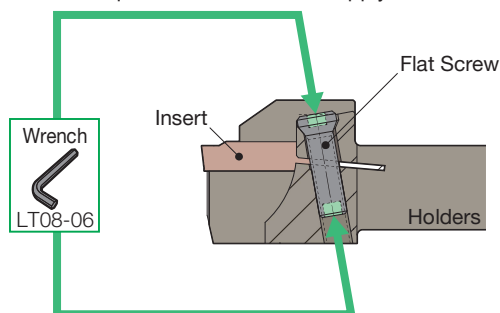
- For necking, these conditions are recommended for each seat size when grooving with RN chipbreakers.
- To prevent interference with the part material, the work diameter for each GNDN holder should be set to the minimum machining diameter (DMIN) or less.



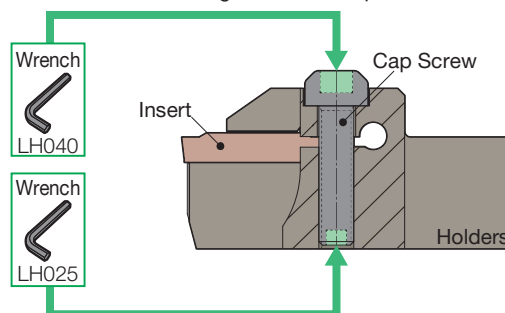
Part Material : 15CrMo Steel
Seat Size : 3.0
Holder : GNDN R2020K-320-020
Insert : GCMN3015-RN
Cutting Conditions : $v_c = 330$ SFM, $f = .0039$ IPR
Necking Depth = .039" Wet

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-000.0J**

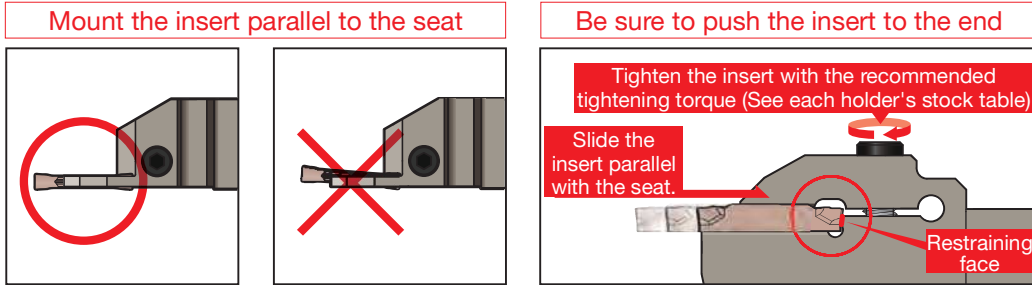


16mm square holder: **GNDM R/L1616JX-000J**
GNDL R/L1616JX-000J

Precautions for Grooving Tool Holders GND

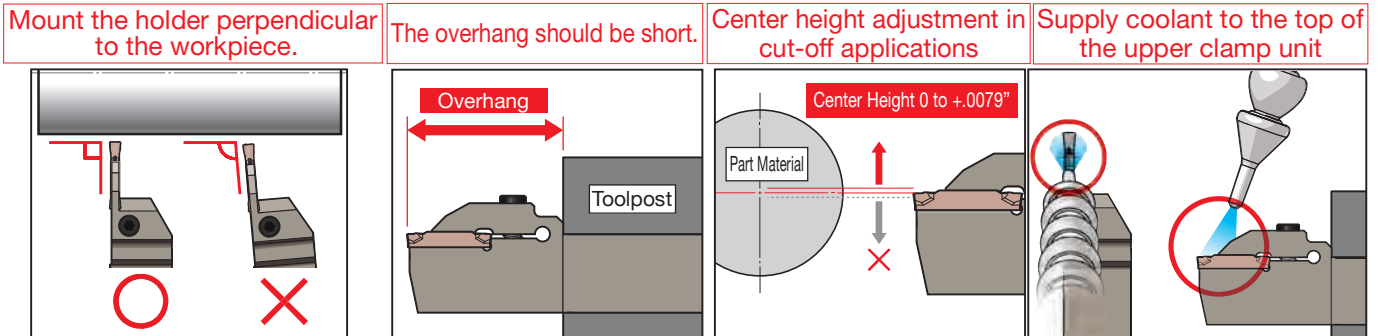
■ Insert Mounting Precautions

- (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.



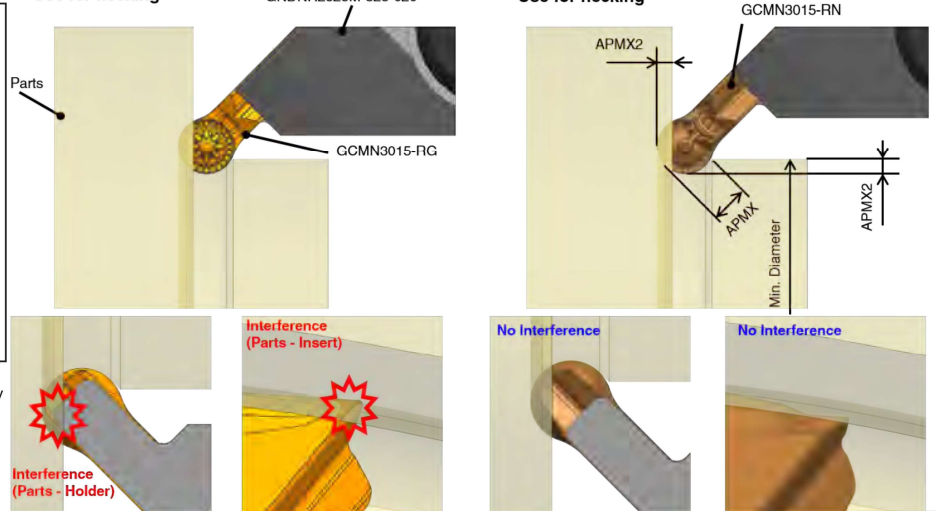
■ D.O.C. when Pulling Up with RG/RN Chipbreakers

Seat Size (mm)	Maximum Depth of Cut when Pulling Up (inch / mm)
CW	E1
2.0*	.004 / .10
3.0	.006 / .15
4.0	.008 / .20
5.0	.010 / .25
6.0	.012 / .30
7.0	.014 / .35
8.0	.016 / .40

*: CW = 2.0 is RN Chipbreakers only

■ RN vs. RG Insert Length Comparison

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

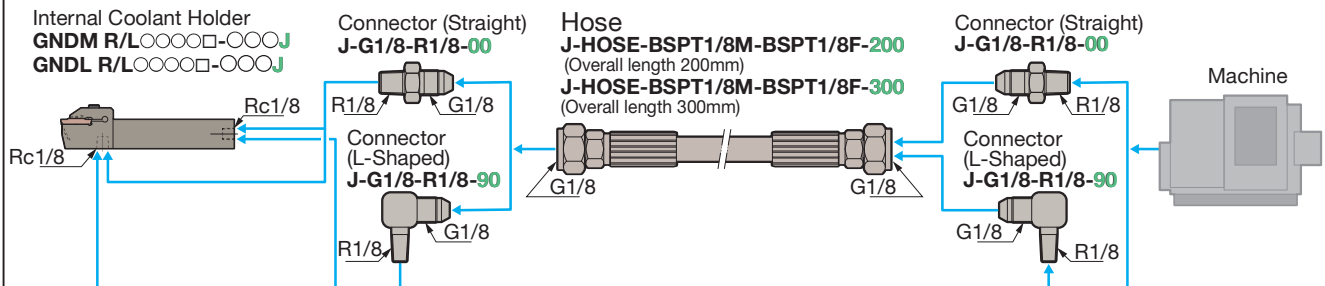


RN is longer than RG for preventing interference.

Precautions for Grooving Tool Holders GND

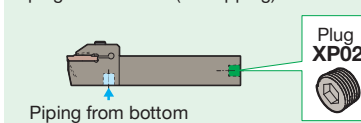
Piping Method for Hoses and Connectors

Hoses and Connectors F29

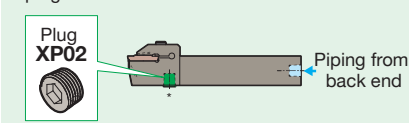


- Apply sealant such as commercial sealing tape to the piping connection parts.
- For plug mounting when piping, see the figure below.

Piping from bottom (at shipping)

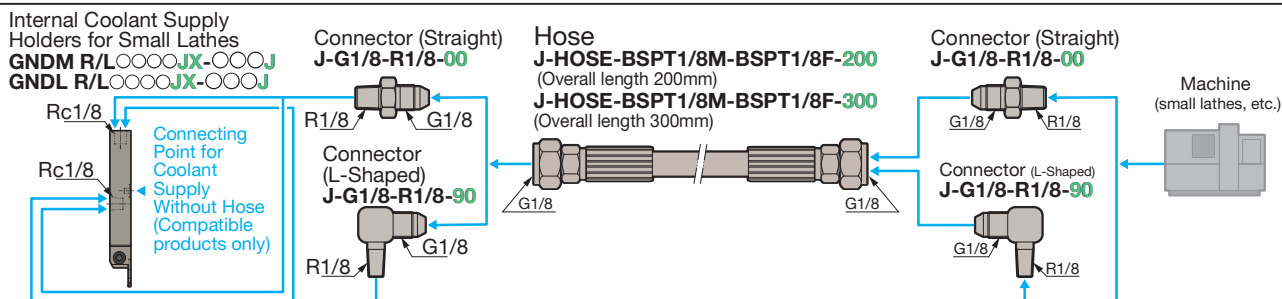


Piping from back end



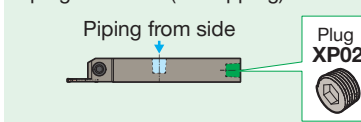
*The plug will protrude a few millimeters when mounted on the bottom.

Piping Method for Hoses and Connectors (For Small Lathes)

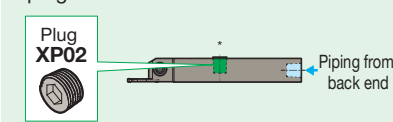


- Apply sealant such as commercial sealing tape to the piping connection parts.
- For plug mounting when piping, see the figure below.

Piping from side (at shipping)

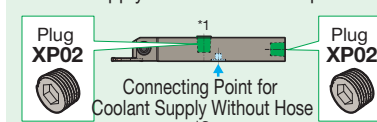


Piping from back end



* The plug will protrude a few millimeters when mounted on the side.

Coolant Supply Without Hose Compatible Products

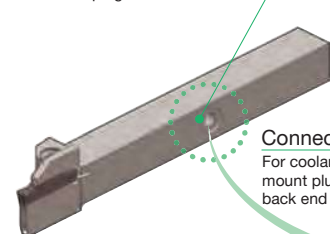


- *1 The plug will protrude a few millimeters when mounted on the side.
- *2 The plug is mounted at shipping, so remove it for use with coolant supply without hose.

Coolant Supply to Holders Without Hose

Coolant can be supplied directly from the toolpost without a hose

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

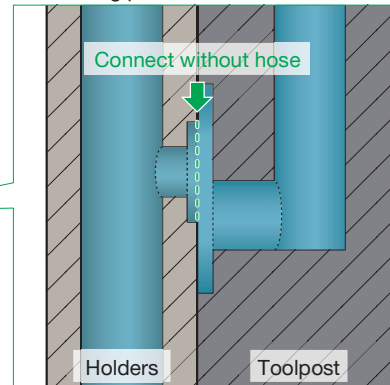


Connecting Points for Hoses
For coolant supply without hose, mount plugs (XP02) on the side and back end

Holders for Coolant Supply Without Hose

- 12mm size: GNDL R/L1212JX-000J
- 16mm size: GNDM R/L1616JX-000J
- GNDL R/L1616JX-000J

Connecting point cross-section



Compatible Toolpost for Coolant Supply Without Hose

GND - 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	M: Multi-function	R: Right Handed	12: 0.750 x 0.750"	1.25	K: 5.0"	050: 0.50"	J: Coolant Through / Internal Coolant
#2 New	L: Deep Groove	L: Left Handed	16: 1.000 x 1.000"	1.5	M: 6.0"	070: 0.70"	
#3 Depth	MS: 90° L Holder for Multi-function		20: 1.250 x 1.250"	2	P: 7.0"	075: 0.75"	
	LS: 90° L Holder for Deep Grooving			3	JX: for Small lathes	090: 0.90"	
	XL: Deep Grooving and Parting			4		100: 1.00"	
	F: Face Machining			5			
	I: for Internal (ID) Grooving			6			
				7			
				8			

■ 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	F: Face Grooving	R: Right Handed	12: 0.750 x 0.750"	2	K: 5.0"	050: 0.50"	035: 35mm (1.378")
#2 New	FS: 90° Face	L: Left Handed	16: 1.000 x 1.000"	3	M: 6.0"	070: 0.70"	040: 40mm (1.575")
#3 Depth			20: 1.250 x 1.250"	4	P: 7.0"	075: 0.75"	045: 45mm (1.772")
				5		090: 0.90"	050: 50mm (1.969")
				6			065: 65mm (2.559")
				7			085: 85mm (3.346")
				8			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	R: Right Handed	1.25	094: 0.094"	R0.5: 0.5/64 = 0.0078"	GG: Std. Feed Deep Groove
#2 C: 7° Relief Angle	L: Left Handed	1.5	125: 0.125"	R1.0: 1/64 = 0.0156"	GL: Low Feed Deep Groove
#3 M: Molded Tolerance	N: Neutral	2	187: 0.187"	R2.0: 2/64 = 0.0313"	MG: Std. Feed Traverse
		3	250: 0.250"		ML: Low Feed Traverse
		4			RG: Full Radius Profiling
		5			RN: For profiling with undercut
		6			GF: Low Cutting Force
		7			GA: Non-ferrous grooving
		8			CG: General Cutoff
					CF: High Shear Cutoff
					LF: Profiling / Radius Grooving

*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
BN7500: Uncoated CBN grade for powdered metals

See next page for metric nomenclature

Grooving Tools

GND - Metric Nomenclature

Identification Code

Holders

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

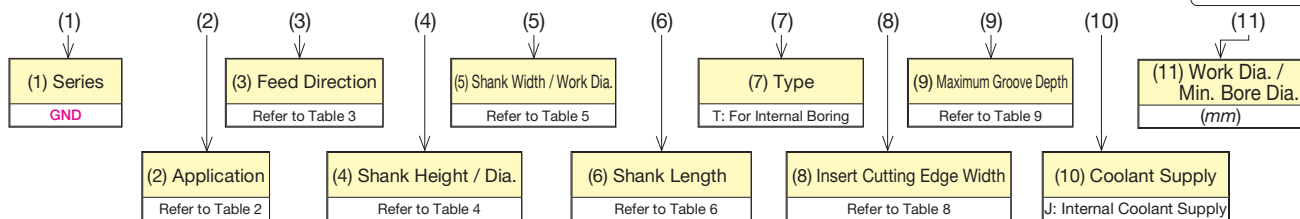


Table 2

(2) Application		
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
XL	For External Machining	External Deep Grooving and Parting

Table 3

(3) Feed Direction	
Symbol	Feed Direction
R	Right Hand
L	Left Hand

Table 4

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

Table 5

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

Table 6

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

Table 8

(8) Insert Cutting Edge Width*			
Symbol	Seat Size	Symbol	Seat Size
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		

* Excluding GNDIS.

Table 9

(9) Maximum Groove Depth*			
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 GNDN / GNDIS.

Insert

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



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 holder so long as the maximum groove depth can be achieved.

Grooving Tools

GND - Inserts

GCMN Inserts		Sumitomo Catalog Number	Precision Machining	Coated Carbide								Cermet	Uncoated Carbide	Dimensions (Inch / mm)				Fig.			
				S				K	P					N	Insert Seat Size	Grooving Width	Nose Radius		Overall Length	Thickness	
Function	Chipbreaker		AC1030U	AC5015S	AC5025S	AC520U	AC530U	AC425K	AC8025P	AC8035P	AC830P	T2500A	H10		CW	RE	L	S			
Low Cutting Force	GF	GCMN125005-GF												1.25	.049	.0020	.685	.126	1		
		GCMN150005-GF												1.5	.059	.0020	.685	.146	1		
		GCMN2002-GF		★	●		★					★		2	.078	.0078	.831	.142	1		
		GCMN2002-GF1		●	●		●							2	.078	.0078	.831	.142	6		
		GCMN2004-GF		★	★							★		2	.078	.0156	.831	.142	1		
		GCMN3002-GF		●	●	★	★			★	★	★		3	.118	.0078	.831	.150	1		
		GCMN3002-GF1		●	●		●							3	.118	.0078	.831	.150	6		
		GCMN3004-GF		★	★					★		★		3	.118	.0156	.831	.150	1		
		GCMN4002-GF		●	★	★	★			★	★	★		4	.157	.0078	1.039	.157	1		
		GCMN4002-GF1		●	●		●							4	.157	.0078	1.039	.157	6		
		GCMN4004-GF		★	★					★		★		4	.157	.0156	1.039	.157	1		
		GCMN5002-GF		★	★	★	★			★	★			5	.197	.0078	1.039	.161	1		
		GCMN5002-GF1		●	●		●							5	.197	.0078	1.039	.161	6		
		GCMN5004-GF		★	★					★				5	.197	.0156	1.039	.161	1		
		GCMN6002-GF		★	★	★	★			★	★			6	.236	.0078	1.039	.177	1		
		GCMN6002-GF1		●	●		●							6	.236	.0078	1.039	.177	6		
		GCMN6004-GF		★	★					★				6	.236	.0156	1.039	.177	1		
GCMN7002-GF		★	★	★	★			★	★			7	.276	.0078	1.132	.217	1				
GCMN7004-GF		★	★	★	★			★	★			7	.276	.0156	1.132	.217	1				
GCMN8002-GF		★	★	★	★			★	★			8	.315	.0078	1.132	.236	1				
GCMN8004-GF		★	★	★	★			★	★			8	.315	.0156	1.132	.236	1				
Deep Grooving Cut Off	GG General Feed	GCMN2002-GG		●	●	●	●	●	●	★	●			2	.078	.0078	.831	.142	1		
		GCMN2094R0.5-GG		●	●	●	●	●	●	●	●			2	.094	.0078	.831	.142	1		
		GCMN3002-GG		●	●	●	●	●	●	●	★	●			3	.118	.0078	.831	.150	1	
		GCMN3004-GG		●	●	●	●	●	●	●	★	●			3	.118	.0156	.831	.150	1	
		GCMN3125R0.5-GG		●	●	●	●	●	●	●	●	●			3	.125	.0078	.831	.150	1	
		GCMN4002-GG		●	●	●	●	●	●	●	★	●			4	.157	.0078	1.039	.157	1	
		GCMN4004-GG		●	●	●	●	●	●	●	★	●			4	.157	.0156	1.039	.157	1	
		GCMN5187R0.5-GG		●	●	●	●	●	●	●	●	●			5	.187	.0078	1.039	.161	1	
		GCMN5002-GG		●	★	●	●	●	●	●	★	●			5	.197	.0078	1.039	.161	1	
		GCMN5004-GG		●	●	●	●	●	●	●	★	●			5	.197	.0156	1.039	.161	1	
		GCMN6002-GG		★	★	●	●	●	●	●	★	●			6	.236	.0078	1.039	.177	1	
		GCMN6004-GG		★	●	●	●	●	●	●	★	●			6	.236	.0156	1.039	.177	1	
		GCMN6250R0.5-GG		●	●	●	●	●	●	●	●	●			6	.250	.0078	1.039	.177	1	
		GCMN6250R1.0-GG		●	●	●	●	●	●	●	●	●			6	.250	.0156	1.039	.177	1	
		GCMN7004-GG		★	★	●	●			★	●				7	.276	.0156	1.132	.217	1	
		GCMN8004-GG		★	★	●	●			★	●				8	.315	.0156	1.132	.236	1	
		GL Low Feed	GCMN2002-GL		★	●	●	●	●	●	★	●				2	.078	.0078	.831	.142	1
			GCMN2004-GL		★	★					★					2	.078	.0156	.831	.142	1
			GCMN2094R0.5-GL			●	●	●	●	●	●	●				2	.094	.0078	.831	.142	1
			GCMN3002-GL		●	●	●	●	●	●	★	●				3	.118	.0078	.831	.150	1
	GCMN3004-GL			★	★					★					3	.118	.0156	.831	.150	1	
	GCMN3125R0.5-GL			●	●	●	●	●	●	●	●				3	.125	.0078	.831	.150	1	
	GCMN4002-GL			●	●	●	●	●	●	★	●				4	.157	.0078	1.039	.157	1	
	GCMN4004-GL			★	★					★					4	.157	.0156	1.039	.157	1	
	GCMN5187R0.5-GL			●	●	●	●	●	●	●	●	●			5	.187	.0078	1.039	.161	1	
	GCMN5002-GL			★	★	●	●	●	●	★	●				5	.197	.0078	1.039	.161	1	
	GCMN5004-GL			★	★					★					5	.197	.0156	1.039	.161	1	
	GCMN6002-GL			●	★	●	●	●	●	★	●				6	.236	.0078	1.039	.177	1	
	GCMN6004-GL			★	★					★					6	.236	.0156	1.039	.177	1	
	GCMN6250R0.5-GL			●	●	●	●	●	●	●	●	●			6	.250	.0078	1.039	.177	1	
	GCMN7004-GL			★	★	●	●			★	●				7	.276	.0156	1.132	.217	1	
	GCMN8004-GL			★	●	●	●			★	●				8	.315	.0156	1.132	.236	1	
	Multi function (traversing)	MG General Feed	GCMN3002-MG		★	★				★	★				3	.118	.0078	.831	.150	1	
			GCMN3004-MG		★	●	●	●	●	●	★	●				3	.118	.0156	.831	.150	1
			GCMN3125R1.0-MG		★	●	●	●	●	●	●	●				3	.125	.0156	.831	.150	1
			GCMN4002-MG		★	★				★	★					4	.157	.0078	1.039	.157	1
GCMN4004-MG				★	★				★	★					4	.157	.0156	1.039	.157	1	
GCMN4008-MG				★	●	●	●	●	★	★	●				4	.157	.0313	1.039	.157	1	
GCMN5187R2.0-MG				●	●	●	●	●	●	●	●				5	.187	.0313	1.039	.161	1	
GCMN5004-MG				★	★				★	★					5	.197	.0156	1.039	.161	1	
GCMN5008-MG				★	●	●	●	●	★	★	●				5	.197	.0313	1.039	.161	1	
GCMN6004-MG				★	★				★	★					6	.236	.0156	1.039	.177	1	
GCMN6008-MG				★	●	●	●	●	●	★	●				6	.236	.0313	1.039	.177	1	
GCMN6250R2.0-MG				●	●	●	●	●	●	●	●				6	.250	.0313	1.039	.177	1	
GCMN7004-MG				★	★				★	★					7	.276	.0156	1.132	.217	1	
GCMN7008-MG				★	★	●	●	●	★	★	●				7	.276	.0313	1.132	.217	1	
GCMN8004-MG				★	★				★	★					8	.315	.0156	1.132	.236	1	
GCMN8008-MG				★	★	●	●	●	★	★	●				8	.315	.0313	1.132	.236	1	

Inserts continued on next page

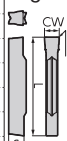
● = USA Stocked item ★ = World Wide Warehouse Item

Recommended Cutting Conditions  F14 & F15

Grooving
Tools

F

Fig. 6



Grooving Tools

GND - Inserts Continued

Grooving Tools
F

GCMN Inserts		Sumitomo Catalog Number	Coated Carbide										Cermet	Uncoated Carbide	DLC	Dimensions (Inch / mm)				Fig.
			Precision Machining	S			K			P			N		Insert Seat Size	Grooving Width	Nose Radius	Overall Length	Thickness	
Function	Chipbreaker		AC1030U	AC5015S	AC5025S	AC520U	AC530U	AC425K	AC8025P	AC8035P	AC830P	T2500A	H10	DL1500		CW	RE	L	S	
Multi function (traversing)	ML Low Feed	GCMN2002-ML		★	★	★									2	.078	.0078	.831	.142	1
		GCMN3002-ML		★	★	★	★	★	★	★	★	★			3	.118	.0078	.831	.150	1
		GCMN3002-ML1		★	★	★	★	★	★	★	★	★			3	.118	.0078	.831	.150	6
		GCMN3004-ML		★	★	★	★	★	★	★	★	★			3	.118	.0156	.831	.150	1
		GCMN3125R0.5-ML		★	★	★	★	★	★	★	★	★			3	.125	.0078	.831	.150	1
		GCMN4002-ML		★	★	★	★	★	★	★	★	★			4	.157	.0078	1.039	.157	1
		GCMN4004-ML		★	★	★	★	★	★	★	★	★			4	.157	.0156	1.039	.157	1
		GCMN4004-ML1		★	★	★	★	★	★	★	★	★			4	.157	.0156	1.039	.157	6
		GCMN4008-ML		★	★	★	★	★	★	★	★	★			4	.157	.0313	1.039	.157	1
		GCMN5187R1.0-ML		★	★	★	★	★	★	★	★	★			5	.187	.0156	1.039	.161	1
		GCMN5004-ML		★	★	★	★	★	★	★	★	★			5	.197	.0156	1.039	.161	1
		GCMN5004-ML1		★	★	★	★	★	★	★	★	★			5	.197	.0156	1.039	.161	6
		GCMN5008-ML		★	★	★	★	★	★	★	★	★			5	.197	.0313	1.039	.161	1
		GCMN6004-ML		★	★	★	★	★	★	★	★	★			6	.236	.0156	1.039	.177	1
		GCMN6004-ML1		★	★	★	★	★	★	★	★	★			6	.236	.0156	1.039	.177	6
Profiling / Radius Grooving	RN	GCMN6008-ML		★	★	★	★	★	★	★	★	★			6	.236	.0313	1.039	.177	1
		GCMN6250R1.0-ML		★	★	★	★	★	★	★	★	★			6	.250	.0156	1.039	.177	1
		GCMN7004-ML		★	★	★	★	★	★	★	★	★			7	.276	.0156	1.132	.217	1
		GCMN7008-ML		★	★	★	★	★	★	★	★	★			7	.276	.0313	1.132	.217	1
		GCMN8004-ML		★	★	★	★	★	★	★	★	★			8	.315	.0156	1.132	.236	1
		GCMN8008-ML		★	★	★	★	★	★	★	★	★			8	.315	.0313	1.132	.236	1
		GCMN2010-RN		★	★	★	★	★	★	★	★	★			2	.078	.0394	.854	.142	3
		GCMN3015-RN		★	★	★	★	★	★	★	★	★			3	.118	.0590	.882	.150	3
Profiling	General Feed	GCMN3015-RN1		★	★	★	★	★	★	★	★	★			3	.118	.0590	.882	.150	7
		GCMN3125-RN		★	★	★	★	★	★	★	★	★			3	.125	.0625	.882	.150	3
		GCMN4020-RN		★	★	★	★	★	★	★	★	★			4	.157	.0787	1.102	.157	3
		GCMN5187-RN		★	★	★	★	★	★	★	★	★			5	.187	.0938	1.112	.161	3
		GCMN5025-RN		★	★	★	★	★	★	★	★	★			5	.197	.0984	1.106	.161	3
		GCMN6030-RN		★	★	★	★	★	★	★	★	★			6	.236	.1181	1.106	.177	3
		GCMN6030-RN1		★	★	★	★	★	★	★	★	★			6	.236	.1181	1.106	.177	7
		GCMN6250-RN		★	★	★	★	★	★	★	★	★			6	.250	.1250	1.112	.177	3
For Non Ferrous Materials	GA	GCMN3015-RG		★	★	★	★	★	★	★	★	★			3	.118	.0590	.831	.150	2
		GCMN3125-RG		★	★	★	★	★	★	★	★	★			3	.125	.0625	.831	.150	2
		GCMN4020-RG		★	★	★	★	★	★	★	★	★			4	.157	.0787	1.039	.157	2
		GCMN5187-RG		★	★	★	★	★	★	★	★	★			5	.187	.0938	1.0709	.161	2
		GCMN5025-RG		★	★	★	★	★	★	★	★	★			5	.197	.0984	1.0709	.161	2
		GCMN6030-RG		★	★	★	★	★	★	★	★	★			6	.236	.1181	1.0827	.177	2
		GCMN6250-RG		★	★	★	★	★	★	★	★	★			6	.250	.1250	1.0827	.177	2
		GCMN7035-RG		★	★	★	★	★	★	★	★	★			7	.276	.1378	1.144	.217	2
Cut-off (Handed)	CF	GCMN8040-RG		★	★	★	★	★	★	★	★	★			8	.315	.1575	1.1516	.236	2
		GCGN2002-GA		★	★	★	★	★	★	★	★	★			2	.078	.0078	.831	.142	4
		GCGN3002-GA		★	★	★	★	★	★	★	★	★			3	.118	.0078	.831	.150	4
		GCGN4004-GA		★	★	★	★	★	★	★	★	★			4	.157	.0156	1.039	.157	4
		GCGN5004-GA		★	★	★	★	★	★	★	★	★			5	.197	.0156	1.039	.161	4
		GCGN6004-GA		★	★	★	★	★	★	★	★	★			6	.236	.0156	1.039	.177	4
		GCM_2002-CG-05		★	★	★	★	★	★	★	★	★			2	.078	.0078	.831	.142	5
		GCM_3002-CG-05		★	★	★	★	★	★	★	★	★			3	.118	.0078	.831	.150	5
		GCM_4002-CG-05		★	★	★	★	★	★	★	★	★			4	.157	.0078	1.039	.157	5
		GCM_20003-CF-10		★	★	★	★	★	★	★	★	★			2	.078	.0012	.882	.142	5
		GCM_20003-CF-15		★	★	★	★	★	★	★	★	★			2	.078	.0012	.882	.142	5
		GCM_30003-CF-10		★	★	★	★	★	★	★	★	★			3	.118	.0012	.882	.150	5
		GCM_30003-CF-15		★	★	★	★	★	★	★	★	★			3	.118	.0012	.882	.150	5

See page F17 for RN / RG Description and Comparison

Recommended Cutting Conditions F14 & F15

BN7500 Recommended Cutting Conditions F15

GND Insert - CBN Grade: BN7500

Uncoated CBN



● = USA Stocked item
★ = World Wide Warehouse Item

GCMN Inserts		Shape	Sumitomo Catalog Number	Stock	Dimensions (Inch / mm)						Fig.
Function	Chipbreaker			BN7500	Insert Seat Size	Grooving Width	Width Tolerance	Nose Radius	Overall Length	Thickness	
Profiling / Radius Grooving	—		GCMN2010P	●	2	.078	±.0012 (.03)	.0394	.8543	.142	 Fig. 8
			GCMN3015P	●	3	.118		.0590	.8819	.150	
			GCMN4020P	●	4	.157		.0787	1.1024	.157	
			GCMN5025P	●	5	.197		.0984	1.1063	.161	
			GCMN6030P	●	6	.236		.1181	1.1063	.177	
Profiling / Radius Grooving	LF		GCMN2010P-LF	●	2	.078	±.0012 (.03)	.0394	.8543	.142	 Fig. 9
			GCMN3015P-LF	●	3	.118		.0590	.8819	.150	
			GCMN4020P-LF	●	4	.157		.0787	1.1024	.157	
			GCMN5025P-LF	●	5	.197		.0984	1.1063	.161	
			GCMN6030P-LF	●	6	.236		.1181	1.1063	.177	
Turning / Grooving	—		GCMN30040-N	●	3	.118	±.0012 (.03)	.0310	.8310	.150	 Fig. 10
			GCMN40040-N	●	4	.157		.0394	1.0394	.157	
			GCMN50040-N	●	5	.197		.0394	1.0394	.161	
			GCMN60040-N	●	6	.236		.0394	1.0394	.177	

GNDM-JX / GNDL-JX - For Small Lathes

External General-Purpose GND for Small Lathes (Grooving, Turning, Profiling)


Zero Offset

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

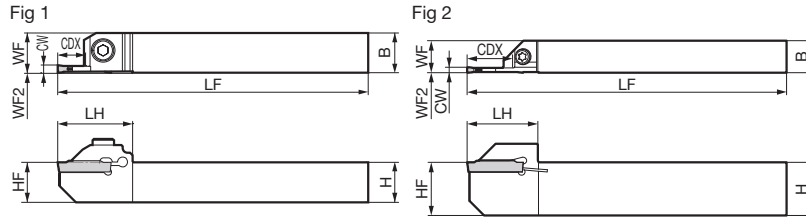
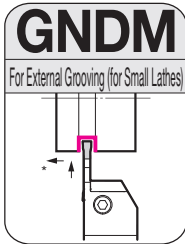


Figure shows right hand (R) tool.

Holder

Parts Dimensions (inch/ mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Head	Off Set	Seat Size	Max. Groove Depth	Applicable Insert	Fig	Cap Screw	Wrench
	R	L	H	B	LF	WF	HF	LH	WF2	CW	CDX				
Inch															
GNDM R/L 101.5JX-038	●	●	.625	.625	4.75	.625	—	1.024	0	1.5	.375	GCMN150005-GF	1		
GNDM R/L 102JX-047	●	●	.625	.625	4.75	.625	—	1.181	0	2	.472	GC□□20○○-□□	1	BX0515	4.0 LH040
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		
GNDM R/L 1616JX-1.510	★	★	16	16	120	16	16	26	0	1.5	10.0	GCMN150005-GF	1	BX0515	4.0 LH040
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	BFTX0414	3.0 LT15-10
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 F21 & F22 for applicable inserts

External Grooving / Cut-Off GND for Small Lathes


Zero Offset

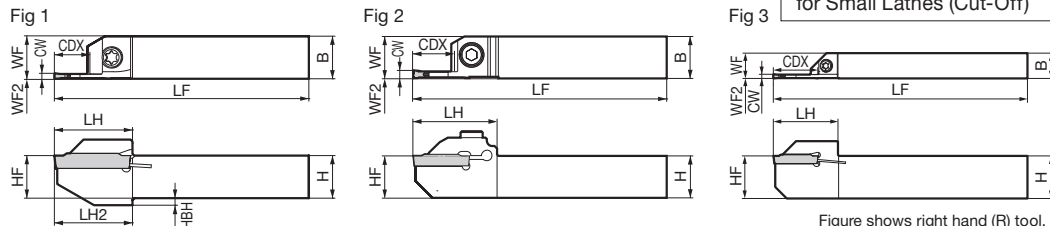
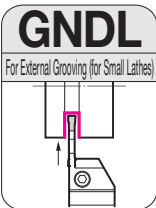


Figure shows right hand (R) tool.

Holder

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				
Inch																	
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		
Metric																	
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	BFTX0412N	3.0 LT15-10
GNDL R/L 082JX-050	●	●	.500	.500	4.75	.500	.500	.079	.866	.878	0	2	.500	GC□□20○○-□□	1		
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	2		
GNDL R/L 102JX-063	●	●	.625	.625	4.75	.625	.625	—	1.26	—	0	2	.625	GC□□20○○-□□	2	BX0515	4.0 LH040
GNDL R/L 103JX-063	●	●	.625	.625	4.75	.625	.625	—	1.26	—	0	3	.625	GC□□3○○○-□□	2		
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		
GNDL R/L 1010JX-210	★	★	10	10	120	10	10	2.0	22	22.3	0	2	10.0	GC□□20○○-□□	1	BFTX0412N	3.0 LT15-10
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	BFTX0414	3.0 LT15-10
GNDL R/L 2012JX-321	★	★	20	12	120	12	20	—	30.5	—	0	3	21.0	GC□□3○○○-□□	3		

Combine the insert with a holder such that the Seat Size matches. Refer to page F21 & F22 for applicable inserts

Grooving Tools

GNDM-J / GNDL-J GND with Internal Coolant for Small Lathes

External Multi-Purpose GND for Small Lathes (Grooving, Turning, Profiling)

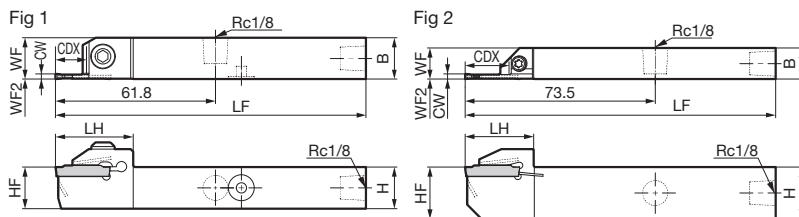
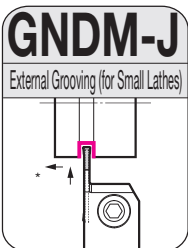


Figure shows right hand (R) tool.

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

Parts

Dimensions (inch/ mm)

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

Select holders and inserts with matching width of cut (CW). Refer to F21 & F22 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 F14.

External Grooving / Cut-Off GND for Small Lathes

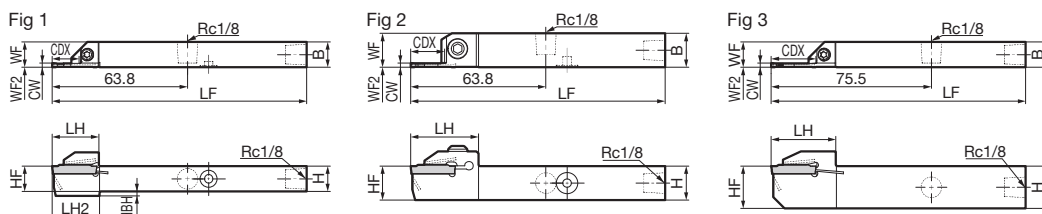
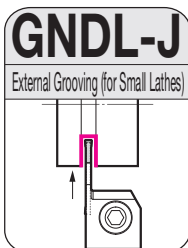


Figure shows right hand (R) tool.

Holder

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	Insert Wrench	Plug	Wrench
	R	L	H	B	LF	WF	HF	LH		CDX						
Inch																
Metric																
GNDL R/L 082JX-050J	•	•	.500	.500	4.750	.500	.500	.866	2	.500	GC□□20□□-□□	1	BFTX0415T8R	2.0	—	XP03
GNDL R/L 083JX-050J	•	•	.500	.500	4.750	.500	.500	.866	3	.500	GC□□3□□□-□□	1	BFTX0415T8R	3.0	—	XP03
GNDL R/L 102JX-063J	•	•	.625	.625	4.750	.625	.625	1.260	2	.625	GC□□20□□-□□	1	CP-M5-20-1	2.0	LH025	XP03
GNDL R/L 103JX-063J	•	•	.625	.625	4.750	.625	.625	1.260	3	.625	GC□□3□□□-□□	1	CP-M5-20-1	3.0	LH025	XP03
GNDL R/L 1212JX-212.5J	★	★	12	12	120	12	12	22.0	2	12.5	GC□□20□□-□□	2	BFTX0415T8R	1.5	LT08-06	XP02
GNDL R/L 1212JX-312.5J	★	★	12	12	120	12	12	22.0	3	12.5	GC□□3□□□-□□	2	BFTX0415T8R	1.5	LT08-06	XP02
GNDL R/L 1616JX-216J	★	★	16	16	120	16	16	32.0	2	16.0	GC□□20□□-□□	2	CP-M5-20-1	5.0	LH040	XP02
GNDL R/L 1616JX-316J	★	★	16	16	120	16	16	32.0	3	16.0	GC□□3□□□-□□	2	CP-M5-20-1	5.0	LH040	XP02
GNDL R/L 2012JX-221J	★	★	20	12	120	12	12	30.5	2	21.0	GC□□20□□-□□	3	BFTX0414	3.0	LT15-10	XP02
GNDL R/L 2012JX-321J	★	★	20	12	120	12	12	30.5	3	21.0	GC□□3□□□-□□	3	BFTX0414	3.0	LT15-10	XP02

Select holders and inserts with matching width of cut (CW). Refer to F21 & F22 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 F14. See page F29 for GND-J parts and connecting method

Grooving Tools

GNDM

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



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

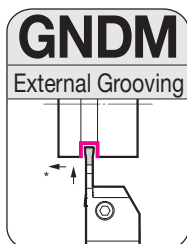


Fig 1

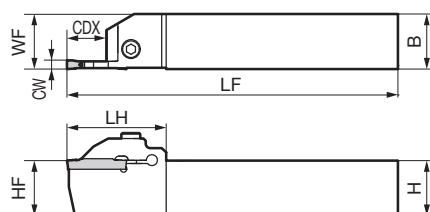


Figure shows right hand (R) tool.

Holder

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 BX0620	
GNDM R/L 122K-050	•	•	.750	.750	5.000	.750	.750	1.441	2	.500	GC□□20○□□□	1	BX0520	5.0
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		
GNDM R/L 162M-050	•	•	1.000	1.000	6.000	1.000	1.000	1.441	2	.500	GC□□20○□□□	1	BX0520	5.0
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		
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 168M-070	•	•	1.000	1.000	6.000	1.000	1.000	1.772	8	.700	GCMN80○□□□	1	BX0620	6.0
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		
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	BX0620	6.0
GNDM R/L 208P-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
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		
GNDM R/L 2020K-518	★	★	20	20	125	20	20	45.0	5	18	GC□N5○□□□□	1	BX0520	5.0
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		
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	BX0520	5.0
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		
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	BX0520	5.0
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		
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	BX0620	6.0
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		
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	BX0620	6.0
GNDM R/L 3232P-718	★	★	32	32	170	32	32	50.0	7	18	GCMN70○□□□	1		
GNDM R/L 3232P-818	★	★	32	32	170	32	32	50.0	8	18	GCMN80○□□□	1		

Combine the insert with a holder such that the Seat Size matches. Refer to page F21 & F22 for applicable inserts
See GNDM-JX (holders for small lathes) on page F23)

Recommended Tightening Torque (N·m) Recommended Cutting Conditions **F14 & F15** ★: Worldwide Warehouse Item •: USA Stocked Item

Grooving Tools GNDMS / GNDM-J

External L-Styled (Side Cut) Multi-Purpose GND (Grooving, Turning, Profiling)



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

Fig 1

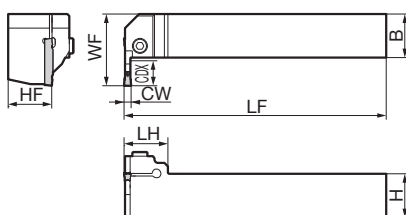
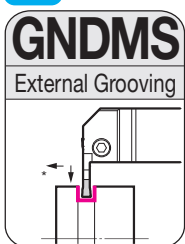


Figure shows right hand (R) tool.



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													
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	BX0520	5.0	LH040
	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 166M-055	•	1.000	1.000	6.000	1.630	1.000	1.000	6	.550	GC□□N6□□□□□□	1	BX0520	5.0	LH040
	GNDMS R/L 2020K-310	★	20	20	125	32	20	25.0	3	10	GC□□3□□□□□□□	1			
	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	BX0520	5.0	LH040
	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 F21 & F22 for applicable inserts

External Multi-Purpose GND (Grooving, Turning, Profiling) with Internal Coolant



Internal Coolant

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

Fig 1

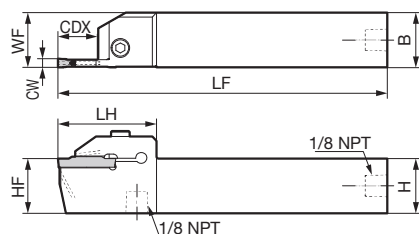


Figure shows right hand (R) tool.

Fig 2

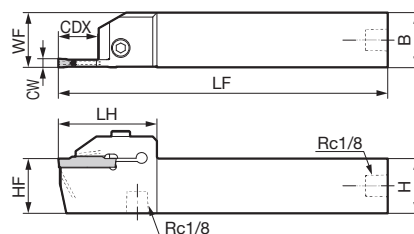
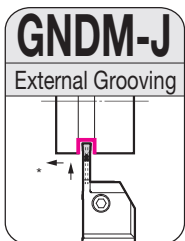


Figure shows right hand (R) tool.



Holder

Parts Dimensions (inch/ mm)

												Dimensions (in/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	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□□3□□□□□□□	1										
	GNDM R/L 124K-070J	•	•	.750	.750	5.000	.750	.750	1.772	4	.700	GC□□40□□□□□□	1										
	GNDM R/L 125K-070J	•	•	.750	.750	5.000	.750	.750	1.772	5	.700	GC□N5□□□□□□	1										
	GNDM R/L 126K-070J	•	•	.750	.750	5.000	.750	.750	1.772	6	.700	GC□N6□□□□□□	1										
	GNDM R/L 162K-050J	•	•	1.000	1.000	5.000	1.000	1.000	1.323	2	.500	GC□□20□□□□□□	1										
	GNDM R/L 163K-050J	•	•	1.000	1.000	5.000	1.000	1.000	1.441	3	.500	GC□□3□□□□□□□	1										
	GNDM R/L 164K-070J	•	•	1.000	1.000	5.000	1.000	1.000	1.772	4	.700	GC□□40□□□□□□	1										
Metric	GNDM R/L 165K-070J	•	•	1.000	1.000	5.000	1.000	1.000	1.772	5	.700	GC□N5□□□□□□	1	BX0520	6.0	—	XP03	LH040					
	GNDM R/L 166K-070J	•	•	1.000	1.000	5.000	1.000	1.000	1.772	6	.700	GC□N6□□□□□□	1										
	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□□3□□□□□□□	2										
	GNDM R/L 2020K-418J	★	★	20	20	125	20	20	45	4	18	GC□□40□□□□□□	2										
	GNDM R/L 2020K-518J	★	★	20	20	125	20	20	45	5	18	GC□N5□□□□□□	2										
	GNDM R/L 2020K-618J	★	★	20	20	125	20	20	45	6	18	GC□N6□□□□□□	2										
	GNDM R/L 2525K-210J	★	★	25	25	125	25	25	33.6	2	10	GC□□20□□□□□□	2										
GNDM R/L 2525K-312J	★	★	25	25	125	25	25	36.6	3	12	GC□□3□□□□□□□	2											
Metric	GNDM R/L 2525K-418J	★	★	25	25	125	25	25	45	4	18	GC□□40□□□□□□	2	BX0520	6.0	—	XP02	LH040					
	GNDM R/L 2525K-518J	★	★	25	25	125	25	25	45	5	18	GC□N5□□□□□□	2										
	GNDM R/L 2525K-618J	★	★	25	25	125	25	25	45	6	18	GC□N6□□□□□□	2										

Combine the insert with a holder such that the Seat Size matches. Refer to page F21 & F22 for applicable inserts. See page F29 for GND-J parts and connecting method



External Deep Grooving and Cut-Off GND

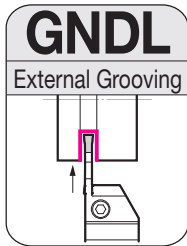


Fig 1

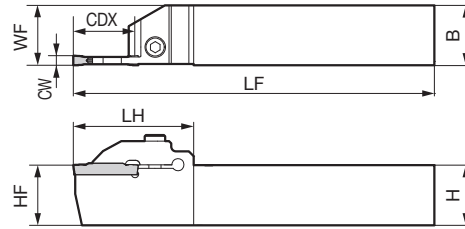


Figure shows right hand (R) tool.

Holder

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											 BX0520 BX0620		
				H	B	LF	WF	HF	LH	CDX						
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			
	GNDL R/L 162M-075	•	•	1.00	1.00	6.00	1.00	1.00	1.752	2	.750	GC□□20□□-□□	1	BX0520	5.0	LH040
	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			
	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 168M-100	•	•	1.00	1.00	6.00	1.00	1.00	1.969	8	1.000	GCMN80□□-□□	1	BX0520	5.0	LH040
	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			
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	BX0620	6.0	LH050	
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			
	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	BX0520	5.0	LH040
	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			
	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			
	GNDL R/L 3225P-625			32	25	170	25	32	50.0	6	25(23)	GC□N6□□□-□□	1	BX0620	6.0	LH050
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				
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 F21-F22 for applicable inserts
See GNDL-JX (holders for small lathes) on page F23

Grooving Tools

GNDL-J / GNDLS

External Deep Grooving and Cut-Off GND with Internal Coolant

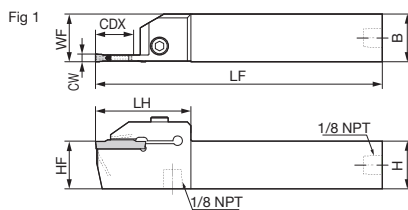
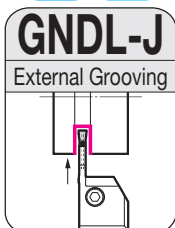


Figure shows right hand (R) tool.

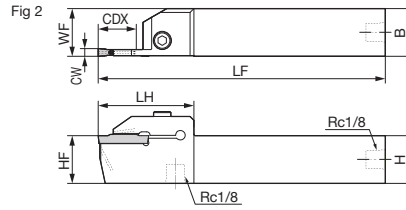


Figure shows right hand (R) tool.

Holder

Cat. No.		Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Head	Seat Size	Max. Groove Depth CDX	Applicable Insert	Fig	Dimensions (inch/mm)				
		R	L											H	B	LF	WF	HF
Inch	GNDL R/L 122K-075J	●	●	.750	.750	5.000	.750	.750	1.752	2	.750	GC□□20□□□□	1	BX0520	5.0	—	XP03	LH040
	GNDL R/L 123K-075J	●	●	.750	.750	5.000	.750	.750	1.752	3	.750	GC□□30□□□□	1					
	GNDL R/L 124K-100J	●	●	.750	.750	5.000	.750	.750	1.969	4	1.000	GC□□40□□□□	1					
	GNDL R/L 125K-100J	●	●	.750	.750	5.000	.750	.750	1.969	5	1.000	GC□N50□□□□	1					
	GNDL R/L 126K-100J	●	●	.750	.750	5.000	.750	.750	1.969	6	1.000	GC□N60□□□□	1					
	GNDL R/L 162K-075J	●	●	1.000	1.000	5.000	1.000	1.000	1.752	2	.750	GC□□20□□□□	1	BX0520	5.0	—	XP03	LH040
	GNDL R/L 163K-075J	●	●	1.000	1.000	5.000	1.000	1.000	1.752	3	.750	GC□□30□□□□	1					
	GNDL R/L 164K-100J	●	●	1.000	1.000	5.000	1.000	1.000	1.969	4	1.000	GC□□40□□□□	1					
	GNDL R/L 165K-100J	●	●	1.000	1.000	5.000	1.000	1.000	1.969	5	1.000	GC□N50□□□□	1					
	GNDL R/L 166K-100J	●	●	1.000	1.000	5.000	1.000	1.000	1.969	6	1.000	GC□N60□□□□	1					
Metric	GNDL R/L 2020K-220J	★	★	20	20	125	20	20	44.5	2	20(18)	GC□□20□□□□	2	BX0520	5.0	—	XP02	LH040
	GNDL R/L 2020K-320J	★	★	20	20	125	20	20	44.5	3	20(18)	GC□□30□□□□	2					
	GNDL R/L 2020K-425J	★	★	20	20	125	20	20	50	4	25(23)	GC□□40□□□□	2					
	GNDL R/L 2020K-525J	★	★	20	20	125	20	20	50	5	25(23)	GC□N50□□□□	2					
	GNDL R/L 2020K-625J	★	★	20	20	125	20	20	50	6	25(23)	GC□N60□□□□	2					
	GNDL R/L 2525K-220J	★	★	25	25	125	25	25	44.5	2	20(18)	GC□□20□□□□	2	BX0520	5.0	—	XP02	LH040
	GNDL R/L 2525K-320J	★	★	25	25	125	25	25	44.5	3	20(18)	GC□□30□□□□	2					
	GNDL R/L 2525K-425J	★	★	25	25	125	25	25	50	4	25(23)	GC□□40□□□□	2					
	GNDL R/L 2525K-525J	★	★	25	25	125	25	25	50	5	25(23)	GC□N50□□□□	2					
	GNDL R/L 2525K-625J	★	★	25	25	125	25	25	50	6	25(23)	GC□N60□□□□	2					

Combine the insert with a holder such that the Seat Size matches. Refer to page F21-F22 for applicable inserts. Dimensions in parentheses under maximum groove depth are for profiling inserts (RG type/RN type chipbreakers). See page F29 for GND-J parts and connecting method

External L-Styled (Side Cut) Grooving GND

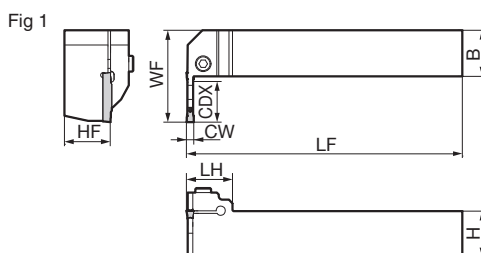
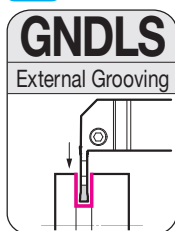


Figure shows right hand (R) tool.

Holder

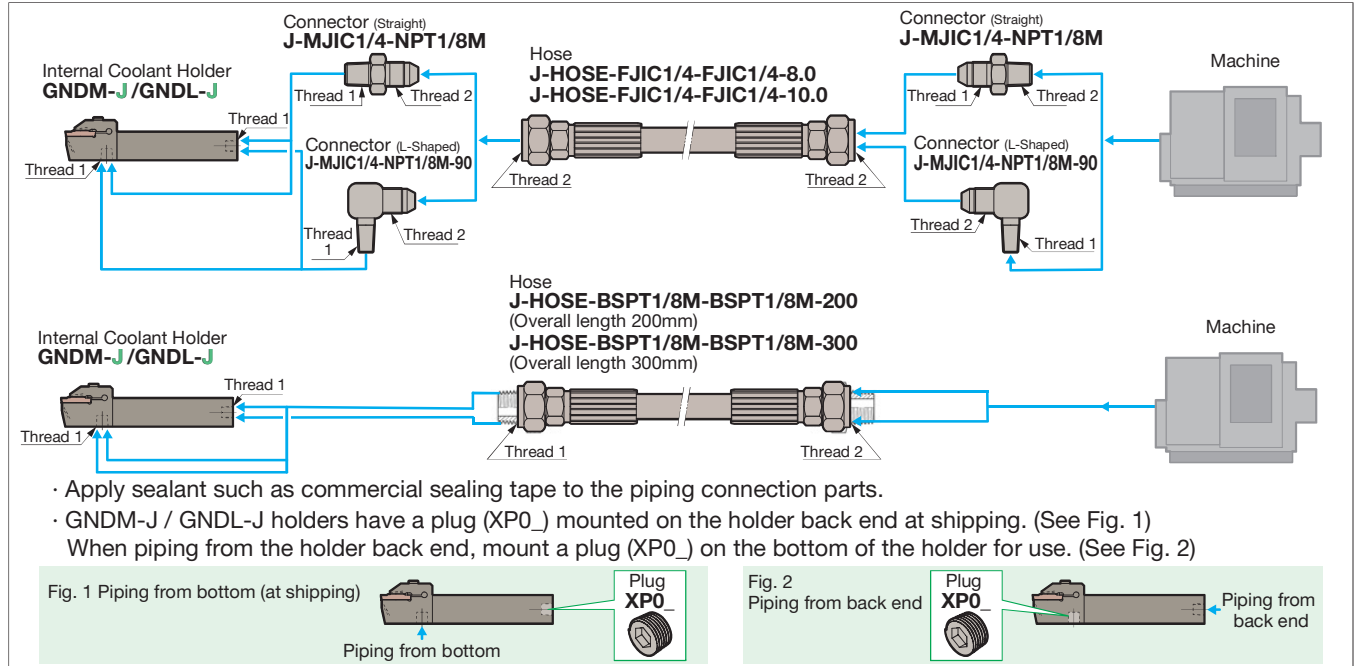
Cat. No.		Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Head	Seat Size	Max. Groove Depth	Applicable Insert	Fig	Dimensions (incl. mm)		
		R	L											Cap Screw		Wrench
																
Inch	GNDLS R/L 122K-060	●	●	.750	.750	5.000	1.459	.750	—	2	.600	GC□□20□□□□	1	BX0520	5.0	LH040
	GNDLS R/L 123K-060	●	●	.750	.750	5.000	1.459	.750	—	3	.600	GC□□30□□□□	1			
	GNDLS R/L 124K-070	●	●	.750	.750	5.000	1.787	.750	—	4	.700	GC□□40□□□□	1			
	GNDLS R/L 162M-070	●	●	1.000	1.000	6.000	1.787	1.000	—	2	.700	GC□□20□□□□	1	BX0520	5.0	LH040
	GNDLS R/L 163M-070	●	●	1.000	1.000	6.000	1.787	1.000	—	3	.700	GC□□30□□□□	1			
	GNDLS R/L 164M-090	●	●	1.000	1.000	6.000	1.984	1.000	—	4	.900	GC□□40□□□□	1			
	GNDLS R/L 165M-090	●	●	1.000	1.000	6.000	1.984	1.000	—	5	.900	GC□N50□□□□	1			
GNDLS R/L 166M-090	●	●	1.000	1.000	6.000	1.984	1.000	—	6	.900	GC□N60□□□□	1				
Metric	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□□30□□□□	1			
	GNDLS R/L 2525M-218	★	★	25	25	150	45	25	25	2	18	GC□□20□□□□	1	BX0520	5.0	LH040
	GNDLS R/L 2525M-318	★	★	25	25	150	45	25	25	3	18	GC□□30□□□□	1			
	GNDLS R/L 2525M-423	★	★	25	25	150	50	25	25	4	23	GC□□40□□□□	1			
	GNDLS R/L 2525M-523	★	★	25	25	150	50	25	25	5	23	GC□N50□□□□	1			
GNDLS R/L 2525M-623	★	★	25	25	150	50	25	25	6	23	GC□N60□□□□	1				

Combine the insert with a holder such that the Seat Size matches. Refer to page F21-F22 for applicable inserts



GND-J - Parts and Connection Methods

Piping Method for Hoses and Connectors



Parts (Plugs)

Cat. No.	Stock	Description	Thread Pitch
XP02	★	Plug	BSPT 1/8"
XP03	★	Plug	NPT 1/8"

Connectors are sold separately.

Parts (Cap Screw/ Wrench)

Cat. No.	Stock	Description	Wrench Size
BX0520	●	Cap Screw	5mm Hex
LH040	●	Wrench	5mm Hex

Connectors are sold separately.

Hoses

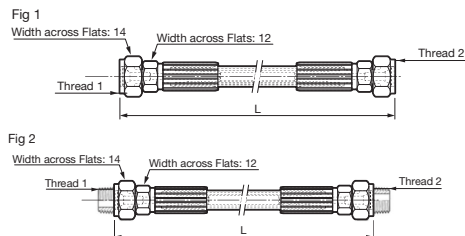
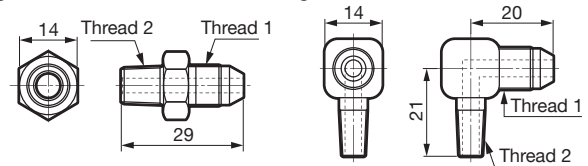


Fig 1

Fig 2



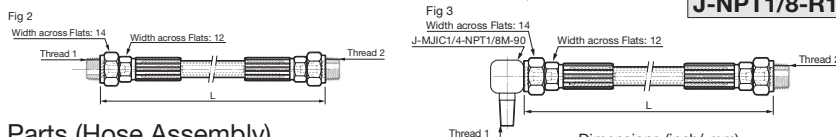
Parts (Connector)

Cat. No.	Stock	Angle	Thread 1	Thread 2	Fig
J-MJIC1/4-NPT1/8M	★	0°	MJIC1/4	NPT1/8 M	1
J-MJIC1/4-NPT1/8M-90	●	90°	MJIC 1/4	NPT1/8 M	2
J-FJIC1/4-BSPT1/8M	★	0°	FJIC1/4	BSPT1/8 M	1
J-MJIC1/4-5/16-24M	★	0°	MJIC1/4	5/16-24 M	1
J-MJIC1/4-M8X1M	★	0°	MJIC1/4	M8 X 1 M	1
J-MJIC1/4-BSPP1/8M	★	0°	MJIC1/4	BSPP1/8 M	1
J-MJIC1/4-BSPT1/8M	★	0°	MJIC1/4	BSPT1/8 M	1
J-MJIC1/4-5/16-24M-90	★	90°	MJIC1/4	5/16-24 M	2
J-MJIC1/4-BSPP1/8M-90	★	90°	MJIC1/4	BSPP1/8 M	2
J-MJIC1/4-NPT1/8F	★	0°	MJIC1/4	NPT1/8F	3
J-G1/8-R1/8-00	★	0°	G1/8	R1/8	1
J-G1/8-R1/8-90	★	90°	G1/8	R1/8	2
J-NPT1/8-G1/8-00	★	0°	NPT1/8	G1/8	1
J-NPT1/8-R1/8-00	★	0°	NPT1/8	R1/8	1

Parts (Hose)

Cat. No.	Stock	L	End 1	End 2	Fig
J-HOSE-BSPT1/8M-BSPT1/8M-200	●	200	BSPT1/8M	BSPT1/8 M	2
J-HOSE-BSPT1/8M-BSPT1/8M-300	●	300	BSPT1/8M	BSPT1/8 M	2
J-HOSE-FJIC1/4-FJIC1/4-8.0	●	8.0	FJIC 1/4	FJIC 1/4	1
J-HOSE-FJIC1/4-FJIC1/4-10.0	●	10.0	FJIC 1/4	FJIC 1/4	1
J-HOSE-5/16-24M-5/16-24M-9.0	●	9.0	5/16-24M	5/16-24M	2
J-HOSE-M8X1M-M8X1M-9.0	●	9.0	M8X1 M	M8X1 M	2
J-HOSE-BSPP1/8M-BSPP1/8M-9.0	●	9.0	BSPP1/8 M	BSPP1/8 M	2

Hoses are sold separately.



Parts (Hose Assembly)

Cat. No.	Stock	L	Thread 1	Thread 2	Fig
J-ASSY-NPT1/8M-NPT1/8M-90-8.0*	●	8.0	NPT1/8M	NPT1/8 M (90deg)	3
J-ASSY-NPT1/8M-NPT1/8M-90-10.0*	●	10.0	NPT1/8M	NPT1/8 M (90deg)	3
J-HOSE-G1/8-G1/8-200	●	200	G1/8	G1/8	2
J-HOSE-G1/8-G1/8-300	●	300	G1/8	G1/8	2
J-HOSE-MJIC1/4-NPT1/8-10.0	●	10.0	MJIC1/4	NPT1/8	2
J-HOSE-MJIC1/4-NPT1/8-8.0	●	8.0	MJIC1/4	NPT1/8	2
J-HOSE-R1/8-G1/8-200	●	200	R1/8	G1/8	2
J-HOSE-R1/8-G1/8-300	●	300	R1/8	G1/8	2

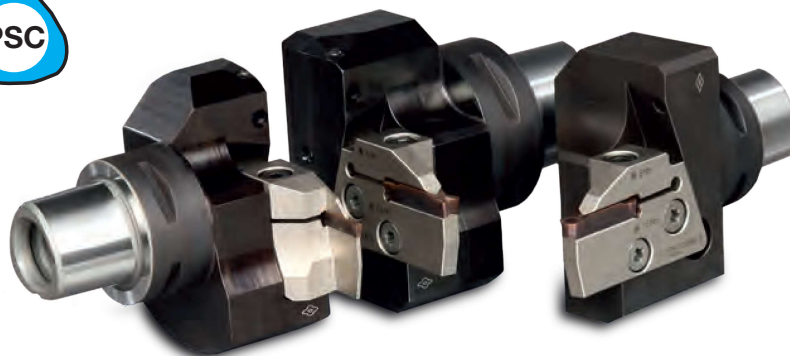
* Require separately sold MJIC Connectors to connect to holder or machine

Grooving Tools

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

PSC	40	-	G	M	00	R
Polygonshank	Shank Diameter (Ø D)	Series Symbol GND	Application External Multi-Purpose	Style 00 = Straight 90 = L-Style	Holder Design R = Right L = Left	

■ Identification Details - Cassette

GND	C	M	L	3	12
Series Symbol GND	Cassette	Application External Multi-Purpose	Holder Design R = Right L = Left	Grooving Width	Max. Grooving Depth



■ 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							⊙	⊙	⊙	⊙	⊙		⊙	⊙
GNDCM R		Stock				12	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
GNDCM L			Stock				⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
GNDCM R				Stock		18	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
GNDCM L					Stock		⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
GNDCM R					Stock	18	⊙	⊙	⊙	⊙	⊙	⊙		⊙
GNDCM L							⊙	⊙	⊙	⊙	⊙	⊙		⊙

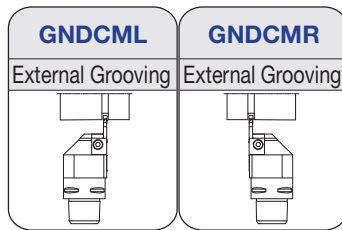
Stock

⊙ Recommendation

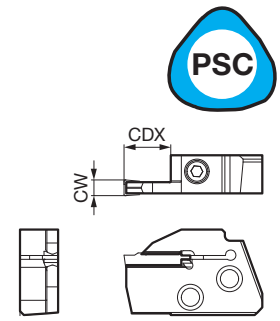
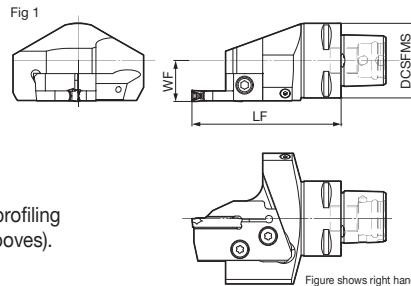
Grooving Tools

GND - Polygro Shank Style

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



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



Right handed Cassette goes with right handed holder

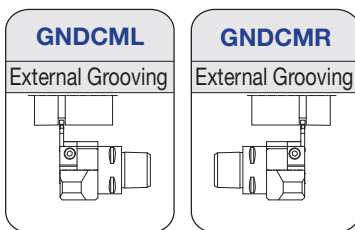
Left handed Cassette goes with left handed holder

Figure shows right hand (R) tool.

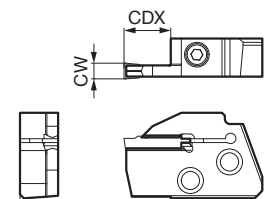
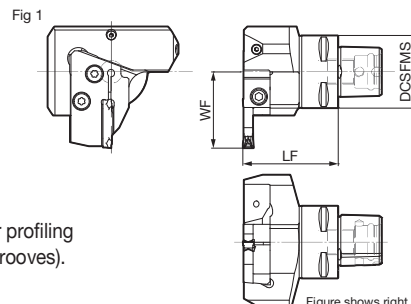
Above figures show right hand tools.

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	22	80	BFTX0619N	7.5	TRD25
	PSC50GM00 R/L	★ ★	50	27	80			
	PSC63GM00 R/L	★ ★	63	33	80			

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



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



Right handed Cassette goes with left handed holder

Left handed Cassette goes with right handed holder

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

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	42	52.5	BFTX0619N	7.5	TRD25	
	PSC50GM90 R/L	★ ★	50	47	55				
	PSC63GM90 R/L	★ ★	63	54	57				

Grooving Tools GNDS / GNDN

External Multi-Purpose GND for Shallow Grooves (Grooving, Traverse Cutting, Profiling)

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

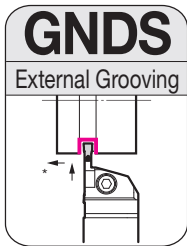


Fig 1

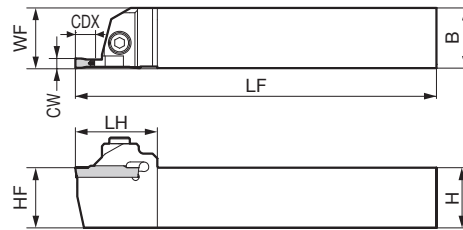


Figure shows right hand (R) tool.

Holder

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	
															
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 F21-F22 for applicable inserts.

GND for Necking

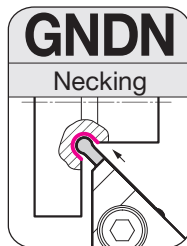


Fig 1

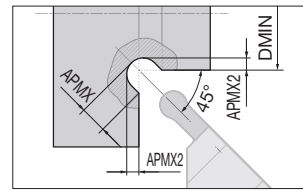
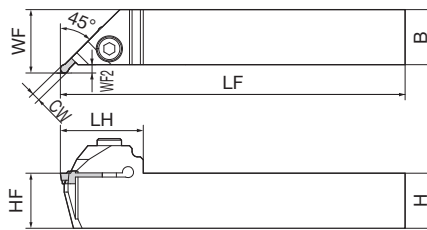


Figure shows right hand (R) tool.

Holder

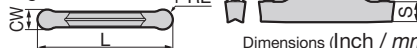
Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Off Set WF2	Min. Work Diameter DMIN	Seat Size CW	APMX	APMX2	Applicable Insert	Fig	Parts Dimensions (mm)		
	R	L														Cap Screw	N·m	Wrench
GNDN R/L 2020K-215-020	★	★	20	20	125	23	20	35	3.0	20	2	1.5	.64	GCMN2010-RN	1	BX0520	5.0	LH040
GNDN R/L 2020K-320-020	★	★	20	20	125	23	20	35	3.0	20	3	2.0	.79	GCMN3015-RN	1			
GNDN R/L 2020K-430-030	★	★	20	20	125	24	20	37	4.0	30	4	3.0	1.29	GCMN4020-RN	1			
GNDN R/L 2020K-535-030	★	★	20	20	125	25	20	40	5.0	30	5	3.5	1.44	GCMN5025-RN	1			
GNDN R/L 2020K-640-030	★	★	20	20	125	25	20	40	5.0	30	6	4.0	1.59	GCMN6030-RN	1			
GNDN R/L 2525M-215-020	★	★	25	25	150	28	25	35	3.0	20	2	1.5	.64	GCMN2010-RN	1	BX0520	5.0	LH040
GNDN R/L 2525M-320-020	★	★	25	25	150	28	25	35	3.0	20	3	2.0	.79	GCMN3015-RN	1			
GNDN R/L 2525M-430-030	★	★	25	25	150	29	25	37	4.0	30	4	3.0	1.29	GCMN4020-RN	1			
GNDN R/L 2525M-535-030	★	★	25	25	150	30	25	40	5.0	30	5	3.5	1.44	GCMN5025-RN	1			
GNDN R/L 2525M-640-030	★	★	25	25	150	30	25	40	5.0	30	6	4.0	1.59	GCMN6030-RN	1			

Combine the insert with a holder such that the width of cut (CW) matches. See page F16 for Key Points for Necking

GNDN Insert

Profiling / Radius Grooving / Necking

Fig 1



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					
										Size	Width						
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

Identification Code

GND N R 20 20 K - 2 15 - 020

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

Grooving Tools

GNDXL

GND for External Deep Grooving and Parting

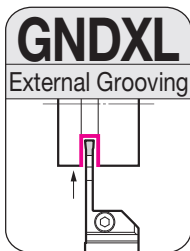


Fig 1

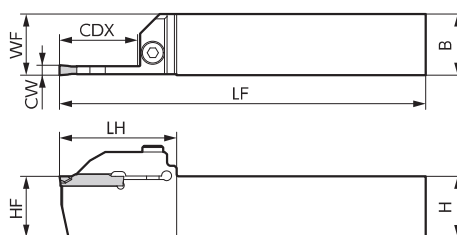


Figure shows right hand (R) tool.

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	Maximum Cut-off Diameter	Applicable Insert	Fig	Cap Screw		Wrench
		R	L													Nm	
Inch	GNDXL R/L 122K-100			0.750	0.750	5.000	0.750	0.750	1.654	2	1.000	2.000	GCMN2002-GF1	1	BX0520	5.0	LH040
	GNDXL R/L 123K-125	•	•	0.750	0.750	5.000	0.750	0.750	1.890	3	1.250	2.500	GCMN3000-□□1	1			
	GNDXL R/L 124K-125	•	•	0.750	0.750	5.000	0.750	0.750	1.890	4	1.250	2.500	GCMN4000-□□1	1			
	GNDXL R/L 125K-125	•	•	0.750	0.750	5.000	0.750	0.750	1.890	5	1.250	2.500	GCMN5000-□□1	1			
	GNDXL R/L 126K-125	•	•	0.750	0.750	5.000	0.750	0.750	1.890	6	1.250	2.500	GCMN6000-□□1	1	BX0520	5.0	LH040
	GNDXL R/L 162M-100			1.000	1.000	6.000	1.000	1.000	1.654	2	1.000	2.000	GCMN2002-GF1	1			
	GNDXL R/L 163M-125	•	•	1.000	1.000	6.000	1.000	1.000	1.890	3	1.250	2.500	GCMN3000-□□1	1			
	GNDXL R/L 164M-125	•	•	1.000	1.000	6.000	1.000	1.000	1.890	4	1.250	2.500	GCMN4000-□□1	1			
Metric	GNDXL R/L 165M-125	•	•	1.000	1.000	6.000	1.000	1.000	1.890	5	1.250	2.500	GCMN5000-□□1	1	BX0520	5.0	LH040
	GNDXL R/L 166M-125	•	•	1.000	1.000	6.000	1.000	1.000	1.890	6	1.250	2.500	GCMN6000-□□1	1			
	GNDXL R/L 2020K-226			20	20	125	20	20	42.0	2	26	52	GCM N2002-GF1	1	BX0520	5.0	LH040
	GNDXL R/L 2020K-332	★	★	20	20	125	20	20	48.0	3	32	64	GCM N3000-□□1	1			
	GNDXL R/L 2020K-432	★	★	20	20	125	20	20	48.0	4	32	64	GCM N4000-□□1	1			
	GNDXL R/L 2020K-532	★	★	20	20	125	20	20	48.0	5	32	64	GCM N5000-□□1	1			
	GNDXL R/L 2020K-632	★	★	20	20	125	20	20	48.0	6	32	64	GCM N6000-□□1	1	BX0520	5.0	LH040
	GNDXL R/L 2525M-226			25	25	150	25	25	42.0	2	26	52	GCM N2002-GF1	1			
	GNDXL R/L 2525M-332	★	★	25	25	150	25	25	48.0	3	32	64	GCM N3000-□□1	1			
	GNDXL R/L 2525M-432	★	★	25	25	150	25	25	48.0	4	32	64	GCM N4000-□□1	1			
	GNDXL R/L 2525M-532	★	★	25	25	150	25	25	48.0	5	32	64	GCM N5000-□□1	1	BX0520	5.0	LH040
	GNDXL R/L 2525M-632	★	★	25	25	150	25	25	48.0	6	32	64	GCM N6000-□□1	1			

Use the same combination of insert and holder edge width CW. Only one corner insert is available. The maximum groove depth CDX is the value for grooving.

GNDXL Insert (1 Corner)

Fig 1

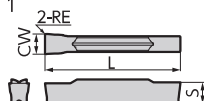
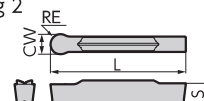


Fig 2



Grooving / Traversing (1 corner)

Dimensions (Inch / mm)

Radius Grooving / Necking (1 corner)

Dimensions (Inch / mm)

Cat. No.	AC5015S	AC5025S	AC530U	Seat Size CW			Nose Radius	Overall Length	Thickness	Pcs /Pack	Fig
				Seat Size	Grooving Width	Tolerance					
GCMN3002-ML1	•	•	•	3.0	.118	±.0012	.0079	.8307	.1496	5	1
GCMN4004-ML1	•	•	•	4.0	.157	±.0012	.0156	1.0394	.1575	5	1
GCMN5004-ML1	•	•	•	5.0	.197	±.0012	.0156	1.0394	.1614	5	1
GCMN6004-ML1	•	•	•	6.0	.236	±.0012	.0156	1.0394	.1772	5	1

Cat. No.	AC5015S	AC5025S	AC530U	Seat Size CW			Nose Radius	Overall Length	Thickness	Pcs /Pack	Fig
				Seat Size	Grooving Width	Tolerance					
GCMN3015-RN1	•	•	•	3.0	.118	±.0012	.0591	.8819	.1496	5	2
GCMN6030-RN1	•	•	•	6.0	.236	±.0012	.1181	1.1063	.1772	5	2

Grooving and Parting (1 corner)

Dimensions (Inch / mm)

Cat. No.	AC5015S	AC5025S	AC530U	Seat Size CW			Nose Radius	Overall Length	Thickness	Pcs /Pack	Fig
				Seat Size	Grooving Width	Tolerance					
GCMN2002-GF1	•	•	•	2.0	.078	±.0012	.0079	.8307	.1417	5	1
GCMN3002-GF1	•	•	•	3.0	.118	±.0012	.0079	.8307	.1496	5	1
GCMN4002-GF1	•	•	•	4.0	.157	±.0012	.0079	1.0394	.1575	5	1
GCMN5002-GF1	•	•	•	5.0	.197	±.0012	.0079	1.0394	.1614	5	1
GCMN6002-GF1	•	•	•	6.0	.236	±.0012	.0079	1.0394	.1772	5	1

Use the same combination of insert and holder edge width CW. Please use in combination with the GNDXL holder. Cannot be used with the GNDIS holder.

Grooving Tools

GNDF - Inch

GND for Face Grooving



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

Grooving
Tools
F



Holder

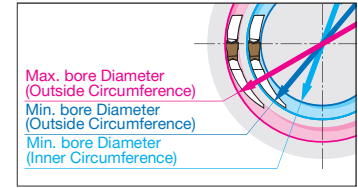
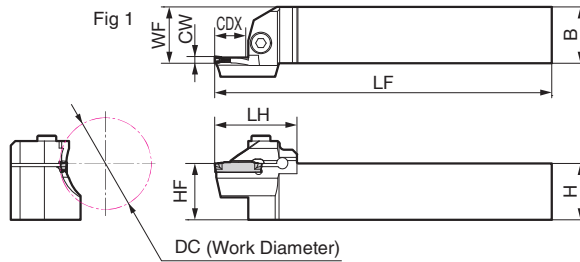


Figure shows right hand (R) tool.

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 Wrench		
	R	L														
GNDF R/L 123K-050-035	•	•	.750	.750	5.000	.750	.750	1.402	1.378 - 1.772	3.0	.500	GC□N3○○○-□□	1	BX0520	5.0	LH040
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		1			
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	GC□N40○○-□□	1	BX0520	5.0	LH040
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		1			
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	GC□N5○○○-□□	1	BX0520	5.0	LH040
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		1			
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	GC□N6○○○-□□	1	BX0520	5.0	LH040
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		1			
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	GC□N3○○○-□□	1	BX0520	5.0	LH040
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		1			
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	GC□N40○○-□□	1	BX0520	5.0	LH040
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		1			
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	GC□N5○○○-□□	1	BX0520	5.0	LH040
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□N6○○○-□□	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 F21-F22 for applicable inserts.

F34



Recommended Tightening Torque (N-m)

Recommended Cutting Conditions F14 & F15

★: Worldwide Warehouse Item

●: USA Stocked Item

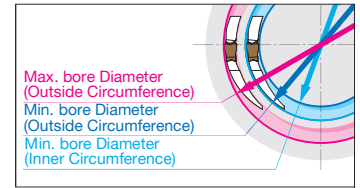
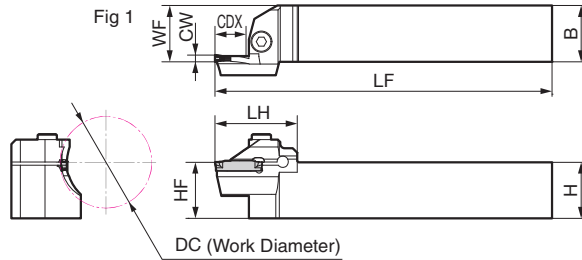
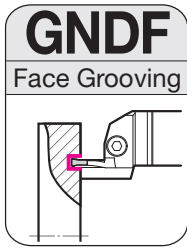
Grooving Tools

GNDF - Metric

GND for Face Grooving



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



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 Length LH	Work Diameter DC	Seat Size CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L												Fig	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	GC□N40○○-□□	1	BX0520	5.0	LH040
GNDF R/L 2020K-418-040	★	★	20	20	125	20	20	41.6	40 to 55	4.0	18		1			
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	GC□N5○○○-□□	1	BX0520	5.0	LH040
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		1			
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	GC□N6○○○-□□	1	BX0520	5.0	LH040
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		1			
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	GC□N3○○○-□□	1	BX0520	5.0	LH040
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		1			
GNDF R/L 2525M-312-040	★	★	25	25	150	25	25	35.6	40 to 55	3.0	12	GC□N3○○○-□□	1	BX0520	5.0	LH040
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	GC□N40○○-□□	1	BX0520	5.0	LH040
GNDF R/L 2525M-418-040	★	★	25	25	150	25	25	41.6	40 to 55	4.0	18		1			
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	GC□N5○○○-□□	1	BX0520	5.0	LH040
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		1			
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	GC□N6○○○-□□	1	BX0520	5.0	LH040
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		1			
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 F21-F22 for applicable inserts.



Recommended Tightening Torque (N·m)

Recommended Cutting Conditions **F14 & F15**

★: Worldwide Warehouse Item

●: USA Stocked Item

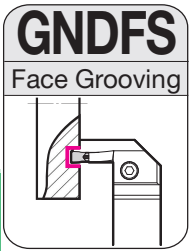
F35

Grooving Tools GNDFS

GND for Face Grooving L-Styled (Non-Adjustable)



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



**GNDFS PRODUCTS
ARE MADE TO ORDER**

Fig 1

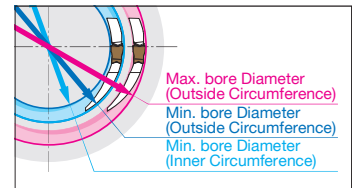
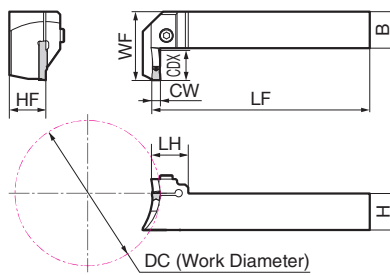


Figure shows right hand (R) tool.

Parts

Dimensions (mm)

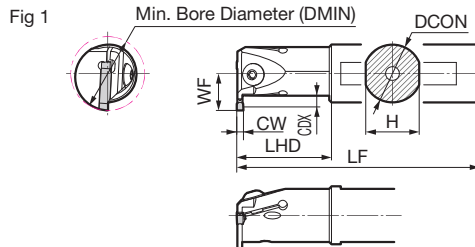
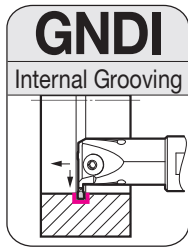
Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Work Diameter DC	Seat Size CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L												BX0520	Nm	
GNDFS R/L 2525M-620-070			25	25	150	47	25	25	70 to 100	6.0	20	GC□N6○□□□□	1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

Recommended Tightening Torque (N·m)

Recommended Cutting Conditions F14 & F15

GND for Internal (ID) Grooving



Holder

Figure shows right hand (R) tool.

Parts Dimensions (inch / mm)

Cat. No.	Stock		Diameter	Height	Head	Overall Length	Cutting Edge Distance	Min. Bore Diameter	Seat Size	Max. Groove Depth	Applicable Insert	Fig	Screw			Wrench
	R	L														
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□N40□□□□	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□N40□□□□	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	BH0616	6.0	LH040	
GNDI R/L 244T-43	●	●	1.500	1.421	2.362	12.000	1.142	2.000	4	.430	GC□N40□□□□	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□N40□□□□	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□N40□□□□	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□N40□□□□	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 F21-F22 for applicable inserts. Not usable with GNDIS inserts.



Recommended Tightening Torque (N·m)

Recommended Cutting Conditions F14 & F15

★: Worldwide Warehouse Item

●: USA Stocked Item

Grooving Tools

GNDIS

GND for Internal (ID) Grooving

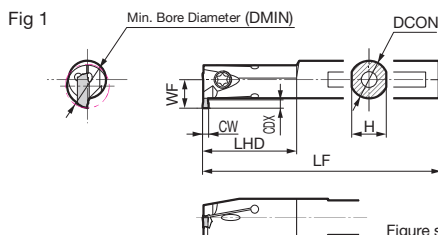
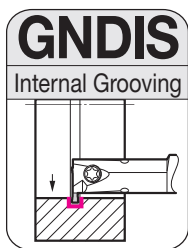


Figure shows right hand (R) tool.

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	
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	GXMN2002S-□□	1	BFTX0511N	5.0	LT20
GNDIS R/L 1214-T2026	★	★	12	11	150	30	9.0	14	2.0	2.6		1			
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	GXMN3002S-□□	1	BFTX0511N	5.0	LT20
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		1			
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	GXMN3002S-□□	1	BFTX0409N	3.4	LT15
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.**

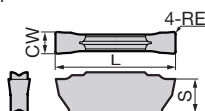
Identification Code

GND IS R 12 14 - T 15 26

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

GNDIS Inserts

Fig 1



(Coated Carbide)

Grooving / Traverse Cutting

Dimensions (mm)

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	Appearance	Cat. No.	AC520U AC1030U	Seat Size CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
			Seat Size	Tolerance									Seat Size	Tolerance					
ML Low Feed	GXMN2002S-ML	★	2.0	±0.03	0.2	11.1	3.1	5	1	GF Low Resistance	GXMN150005S-GF	★	1.5	±0.03	0.05	11.1	3.1	1	1
	GXMN3002S-ML	★	3.0	±0.03	0.2	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	1	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	Carbon Steel / Alloy Steel		Stainless Steel		Cast Iron		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 CW (mm)	1.5	—	0.001 to 0.004
	2.0	0.001 to 0.005	0.001 to 0.005
	3.0	0.002 to 0.006	0.002 to 0.006

Traverse Cutting

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

F38

Recommended Tightening Torque (N-m)

★: Worldwide Warehouse Item ●: USA Stocked Item

Grooving Tools

GND - Special Grooving Insert Request Form

Applicable Tool Holders (Seat Size: 2 to 6mm)

External Turning: GNDS, GNDM, GNDMS, GNDL, GNDLS, GNDLM
Internal Boring: GNDI (*GNDS cannot be used as the insert shape is different)
Facing: GNDF, GNDFS

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	
*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.		

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.
(Standard holder dimension WF) + (WF - 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	
4.60 to 5.59mm	5mm Width Holder	0.8mm
5.60 to 6.59mm	6mm Width Holder	

Quotation Sheet for 90-degree Inserts for Grooving Tool GND Series

When ordering, please fill in the required items (○ mark or dimensions, etc.) in the table below and contact our distributors or distributors. (Please make a copy of this sheet before using.) For grooving inserts with shapes, edge widths, edge treatments, and insert grades other than those listed below, please contact our nearest sales office (see the end of this manual).

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

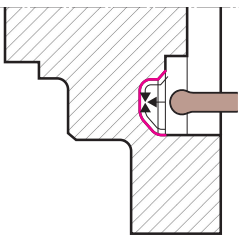
Shape	Item	Contents
	Seat Size CW (2.00 to 6.00mm)	Inch/mm
	Corner Radius RER	Inch/mm
	Corner Radius REL	Inch/mm
	Grade (Please select from the list on the right)	EH510 / EH520 / AC5015S / AC5025S
	Grooving Depth CDX	Inch/mm
	Cutting Edge Position L (5.80mm~) (Please fill in the allowable maximum value)	Inch/mm
	Direction	Right Handed Left Handed
	Insert thickness (Please choose from the list on the right)	Standard High rigidity

Work processing part and processing method
(Please select one of the following and enter the processing diameter)

End face processing	Outer diameter machining	Internal diameter machining
Processing Diameter: mm	Processing Diameter: mm	Processing Diameter: mm

Grooving Tools GND - Application Examples

4130H Steel Automotive Component Face Profiling

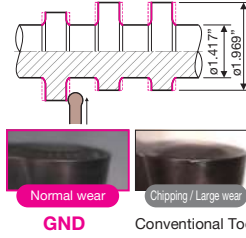


- High rigidity
- Chip evacuation
- Wear resistance

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)

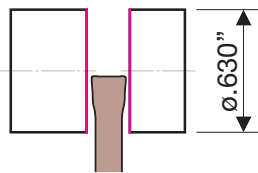


- High rigidity and chatter
- Chip evacuation
- Fracture resistance

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

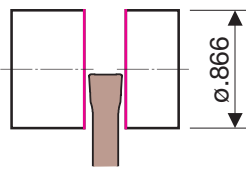


- Chip evacuation
- Wear resistance

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

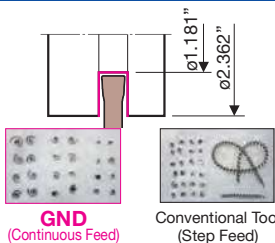


- High rigidity for chatter
- Chip evacuation

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

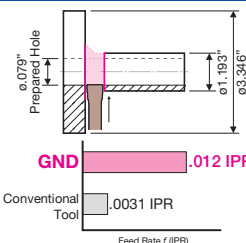


- Chip evacuation
- Machining efficiency

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

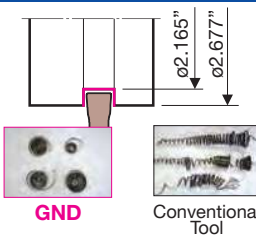


- High rigidity for chatter
- Chip evacuation

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

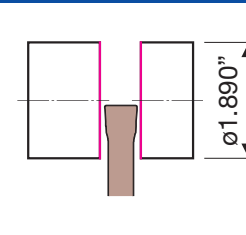


- High rigidity for chatter
- Chip evacuation

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

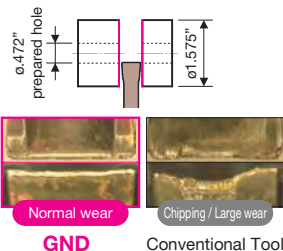


- High rigidity for chatter
- Chip evacuation

Holder: GNDL R2525M-425
Insert: GCMN4002-GG
Seat Size: 4.0
Cutting Conditions
 $v_C = 165$ SFM
 $f = .0012$ IPR, Wet

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

1042 Steel Tempered Machine Component Cut-off



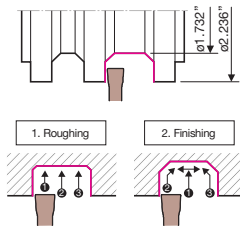
- High rigidity
- Chatter
- Fracture resistance

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

Grooving Tools GND - Application Examples

4130 Steel Gearshaft Grooving / Profiling



- High rigidity for chatter
- Chip evacuation

Holder: GNDMR2020K-518

Insert: GCMN5008-MG

Seat Size: 5.0

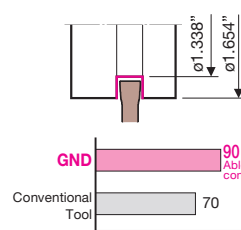
Cutting Conditions

$v_c = 500$ 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

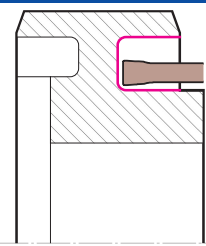
Cutting Conditions

$v_c = 330$ 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

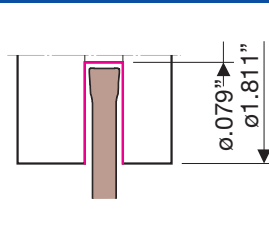
$n = 500$ min⁻¹

$v_c = 330$ 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

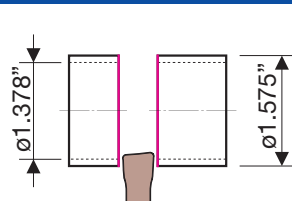
Cutting Conditions

$v_c = 195$ 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

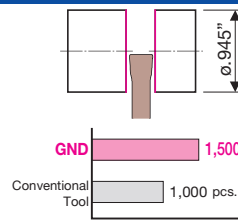
$n = 1,000$ min⁻¹

$v_c = 460$ 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

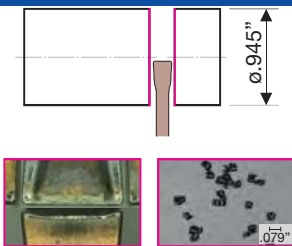
Cutting Conditions

$n = 1,000$ 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

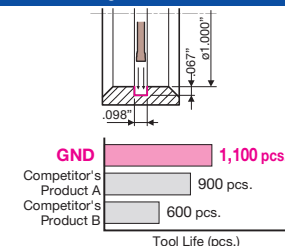
Cutting Conditions

$n = 2,000$ 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: GCMN2002S-GF

Seat Size: 2.0

Cutting Conditions

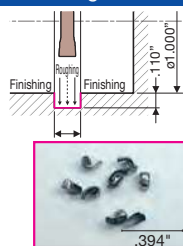
$v_c = 500$ SFM

$f = .0012$ IPR

$ap = .067$ ", 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: GCMN2002S-GF

Seat Size: 2.0

Cutting Conditions

$v_c =$ Roughing 165 to

Finishing 265 SFM

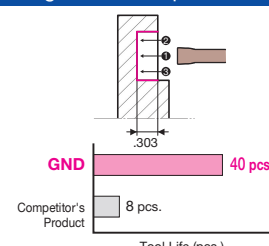
$f =$ Roughing .0027 to

Finishing .0019 IPR

$ap = .110$ ", Wet

- Good chip evacuation reduces cycle time by eliminating unneeded processes, such as dwelling, which is present in competitor's products.

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

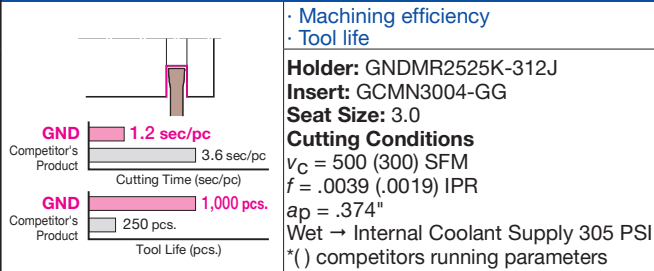
$f = .004$ IPR

$ap =$ up to .303", Dry

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

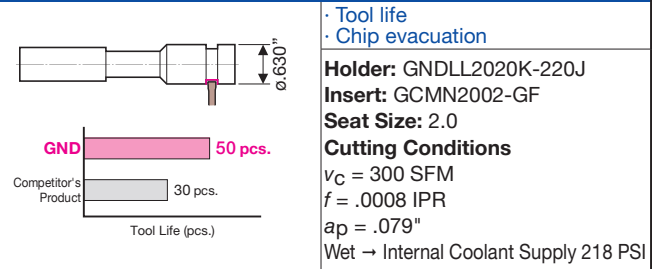
Grooving Tools GND - Application Examples

1015 Steel Automotive Component Grooving



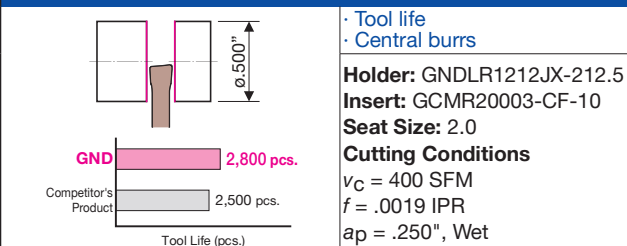
- Double the feed rate of competitor tools, with no chatter
- 1.5 times the cutting speed thanks to an internal coolant holder, achieving 4 times longer tool life

Sintered Component Tap Component Grooving



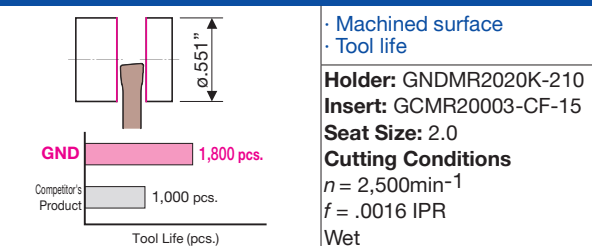
- Coolant supply from near the cutting edge directly to the cutting point, achieves 1.7 times longer tool life
- Internal coolant supply realizes stable chip evacuation even at low feed machining

4804 Steel Free-cutting Steel Machine Component Cut-off



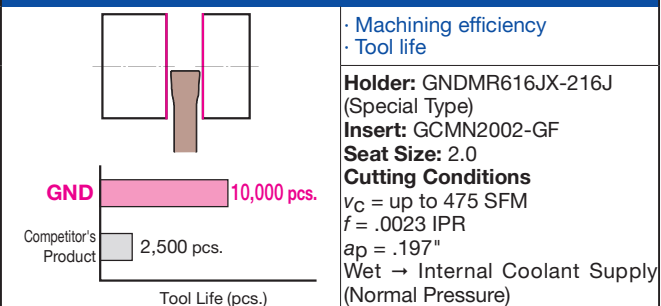
- Excellent cutting edge sharpness for 1.12 times longer tool life
- Central burrs eliminated with handed insert

4135 Steel Machine Component Cut-off



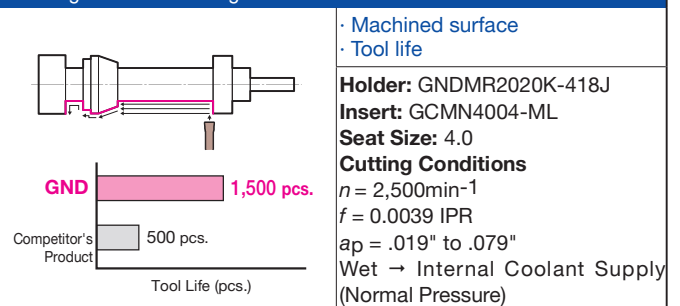
- Excellent chip control improves machined surface
- Outstanding cutting edge sharpness for 1.8 times longer tool life

Pure Iron Automotive Component Cut-off



- 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

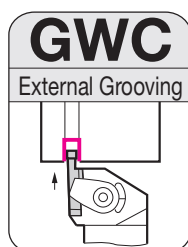


- Effective cutting edge cooling via internal coolant supply, achieving 3 times longer tool life
- Cutting edge sharpness maintained for significantly improved post-machining tearing as well

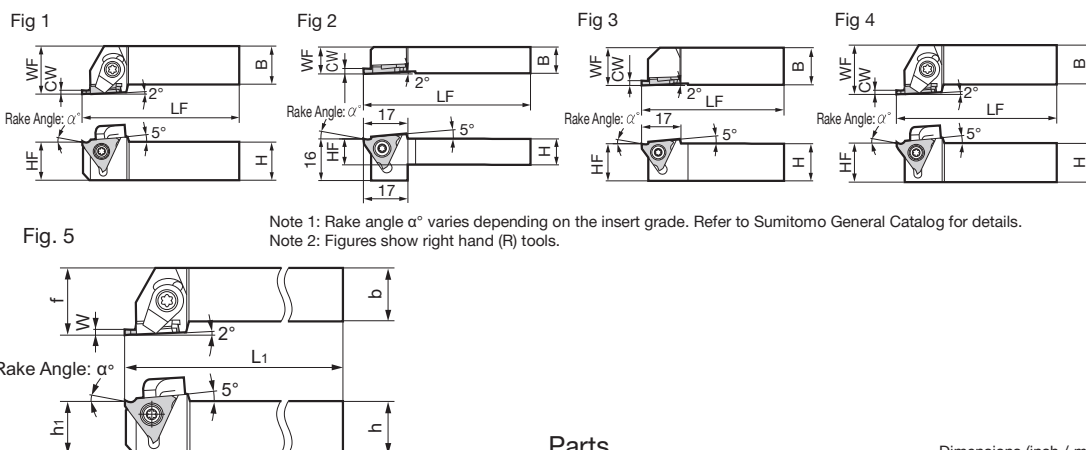


Features of GWC Series for Shallow Groove

- The same insert can be used for both external and internal grooving
- Full range of insert grades to cover a wide range of work materials
Coated Carbide AC530U, Carbide H1, Coated Cermet T3000Z, Cermet T1500A, CBN BN2000, and PCD DA2200 are now in stock.
- A wide variety of grooving widths from (.060 - .090" & 0.33mm to 4.8mm
- **SumiTurn B-Groove** inserts with chipbreaker are now in stock
- Customers can modify the width of cut, nose radius and rake angle according to their own requirements with the blank inserts in stock.
Customized edge shapes can be made-to-order.
(Sumitomo Electric Carbide, Inc. also accepts such orders)



Double Clamp / Screw-on
for External Shallow Grooves



Holder

Parts

Dimensions (inch / mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Width of Cut CW	Max. Groove Depth	Group No.	Fig	Parts				
	R	L										Flat Screw	Wrench	Clamp	Double Screw	Wrench
GWC R/L083	●	●	.500	.500	5.00	.500	.500	.33 to 2.80	.8 to 2.5	1	2	BFTX0409N	3.4	TRX15	—	—
GWC R/L103	●	●	.625	.625	5.00	.625	.625	.33 to 2.80	.8 to 2.5	1	3					
GWC R/L124C-25	●	●	.750	.750	5.00	.938	.750	.060 - .090	.1378	3	5					
GWC R/L124C-35	●	●	.750	.750	5.00	.938	.750	.100 - .189	.1969	4	5	BFTX0511N	5.0	TRX20	CCM8U R/L	WB8-22 TL/T
GWC R/L164D-25	●	●	1.000	1.000	6.00	1.18	1.000	.060 - .090	.1378	3	5					
GWC R/L164D-35	●	●	1.000	1.000	6.00	1.18	1.000	.100 - .189	.1969	4	5					
GWC R/L1010-3	★	★	10	10	125	10	10	.33 to 2.80	.8 to 2.5	1	2	BFTX0409N	3.4	TRX15	—	—
GWC R/L1212-3	★	★	12	12	125	12	12	.33 to 2.80	.8 to 2.5	1	2					
GWC R/L1616-3	★	★	16	16	125	16	16	.33 to 2.80	.8 to 2.5	1	3					
GWC R/L2020-3	★	★	20	20	125	25	20	.33 to 2.80	.8 to 2.5	1	1	BFTX0511N	5.0	TRX20	CCM6B R/L	WB6-20 TL/T
GWC R/L2525-3	★	★	25	25	150	30	25	.33 to 2.80	.8 to 2.5	1	1					
GWC R/L2020-15	★	★	20	20	125	25	20	1.00 to 1.45	2.0	2	4					
GWC R/L2020-25	★	★	20	20	125	25	20	1.50 to 2.30	3.5	3	1	BFTX0511N	5.0	TRX20	CCM8U R/L	WB8-22 TL/T
GWC R/L2020-35	★	★	20	20	125	25	20	2.50 to 4.80	5.0	4	1					
GWC R/L2525-15	★	★	25	25	150	30	25	1.00 to 1.45	2.0	2	4					
GWC R/L2525-25	★	★	25	25	150	30	25	1.50 to 2.30	3.5	3	1					
GWC R/L2525-35	★	★	25	25	150	30	25	2.50 to 4.80	5.0	4	1					

* mark: Cermet inserts have a recommended tightening torque of 4N·m.

Right-handed (R) tool holders can be used with right-handed (R) inserts.

* Refer to TGA type insert group numbers on pages F45 & F46 for applicable inserts. Select applicable inserts for the holders by using matching group numbers.

* Right-handed (R) tool holders are compatible with left-handed clamps (CCM○□L) and right-handed double screws (WB○-2○T)

Left-handed (L) tool holders are compatible with right-handed clamps (CCM○□R) and left-handed double screws (WB○-2○TL).

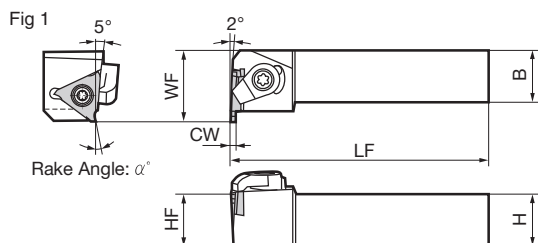
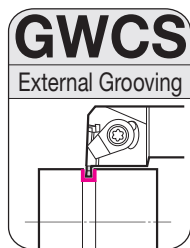
Recommended Tightening Torque (N·m)

● = USA Stocked Item ★ = World Wide Warehouse Item

Grooving Tools GWCS Series / GWCI Series



Double Clamp for External L-Shaped
(Side Cut) Shallow Grooves



Note 1: Rake angle α° varies depending on the insert grade. Refer to the insert table at the bottom of this page for details.
Note 2: 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	Width of Cut CW	Max. Groove Depth	Group No.	Fig	Flat Screw		Wrench	Clamp	Double Screw		Wrench
	R	L																
GWCS R/L2020-3	★	★	20	20	125	25	20	.33 to 2.80	.8 to 2.5	1	1	BFTX0409N	3.4	TRX15	CCM6B R/L	WB6-20 TL/T	5.0*	LT20
GWCS R/L2525-3	★	★	25	25	150	30	25	.33 to 2.80	.8 to 2.5	1	1							
GWCS R/L2020-15	★	★	20	20	125	27	20	1.00 to 1.45	2.0	2	1							
GWCS R/L2020-25	★	★	20	20	125	27	20	1.50 to 2.30	3.5	3	1							
GWCS R/L2020-35	★	★	20	20	125	27	20	2.50 to 4.80	5.0	4	1							
GWCS R/L2525-15	★	★	25	25	150	32	25	1.00 to 1.45	2.0	2	1	BFTX0511N	5.0	TRX20	CCM8U R/L	WB8-22 TL/T	5.0*	LT27
GWCS R/L2525-25	★	★	25	25	150	32	25	1.50 to 2.30	3.5	3	1							
GWCS R/L2525-35	★	★	25	25	150	32	25	2.50 to 4.80	5.0	4	1							

* mark: Cermet inserts have a recommended tightening torque of 4N·m.

Right-handed (R) tool holders can be used with left-handed (L) inserts.

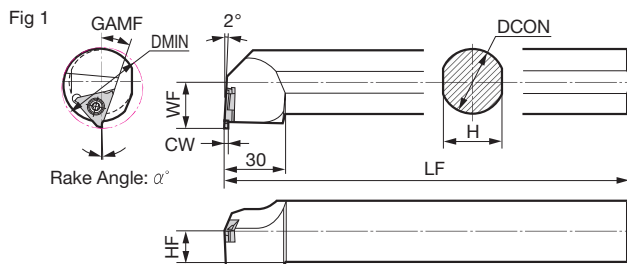
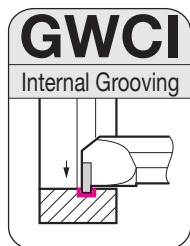
* Refer to TGA insert group numbers on pages F45 and F46 for GWCS holder applicable inserts. Select applicable inserts for the holders by using matching group numbers.

* Right-handed (R) tool holders are compatible with right-handed clamps (CCM○□R) and left-handed double screws (WB○-2○TL).

Left-handed (L) tool holders are compatible with left-handed clamps (CCM○□L) and right-handed double screws (WB○-2○T).



Screw-on for Internal Diameter
Shallow Grooving



Note 1: Rake angle α° varies depending on the insert grade. Refer to the insert table at the bottom of this page for details.
Note 2: Figure shows right hand (R) tool.

Holder

Parts

Dimensions (inch / mm)

Cat. No.	Stock		Diameter DCON	Height H	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Min. Bore Diameter DMIN	Rake Angle GAMF	Width of Cut CW	Max. Groove Depth	Group No.	Gauge Insert	Fig	Flat Screw		Wrench
	R	L															
GWCI R/L163	●	●	1.000	.905	7.850	.690	.453	1.380	14°	.013 to .110	.020 to .080	1	TGA_3	1	BFTX0409N	3.4	TRX15
GWCI R/L204	●	●	1.250	1.181	10.0	.890	.590	1.580	16°	.050 to .189	.070 to .100	2/3/4	TGA_4	1	BFTX0511N	5.0	TRX20
GWCI R/L325	★	★	.25	.23	220	.175	.115	.35	14°	0.33 to 2.80	0.5 to 2.0	1	TGA_3	1	BFTX0409N	3.4	TRX15
GWCI R/L432	★	★	.32	.30	250	.230	.150	.40	16°	1.25 to 4.80	1.7 to 2.5	2/3/4	TGA_4	1	BFTX0511N	5.0	TRX20

Right-handed (R) tool holders can be used with left-handed (L) inserts.

*Refer to TGA insert group numbers on pages F45 and F46 for GWCI holder applicable inserts.

• Rake angle when fitted on a holder (E)

	Coated Carbide	Carbide	Coated Cermet	Cermet	SUMIBORON	SUMIDIA
	AC530U	H1	T3000Z	T1500A	BN2000	DA2200
External Grooving GWC GWCS	10°	20°	10°	5°	0°	10°
Internal Grooving GWCI R/L325	1°	11°	1°	-4°	-9°	1°
Internal Grooving GWCI R/L432	-1°	9°	-1°	-6°	-11°	-1°

● = USA Stocked item ★ = World Wide Warehouse Item

Recommended Tightening Torque (N·m)

Grooving Tools TGA Inserts

Fig 1

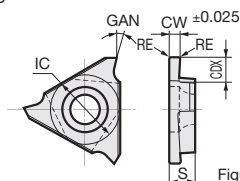


Figure shows right hand (R) tool.

(Coated Carbide / Cermet / Carbide / CBN-SUMIBORON / PCD-SUMIDIA)

Grade	Cutting Edge	GAN
Coated Carbide AC530U	Honing	15°
Carbide H1	Sharp Edge	25°
Coated Cermet T3000Z	Honing	15°
Coated Cermet T2500Z	Honing	15°
Cermet T1500A	Sharp Edge	10°
SUMIBORON BN2000	Negative Land	5°
SUMIDIA DA2200	Sharp Edge	15°

* For the rake angle when fitted on the holder, refer to page F44.

Square Edged Grooving Insert

Dimensions (mm)

Cat. No.	AC530U		H1		T2500Z		T3000Z		T1500A		BN2000		DA2200		Width of Cut CW	Maximum Depth of Cut		Maximum Groove Depth (mm) CDX	Nose Radius RE	Inscribed Circle IC	Thickness S	*Group No.	Fig
	R	L	R	L	R	L	R	L	R	L	R	L	R	L		O.D.	Internal Diameter						
TGA R/L3033(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.33	0.8	0.5	1.0	0.05	9.525	3.18	1	1
TGA R/L3050(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.50	1.2	0.8	1.4	0.05	9.525	3.18	1	1
TGA R/L3075(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.75								1
TGA R/L3095(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.95								1
TGA R/L3100(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1.00								1
TGA R/L3110(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1.10								1
TGA R/L3125(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1.25								1
TGA R/L3135(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1.35	2.0	1.5	2.5	*3 0.1	9.525	3.18	1	1
TGA R/L3145(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1.45								1
TGA R/L3150(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1.50								1
TGA R/L3165(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1.65								1
TGA R/L3175(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1.75								1
TGA R/L3185(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1.85								1
TGA R/L3200(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.00								1
TGA R/L3220(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.20								1
TGA R/L3230(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.30								1
TGA R/L3250(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.50	2.5	2.0	3.0	*3 0.1	9.525	3.18	1	1
TGA R/L3265(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.65								1
TGA R/L3270(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.70								1
TGA R/L3280(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.80								1
TGA R/L4125(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1.25	2.0	1.7	2.5	*2 0.2	12.70	4.76	2	1
TGA R/L4145(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1.45								1
TGA R/L4150(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1.50								1
TGA R/L4165(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1.65								1
TGA R/L4175(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1.75								1
TGA R/L4185(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1.85	3.5	2.5	3.9	*2 0.2	12.70	4.76	3	1
TGA R/L4200(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.00								1
TGA R/L4220(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.20								1
TGA R/L4230(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.30								1
TGA R/L4250(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.50	*1 5.0	2.5	*1 5.4	*2 0.3	12.70	4.76	4	1
TGA R/L4265(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.65								1
TGA R/L4270(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.70								1
TGA R/L4280(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.80	*1 5.0	2.5	*1 5.4	*2 0.3	12.70	4.76	4	1
TGA R/L4300(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	3.00								1
TGA R/L4320(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	3.20	*1 5.0	2.5	5.4	*2 0.3	12.70	4.76	4	1
TGA R/L4330(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	3.30								1
TGA R/L4350(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	3.50								1
TGA R/L4370(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	3.70				*2 0.3				1
TGA R/L4390(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	3.90								1
TGA R/L4400(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	4.00								1
TGA R/L4410(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	4.10								1
TGA R/L4420(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	4.20	5.0	2.5	5.4	*2 0.4	12.70	4.76	4	1
TGA R/L4430(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	4.30								1
TGA R/L4440(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	4.40								1
TGA R/L4450(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	4.50								1
TGA R/L4480(E)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	4.80						5.00		1

* Add E as the part number suffix for T1500A.

Select applicable inserts for the holders by using matching group numbers.

*1: CDX = 4.4 (maximum groove depth 4.0) for SUMIBORON and SUMIDIA (2.5 for internal diameter machining)

*2: RE = 0.2 for SUMIBORON; RE = 0.1 for SUMIDIA

*3: T1500A is RE = 0.2

Grooving Inserts TGA / TGA PSC

Fig 1

(Coated Carbide / Cermet / Carbide)

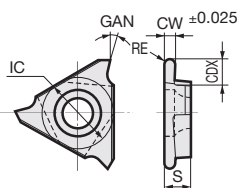


Figure shows right hand (R) tool.

Grade	Cutting Edge	GAN
Coated Carbide	AC530U	Honing
Carbide	H1	Sharp Edge
Coated Cermet	T3000Z	Honing
Coated Cermet	T2500Z	Honing
Cermet	T1500A	Sharp Edge
SUMIBORON	BN2000	Negative Land
SUMIDIA	DA2200	Sharp Edge

* For the rake angle when fitted on the holder, refer to page F44.

Round Edged Grooving Insert

Cat. No.	AC530U		H1		T2500Z		T3000Z		Width of Cut CW	Maximum Depth of Cut		Maximum Groove Depth (mm) CDX	Nose Radius RE	Inscribed Circle IC	Thickness S	*Group No.	Fig
	R	L	R	L	R	L	R	L		O.D.	Internal Diameter						
TGA R/L4050R	★	★	★	★	★	★	★	★	1.00	2.0	1.7	2.5	0.50	12.70	4.76	2	1
TGA R/L4075R	★	★	★	★	★	★	★	★	1.50	0.75			0.75				1
TGA R/L4100R	★	★	★	★	★	★	★	★	2.00	3.5	2.5	3.9	1.00	12.70	4.76	3	1
TGA R/L4125R	★	★	★	★	★	★	★	★	2.50				1.25				1
TGA R/L4150R	★	★	★	★	★	★	★	★	3.00	5.0	2.5	5.4	1.50	12.70	4.76	4	1
TGA R/L4200R	★	★	★	★	★	★	★	★	4.00				2.00				1

* Refer to pages F43 and F44 for group numbers of holders that can be used with the GWC, GWCS and GWCI types.

Select applicable inserts for the holders by using matching group numbers.

Recommended Cutting Conditions

Work Material	P General Steel			M Stainless Steel			N Non-ferrous Metal		H Hardened Steel
Insert Grade	AC530U	T2500Z/T3000Z	T1500A	AC530U	T2500Z/T3000Z	T1500A	H1	DA2200	BN2000
Cutting Speed v_c (SFM)	160 to 650	330 to 600	330 to 600	160 to 650	260 to 500	260 to 400	650 to 1000	650 to 1000	260 to 400
Feed Rate f (IPR)	.001 to .004	.002 to .004	.002 to .003	.001 to .004	.002 to .003	.002 to .003	.002 to .006	.002 to .006	.001 to .003

● Ordering TGA Type Special Inserts

Use the "Special Grooving Insert Request Form" when ordering special inserts (with different shapes, widths of cut, and cutting edge lengths).

Make a copy of the form, fill it out and send it to a Sumitomo Electric Carbide, Inc. Sales Representative or distributor.

TGA PSC

Characteristics of GWC PSC Series

- Similar insert can be use for both external and internal grooving
- Full range of insert grades to cover a wide range of work materials available:

Coated Carbide: AC530U

Uncoated Carbide: H1

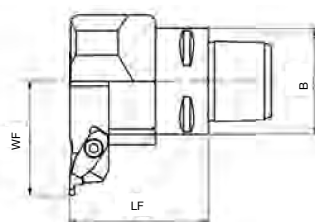
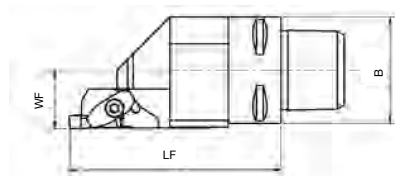
Coated Cermet: T3000Z

Cermet :T1500A/T1200A

SUMIBORON: BN2000/BN250

SUMIDIA: DA2200

- A wide variation of grooving widths from 1.5mm to 4.8mm



■ Cassette

Cat. No. R / L	Stock		Grooving Width w (mm)	Grooving Depth a_r (mm)	Insert	Insert Screw	Tightening Torque (N·m)	Insert Wrench	Clamp Set	Cap Screw	Tightening Torque (N·m)	Clamp Wrench
	R	L										
GWCCM□25	★	★	1.5 - 2.3	3.9	TGA □4□□□	BFTX0511N	5.0	TRX20	SCP4A	BX0414	3.0	LH030
GWCCM□35	★	★	2.5 - 4.8	5.4	TGA □4□□□							

■ Holder

Holder (R/L)	Catalog Number	Stock	B	WF	LH	Torx Screw	Tightening Torque (N·m)	Wrench	Note
PSC40GM00 R/L	★	★	40 mm	22 mm	80 mm	BFTX0619N	7.5	TRD25	Right handed Cassette goes with right handed holder
PSC50GM00 R/L	★	★	50mm	27 mm	80 mm				Left handed Cassette goes with left handed holder
PSC40GM90 R/L	★	★	40 mm	42 mm	52.50 mm				Right handed Cassette goes with left handed holder
PSC50GM90 R/L	★	★	50 mm	47 mm	55 mm				Left handed Cassette goes with right handed holder

Triangular Type Insert with Chipbreaker for Grooving SumiTurn B-Groove



B-Groove

General Features

SumiTurn B-Groove (BF Type) inserts with chipbreaker have been added to the TGA Type grooving insert lineup to solve chip control problems.

Features

- Achieves good chip control in a wide range of grooving processes
- Good chip control during final wide groove touch-up with traverse cutting
- Series expansion of 14 items for circlip groove machining, covering grooving widths from 1.4mm to 4.5mm for a total of 60 stocked items.
- The AC530U grade with Super ZX Coat for a longer tool life is now in stock to cover various materials from steel and stainless steel to non-ferrous metals

Grooving
Tools
F

Fig 1

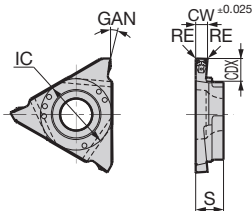
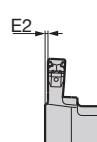


Fig 2



Grade	Cutting Edge	GAN
Coated Carbide AC530U	Honing	15°

* For the rake angle when fitted on the holder, refer to page F44.

Note 1: Please note that inserts with edge width (CW) less than 1.85mm have different cutting edge distance (E2).

Note 2: Figure shows right hand (R) tool.

(Coated Carbide)

Chipbreaker Insert for Square Grooves BF

Dimensions (inch/mm)

Cat. No.	AC530U	Width of Cut CW	Maximum Depth of Cut O.D.	Maximum Depth of Cut Internal Diameter	Maximum Groove Depth (mm) CDX	Nose Radius RE	Inscribed Circle IC	Thickness S	Cutting Edge Distance E2	Group No.	Fig
TGA R/L 40062BF	•	• .062	.138	.154	.008	.008	.500	.187	.016	3	2
TGA R/L 40072BF	•	• .072							.010	3	2
TGA R/L 40088BF	•	• .088							.003	3	2
TGA R/L 40094BF	•	• .094								4	1
TGA R/L 40097BF	•	• .097	.197	.213	.012	.012	.500	.187		4	1
TGA R/L 40105BF	•	• .105								4	1
TGA R/L 40110BF	•	• .110								4	1
TGA R/L 40122BF	•	• .122								4	1
TGA R/L 40125BF	•	• .125	.197	.213	.012	.012	.500	.187		4	1
TGA R/L 40142BF	•	• .142								4	1
TGA R/L 40156BF	•	• .156								4	1
TGA R/L 4140BF01	★	★ 1.40	2.0	1.7	2.5	0.1	12.70	4.76	0.300	2	2
TGA R/L 4165BF01	★	★ 1.65	3.5	2.5	3.9	0.1	12.70	4.76	.0175	3	1
TGA R/L 4190BF01	★	★ 1.90							0		
TGA R/L 4220BF01	★	★ 2.20									
TGA R/L 4270BF02	★	★ 2.70	5.0	2.5	5.4	0.1	12.70	4.76	0	4	1
TGA R/L 4320BF02	★	★ 3.20									
TGA R/L 4420BF02	★	★ 4.20									
TGA R/L 4150BF	★	★ 1.50							0.250		
TGA R/L 4165BF	★	★ 1.65	3.5	2.5	3.9	0.2	12.70	4.76	.0175	3	2
TGA R/L 4175BF	★	★ 1.75							.0125		
TGA R/L 4185BF	★	★ 1.85							.0075		
TGA R/L 4200BF	★	★ 2.00									
TGA R/L 4220BF	★	★ 2.20	5.0	2.5	5.4	0.3	12.70	4.76	0	4	1
TGA R/L 4230BF	★	★ 2.30									
TGA R/L 4250BF	★	★ 2.50									
TGA R/L 4265BF	★	★ 2.65									
TGA R/L 4270BF	★	★ 2.70	5.0	2.5	5.4	0.4	12.70	4.76		4	1
TGA R/L 4280BF	★	★ 2.80									
TGA R/L 4300BF	★	★ 3.00									
TGA R/L 4320BF	★	★ 3.20									
TGA R/L 4330BF	★	★ 3.30	5.0	2.5	5.4	0.4	12.70	4.76		4	1
TGA R/L 4350BF	★	★ 3.50									
TGA R/L 4370BF	★	★ 3.70									
TGA R/L 4390BF	★	★ 3.90									
TGA R/L 4400BF	★	★ 4.00	5.0	2.5	5.4	0.4	12.70	4.76		4	1
TGA R/L 4410BF	★	★ 4.10									
TGA R/L 4420BF	★	★ 4.20									
TGA R/L 4430BF	★	★ 4.30									
TGA R/L 4440BF	★	★ 4.40	5.0	2.5	5.4	0.4	12.70	4.76		4	1
TGA R/L 4450BF	★	★ 4.50									

Recommended Cutting Conditions

Work Material	Machining Details	Cutting Conditions	Groove Width CW (mm)		
			1.4 to 2.3	2.5 to 3.3	3.5 to 4.5
General Steel P	Grooving	Cutting Speed v_c (m/min)	50 to 180	50 to 180	50 to 180
		Feed Rate f (mm/rev)	0.03 to 0.12	0.04 to 0.12	0.05 to 0.12
		Depth of Cut a_p (mm)	up to 3.5	up to 5.0	up to 5.0
	Traverse Cutting	Feed Rate f (mm/rev)	0.03 to 0.10	0.05 to 0.10	0.07 to 0.12
		Depth of Cut a_p (mm)	up to 0.3	up to 0.5	up to 0.7
Stainless Steel M	Grooving	Cutting Speed v_c (m/min)	50 to 160	50 to 160	50 to 160
		Feed Rate f (mm/rev)	0.03 to 0.12	0.04 to 0.12	0.05 to 0.12
		Depth of Cut a_p (mm)	up to 3.5	up to 5.0	up to 5.0
	Traverse Cutting	Feed Rate f (mm/rev)	0.03 to 0.10	0.05 to 0.10	0.07 to 0.12
		Depth of Cut a_p (mm)	up to 0.3	up to 0.5	up to 0.7

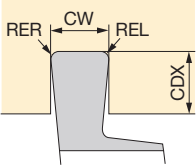
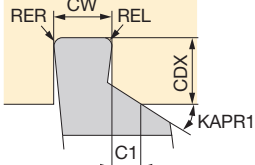
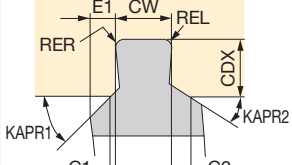
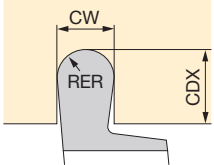
* Refer to pages F43 and F44 for group numbers of holders that can be used with the GWC, GWCS and GWCI types.
Select applicable inserts for the holders by using matching group numbers.

Special Grooving Insert Request Form

This form applies to the GWC, GWCS, and GWCI inserts.

To order special grooving inserts, fill out the form below (indicate preference by circling the item or specify dimensions), and send it to a Sumitomo Sales Representative or distributor. (Make a copy of this form.)
For grooving insert shapes, widths of cut, cutting edge lengths and grades not listed below, contact your Sumitomo Sales Representative or distributor.

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

Cat. No.	①	②	③	④
Shape				
Uses	Internal Grooving / External Grooving			
Holders	GWC / GWCS / GWCI			
Direction	Right Hand (R) / Left Hand (L)			
Insert Size	"3": $\varnothing 9.525$ "4": $\varnothing 12.70$			
CW				
CDX				
C1				
C2				
E1				
RER				
REL				
KAPR1				
KAPR2				
Grade				
Quantity				
Remarks				

Form instructions

1. The above illustration shows only external right-hand and internal left-hand inserts.
(The external left-hand and internal right-hand inserts will be opposite to the above illustration.)

2. The following two insert sizes are available.

3: Inscribed circle 9.525mm

4: Inscribed circle 12.70mm

3. Dimension limits for groove width and groove depth.

(1) Maximum Width of Cut (CW): 4.8mm

· For Models ① and ④ : $CW \leq 4.8$ (SumiTurn B-Groove (BF Type) is 4.5mm)

· For Model ② : $CW + C1 \leq 4.8$ (SumiTurn B-Groove (BF Type) is 4.5mm)

· For Model ③ : $CW + E1$ (or $C1 + C2 \leq 4.8$ (SumiTurn B-Groove (BF Type) is 4.5mm)

(2) Minimum Width of Cut (CW) · For Insert Size "3": $CW \geq 0.33\text{mm}$

· For Insert Size "4": $CW \geq 0.75\text{mm}$

(3) Groove Depth (CDX)

· For Insert Size "3": $CDX \leq 0.8$ to $CDX \leq 2.5\text{mm}$ (For I.D.: $CDX \leq 0.8$ to $CDX \leq 2.0$)

· For Insert Size "4": $CDX \leq 2.0$ to $CDX \leq 5.0\text{mm}$ (For I.D.: $CDX \leq 2.0$ to $CDX \leq 2.5$)

4. SumiTurn B-Groove (BF Type) grooving inserts with chipbreaker are limited to insert size 4 and AC530U grade.

For shape details, please contact us directly.

5. The following shows the standard tolerance for inserts.

Symbol	Standard Tolerance
CW	$\pm 0.025\text{mm}$
CDX	$\pm 0.05\text{mm}$
KAPR1, KAPR2	$\pm 1^\circ$

Unless otherwise specified, inserts are made to standard tolerances.

6. Insert grades are based on the catalogue numbers in stock.

7. The applicable tool holders for Models ①, ② and ④ should match the CW dimension. Contact us for Model ③.

Grooving Tools CKB Toolholders



Clamp-on
for Very Small Diameter Face Grooving

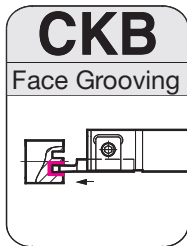
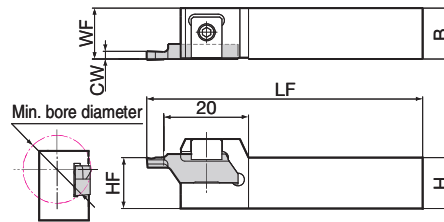


Fig 1



Holder

Parts

Dimensions (mm)

Cat. No.	Stock	Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Fig	Parts		
								Clamp	Double Screw	Wrench
CKBR1010-16	●	10	10	111	10	10	1	CKBW16	WB4-8	LH020
CKBR1212-16	●	12	12	136	12	12	1			
CKBR1616-16	●	16	16	136	16	16	1			
CKBR2020-16	●	20	20	136	20	20	1			
CKBR2525-16	●	25	25	161	25	25	1			

*For round shank holders, refer to page E64.

Insert (Coated Carbide)

Dimensions (mm)

Cat. No.	ACZ150	Min. Work Diameter DMIN	Cutting Edge Distance WF3	Cutting Edge Distance E3	Width of Cut CW	Nose Radius RE	Overall Length L	Max. Groove Depth CDX	Fig	Fig 1
KBMFR0615-05	●	6.0	4.0	0.2	1.5	0.05	21.8	4.0	1	
KBMFR0620-05	●	6.0	4.0	0.2	2.0	0.05	21.8	4.0	1	
KBMFR0630-05	●	6.0	4.0	0.2	3.0	0.05	21.8	4.0	1	

●: USA Stocked Item

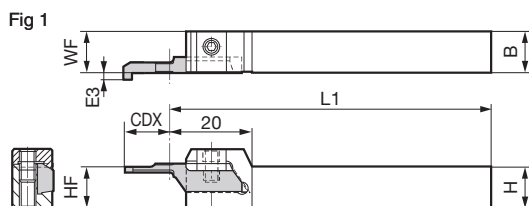
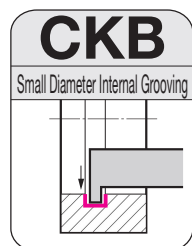
★: Worldwide Warehouse Item

▲: USA Limited Availability Item

Grooving Tools CKB Toolholders



Clamp-on
for Internal Diameter Narrow Grooving



Refer to the insert table for E3 and CDX values.

Holder

Parts

Dimensions (mm)

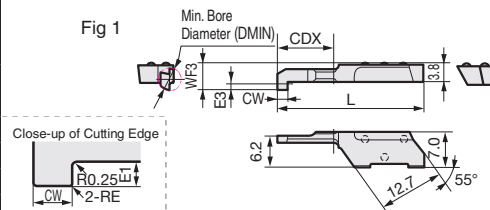
Cat. No.	Stock	Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Fig	Parts		
		H	B	L1	WF	HF		Clamp	Double Screw	Wrench
CKB R1010-16	●	10	10	100	10	10	1	CKBW16	WB4-8	LH020
CKB R1212-16	●	12	12	125	12	12	1			
CKB R1616-16	●	16	16	125	16	16	1			
CKB R2020-16	●	20	20	125	20	20	1			
CKB R2525-16	●	25	25	150	25	25	1			

Refer to the insert table for E3 and CDX values.

Insert (Coated Carbide)

Dimensions (mm)

Cat. No.	AC1030U	Min. Bore Diameter	Width of Cut	Cutting Edge Distance	Cutting Edge Distance	Nose Radius	Overall Length	Maximum Groove Depth (mm)	Fig
		DMIN	CW	WF3	E3	RE	L	CDX	
KBMG R0411-05	●	4.0	1.00	4.90	1.1	0.05	28.5	11	1
KBMG R0411-10	●	4.0	2.00	4.90	1.1	0.10	28.5	11	1
KBMG R0511-05	●	5.0	1.00	5.10	1.3	0.05	28.5	11	1
KBMG R0511-10	●	5.0	2.00	5.10	1.3	0.10	28.5	11	1



●: USA Stocked Item

★: Worldwide Warehouse Item

▲: USA Limited Availability Item

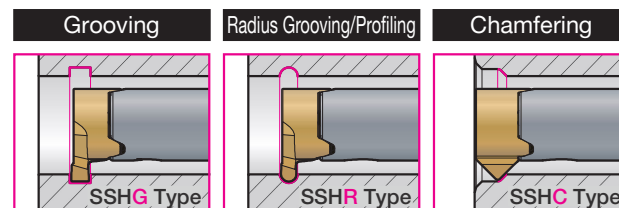
Grooving Tools SSH Toolholders



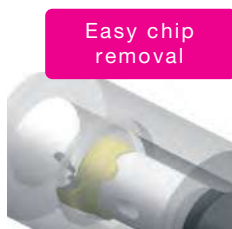
■ Features

- Internal coolant supply for outstanding chip evacuation
- Tough carbide body for stable machining even with small diameters
- Adopts AC1030U for excellent machined surface quality
- Min. bore diameter of $\varnothing 8\text{mm}$ and up supported
- Wide variety of widths of cut

In addition to grooving applications, we have a lineup of 12 catalog items for c-clip groove machining



■ Chip Control



Stable and smooth evacuation of curled chips even on small bore diameters

SSH Type

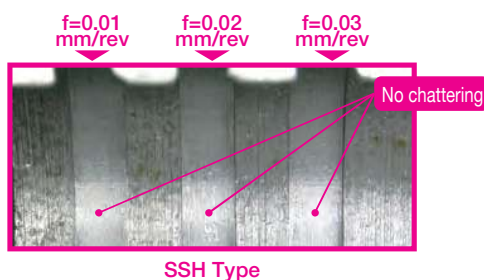


Evacuation from grooves is poor, inviting sudden breakage

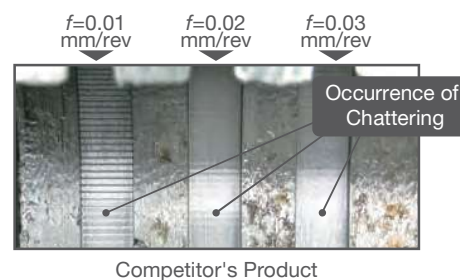
Competitor's Product

Part Material: Medium Strength Steel (S45C) Diameter: $\varnothing 13\text{mm}$ Cutting Conditions: $v_c=50\text{m/min}$, $f=0.02\text{mm/rev}$, $a_p=1.0\text{mm}$ Wet (Oil-based)

■ SSH Type Chatter Resistance Outstanding sharpness and carbide shank suppress chatter



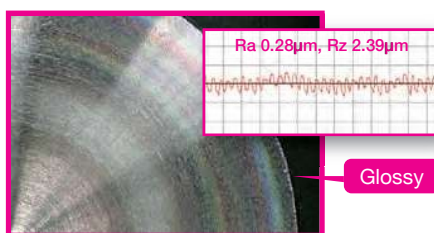
SSH Type



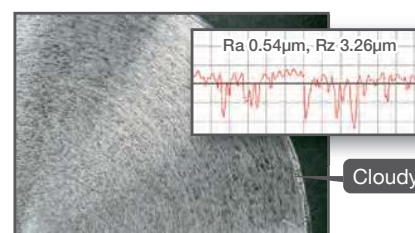
Competitor's Product

Part Material: Medium Strength Steel (S45C) Diameter: $\varnothing 13\text{mm}$ Cutting Conditions: $v_c=100\text{m/min}$, $f=0.01, 0.02, 0.03\text{mm/rev}$, $a_p=0.2\text{mm}$ Wet (Oil-based)

■ SSH Type Machined Surface Quality Glossy, Beautiful Surface Finish



SSH Type

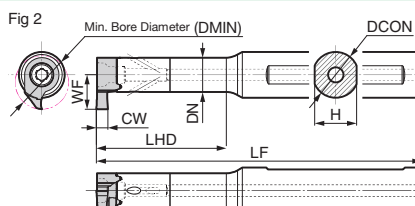
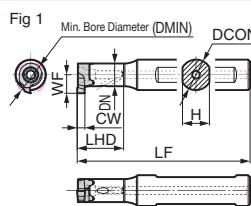


Competitor's Product

Part Material: Alloy Steel (SCM440) Diameter: $\varnothing 30\text{mm}$ Cutting Conditions: $v_c=180\text{m/min}$, $f=0.02\text{mm/rev}$, $a_p=0.2\text{mm}$ Wet (Oil-based)

Grooving Tools

SSH Toolholders



Grooving Tools

Holder

Cat. No.	Stock	Diameter DCON	Head Dia. DN	Height H	Overall Length LF	Head LHD	Min. Bore Diameter DMIN	Width of Cut CW	Applicable Insert	Fig	Parts		Dimensions (mm)	
											Flat Screw	Wrench		
E08D-SSHM N125-08	★	8	6	7	60	12.5	8	0.74 to 2.00	SSH□ R/L 08...	1	BFTX02608IPS	1.2	TRX08IP	
E08E-SSHM N210-08	★	8	6	7	70	21.0	8	0.74 to 2.00	SSH□ R/L 09...	1	BFTX02608IPS	1.2	TRX08IP	
E12E-SSHM N125-08	★	12	6	11	70	12.5	8	0.74 to 2.00	SSH□ R/L 10...	1	BFTX02608IPS	1.2	TRX08IP	
E12F-SSHM N210-08	★	12	6	11	80	21.0	8	0.74 to 2.00		1				
E12G-SSHM N300-08	★	12	6	11	90	30.0	8	0.74 to 2.00		1				
E12H-SSHM N420-08	★	12	6	11	100	42.0	8	0.74 to 2.00		1				
E12X-SSHM N195-14	★	12	9	11	75	19.5	14	0.74 to 3.00		2				
E12H-SSHM N340-14	★	12	9	11	100	34.0	14	0.74 to 3.00		2				
E12J-SSHM N450-14	★	12	9	11	110	45.0	14	0.74 to 3.00		2				
E12X-SSHM N640-14	★	12	9	11	130	64.0	14	0.74 to 3.00		2				
E16F-SSHM N195-14	★	16	9	14	80	19.5	14	0.74 to 3.00		2				
E16H-SSHM N340-14	★	16	9	14	100	34.0	14	0.74 to 3.00		2				
E16J-SSHM N450-14	★	16	9	14	110	45.0	14	0.74 to 3.00		2				
E16X-SSHM N640-14	★	16	9	14	130	64.0	14	0.74 to 3.00		2				

*The LF dimensions above are dimensions with SSHG/SSHR type insert mounted. For WF dimensions, see the table below.

Insert (Coated Carbide)

Applications	Cat. No.	AC1030U		Width of Cut CW	Max. Groove Depth CDX	Nose Radius RE	Cutting Edge Distance WF3	Cutting Edge Distance WF	Thickness S	Cutting Edge Distance E2	Applicable Holder	Fig	Dimensions (mm)	
		R	L											
Grooving (08 size)	SSHG R/L 0807400	★	★	0.74	1.0	-	3.2	4.80	3.6	0.4	E08□-SSHMN○○○-08 E12□-SSHMN○○○-08	1	Fig 1 (Grooving)	
	SSHG R/L 0808400	★	★	0.84	1.0	-	3.2	4.80	3.6	0.4		1		
	SSHG R/L 0809400	★	★	0.94	1.0	-	3.2	4.80	3.6	0.4		1		
	SSHG R/L 0810000	★	★	1.00	1.0	-	3.2	4.80	3.1	-		1		
	SSHG R/L 0811900	★	★	1.19	1.0	-	3.2	4.80	3.1	-		1		
	SSHG R/L 0813900	★	★	1.39	1.0	-	3.2	4.80	3.0	-		1		
	SSHG R/L 0815000	★	★	1.50	1.0	-	3.2	4.80	3.0	-		1		
	SSHG R/L 0816900	★	★	1.69	1.0	-	3.2	4.80	3.0	-		1		
Grooving (09 size)	SSHG R 0910010	★	★	1.00	2.0	0.10	3.6	5.50	3.5	-		2	Fig 2 (Grooving)	
	SSHG R 0915010	★	★	1.50	2.0	0.10	3.6	5.50	3.4	-		2		
	SSHG R 0920010	★	★	2.00	2.0	0.10	3.6	5.50	3.4	-		2		
	SSHG R 0920020	★	★	2.00	2.0	0.20	3.6	5.50	3.4	-		2		
	SSHG R 0925010	★	★	2.50	2.0	0.10	3.6	5.50	3.4	-		2		
	SSHG R 0925020	★	★	2.50	2.0	0.20	3.6	5.50	3.4	-		2		
	SSHG R 0930010	★	★	3.00	2.0	0.10	3.6	5.50	3.4	-		2		
	SSHG R 0930020	★	★	3.00	2.0	0.20	3.6	5.50	3.4	-		2		
Grooving (10 size)	SSHG R 1010010	★	★	1.00	3.0	0.10	3.6	6.50	3.5	-		2	Fig 3 (Radius Grooving/Profiling)	
	SSHG R 1015010	★	★	1.50	3.0	0.10	3.6	6.50	3.4	-		2		
	SSHG R 1020010	★	★	2.00	3.0	0.10	3.6	6.50	3.4	-		2		
	SSHG R 1020020	★	★	2.00	3.0	0.20	3.6	6.50	3.4	-		2		
	SSHG R 1025010	★	★	2.50	3.0	0.10	3.6	6.50	3.4	-		2		
	SSHG R 1025020	★	★	2.50	3.0	0.20	3.6	6.50	3.4	-		2		
	SSHG R 1030010	★	★	3.00	3.0	0.10	3.6	6.50	3.4	-		2		
	SSHG R 1030020	★	★	3.00	3.0	0.20	3.6	6.50	3.4	-		2		
Radius Grooving/ Profiling	SSHR R/L 08080	★	★	0.80	1.0	0.40	3.2	4.80	3.1	-		3	Fig 4 (Chamfering)	
	SSHR R/L 08120	★	★	1.20	1.0	0.60	3.2	4.80	3.1	-		3		
	SSHR R/L 08180	★	★	1.80	1.0	0.90	3.2	4.80	3.0	-		3		
Chamfering	SSHC R/L 08454502	★	★	-	1.4	0.20	1.8	4.65	3.6	-		4		
Grooving	SSHG R/L 1407400	★	★	0.74	1.2	-	5.3	9.00	5.5	0.2	E12□-SSHMN○○○-14 E16□-SSHMN○○○-14	1	Fig 4 (Chamfering)	
	SSHG R/L 1408400	★	★	0.84	1.3	-	5.3	9.00	5.5	0.2		1		
	SSHG R/L 1409400	★	★	0.94	1.5	-	5.3	9.00	5.5	0.2		1		
	SSHG R/L 1410000	★	★	1.00	1.6	-	5.3	9.00	5.5	0.2		1		
	SSHG R/L 1411900	★	★	1.19	4.0	-	5.3	9.00	5.2	-		1		
	SSHG R/L 1413900	★	★	1.39	4.0	-	5.3	9.00	5.1	-		1		
	SSHG R/L 1415000	★	★	1.50	4.0	-	5.3	9.00	5.1	-		1		
	SSHG R/L 1416900	★	★	1.69	4.0	-	5.3	9.00	5.1	-		1		
	SSHG R/L 1420000	★	★	2.00	4.0	-	5.3	9.00	5.1	-		1		
	SSHG R/L 1425000	★	★	2.50	4.0	-	5.3	9.00	5.1	-		1		
Radius Grooving/ Profiling	SSHG R/L 1430000	★	★	3.00	4.0	-	5.3	9.00	5.1	-		1		
	SSHR R/L 14120	★	★	1.20	4.0	0.60	5.3	9.00	5.2	-		3		
	SSHR R/L 14180	★	★	1.80	4.0	0.90	5.3	9.00	5.1	-		3		
	SSHR R/L 14200	★	★	2.00	4.0	1.00	5.3	9.00	5.1	-		3		
	SSHR R/L 14220	★	★	2.20	4.0	1.10	5.3	9.00	5.1	-		3		
	SSHR R/L 14300	★	★	3.00	4.0	1.50	5.3	9.00	5.1	-		3		

Recommended Cutting Conditions

Part Material	P Carbon Steel / Alloy Steel	M Stainless Steel	K Cast Iron
Cutting Speed v_c (SFM)	65-650	50-265	65-525
Feed Rate f (IPR)	0.0004-0.0012	0.0004-0.0012	0.0004-0.0012

★: Worldwide Warehouse Item

Grooving Tools

SGIT Toolholders



Screw-on
for Internal Diameter Narrow Grooving

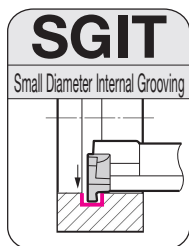
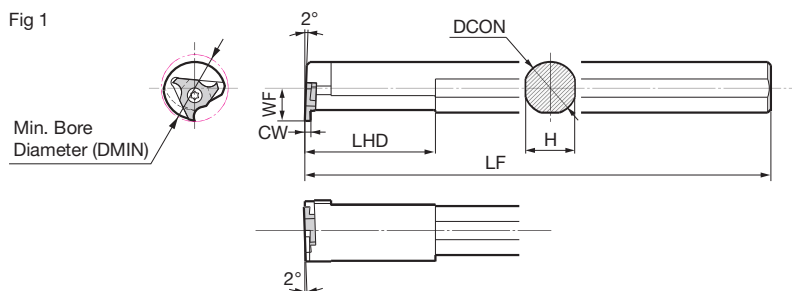


Fig 1



Holder

Parts Dimensions (mm)

Cat. No.	Stock	Diameter		Overall Length	Cutting Edge Distance	Head	Min. Bore Diameter	Width of Cut	Max. Groove Depth	Applicable Insert	Fig	Flat Screw	Wrench
		DCON	H										
SGIT R08	★	8	7.0	125	5.0	20	10.0	0.50 to 2.00	0.8*	GITL3000	1	BFTX02506NS	RT08
SGIT R10	★	10	9.0	150	6.0	25	12.0	0.50 to 2.00	0.8*	GITL3000	1	BFTX02506NS	RT08
SGIT R12	★	12	11.0	180	7.0	30	14.0	1.00 to 2.00	1.8	GITL5000	1	BFTX0307NS	RT10
SGIT R14	★	14	13.0	180	8.0	35	16.0	1.00 to 2.00	1.8	GITL5000	1	BFTX0307NS	RT10
SGIT R16	★	16	15.0	200	10.0	40	20.0	1.50 to 2.00	2.8	GITL6000	1	BFTX0307NS	RT10
SGIT R20	★	20	19.0	200	12.0	40	25.0	1.50 to 2.00	2.8	GITL6000	1	BFTX0307NS	RT10

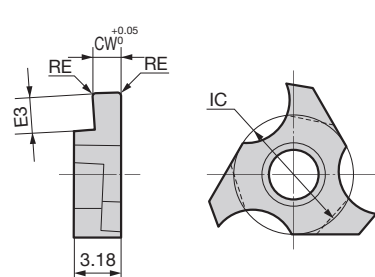
* The maximum groove depth is 0.5mm when GITL3050 is set. (Cutting edge CW = 0.5mm)

Insert (Coated Carbide)

Dimensions (mm)

Cat. No.	ACZ150	Width of Cut	Cutting Edge Distance	Nose Radius	Inscribed Circle	Applicable Holder	Fig
GIT L3050	★	0.50	1.2	0.05	5.56	SGIT R08 SGIT R10	1
GIT L3065	★	0.65	1.2	0.05	5.56		1
GIT L3075	★	0.75	1.2	0.05	5.56		1
GIT L3100	★	1.00	1.2	0.05	5.56		1
GIT L3125	★	1.25	1.2	0.20	5.56		1
GIT L3145	★	1.45	1.2	0.20	5.56		1
GIT L3150	★	1.50	1.2	0.05	5.56		1
GIT L3200	★	2.00	1.2	0.10	5.56		1
GIT L5100	★	1.00	2.2	0.05	7.94	SGIT R12 SGIT R14	1
GIT L5145	★	1.45	2.2	0.20	7.94		1
GIT L5150	★	1.50	2.2	0.05	7.94		1
GIT L5175	★	1.75	2.2	0.20	7.94		1
GIT L5200	★	2.00	2.2	0.10	7.94		1
GIT L6150	★	1.50	3.2	0.20	9.525	SGIT R16 SGIT R20	1
GIT L6175	★	1.75	3.2	0.20	9.525		1
GIT L6200	★	2.00	3.2	0.20	9.525		1

Fig 1

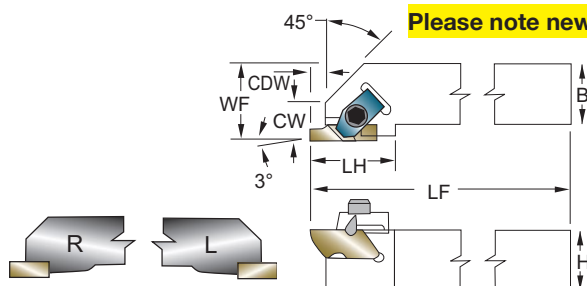
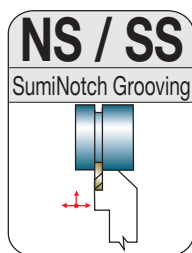


Grooving Toolholders & Boring Bars

SumiNotch

Grooving Tools

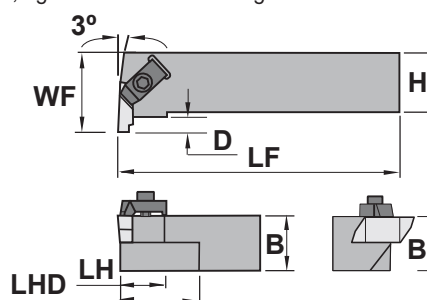
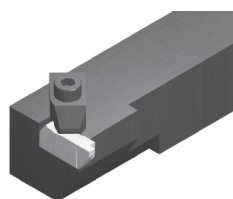
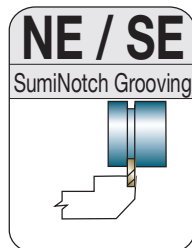
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Please note new product codes for SumiNotch items, See below

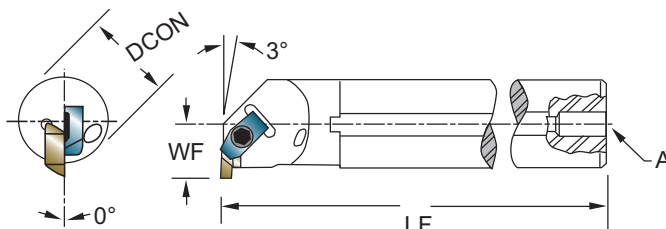
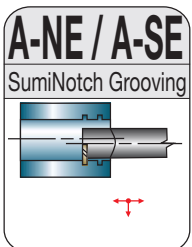
New Sumitomo Catalog Number		Previous Catalog Number		Stock		B	H	LF	CDW	LH	WF	CW	Applicable Insert	Right Hand Clamp	Left Hand Clamp	Screw
Right	Left	Right	Left	R	L											
NSR062	NSL062	SSR062	SSL062	★	★	.375	.375	2.50	.138	1.25	.562	.500	SG-2R SG-2L	TF74	TF75	S-310 or ST-1291
NSR082J	NSL082J	SSR-82V	SSL-82V	★	★	.500	.500	3.50	.138	1.25	.750	.500				
NSR102B	NSL102B	SSR-102B	SSL-102B	★	★	.625	.625	4.50	.138	1.25	.875	.500				
NSR122B	NSL122B	SSR-122B	SSL-122B	★	★	.750	.750	4.50	.138	1.25	1.00	.500				
		SSR-162C	SSL-162C	▲	▲	1.00	1.00	5.00	.138	1.25	1.25	.500				
NSR162D	NSL162D	SSR-162D	SSL-162D	★	★	1.00	1.00	6.00	.138	1.25	1.25	.500	SG-3R SG-3L	TF72	TF73	S-412 or ST-1297
		SSR-123A	SSL-123A	▲	▲	.750	0.75	4.00	.210	1.25	1.00	.500				
NSR123B	NSL123B	SSR-123B	SSL-123B	★	★	.750	0.75	4.50	.210	1.25	1.00	.500				
NSR163C	NSL163C	SSR-163C	SSL-163C	★	★	1.00	1.00	5.00	.210	1.25	1.25	.500				
NSR163D	NSL163D	SSR-163D	SSL-163D	★	★	1.00	1.00	6.00	.210	1.25	1.25	.500				
NSR203D	NSL203D	SSR-203D	SSL-203D	★	★	1.25	1.25	6.00	.210	1.25	1.50	.500				

Note: NS & SS Holder, right-hand holder uses right hand insert and right hand clamp.



New Sumitomo Catalog Number		Previous Catalog Number		Stock		H	B	LH	LF	LHD	D	WF	Applicable Insert	Right Hand Clamp	Left Hand Clamp	Screw
Right	Left	Right	Left	R	L											
NER062	NEL062	SER062	SEL062	★	★	.375	.375	.500	2.500	1.000	.138	.750	SG-2R SG-2L	TF74	TF75	ST-1291
NER082J	NEL082J	SER082J	SEL082J	★	★	.500	.500	.500	3.500	1.000	.138	.750				
NER102B	NEL102B	SER102B	SEL102B	★	★	.625	.625	-	4.500	1.000	.138	.750				
NER122B	NEL122B	SER122B	SEL122B	★	★	.750	.750	.500	4.500	1.000	.138	1.000				
		SER123B	SEL123B	★	★	.750	.750	.750	4.500	2.000	.210	1.125				
NER123B	NEL123B	SER123B	SEL123B	★	★	.750	.750	.750	4.500	2.000	.210	1.125	SG-3R SG-3L	TF72	TF73	ST-1297
NER163D	NEL163D	SER163D	SEL163D	★	★	1.000	1.000	.750	6.000	2.000	.210	1.250				
NER203D	NEL203D	SER203D	SEL203D	★	★	1.250	1.250	.750	6.000	2.000	.210	1.500				

Note: NE & SE Holder, Right-hand holder uses left hand insert and left hand clamp.

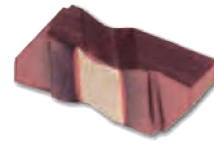
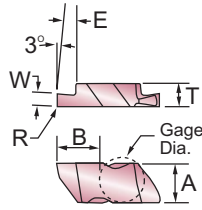


New Sumitomo Catalog Number		Previous Catalog Number		Stock		DCON	LF	WF	Min. Bore	D	A	Applicable Insert	Right Hand Clamp	Left Hand Clamp	Screw
Right	Left	Right	Left	R	L										
A08M-NER2	A08M-NEL2	A08-SER2	A08-SEL2	★	★	.500	8.000	.437	.730	.138	1/4-18 NPT	SG-2R SG-2L	TF74	TF75	S-310 or ST-1291
A10S-NER2	A10S-NEL2	A10-SER2	A10-SEL2	★	★	.625	10.000	.500	1.000	.138	1/4-18 NPT				
A12S-NER2	A12S-NEL2	A12-SER2	A12-SEL2	★	★	.750	10.000	.562	1.125	.138	1/4-18 NPT				
A16T-NER2	A16T-NEL2	A16-SER2	A16-SEL2	★	★	1.000	12.000	.688	1.375	.138	1/4-18 NPT				
		A16-SER3	A16-SEL3	★	★	1.000	12.000	.688	1.375	.210	1/4-18 NPT				
A20U-NER3	A20U-NEL3	A20-SER3	A20-SEL3	★	★	1.250	14.000	.875	1.750	.210	1/4-18 NPT	SG-3R SG-3L	TF72	TF73	S-412 or ST-1297
A24U-NER3	A24U-NEL3	A24-SER3	A24-SEL3	★	★	1.500	14.000	1.000	2.000	.210	1/4-18 NPT				

★ : Worldwide Warehouse Item Note: Right-hand boring bars use left-hand inserts/clamp. Left-hand boring bars use right-hand inserts/clamp.
▲ : Limited Availability Item, made to order, or discontinued

Grooving Toolholders & Boring Bars

SumiNotch - Inserts



Left				Dimensions (in)							Right			
SG	Coated	CBN		W ±.001	R	E ±.001	T	A	B	Gage Dia.	SG	Coated	CBN	
	EH520V	BN250	BN350									EH520V	BN250	BN350
SG-2031L	•			.031	.002/.005	.050	.150	.219	.2700	.1875	SG-2031R	•		
SG-2041L	•			.041	.002/.005	.050					SG-2041R	•		
SG-2047L	•			.047	.002/.005	.050					SG-2047R	•		
SG-2058L	•			.058	.005/.010	.050					SG-2058R	•		
SG-2062L	•			.062	.005/.010	.110					SG-2062R	•		
SG-2094L	•			.094	.005/.010	.110					SG-2094R	•		
SG-2125L	•			.125	.005/.010	.110	.195	.344	.4050	.3750	SG-2125R	•		
SG-3047L	•			.047	.005/.010	.120					SG-3047R	•	•	•
SG-3062L	•	•	•	.062	.005/.010	.120					SG-3062R	•	•	•
SG-3072L	•			.072	.005/.010	.120					SG-3072R	•		
SG-3088L	•			.088	.005/.010	.180					SG-3088R	•		
SG-3094L	•	•	•	.094	.005/.010	.180					SG-3094R	•	•	•
SG-3097L	•			.097	.005/.010	.180					SG-3097R	•		
SG-3105L	•			.105	.005/.010	.180					SG-3105R	•		
SG-3110L	•			.110	.005/.010	.180					SG-3110R	•		
SG-3122L	•			.122	.005/.010	.180					SG-3122R	•		
SG-3125L	•	•	•	.125	.005/.010	.180					SG-3125R	•	•	•
SG-3142L	•			.142	.005/.010	.180					SG-3142R	•		
SG-3156L	•			.156	.005/.010	.180					SG-3156R	•		
SG-3178L	•			.178	.005/.010	.180					SG-3178R	•		
SG-3185L	•			.185	.020/.025	.180					SG-3185R	•		
SG-3189L	•			.189	.020/.025	.180					SG-3189R	•		•

Left		Dimensions (in)								Right	
SG-CB	Coated	W ±.001	R	E ±.001	T	A	B	Gage Dia.	SG-CB	Coated	
	EH520V										EH520V
SG-2047L-CB	●	.047	.002/.005	.050	.150	.219	.2700	.1875	SG-2047R-CB	●	
SG-2062L-CB	●	.062	.005/.010	.110					SG-2062R-CB	●	
SG-2078L-CB	●	.078	.005/.010	.110					SG-2078R-CB	●	
SG-2094L-CB	●	.094	.005/.010	.110					SG-2094R-CB	●	
SG-2125L-CB	●	.125	.005/.010	.110					SG-2125R-CB	●	
SG-3047L-CB	●	.047	.005/.010	.075	.195	.344	.4050	.3750	SG-3047R-CB	●	
SG-3062L-CB	●	.062	.005/.010	.120					SG-3062R-CB	●	
SG-3072L-CB	●	.072	.005/.010	.120					SG-3072R-CB	●	
SG-3078L-CB	●	.078	.005/.010	.120					SG-3078R-CB	●	
SG-3088L-CB	●	.088	.005/.010	.180					SG-3088R-CB	●	
SG-3094L-CB	●	.094	.005/.010	.180					SG-3094R-CB	●	
SG-3125L-CB	●	.125	.005/.010	.180					SG-3125R-CB	●	
SG-3189L-CB	●	.189	.020/.025	.180					SG-3189R-CB	●	

• = USA Stocked Item

Recommended Cutting Conditions

Cutting Conditions below reflect EH520V grade

Material		Speed (SFM)	Feed Rate (in/rev)
Steels	free-machining carbon alloys	450-750	.004 - .012
	plain carbon steels	400-700	
	alloy steels 190-330HB	400-700	
	alloy steels 330-450HB	350-600	
Stainless Steels	martensitic/ferritic stainless steel	250-650	.004 - .009
	austenitic stainless steel	175-700	
	gray cast iron 190-330HB	400-700	
Cast Iron	gray cast iron 330-450HB	350-600	.004 - .015
	alloy/ductile irons	250-650	
	high temp alloys 200-260HB	60-250	
High Temperature Alloys	high temp alloys 260-450HB	30-175	.003 - .008
	titanium alloys Ti 6Al-4V	90-250	
	free-machining aluminum alloys	600-2500	
Non-Ferrous Materials	copper/zinc/brass	300-900	.004 - .012
	non-metallics	350-1200	

CBN - SUMIBORON Grooving Tool Holder GWB Toolholders

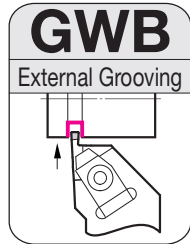
Grooving
Tools

F



■ Features

- Vertically-mounted insert enhances tool rigidity
- Double clamping holder design improves stability during continuous and interrupted cutting. Can also be used for traverse cutting
- Long tool life for interrupted cutting applications with the Coated CBN - SUMIBORON BNC30G grade for grooving (BN2000 recommended for continuous cutting)
- Suited for grooving hardened steel, powdered metals, and cast irons. Variety of widths available from .059 to .236" and 1.5 to 6.0mm



Holder



Fig 1

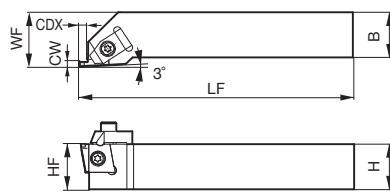
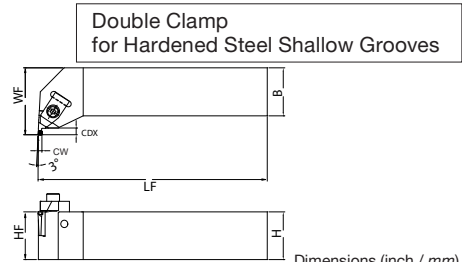


Fig. 2



Parts

Dimensions (inch / mm)

Cat. No.		Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Width of Cut CW	Max. Groove Depth CDX	Group No.	Fig	Clamp	Cap Screw	Flat Screw	Spring	Wrench	
		R	L															
Inch	GWB R/L 165D4	●	●	1.00	1.00	6.000	1.181	1.0	.059 ≤ CW ≤ .177	.138 to .197	1	1	TF72 (Right Hand) / TF73 (Left Hand)	BX0520T	5.0	BFTX0511N	GSP06	TRX20
	GWB R/L 165D6	●	●	1.00	1.00	6.039	1.181	1.0	.059 ≤ CW ≤ .236	.197	2	1						
Metric Inch 90° Series	GWBS R/L 125D4	●	●	.750	.750	6.000	.880	.750	.059 ≤ CW ≤ .177	.138 to .197	1	2						
	GWBS R/L 165D4	●	●	1.00	1.00	6.000	1.167	1.0	.059 ≤ CW ≤ .177	.138 to .197	1	2						
	GWBS R/L 165D6	●	●	1.00	1.00	6.000	1.167	1.0	.177 ≤ CW ≤ .236	.197	2	2						
	GWBS R/L 205D4	●	●	1.25	1.25	6.000	1.75	1.25	.059 ≤ CW ≤ .177	.138 to .197	1	2						
	GWB R/L 2525-45	★	★	25	25	151 (150)	30	25	1.5 ≤ CW ≤ 4.5	3.5 to 5.0	1	1						
	GWB R/L 2525-60	★	★	25	25	151	30	25	4.5 < CW ≤ 6.0	5.0	2	1						

Dimensions in () are for width of cut (CW) of 3.0 or less. GWBR holders take Right-Handed insert - GWBL take Left-Handed inserts. GWBSR takes Left-Handed insert and clamp, GWBSL take Right-Handed insert and clamp.

Insert (CBN / SUMIBORON)

Dimensions (inch / mm)

Cat. No.	BN7000		BN7500		BN2000		BNC30G		Width of Cut CW	Groove Depth CDX	Inscribed Circle IC	Thickness S	Group No.	Applicable Holder	Fig
	R	L	R	L	R	L	R	L							
CGA R/L 4062					•	•	•	•	.062	.1378	.625	.1875	1	GWB R/L 1□□D4	1
CGA R/L 4094					•	•	•	•	.094	.1575	.625	.1875	1	GWB R/L 2525-45	1
CGA R/L 4125					•	•	•	•	.125	.1969	.625	.1875	1	GWB R/L 2525-60 / GWB R/L 1□□D6	1
CGA R/L 6189					•	•	•	•	.189	.1969	.625	.250	2		1
CGA R/L 1504150	•	•	•	•	•	•	•	•	1.5	3.5	15.875	4.76	1	GWB R/L 1□□D4 GWB R/L 2525-45	1
CGA R/L 1504200	•	•	•	•	•	•	•	•	2.0	3.5	15.875	4.76			1
CGA R/L 1504250	•	•	•	•	•	•	•	•	2.5	4.0	15.875	4.76			1
CGA R/L 1504300	•	•	•	•	•	•	•	•	3.0	4.0	15.875	4.76			1
CGA R/L 1504350	•	•	•	•	•	•	•	•	3.5	5.0	15.875	4.76			1
CGA R/L 1504400	•	•	•	•	•	•	•	•	4.0	5.0	15.875	4.76			1
CGA R/L 1504450	•	•	•	•	•	•	•	•	4.5	5.0	15.875	4.76	2	GWB R/L 2525-60 GWB R/L 1□□D6	1
CGA R/L 1506500					•	•	•	•	5.0	5.0	15.875	6.35			1
CGA R/L 1506550					•	•	•	•	5.5	5.0	15.875	6.35			1
CGA R/L 1506600					•	•	•	•	6.0	5.0	15.875	6.35			1

* It is also possible to manufacture widths of cut other than those listed above (CW = 1.5 to 6.0mm).

Grade Features (See page L9 for details on BN7000 & BN7500)

Grade	Application Range	Features	HV(GPa)	TRS(GPa)
BN2000	Continuous Grooving	General-purpose grade with superior wear resistance	31 to 34	1.0 to 1.1
BNC30G	Interrupted Grooving	Grade suited to interrupted grooving. Features tough substrate and special ceramic coating that exhibits both peel-off and wear resistance.	33 to 35	1.1 to 1.2

Recommended Cutting Conditions

Cutting Conditions	H Hardened Steel
Cutting Speed v_c (SFM)	260 to 400
Feed Rate f (IPR)	.0016 to .0032

* In order to avoid thermal cracking of the SUMIBORON cutting edge during interrupted cutting, ensure that the work material is thoroughly dry before cutting.

Application Examples

Tooling	Work Material	Tool Cat. No.	Cutting Condition	Tool Life Comparison
Shaft Grooving: Continuous Required Surface Roughness for Groove Sides: Ra0.4μm	Carburized steel 58 to 62HRC	CGAR1504200 BN2000	v_c : 120m/min f : 0.05mm/rev Groove Depth: 2mm Dry	GWB Type BN2000: No Chipping Conventional Tool: Chipping
Spline Grooving: Interrupted 	Carburized steel 58 to 62HRC	CGAR1504200 BNC30G	v_c : 100m/min f : 0.05mm/rev Groove Depth: 1.6mm Dry	GWB Type BNC30G: No Chipping Competitor's Product: Chipping

Recommended Tightening Torque (N·m)

CBN Grooving Tools CGA PSC / BNGG

CGA PSC ■ Features & Benefits

- New double clamping system provides reliable grooving of hardened steel
- 80° tangentially mounted CGA style insert for improved rigidity
- Wide range of widths and grades for continuous and interrupted grooving operations
- New special coated CBN grade BNC30G extends tool life of insert

■ Cassette



Dimensions (mm)

Cat. No. R / L	Stock R L	Grooving Width w (mm)	Grooving Depth a _r (mm)	Insert	Insert Screw	Tightening Torque (N·m)	Insert Wrench	Clamp Set	Cap Screw	Tightening Torque (N·m)	Clamp Wrench
GWBCM□45	★ ★	1.5 - 2.0 2.5 - 3.0	3.5 4.0	CGA1504□□0 CGA4□□□	BFTX0511N	5.0	TRX20	SCP4A	BX0414	3.0	LH030
GWBCM□60	★ ★	3.5 - 6.0	5.0	CGA1506□□0 CGA6□□□							

■ Holder

Holder (R/L)	Catalog Number	Stock	B	WF	LH	Torx Screw	Tightening Torque (N·m)	Wrench	Note
PSC40GM00 R/L	★ ★	40	22	82		BFTX0619N	7.5	TRD25	Right handed Cassette goes with right handed holder
PSC50GM00 R/L	★ ★	50	27	82					Left handed Cassette goes with left handed holder
PSC40GM90 R/L	★ ★	40	43	52.5					Right handed Cassette goes with left handed holder
PSC50GM90 R/L	★ ★	50	48	55					Left handed Cassette goes with right handed holder

BNGG



■ Features & Benefits

- Improved rigidity for longer tool life
Strong clamping reduces insert breakage and holder chatter
- Enhanced tooling for 2mm fine grooves or threading
Grooving and threading can be done by changing the support

Top Clamp
for Hardened Steel Shallow Grooves

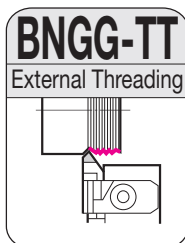
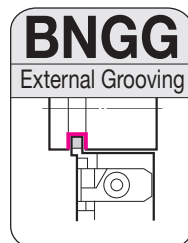


Fig 1 (Grooving)

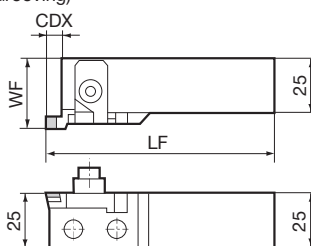
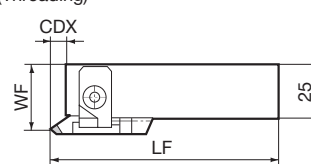


Fig. 2 (Threading)



Dimensions (inch/ mm)

	Cat. No.	Stock R L	Cutting Edge Distance WF	Groove Depth CDX	Overall Length LF	Applicable Insert	Shank Size	Fig
Grooving	BNGG R/L 160	★	1.250	.200	6.000	BNGNT	1.00 x 1.00	1
	BNGG R/L2525-200	★	30.5	4	150	BNGNT0200 R/L	25mm x 25mm	1
	BNGG R/L2525-250	★	30.5	4	150	BNGNT0250 R/L		1
	BNGG R/L2525-300	★	30.5	5	150	BNGNT0300 R/L		1
	BNGG R/L2525-400	★	30.5	6	151	BNGNT0400 R/L		1
	BNGG R/L2525-500	★	30.5	6	151	BNGNT0500 R/L		1
	BNGG R/L2525-600	★	30.5	7	152	BNGNT0600 R/L		1
	BNGG R/L2525-TT	★	28.5	5	150	BNTT1020 R/L, BNTT1530 R/L		2

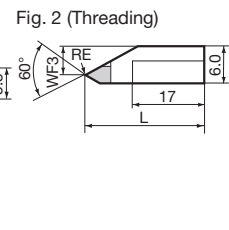
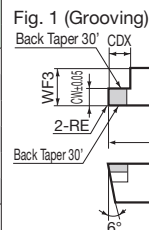
Inserts are not embedded into tool holders.

* Holder body is universal. The anvil can be configured for different groove widths or threading by changing the support.

Insert (CBN / SUMIBORON)

Dimensions (mm)

	Cat. No.	BN250 R L	BNX20 R L	BN350 R L	BNX25 R L	Width of Cut CW	Groove Depth CDX	Nose Radius RE	Overall Length L	Cutting Edge Distance WF3	Applicable Holder	Fig
Grooving	BNGNT0200 R/L	●		●		2.0	4.0	0.2	25	6.0	BNGG R/L 2525-200	1
	BNGNT0250 R/L	●		●		2.5	4.0	0.2	25	6.0	BNGG R/L 2525-250	1
	BNGNT0300 R/L	●		●		3.0	5.0	0.4	25	6.0	BNGG R/L 2525-300	1
	BNGNT0400 R/L	●		●		4.0	6.0	0.4	26	6.0	BNGG R/L 2525-400	1
	BNGNT0500 R/L	●		●		5.0	6.0	0.4	26	6.0	BNGG R/L 2525-500	1
	BNGNT0600 R/L	●		●		6.0	7.0	0.4	27	6.0	BNGG R/L 2525-600	1
Threading	BNTT1020 R/L	●				Pitch 1.0 to 2.0	0.14	25	4.0		BNGG R/L 2525-TT	2
	BNTT1530 R/L	●				Pitch 1.5 to 3.0	0.2	25	4.0			2



Parts ■ Anvil Sold Separately

Applicable Holder	Anvil	Clamp	Adjustment Screw	Spring	Cap Screw	Wrench
BNGG R/L 160	BNGS R/L					
BNGG R/L2525-200	BNGS R/L 200	BNGC R/L	FMJ	GSP06	BX0615 (For Clamp) BX0414 (For Support)	LH050 (For Clamp) LH030 (For Support)
BNGG R/L2525-250	BNGS R/L 250					
BNGG R/L2525-300	BNGS R/L 300					
BNGG R/L2525-400	BNGS R/L 400					
BNGG R/L2525-500	BNGS R/L 500					
BNGG R/L2525-600	BNGS R/L 600					
BNGG R/L2525-TT	BNGS R/L TT					

Recommended Cutting Conditions

• Grooving

Cutting Conditions	H Hardened Steel
Cutting Speed v _c (SFM)	250 - 400
Feed Rate f (IPR)	.001 - .0025

• Threading

Cutting Conditions	H Hardened Steel
Cutting Speed v _c (SFM)	250 - 400
Feed Rate f (in.)	Maximum Pitch .118

Cut-Off Tools

F58 to F67

F



Cut-Off Tools

SumiGrip Jr.

SumiGrip

SEC-Small Diameter Cut-Off Tool Holders

Cut-Off Tool Series Selection Guide	F59
SumiGrip Introduction	F60
WCF Inserts	F61
STFH	F62
STFS	F63
WCFH	F64
WCFS.....	F65
SCT.....	F66

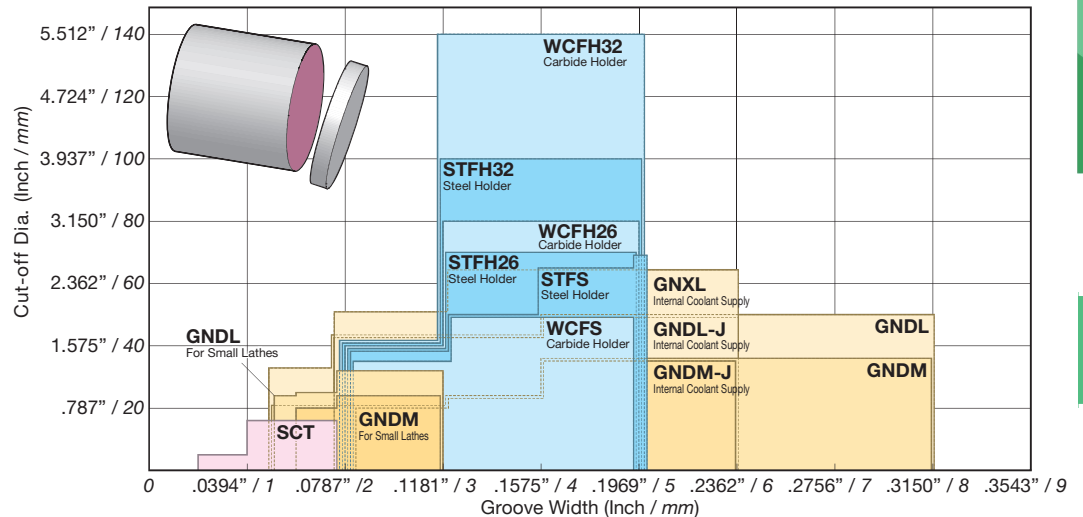
Stock Markings and Symbols

- : Standard stocked item
- ★: Worldwide Warehouse Item
- ▲: Limited Availability Item, made to order, or discontinued (please confirm stock availability).

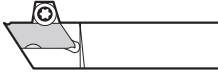
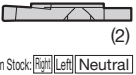
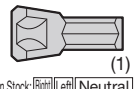
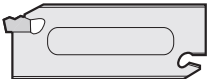
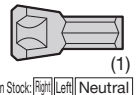
Blank: Made-to-order item
— mark: Not available

Cut-off Tool Holders Selection Guide

Cut-off



Range of Tool Applications (For Solid Workpieces)

Applications	Series	Shape	Insert Shape (): indicates no. of cutting edges	Cut-off Dia. 25 50 75 100(mm)					Features
				Groove Width 2 4 6 8 10(mm)					
For Small Lathes	SCT			 16.0					- Ground insert with good sharpness - Can clamp even from behind 2-cornered type
				 2.0					
For Small to Medium Diameters	GNDM/ GNDL For Small Lathes			 32.0					- High-rigidity design and outstanding chip control - Unground 2-cornered type - Available Seat Size starting at 1.25mm
				 1.25 3.0					
	Medium Diameters	GNDM(-J)/ GNDL(-J) GNDXL			 50.0				
 2.0 8.0									
For Medium to Large Diameters	STFH/ STFS (SumiGrip Jr.)			 100.0					- Can be used for large diameter machining up to $\phi 100mm$ - Economical steel shank 1-cornered self-grip type
				 2.0 5.0					
For Medium to Large Diameters	WCFH/ WCFS (SumiGrip)			 140.0					- Can be used for large diameter machining up to $\phi 140mm$ - High-rigidity carbide shank 1-cornered self-grip type
				 2.0 5.0					

Cut-Off Tool Series

Small Diameter Cut-Off Toolholders SCT		- Our first recommendation for small lathes - Excellent sharpness reduces cutting resistance and central pips!	
Cut-off Toolholders GND Grooving GNDM(-J) / GNDL(-J) GNDXL		- Our first recommendation for small to medium diameters - Enables stable cutting off due to high-rigidity body and rigid clamping	
Cut-off Toolholders SumiGrip Jr. Steel Shank SumiGrip Carbide Shank		- Our first recommendation for medium to large diameters - Blade type is also available for cutting off up to $\phi 140mm$	

SumiGrip

Cut-Off
Tools

F

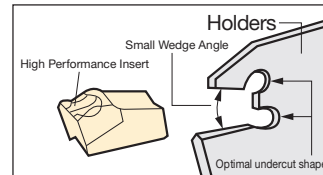


■ Features

- Available in carbide blade (SumiGrip) and steel blade (SumiGrip Jr.)
- Capable of interrupted machining.
- Can be used for cutting off, grooving, chamfering, etc.

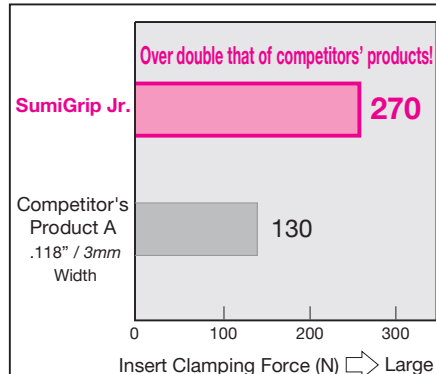
■ Types

1. Tool Block Type
STFH (Steel) / WCFH (Carbide)
2. Shank Type
STFS (Steel) / WCFS (Carbide)

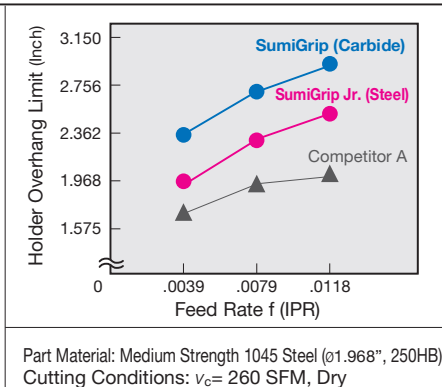


■ Cutting Performance (Holder)

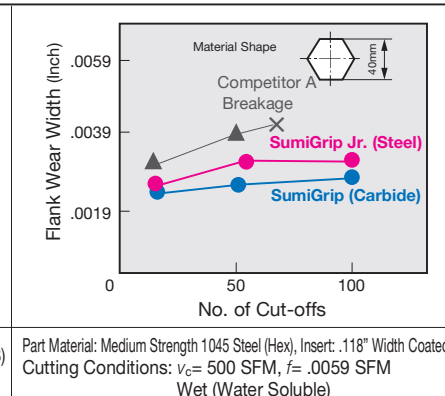
● Insert Clamping Force



● Holder Overhang



● Wear Resistance



■ GG / GF / CF Chipbreaker, New Grade: AC1030U

- Utilizing grooving tool GND Series chipbreakers for excellent chip control.
- Low cutting force chipbreaker GF (neutral) or CF (handed) inserts, coupled with a carbide blade enable stable machining and prevents chattering even when machining stainless steel.
- Achieving stable and long tool life with the AC1030U grade.

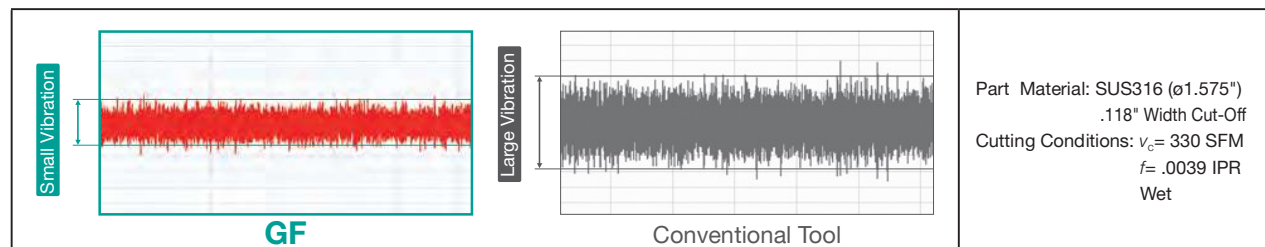


■ Cutting Performance (Chipbreaker)

● Chip Control Performance



● Anti-Vibration Performance



Cut-Off - SumiGrip WCF Inserts

Fig. 1 (Neutral (N))

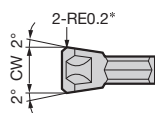


Fig. 2 (Right Hand (R))

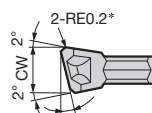
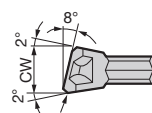


Fig. 3 (Left Hand (L))



*WCF□ 2T: 2-RE0.15

STFH Insert (SumiGrip/SumiGrip Jr. Common Insert) (Coated Carbide / Cermet / Carbide)

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC225	AC1030U	T1500A	G10E	Width of Cut CW	Applicable Holder	Fig
WCF N□-GG General-purpose	WCFN2-GG	●	-	-	-	-	2.0	STFH □□-2 / STFS R/L / WCFH / WCFS R/L	1
	WCFN3-GG	●	-	-	-	-	3.0	STFH □□-3 / STFS R/L / WCFH / WCFS R/L	1
	WCFN4-GG	●	-	-	-	-	4.0	STFH □□-4 / STFS R/L / WCFH / WCFS R/L	1
	WCFN5-GG	★	-	-	-	-	5.0	STFH □□-5 / STFS R/L / WCFH / WCFS R/L	1
WCF N□-GF Exotic Alloy Low Feed	WCFN2-GF	-	●	-	-	-	2.0	STFH □□-2 / STFS R/L / WCFH / WCFS R/L	1
	WCFN3-GF	-	●	-	-	-	3.0	STFH □□-3 / STFS R/L / WCFH / WCFS R/L	1
	WCFN4-GF	-	●	-	-	-	4.0	STFH □□-4 / STFS R/L / WCFH / WCFS R/L	1
	WCFN5-GF	-	●	-	-	-	5.0	STFH □□-5 / STFS R/L / WCFH / WCFS R/L	1
WCF □□-CF Exotic Alloy Low Feed (With Feed Direction)	WCFR3-CF	-	●	-	-	-	3.0	STFH □□-3 / STFS R/L / WCFH / WCFS R/L	2
	WCFL3-CF	-	●	-	-	-	3.0	STFH □□-3 / STFS R/L / WCFH / WCFS R/L	3
	WCFR4-CF	-	★	-	-	-	4.0	STFH □□-4 / STFS R/L / WCFH / WCFS R/L	2
	WCFL4-CF	-	★	-	-	-	4.0	STFH □□-4 / STFS R/L / WCFH / WCFS R/L	3
WCF □2T Small Diameter Low Resistance	WCFN2T	▲	-	-	-	-	2.0	STFH □□-2 / STFS R/L / WCFH / WCFS R/L	1
	WCFR2T	▲	-	-	-	-	2.0	STFH □□-2 / STFS R/L / WCFH / WCFS R/L	2
	WCFL2T	▲	-	-	-	-	2.0	STFH □□-2 / STFS R/L / WCFH / WCFS R/L	3
WCF □□ No Chipbreaker For General Steel	WCFN3	▲	-	-	-	-	3.0	STFH □□-3 / STFS R/L / WCFH / WCFS R/L	1
	WCFR3	▲	-	-	-	-	3.0	STFH □□-3 / STFS R/L / WCFH / WCFS R/L	2
	WCFL3	▲	-	-	-	-	3.0	STFH □□-3 / STFS R/L / WCFH / WCFS R/L	3
	WCFN4	▲	-	-	-	-	4.0	STFH □□-4 / STFS R/L / WCFH / WCFS R/L	1
	WCFR4	▲	-	-	-	-	4.0	STFH □□-4 / STFS R/L / WCFH / WCFS R/L	2
	WCFL4	▲	-	-	-	-	4.0	STFH □□-4 / STFS R/L / WCFH / WCFS R/L	3
	WCFN5	▲	-	-	-	-	5.0	STFH □□-5 / STFS R/L / WCFH / WCFS R/L	1
	WCFR5	★	-	-	-	-	5.0	STFH □□-5 / STFS R/L / WCFH / WCFS R/L	2
WCF □□A Exotic Alloy Low Feed	WCFL5	★	-	-	-	-	5.0	STFH □□-5 / STFS R/L / WCFH / WCFS R/L	3
	WCFN2A	▲	-	-	-	-	2.0	STFH □□-2 / STFS R/L / WCFH / WCFS R/L	1
	WCFN3A	●	-	-	-	★	3.0	STFH □□-3 / STFS R/L / WCFH / WCFS R/L	1
	WCFR3A	▲	-	-	-	-	3.0	STFH □□-3 / STFS R/L / WCFH / WCFS R/L	2
	WCFL3A	▲	-	-	-	-	3.0	STFH □□-3 / STFS R/L / WCFH / WCFS R/L	3
	WCFN4A	▲	-	★	-	-	4.0	STFH □□-4 / STFS R/L / WCFH / WCFS R/L	1
	WCFR4A	▲	-	-	-	-	4.0	STFH □□-4 / STFS R/L / WCFH / WCFS R/L	2
	WCFL4A	▲	-	-	-	-	4.0	STFH □□-4 / STFS R/L / WCFH / WCFS R/L	3
WCF □□B Cast Iron Light Alloys	WCFN5A	▲	-	-	-	-	5.0	STFH □□-5 / STFS R/L / WCFH / WCFS R/L	1
	WCFR5A	-	-	-	-	-	5.0	STFH □□-5 / STFS R/L / WCFH / WCFS R/L	2
	WCFL5A	-	-	-	-	-	5.0	STFH □□-5 / STFS R/L / WCFH / WCFS R/L	3
	WCFN3B	-	-	-	★	-	3.0	STFH □□-3 / STFS R/L / WCFH / WCFS R/L	1
	WCFR3B	-	-	-	★	-	3.0	STFH □□-3 / STFS R/L / WCFH / WCFS R/L	2
	WCFL3B	-	-	-	★	-	3.0	STFH □□-3 / STFS R/L / WCFH / WCFS R/L	3
	WCFN4B	-	-	-	★	-	4.0	STFH □□-4 / STFS R/L / WCFH / WCFS R/L	1
	WCFR4B	-	-	-	★	-	4.0	STFH □□-4 / STFS R/L / WCFH / WCFS R/L	2
*Same breaker shape as the type for general steel (WCF□□), but with smaller cutting edge treatment.	WCFL4B	-	-	-	-	-	4.0	STFH □□-4 / STFS R/L / WCFH / WCFS R/L	3
	WCFN5B	-	-	-	★	-	5.0	STFH □□-5 / STFS R/L / WCFH / WCFS R/L	1
	WCFR5B	-	-	-	-	-	5.0	STFH □□-5 / STFS R/L / WCFH / WCFS R/L	2
	WCFL5B	-	-	-	★	-	5.0	STFH □□-5 / STFS R/L / WCFH / WCFS R/L	3

Recommended Cutting Conditions

Part Material		Cutting Speed v_c (SFM)					
		Coated Carbide			Cermet	Carbide	
		AC830P	AC225	AC1030U	T1500A	A30	G10E
Steel	General Steel	260-660	160-660	260-660	260-660	150-400	-
	Mild Steel	330-750	160-750	330-750	330-750	230-500	-
	Die Steel	200-500	160-500	200-500	200-500	150-400	-
Stainless Steel		230-500	160-500	200-500	-	230-450	-
Cast Iron		-	160-660	-	-	-	160-400
Non-ferrous Metal		-	-	-	-	-	660-1650

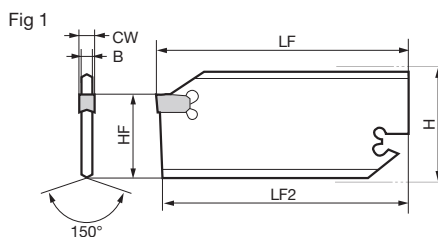
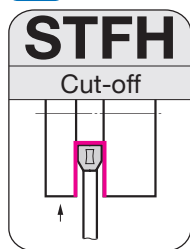
Breaker & Type	Feed f (IPR)										
	Neutral						Handed				
	GG	GF	none	T	A	B	none	CF	T	A	B
Width (mm)	2	.002-.008	.0012-.005	-	.0012-.004	.0012-.005	-	-	.0012-.004	-	-
	3	.003-.010	.0015-.006	.003-.010	-	.0015-.006	.002-.006	.003-.010	.002-.005	-	.0015-.006
	4	.004-.012	.002-.007	.004-.012	-	.002-.007	.002-.007	.004-.012	.002-.005	-	.002-.007
	5	.004-.014	.002-.008	.004-.012	-	.002-.008	.0025-.008	.004-.012	-	-	.0025-.008

★ Worldwide Warehouse Item

▲ USA Limited Availability Item

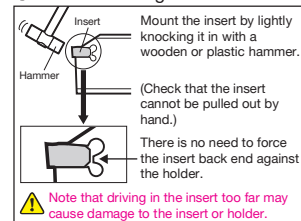
Cut-Off
Tools

F



**Cut-off
(Steel Holder/Tool Block)**

● **Insert Mounting Method**



Holder

Cat. No.	Stock	Height H	Width B	Overall Length LF	Cutting Edge Height HF	Reference Length LF2	Width of Cut CW	Max. Cut-Off Diameter	Applicable Insert	Applicable Tool Block	Fig	Wrench
STFH26-2	●	26	1.6	109	21.4	108	2.0	40	WCF○2□	SBN 20-26 SBU 20-26	1	SL-4
STFH26-3	●	26	2.4	109	21.4	108	3.0	70	WCF○3□		1	
STFH26-4	★	26	3.4	109	21.4	108	4.0	70	WCF○4□		1	
STFH26-5	★	26	4.3	109	21.4	108	5.0	70	WCF○5□		1	
STFH32-2	●	32	1.6	149	25.0	148	2.0	40	WCF○2□	SBN 20-32 SBN 25-32 SBU 20-32 SBU 25-32	1	SL-4
STFH32-3	●	32	2.4	149	25.0	148	3.0	100	WCF○3□		1	
STFH32-4	★	32	3.4	149	25.0	148	4.0	100	WCF○4□		1	
STFH32-5	★	32	4.3	149	25.0	148	5.0	100	WCF○5□		1	

*The shape of STFH32-2 is slightly different from the above figure. Refer to F61 for applicable inserts.

Fig 1

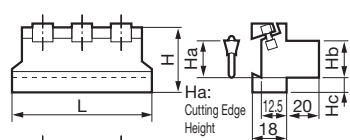


Fig 2

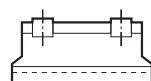


Fig 1

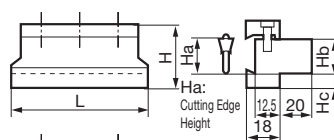
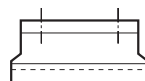


Fig 2



Tool Lock: SBN (Integrated)

Parts Dimensions (Inch/ mm)

Cat. No.	Stock	Cutting Edge Height Ha	Mounting Length Hb	Mounting Position Hc	Height H	Overall Length L	Fig	Clamp	Double Screw	Wrench
SBN063-26	●	.625	.625	.500	1.719	3.000	1	BWS30	WB8-20	LH040
SBN075-26	●	.750	.750	.375	1.719	3.156	1			
SBN100-32	●	1.000	1.000	.3125	2.000	4.500	1			
SBN20-26	★	20	20	10.0	45	80	2			
SBN20-32	★	20	20	13.5	50	100	1			
SBN25-32	★	25	25	8.5	50	110	1			

Tool Lock: SBU (Split Type)

Parts Dimensions (inch/ mm)

Cat. No.	Stock	Cutting Edge Height Ha	Mounting Length Hb	Mounting Position Hc	Height H	Overall Length L	Fig	Clamp Wedge	Cap Screw	Wrench
SBU075-26	●	.750	.750	.4375	1.781	3.156	1	BCS15 BCS20 BCS25	BX0622	LH050
SBU075-32	●	.750	.750	.531	2.000	4.000	1			
SBU100-32	●	1.000	1.000	.344	2.000	4.344	1			
SBU20-26	★	20	20	10.0	45	80	2			
SBU20-32	★	20	20	13.5	50	100	1			
SBU25-32	★	25	25	8.5	50	110	1			

Tool Block Selection Guide

● USA Stocked Item

★ Worldwide Warehouse Item

Integrated	SBN Ex.: SBN20-32 Applicable to toolpost A shown on the right.	A General-purpose Lathe, etc. SBN SBU Toolpost Tool Block Spacer (Clamp from above)	B Turret Toolpost, etc. SBU Toolpost Tool Block Wedge (Clamp from the side)
	SBU Ex.: SBU20-32 Applicable to toolpost A or B shown on the right. Large clamp ensures a wide clamp area that enables long holder overhang.		

Cut-Off - SumiGrip Jr. STFS

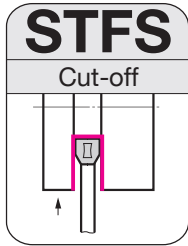


Fig 1

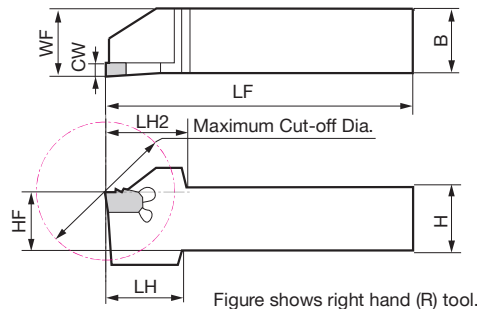
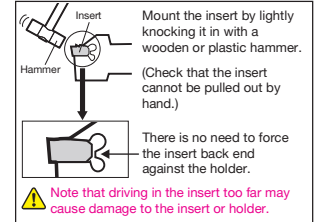


Figure shows right hand (R) tool.

For Cut-off
(Steel Holder/Shank)

● Insert Mounting Method



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	Head LH2	Width of Cut CW	Max. Cut-Off Diameter	Applicable Insert	Fig	Wrench
	R	L												
STFS R/L1010-2	★	★	10	10	86	10	10	17	17	2.0	28	WCF○2□	1	SL-4
STFS R/L1212-2	★	★	12	12	110	12	12	18	18	2.0	30		1	
STFS R/L1616-2	★	★	16	16	110	16	16	-	19	2.0	32		1	
STFS R/L2020-2	★	★	20	20	125	20	20	-	24	2.0	40		1	
STFS R/L1616-3	★	★	16	16	110	16	16	20	22	3.0	35	WCF○3□	1	SL-4
STFS R/L2012-3	★	★	20	12	110	12	20	-	24	3.0	40		1	
STFS R/L2020-3	★	★	20	20	125	20	20	-	30	3.0	50		1	
STFS R/L2525-3	★	★	25	25	150	25	25	-	30	3.0	50		1	
STFS R/L2020-4	★	★	20	20	125	20	20	-	33	4.0	55	WCF○4□	1	SL-4
STFS R/L2525-4	★	★	25	25	150	25	25	-	38	4.0	65		1	
STFS R/L2020-5	★	★	20	20	125	20	20	-	35	5.0	60	WCF○5□	1	SL-4
STFS R/L2525-5	★	★	25	25	150	25	25	-	40	5.0	70		1	

Refer to F61 for applicable inserts.

• USA Stocked Item

★ Worldwide Warehouse Item

F63

Cut-Off
Tools

F



For Cut-off
(Carbide Holder/Tool Block Type)

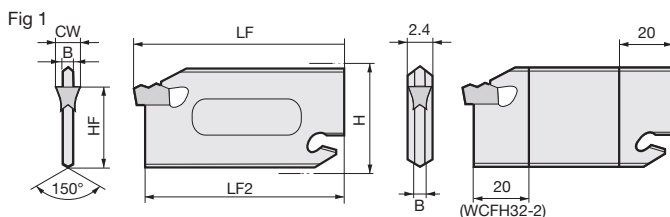
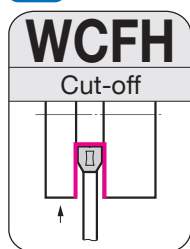
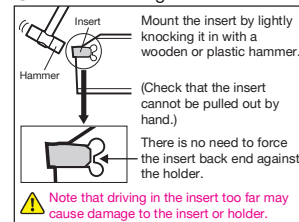


Figure shows right hand (R) tool.

● Insert Mounting Method

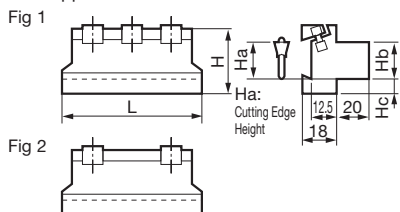


Holder

Parts Dimensions (mm)

Cat. No.	Stock	Height H	Width B	Overall Length LF	Cutting Edge Height HF	Reference Length LF2	Width of Cut CW	Max. Cut-Off Diameter	Applicable Insert	Applicable Tool Block	Fig	Wrench
WCFH26-2	★	26	1.7	110	21.4	109.0	2	40	WCF□2○	SBN20-26 SBU20-26	1	SL-2
WCFH26-3	●	26	2.4	110	21.4	108.5	3	80	WCF□3○		1	SL-1
WCFH26-4	●	26	3.4	110	21.4	108.5	4	80	WCF□4○		1	
WCFH26-5	●	26	4.3	110	21.4	108.5	5	80	WCF□5○		1	
WCFH32-2	★	32	1.7	150	25.0	149.0	2	40	WCF□2○	SBN20-32 SBN25-32 SBU20-32 SBU25-32	1	SL-2
WCFH32-3	●	32	2.4	150	25.0	148.5	3	140	WCF□3○		1	SL-1
WCFH32-4	●	32	3.4	150	25.0	148.5	4	140	WCF□4○		1	
WCFH32-5	●	32	4.3	150	25.0	148.5	5	140	WCF□5○		1	

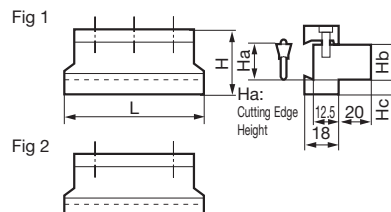
Refer to F61 for applicable inserts.



Tool Lock: SBN (Integrated)

Parts Dimensions (Inch/ mm)

Cat. No.	Stock	Cutting Edge Height Ha	Mounting Length Hb	Mounting Position Hc	Height H	Overall Length L	Fig	Clamp	Double Screw	Wrench
SBN063-26	●	.625	.625	.500	1.719	3.000	1	BWS30	WB8-20	LH040
SBN075-26	●	.750	.750	.375	1.719	3.156	1			
SBN100-32	●	1.000	1.000	.3125	2.000	4.500	1			
SBN20-26	★	20	20	10.0	45	80	2			
SBN20-32	★	20	20	13.5	50	100	1			
SBN25-32	★	25	25	8.5	50	110	1			



Tool Lock: SBU (Split)

Parts Dimensions (inch/ mm)

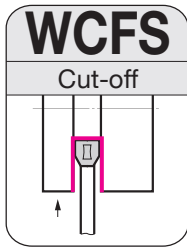
Cat. No.	Stock	Cutting Edge Height Ha	Mounting Length Hb	Mounting Position Hc	Height H	Overall Length L	Fig	Clamp Wedge	Cap Screw	Wrench
SBU075-26	●	.750	.750	.4375	1.781	3.156	1	BCS15 BCS20 BCS25	BX0622	LH050
SBU075-32	●	.750	.750	.531	2.000	4.000	1			
SBU100-32	●	1.000	1.000	.344	2.000	4.344	1			
SBU20-26	★	20	20	10.0	45	80	2			
SBU20-32	★	20	20	13.5	50	100	1			
SBU25-32	★	25	25	8.5	50	110	1			

Tool Block Selection Guide

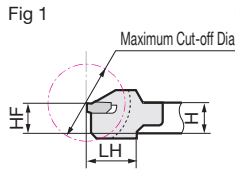
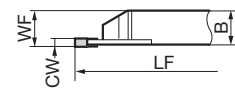
Integrated	SBN Ex.: SBN20-32 • Applicable to toolpost A shown on the right.	A General-Purpose Lathe, etc. SBN SBU Toolpost Tool Block Spacer (Clamp from above)	B Turret Toolpost, etc. SBU Toolpost Tool Block Wedge (Clamp from the side)
	SBU Ex.: SBU20-32 • Applicable to toolpost A or B shown on the right. • Large clamp ensures a wide clamp area that enables long holder overhang.		



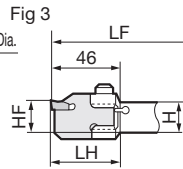
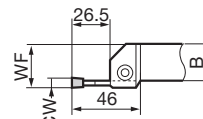
For Cut-off
(Carbide Holder/Shank)



Brazed Blade



Blade Clamp



● Insert Mounting Method

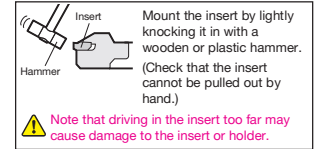


Figure shows right hand (R) tool.

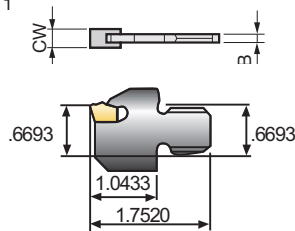
Holder

Parts Dimensions (mm)

Type	Cat. No.	Stock	Height	Width	Overall Length	Cutting Edge Height	Head	Width of Cut	Max. Cut-Off Diameter	Applicable Blade	Applicable Insert	Fig	Wrench
		R L	H	B	LF	HF	LH	CW					
Clamp	WCFS R/L 063-3	● ●	.625	.625	4.000	.625	.625	.1181	2.000	WCFH17-3	WCF□3○	3	SL-1
	WCFS R/L 075-3	● ●	.750	.750	4.500	.750	.750	.1181	2.000	WCFH17-3	WCF□3○	3	
	WCFS R/L 075-4	● ●	.750	.750	4.500	.750	.750	.1575	2.000	WCFH17-4	WCF□4○	3	
	WCFS R/L 075-5	● ●	.750	.750	4.500	.750	.750	.1969	2.000	WCFH17-5	WCF□5○	3	
	WCFS R/L 100-3	● ●	1.000	1.000	6.000	1.000	1.000	.1181	2.000	WCFH17-3	WCF□3○	4	
	WCFS R/L 100-4	● ●	1.000	1.000	6.000	1.000	1.000	.1575	2.000	WCFH17-4	WCF□4○	4	
Brazed	WCFS R/L1010-2	★ ★	10	10	86	10	10	2	28	—	WCF□2○	1	SL-2
	WCFS R/L1212-2	★ ★	12	12	110	12	18	2	30	—	WCF□2○	1	
	WCFS R/L1616-2	★ ★	16	16	100	16	25	2	35	—	WCF□2○	2	SL-1
	WCFS R/L1616-3	★ ★	16	16	100	16	25	3	35	—	WCF□3○	2	
Clamp	WCFS R/L20-3	★ ★	20	20	125	20	46	3	50	WCFH17-3	WCF□3○	3	SL-1
	WCFS R/L20-4	★ ★	20	20	125	20	46	4	50	WCFH17-4	WCF□4○	3	
	WCFS R/L20-5	★ ★	20	20	125	20	46	5	50	WCFH17-5	WCF□5○	3	
	WCFS R/L25-3	★ ★	25	25	150	25	46	3	50	WCFH17-3	WCF□3○	4	SL-1
	WCFS R/L25-4	★ ★	25	25	150	25	46	4	50	WCFH17-4	WCF□4○	4	
	WCFS R/L25-5	★ ★	25	25	150	25	46	5	50	WCFH17-5	WCF□5○	4	

Refer to below for applicable blade. Blade is included with the holder.

Fig 1



Blade

Dimensions (inch / mm)

Cat. No.	Stock	Width of Cut CW	Width B	Applicable Holder	Fig
WCFH 17-3	●	.118 / 3	.094 / 2.4	WCFS R/L20-3,25-3	1
WCFH 17-4	●	.157 / 4	.134 / 3.4	WCFS R/L20-4,25-4	1
WCFH 17-5	●	.197 / 5	.169 / 4.3	WCFS R/L20-5,25-5	1

Parts

Applicable Holder	Cap Screw	Wrench
WCFS R/L-063-○, WCFS R/L-075○, WCFS R/L-100○	BX0622	LH050
WCFS R/L20-○, WCFS R/L25-○	BX0622	LH050

For Cut-off
(Carbide Holder/Tool Block Type)Cut-Off
Tools

F

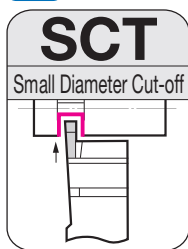


Fig 1

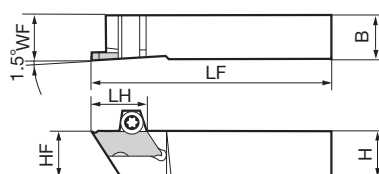


Fig 2

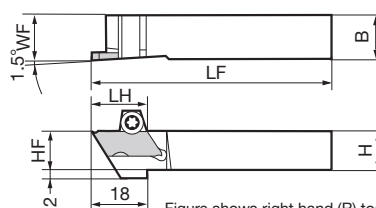


Figure shows right hand (R) tool.

Holder (Right Handed)

Parts Dimensions (inch/mm)

Cat. No.	Stock	Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Head	Applicable Insert	Fig	Flat Screw	Wrench
		H	B	LF	WF	HF	LH				
SCT R08	•	.500	.500	6.0	.500	.500	.591	CT R05○○○○(-NB) CT R12○○○○(-NB)	1	BFTX0410T8L	TRX08
SCT R10	•	.625	.625	6.0	.625	.625	.591		1		
SCT R12	•	.750	.750	6.0	.750	.750	.591		1		
SCT R1010	★	10	10	120	10	10	15	CT R05○○○○(-NB) CT R12○○○○(-NB)	1	BFTX0410T8L	TRX08
SCT R1212	★	12	12	120	12	12	15		1		
SCT R1616	★	16	16	120	16	16	15		1		
SCT R1010-16	★	10	10	120	10	10	18	CT R16○○○○(-NB)	2	BFTX0410T8L	TRX08
SCT R1212-16	★	12	12	120	12	12	18		1		
SCT R1616-16	★	16	16	120	16	16	18		1		

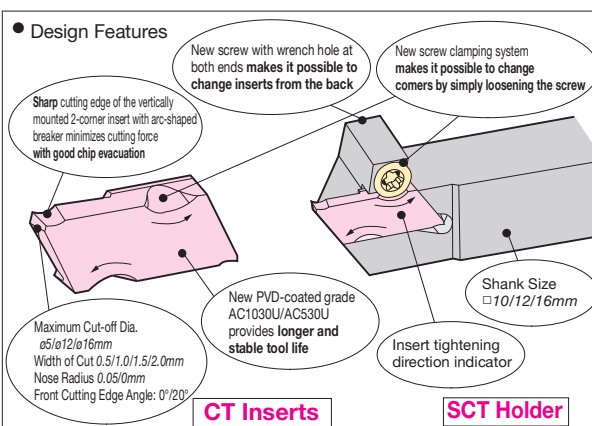
Holder (Left Handed)

Parts Dimensions (inch/mm)

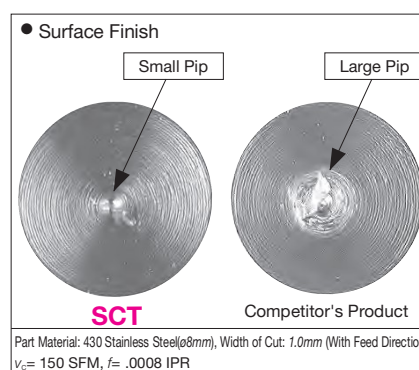
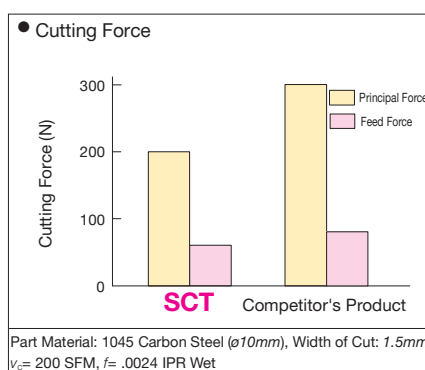
Cat. No.	Stock	Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Head	Applicable Insert	Fig	Flat Screw	Wrench
		H	B	LF	WF	HF	LH				
SCT L08	•	.500	.500	6.0	.500	.500	.591	CT L05○○○○(-NB) CT L12○○○○(-NB)	1	BFTX0410T8R	TRX08
SCT L10	•	.625	.625	6.0	.625	.625	.591		1		
SCT L12	•	.750	.750	6.0	.750	.750	.591		1		
SCT L1010	★	10	10	120	10	10	15	CT L05○○○○(-NB) CT L12○○○○(-NB)	1	BFTX0410T8R	TRX08
SCT L1212	★	12	12	120	12	12	15		1		
SCT L1616	★	16	16	120	16	16	15		1		
SCT L1010-16	★	10	10	120	10	10	18	CT L16○○○○(-NB)	2	BFTX0410T8R	TRX08
SCT L1212-16	★	12	12	120	12	12	18		1		
SCT L1616-16	★	16	16	120	16	16	18		1		

Features

- Simple Indexable Inserts
New clamping system makes it possible to change corners simply by loosening the screw from the back
- High quality surface finish
Excellent chip removal with good surface finish even at the center of the part material end face.
- Long, stable tool life with PVD-coated grades: AC1030U and AC530U



Performance



Insert Mounting Status and Dimensions (Figure shows insert with chipbreaker)

Holder Feed Direction	For Right-handed Holder (SCTR)			For Left-handed Holder (SCTL)		
Insert Cat. No.	CTR ₀₀ R	CTR ₀₀ N	CTR ₀₀ L	CTL ₀₀ R	CTL ₀₀ N	CTL ₀₀ L
Holder Mounting Status						
Insert Shape and Dimensions						

Inserts (For Right-handed Holders) (Coated Carbide)

Dimensions (mm)

Cat. No.	AC1030U			AC530U			Max. Cut-off Dia.	Width of Cut CW	Nose Radius RE	Overall Length L	Thickness S	Chipbreaker	Applicable Holder	
	R	N	L	R	N	L								
CTR 050505 R/N/L	★	★	★	★	★	★	5	0.5	0.05	19	7	Yes	SCT R08 SCT R10 SCT R12 SCT R1010 SCT R1212 SCT R1616	
CTR 050500 R/N/L	★	★		★	★		5	0.5	0					
CTR 121005 R/N/L	★	★	★	★	★	★	12	1.0	0.05	19	7	Yes		
CTR 121505 R/N/L	★	★	★	★	★	★	12	1.5						
CTR 122005 R/N/L	★	★		★	★		12	2.0	0					
CTR 121000 R/N/L	★	★		★	★		12	1.0						
CTR 121500 R/N/L	★	★		★	★		12	1.5						
CTR 122000 R/N/L	★	★		★	★		12	2.0						
CTR 161005 R/N/L							16	1.0	0.05	23.1	8.3	Yes	SCT R1010-16 SCT R1212-16 SCT R1616-16	
CTR 161505 R/N/L	★	★		★	★		16	1.5						
CTR 162005 R/N/L	★	★	★	★	★	★	16	2.0	0					
CTR 161000 R/N/L							16	1.0						
CTR 161500 R/N/L	★	★		★	★		16	1.5						
CTR 162000 R/N/L	★	★	★	★	★	★	16	2.0						
CTR 050500 R/N/L-NB							5	0.5	0	19	7	No		SCT R08 SCT R10 SCT R12 SCT R1010 SCT R1212 SCT R1616
CTR 121000 R/N/L-NB	★			★			12	1.0	0	19	7	No		
CTR 121500 R/N/L-NB	★			★			12	1.5						
CTR 122000 R/N/L-NB	★			★			12	2.0						
CTR 161000 R/N/L-NB							16	1.0					0	
CTR 161500 R/N/L-NB							16	1.5						
CTR 162000 R/N/L-NB	★			★			16	2.0						

Inserts (For Left-handed Holders) (Coated Carbide)

Dimensions (mm)

Cat. No.	AC1030U			AC530U			Max. Cut-off Dia.	Width of Cut	Nose Radius	Overall Length	Thickness	Chipbreaker	Applicable Holder	
	R	N	L	R	N	L								
CTL 050505 R/N/L	★	★		★	★		5	0.5	0.05	19	7	Yes	SCT L08 SCT L10 SCT L12 SCT L1010 SCT L1212 SCT L1616	
CTL 050500 R/N/L	★	★		★	★		5	0.5	0					
CTL 121005 R/N/L	★	★	★	★	★	★	12	1.0	0.05	19	7	Yes		
CTL 121505 R/N/L	★	★	★	★	★	★	12	1.5						
CTL 122005 R/N/L	★	★		★	★		12	2.0	0					
CTL 121000 R/N/L	★	★		★	★		12	1.0						
CTL 121500 R/N/L	★	★		★	★		12	1.5						
CTL 122000 R/N/L	★	★		★	★		12	2.0						
CTL 161005 R/N/L							16	1.0	0.05	23.1	8.3	Yes	SCT L1010-16 SCT L1212-16 SCT L1616-16	
CTL 161505 R/N/L	★	★		★	★		16	1.5						
CTL 162005 R/N/L	★	★	★	★	★	★	16	2.0	0					
CTL 161000 R/N/L							16	1.0						
CTL 161500 R/N/L	★	★		★	★		16	1.5						
CTL 162000 R/N/L	★	★		★	★		16	2.0						
CTL 050500 R/N/L-NB							5	0.5	0	19	7	No		SCT L08 SCT L10
CTL 121000 R/N/L-NB							12	1.0	0	19	7	No		SCT L12 SCT L1010
CTL 121500 R/N/L-NB							12	1.5					SCT L1212	
CTL 122000 R/N/L-NB							12	2.0					SCT L1616	
CTL 161000 R/N/L-NB							16	1.0	0	23.1	8.3	No	SCT L1010-16	
CTL 161500 R/N/L-NB							16	1.5					SCT L1212-16	
CTL 162000 R/N/L-NB							16	2.0					SCT L1616-16	