

# Grooving/Cut-off Threading Tools

## F1 to F60

# F



Grooving Tools

F

Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN

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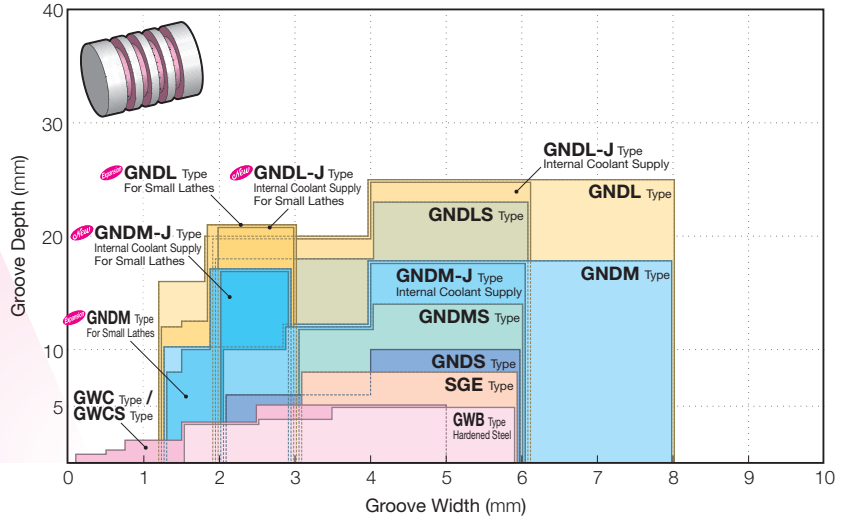
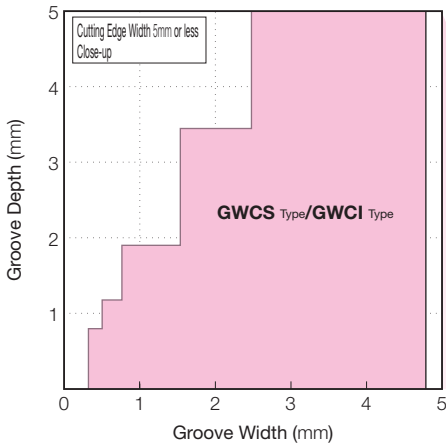
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**Stock Markings and Symbols**

- mark: Standard stocked item
- mark: To be replaced with the new item featured on the same page
- ▲ mark: To be replaced by a new product, made to order, or discontinued (please confirm stock availability).
- \* mark: Semi-standard stock (please confirm stock availability)
- mark: Stock or planned stock (please confirm stock availability)
- Blank: Made-to-order item
- mark: Not available

# Selection Guide

## External Grooving



### External Grooving Tools

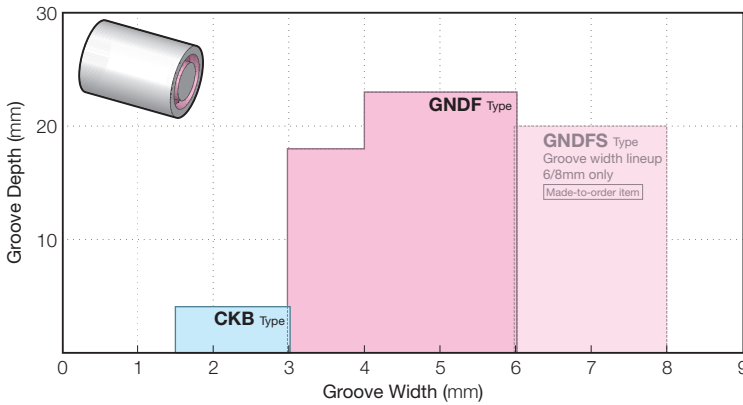
\* mark: For groove depths and width combinations, refer to the above figures or the relevant page.

Applications	Series	Shape	Structure			Insert Shape ( ) indicates no. of cutting edges	Groove Depth* (mm)				Features			
			Screw-on	Clamp-on	Double Clamp		10	20	30	40				
								Groove Width* (mm)						
								2	4	6	8	10		
For Shallow Grooves	<b>GWC</b>		●	●			5.0	4.8						<ul style="list-style-type: none"> <li>High rigidity double clamping (Screw-on for Mini Holders)</li> <li>Triangular type insert with 3 usable corners</li> <li>Inserts with chipbreakers now in stock</li> </ul>
	<b>GWCS</b>				●	(3) (Standard, with Chipbreaker)	5.0	4.8						<ul style="list-style-type: none"> <li>"L-shaped" (side cut) GWC holder</li> </ul>
	<b>GWB</b> Hardened Steel				●	(1) Enables Traverse Cutting	5.0	6.0						<ul style="list-style-type: none"> <li>High rigidity double clamping</li> <li>Employs Coated SUMIBORON for interrupted cutting of hardened steel.</li> </ul>
For Shallow Grooves to General Grooves	<b>SGE</b>				●	(2) Enables Traverse Cutting	8.0	6.0						<ul style="list-style-type: none"> <li>Enables traverse cutting (wider grooves)</li> </ul>
	<b>GNDS</b>				●		10.0	6.0						<ul style="list-style-type: none"> <li>High-rigidity design reduces vibration.</li> <li>Enables high-efficiency grooving and traversing thanks to its short tool overhang length.</li> </ul>
	<b>GNDM</b> For Small Lathes				●		17.0	3.0						<ul style="list-style-type: none"> <li>High-rigidity design reduces vibration.</li> <li>16x16, 20x12mm square shanks available</li> </ul>
	<b>GNDM-J</b> Internal Coolant Supply For Small Lathes				●	(2)	17.0	3.0						<ul style="list-style-type: none"> <li>GNDM Type Internal Coolant Supply For Small Lathes</li> </ul>
	<b>GNDM</b>				●	(2) Enables Traverse Cutting	18.0	8.0						<ul style="list-style-type: none"> <li>High-rigidity design reduces vibration.</li> <li>Perfect for traverse cutting and profiling.</li> </ul>
For Shallow Grooves to General Grooves	<b>GNDM-J</b> Internal Coolant Supply				●		18.0	6.0						<ul style="list-style-type: none"> <li>GNDM type internal coolant supply</li> </ul>
	<b>GNDMS</b>				●		23.0	6.0						<ul style="list-style-type: none"> <li>"L-shaped" (side cut) GNDM type</li> </ul>
	<b>GNDL</b> For Small Lathes				●		21.0	3.0						<ul style="list-style-type: none"> <li>High-rigidity design reduces vibration.</li> <li>10x10, 12x12, 16x16, 20x12mm square shanks available</li> </ul>
	<b>GNDL-J</b> Internal Coolant Supply For Small Lathes				●	(2)	21.0	3.0						<ul style="list-style-type: none"> <li>GNDL Type Internal Coolant Supply For Small Lathes</li> </ul>
	<b>GNDL</b>				●	(2)	25.0	8.0						<ul style="list-style-type: none"> <li>High-rigidity design reduces vibration.</li> <li>Perfect for grooving, deep grooving and cut-off applications.</li> </ul>
For Deep Grooves	<b>GNDL-J</b> Internal Coolant Supply				●		25.0	6.0						<ul style="list-style-type: none"> <li>GNDL type internal coolant supply</li> </ul>
	<b>GNDLS</b>				●		25.0	6.0						<ul style="list-style-type: none"> <li>"L-shaped" (side cut) GNDL type</li> </ul>

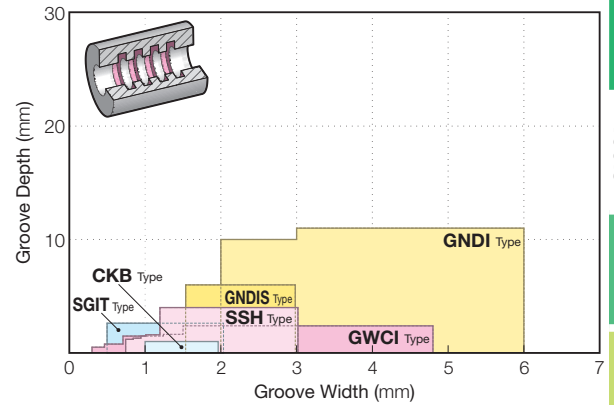
For hardened steel, refer to page F60 for SUMIBORON Grooving Holder BNGG Type.

# 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 ( ) indicates no. of cutting edges	Groove Depth* Groove Width*				Work Diameter (mm)	Features	
			Screw-on	Clamp-on	Double Clamp		10	20	30 (mm)	2			4
Very Small Diameter For General Grooves to Deep Grooves	CKB			●			4.0	1.5	3.0			ø6 to	· Face grooving for small lathes
	GNDF			●			23	3.0	6.0			ø35 to ø1,000	· High-rigidity design reduces vibration.
	GNDFS <small>(Made-to-order item)</small>			●			20			ø6.0	ø8.0	ø70 to	· L-shape (horizontal) type · For wide grooves

### Internal Grooving Tools

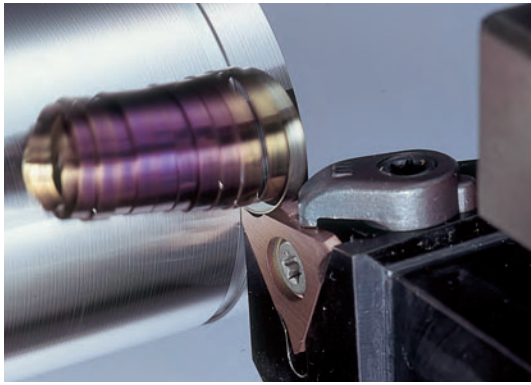
\* mark: For groove depths and width combinations, refer to the above figures or the relevant page.

Applications	Series	Shape	Structure			Insert Shape ( ) indicates no. of cutting edges	Groove Depth* Groove Width*				Min. Bore Diameter (mm)	Features	
			Screw-on	Clamp-on	Double Clamp		10	20	30 (mm)	2			4
For Small Diameter Grooves	CKB			●			1.0	1.0	2.0			ø4	· Very small diameter grooving · High clamping force · Wide variety of tool holders
	SGIT			●			3.2	0.5	2.0			ø10	· 3-cornered type
	SSH			●			4.0	0.74	3.0			ø8	· Internal coolant supply for outstanding chip evacuation · Wide variety of grooving widths · Tough carbide body for stable machining
For Shallow Grooves	GWCI			●			2.5	0.33	4.8			ø35	· Using same inserts as GWC Type holders · Inserts with chipbreakers now in stock
For General Grooves to Deep Grooves	GNDIS			●			6.6	2.0	3.0			ø14	· Supports machining with minimum bore diameter from ø14
	GNDI			●			11.0	2.0	6.0			ø32	· High-rigidity design reduces vibration.

### Necking Tools

Applications	Series	Shape	Structure			Insert Shape ( ) indicates no. of cutting edges	Groove Depth* Groove Width*				Work Diameter (mm)	Features	
			Screw-on	Clamp-on	Double Clamp		10	20	30 (mm)	2			4
Facing Necking	GNDN			●			4.0	2.0	6.0			ø20 to	· Necking at corners possible

# GWC Type

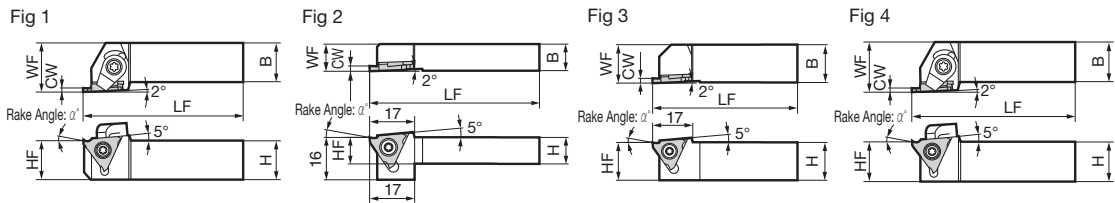


## Features of GWC Type Series for Shallow Groove

- 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 available  
Coated Carbide AC530U, Cemented Carbide H1, Coated Cermet T2500Z, T3000Z, Cermet T1500A, SUMIBORON BN2000, and SUMIDIA DA2200 are now in stock.
- A wide range of grooving widths from 0.33mm to 4.8mm
- SumiTurn B-Groove inserts with chipbreaker are now in stock.
- Customers can modify the grooving width, corner radius and rake angle according to their own requirements using the grooving insert blanks. (Sumitomo Electric Hardmetal also accepts orders.)



Double Clamp / Screw-on for External Shallow Grooves



Note 1: Rake angle  $\alpha'$  varies depending on the insert grade. Refer to the insert table on F5 for details.  
Note 2: Figures show right hand (R) tools.

### 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 (mm)	Group No.	Fig	Screw		Wrench	Clamp Plate	Double Screw	Wrench	
	R	L										(N·m)	(N·m)					
GWC R/L1010-3	●	●	10	10	125	10	10	0.33 to 2.80	0.8 to 2.5	1	2	BFTX0409N	3.4	TRX15	CCM6B L/R	WB6-20 T/TL	5.0'	LT20
GWC R/L1212-3	●	●	12	12	125	12	12	0.33 to 2.80	0.8 to 2.5	1	2							
GWC R/L1616-3	●	●	16	16	125	16	16	0.33 to 2.80	0.8 to 2.5	1	3							
GWC R/L2020-3	●	●	20	20	125	20	20	0.33 to 2.80	0.8 to 2.5	1	1							
GWC R/L2525-3	●	●	25	25	150	30	25	0.33 to 2.80	0.8 to 2.5	1	1	BFTX0511N	5.0	TRX20	CCM8U L/R	WB8-22 T/TL	5.0'	LT27
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							
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 F6, F7 and F8 for applicable inserts. Select applicable inserts for the holders by using matching group numbers.

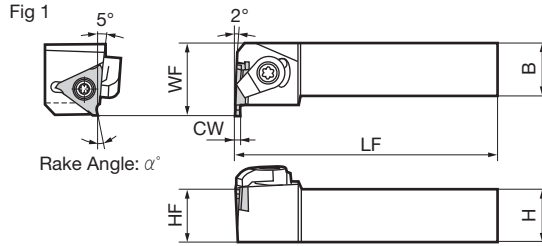
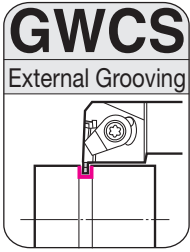
\* Right-handed (R) tool holders are compatible with left-handed clamp plates (CCMO□L) and right-handed double screws (WBO-2OT)

Left-handed (L) tool holders are compatible with right-handed clamp plates (CCMO□R) and left-handed double screws (WBO-2OTL).

# GWCS Type / GWCI Type



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



Note 1: Rake angle  $\alpha^\circ$  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 (mm)	Group No.	Fig	Parts						
	R	L										Screw	Wrench (N-m)	Clamp Plate	Double Screw (N-m)	Wrench		
GWCS R/L2020-3	●	●	20	20	125	25	20	0.33 to 2.80	0.8 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	0.33 to 2.80	0.8 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							
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	BFTX0511N	5.0	TRX20	CCM8U R/L	WB8-22 TL/T	5.0*	LT27

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

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

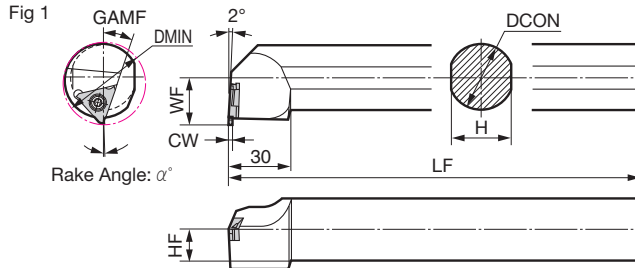
\* Refer to TGA Type insert group numbers on F6, F7 and F8 for GWCS Type holder applicable inserts. Select applicable inserts for the holders by using matching group numbers.

\* Right-handed (R) tool holders are compatible with right-handed clamp plates (CCM□□R) and left-handed double screws (WBO-2OTL).

Left-handed (L) tool holders are compatible with left-handed clamp plates (CCM□□L) and right-handed double screws (WBO-2OT).



Screw-on for Internal Diameter Shallow Grooves



Note 1: Rake angle  $\alpha^\circ$  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		Diameter DCON	Height H	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Min. Bore Dia. DMIN	Rake Angle GAMF	Width of Cut CW	Max. Groove Depth (mm)	Group No.	Fig	Parts		
	R	L												Screw	Wrench (N-m)	Wrench
GWCI R/L325	●	●	25	23	220	17.5	11.5	35	14°	0.33 to 2.80	0.5 to 2.0	1	1	BFTX0409N	3.4	TRX15
GWCI R/L432	●	●	32	30	250	23.0	15.0	40	16°	1.25 to 4.80	1.7 to 2.5	2/3/4	1	BFTX0511N	5.0	TRX20

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

\*Refer to TGA Type insert group numbers on F6, F7 and F8 for GWCI Type holder applicable inserts.

● Rake angle when fitted on a holder ( $\alpha^\circ$ )

	Coated Carbide	Carbide	Coated Cermet	Cermet	SUMIBORON	SUMIDIA
	AC530U	H1	T2500Z 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°



# Grooving Insert TGA Type

Expansion

Fig 1

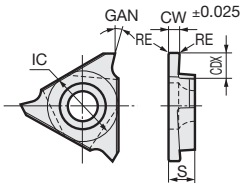
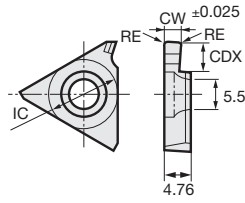


Fig. 2 (For BN2000 / DA2200)



( Coated Carbide / Cermet / Cemented Carbide / SUMIBORON / SUMIDIA)

Grade	Cutting Edge Shape	GAN
Coated Carbide AC530U	Honing	15°
Carbide H1	Sharp Edge	25°
Coated Cermet T2500Z	Honing	15°
Coated Cermet T3000Z	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 F5.

## Square Edged Grooving Insert

Figure shows right hand (R) tool.

Dimensions (mm)

Cat. No.	AC530U		H1		T2500Z		T3000Z		T1500A		BN2000		DA2200		Width of Cut CW	Maximum Depth of Cut		Max. Groove Depth (mm) CDX	Corner Radius RE	Inscribed Circle IC	Thickness S	*Group No.	Fig
	R	L	R	L	R	L	R	L	R	L	R	L	R	L		External	Internal						
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(2)
TGA R/L4145(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	1.45								1
TGA R/L4150(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	1.50								1(2)
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(2)
TGA R/L4220(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2.20								1
TGA R/L4230(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2.30								1
TGA R/L4250(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2.50								1(2)
TGA R/L4265(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2.65	*1 5.0	2.5	*1 5.4	*2 0.3	12.70	4.76	4	1
TGA R/L4270(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2.70								1
TGA R/L4280(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2.80	*1	2.5	*1	*2 0.3	12.70	4.76	4	1
TGA R/L4300(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	3.00	5.0	2.5	5.4	0.3	12.70	4.76	4	1(2)
TGA R/L4320(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	3.20	*1	2.5	5.4	*2 0.3	12.70	4.76	4	1
TGA R/L4330(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	3.30	5.0							1
TGA R/L4350(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	3.50								1(2)
TGA R/L4370(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	3.70				*2 0.3				1
TGA R/L4390(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	3.90								1
TGA R/L4400(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4.00								1(2)
TGA R/L4410(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4.10	5.0	2.5	5.4	*2 0.4	12.70	4.76	4	1
TGA R/L4420(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4.20								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								1

\* Add E as the part number suffix for T1500A.

\* Refer to F4 and F5 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.

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

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

\*3: T1500A is RE = 0.2

## Recommended Cutting Conditions

Work Materials	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 $v_c$ (m/min)	50 to 200	100 to 180	100 to 180	50 to 200	80 to 150	80 to 120	200 to 300	200 to 300	80 to 120
Feed Rate $f$ (mm/rev)	0.02 to 0.10	0.05 to 0.10	0.05 to 0.08	0.02 to 0.10	0.05 to 0.08	0.05 to 0.08	0.05 to 0.15	0.05 to 0.15	0.03 to 0.07

# Grooving Insert TGA Type

Expansion

Fig 1

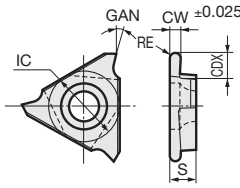


Figure shows right hand (R) tool.

( Coated Carbide / Cermet / Cemented Carbide )

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

\* For the rake angle when fitted on the holder, refer to F5.

## Round Edged Grooving Insert

Dimensions (mm)

Cat. No.	AC530U		H1		T2500Z		T3000Z		Width of Cut CW	Maximum Depth of Cut		Max. Groove Depth (mm) CDX	Corner Radius RE	Inscribed Circle IC	Thickness S	* Group No.	Fig
	R	L	R	L	R	L	R	L		External	Internal						
TGA R/L4050R	●	●	●	●	●	●	●	●	1.00	2.0	1.7	2.5	0.50	12.70	4.76	2	1
TGA R/L4075R	●	●	●	●	●	●	●	●	1.50	3.5	2.5	3.9	0.75	12.70	4.76	3	1
TGA R/L4100R	●	●	●	●	●	●	●	●	2.00				1.00				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 F4 and F5 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 Materials	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 $v_c$ (m/min)	50 to 200	100 to 180		100 to 180	50 to 200	80 to 150	80 to 120	200 to 300	200 to 300	80 to 120
Feed Rate $f$ (mm/rev)	0.02 to 0.10	0.05 to 0.10		0.05 to 0.08	0.02 to 0.10	0.05 to 0.08	0.05 to 0.08	0.05 to 0.15	0.05 to 0.15	0.03 to 0.07

Fig 1

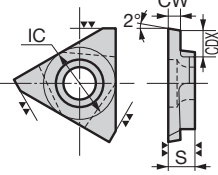
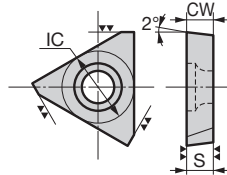


Fig 2



## Precautions when Modifying Inserts

When modifying the cutting edge, refer to the shapes in Fig. 3 for the rake face, back taper, etc. Cutting edge specifications shown in Fig. 4 are when the insert is mounted on the holder.

## Blank Insert

(Uncompleted inserts: Cutting edge width, corner radius and rake angle modification are required.)

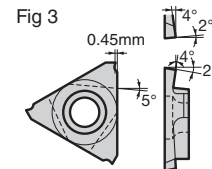
( Cermet / Cemented Carbide )

Dimensions (mm)

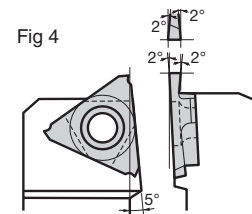
Cat. No.	KH03		H1		EH510		T1500A		Width of Cut CW	Max. Groove Depth (mm) CDX	Inscribed Circle IC	Thickness S	Fig
	R	L	R	L	R	L	R	L					
TGA R/L3-T18	●	●	●	●	●	●	●	●	1.85	(3.4)	9.525	3.18	1
TGA R/L3-T23	●	●	●	●	●	●	●	●	2.35	(3.4)	9.525	3.18	1
TGA R/L3-T31	●	●	●	●	●	●	●	●	3.18	—	9.525	3.18	2
TGA R/L4-T22	●	●	●	●	●	●	●	●	2.20	(4.8)	12.70	4.76	1
TGA R/L4-T37	●	●	●	●	●	●	●	●	3.75	(6.2)	12.70	4.76	1
TGA R/L4-T47	●	●	●	●	●	●	●	●	4.76	—	12.70	4.76	2

<Note> Figures in ( ) for CDX are reference values

## Recommended Modification



## Cutting Edge Specifications When Mounted



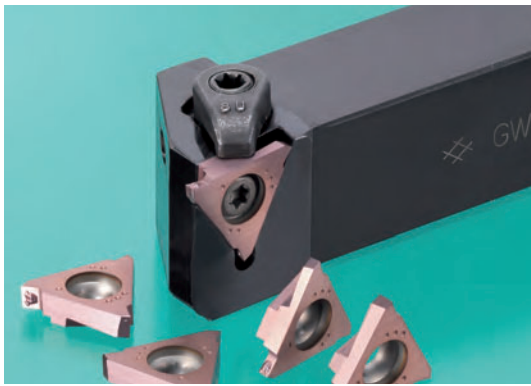
## Ordering TGA Type Blanks and Special Inserts

Sumitomo Electric Hardmetal also accepts orders for blank inserts. Use the "Special Grooving Insert Request Form" on F9 when ordering.

Use the "Special Grooving Insert Request Form" on F9 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 Hardmetal dealer or distributor.

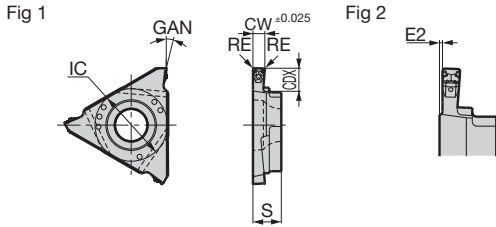
# SumiTurn B-Groove



## 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.

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



Grade	Cutting Edge Shape	GAN
Coated Carbide AC530U	Honing	15°

\* For the rake angle when fitted on the holder, refer to F5.

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.



Chipbreaker Insert for Square Grooves BF Type ( Coated Carbide) Dimensions (mm)

Cat. No.	AC530U		Width of Cut CW	Max. Depth of Cut		Max. Groove Depth (mm) CDX	Corner Radius RE	Inscribed Circle IC	Thickness S	Cutting Edge Distance E2	Group No.	Fig
	R	L		External	Internal							
TGA R/L4140BF01	●	●	1.40	2.0	1.7	2.5	0.1	12.70	4.76	0.300	2	2
TGA R/L4165BF01	●	●	1.65							0.175		2
TGA R/L4190BF01	●	●	1.90	3.5	2.5	3.9	0.1	12.70	4.76		3	1
TGA R/L4220BF01	●	●	2.20									1
TGA R/L4270BF02	●	●	2.70									1
TGA R/L4320BF02	●	●	3.20	5.0	2.5	5.4	0.2	12.70	4.76		4	1
TGA R/L4420BF02	●	●	4.20									1
TGA R/L4150BF	●	●	1.50							0.250		2
TGA R/L4165BF	●	●	1.65							0.175		2
TGA R/L4175BF	●	●	1.75							0.125		2
TGA R/L4185BF	●	●	1.85	3.5	2.5	3.9	0.2	12.70	4.76	0.075	3	2
TGA R/L4200BF	●	●	2.00									1
TGA R/L4220BF	●	●	2.20									1
TGA R/L4230BF	●	●	2.30									1
TGA R/L4250BF	●	●	2.50									1
TGA R/L4265BF	●	●	2.65									1
TGA R/L4270BF	●	●	2.70									1
TGA R/L4280BF	●	●	2.80									1
TGA R/L4300BF	●	●	3.00									1
TGA R/L4320BF	●	●	3.20	5.0	2.5	5.4	0.3	12.70	4.76		4	1
TGA R/L4330BF	●	●	3.30									1
TGA R/L4350BF	●	●	3.50									1
TGA R/L4370BF	●	●	3.70									1
TGA R/L4390BF	●	●	3.90									1
TGA R/L4400BF	●	●	4.00									1
TGA R/L4410BF	●	●	4.10									1
TGA R/L4420BF	●	●	4.20	5.0	2.5	5.4	0.4	12.70	4.76		4	1
TGA R/L4430BF	●	●	4.30									1
TGA R/L4440BF	●	●	4.40									1
TGA R/L4450BF	●	●	4.50									1

## Recommended Cutting Conditions

Work Materials	Machining Application	Cutting Conditions	Groove Width CW (mm)		
			1.4 to 2.3	2.5 to 3.3	3.5 to 4.5
General Steel	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
	Traverse Cutting	Depth of Cut $a_p$ (mm)	up to 3.5	up to 5.0	up to 5.0
		Depth of Cut $a_p$ (mm)	up to 2.5	up to 2.5	up to 2.5
Stainless Steel	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
	Traverse Cutting	Depth of Cut $a_p$ (mm)	up to 3.5	up to 5.0	up to 5.0
		Depth of Cut $a_p$ (mm)	up to 2.5	up to 2.5	up to 2.5

\* Refer to F4 and F5 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.



# GWC Type Special Grooving Insert Request Form

Applies to the GWC Type (page F4), GWCS Type (page F5) and GWCI Type (page F5) 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 Electric Hardmetal dealer or 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 Hardmetal sales office (refer to the back of this catalog).

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

Cat. No.	(1)	(2)	(3)	(4)
Shape				
Uses	Internal Grooving/External Grooving			
Holders	GWC Type (page F4)/GWCS Type (page F5)/GWCI Type (page F5)			
Direction	Right Hand (R)/Left Hand (L)			
Insert Size	"3": ø9.525 "4": ø12.70			
CW				
CDX				
C1				
C2				
E1				
RER				
REL				
KAPR1				
KAPR2				
Grade				
Quantity				
Remarks				

### Form instructions

- 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.)
- The following two insert sizes are available.
  - 3: Inscribed circle 9.525mm
  - 4: Inscribed circle 12.70mm
- 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  $CDX \leq 2.5$ )
- 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.

- 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.
- Insert grades are based on the catalogue numbers in stock.
  - The applicable tool holders for Models (1), (2) and (4) should match the CW dimension. Contact us for Model (3).

# GND Type



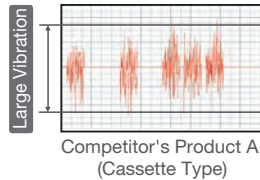
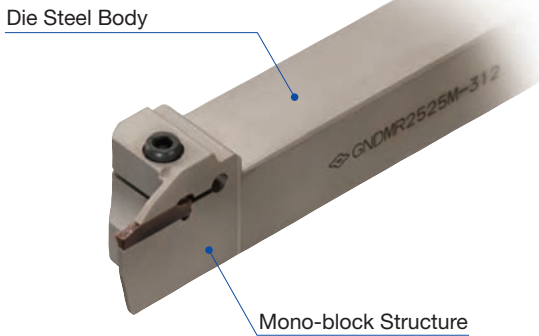
## ■ Features

- Suitable for a wide variety of applications  
Applicable for grooving, traverse cutting, profiling, necking, facing and internal boring
- Stable tool life  
A variety of chipbreakers improve chip control in various applications. Prevents sudden breakages due to chip clogging.
- Achieving high-efficiency machining with reduced chattering  
The mono-block structure and die steel body reduce vibration during machining around 30% compared to conventional tools
- Higher edge width precision even with unground inserts  
High-precision sintering technology achieves width of cut precision of  $\pm 0.03\text{mm}$  for widths from 1.25 to 6.0mm (lead angle of  $0^\circ$  or  $5^\circ$ )

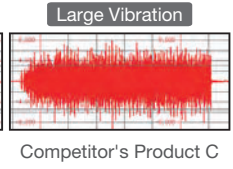
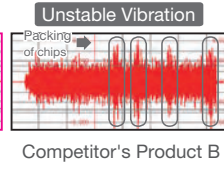
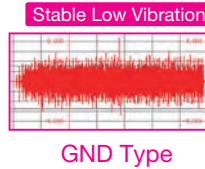
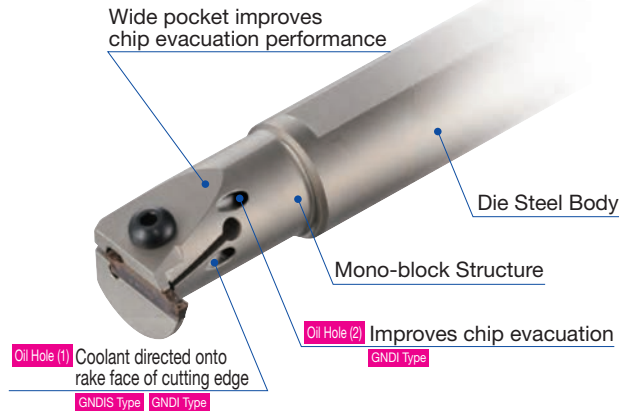
## ■ Cutting Performance

### Reduce Chattering

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



### Both high rigidity and good chip evacuation performance Internal Boring



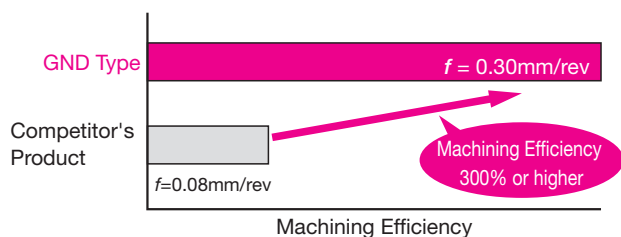
Work Material: SCM415  
Holder: GNDL R2525M-220 Insert: GCM N2002-GG  
Cutting Conditions:  $v_c = 100\text{m/min}$ ,  $f = 0.10\text{mm/rev}$ ,  $a_p = 20.0\text{mm Wet}$

Work Material: SCM415  
Holder: GNDI R2532-T306 Insert: GCM N3002-GG  
Cutting Conditions:  $v_c = 100\text{m/min}$ ,  $f = 0.05\text{mm/rev}$ ,  $a_p = 3.0\text{mm Wet}$

## ■ Application Examples

### Substantially improved machining efficiency

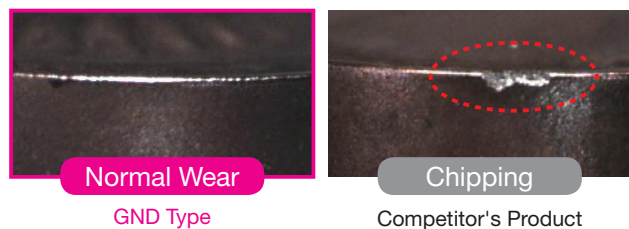
High-rigidity holder enables machining at high feed rates.



Work Material: SCM435  
Holder: GNDL R2525M-320 Insert: GCM N3002-GG (AC530U)  
Cutting Conditions:  $v_c = 130\text{m/min}$ ,  $f = 0.30\text{mm/rev Wet}$

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

Reduction of chattering prevents unexpected breakage.



Work Material: S53C  
Holder: GNDM L2525M-618 Insert: GCM N6030-RG (AC530U)  
Cutting Conditions:  $v_c = 130\text{m/min}$ ,  $f = 0.3\text{mm/rev Wet}$

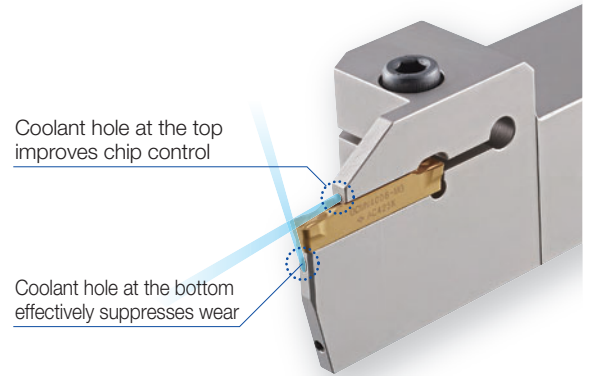
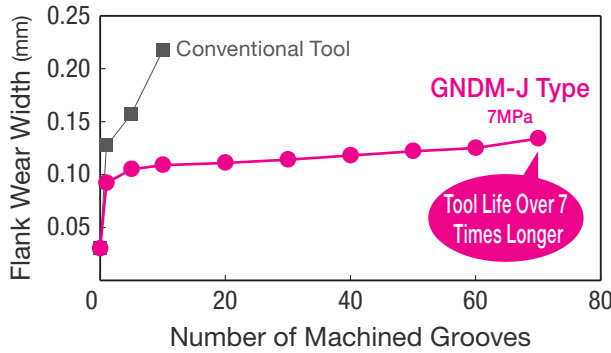
# GND Type

## Internal Coolant Holder GNDM-J Type/GNDL-J Type Expansion

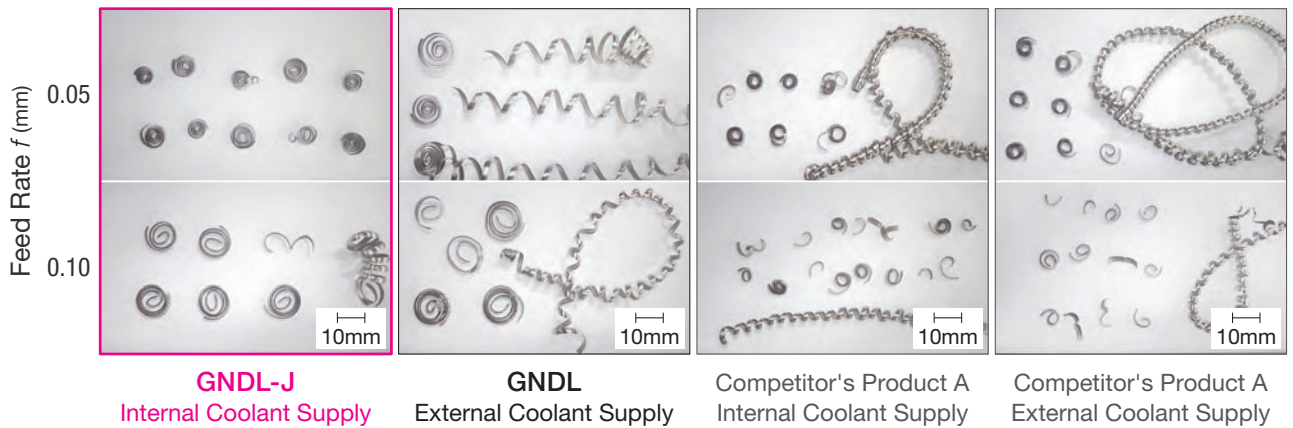
- Series expansion of SEC-Grooving Tool GND Type with internal coolant holder series  
Shanks for even smaller lathes (12mm, 16mm, 20x12mm square) also available
- Available grooving widths from 2.0 to 6.0mm (2.0 to 3.0mm for small lathes)
- Effective coolant supply to the cutting edge during grooving, 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



### Chip evacuation performance



Work Material: SUS316 Holders: GNDL R1212JX-312.5J Insert: GCMN3002-GG (AC530U) Cutting Conditions:  $n = 1,000 \text{ min}^{-1}$   $a_p = 5.0 \text{ mm}$  Wet (Internal Coolant Supply 0.5MPa (Normal Pressure))

## CF Type Chipbreakers for Cut-off Machining

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



Work Material: SS400 Holders: GNDL R2525M-220 Insert: GCMR20003-CF-10,15 (AC1030U) Cutting Conditions:  $n = 2,000 \text{ min}^{-1}$   $f = 0.08 \text{ mm/rev}$  Wet

# SEC-Grooving Tools GND Type

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

	Grooving/Traverse Cutting		Grooving / Cut-off			Cut-off		Profiling	Profiling Necking	For Non-Ferrous Metals	
	General-purpose	Low Feed	General-purpose	Low Feed	Low Resistance	General-purpose	Low Resistance	General-purpose	General-purpose	General-purpose	
	MG Type	ML Type	GG Type	GL Type	GF Type	CG Type	CF Type	RG Type	RN Type	GA Type	
<b>Grooving Tools</b>											
	Standard chipbreaker for traverse cutting	For low-feed chip control	1st recommendation for grooving	For low-feed chip control	For low-feed and low resistance chip control	1st recommendation for cut-off machining	For low-feed chip control	For external profiling and radius grooving	For face/internal profiling, radius grooving and necking	Ideal for aluminum alloy machining	
	0.10	0.05	0.10	0.10	0.10	0.10	0.05	0.05	0.05	0.05	
	15°	20°	20°	20°	30°	25°	25°	25°	25°	20°	
	1.25 1.5 2.0	1.25 1.5 2.0	1.25 1.5 2.0	1.25 1.5 2.0	1.25 1.5 2.0	1.25 1.5 2.0	1.25 1.5 2.0	1.25 1.5 2.0	1.25 1.5 2.0	1.25 1.5 2.0	
	3.0 4.0 5.0	3.0 4.0 5.0	3.0 4.0 5.0	3.0 4.0 5.0	3.0 4.0 5.0	3.0 4.0 5.0	3.0 4.0 5.0	3.0 4.0 5.0	3.0 4.0 5.0	3.0 4.0 5.0	
	6.0 7.0 8.0	6.0 7.0 8.0	6.0 7.0 8.0	6.0 7.0 8.0	6.0 7.0 8.0	6.0 7.0 8.0	6.0 7.0 8.0	6.0 7.0 8.0	6.0 7.0 8.0	6.0 7.0 8.0	
	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	
	AC8025P AC8035P AC8025P AC8035P	AC8025P AC8035P AC8025P AC8035P	AC8025P AC8035P AC8025P AC8035P	AC8025P AC8035P AC8025P AC8035P	AC8025P AC8035P AC8025P AC8035P	AC8025P AC8035P AC8025P AC8035P	AC8025P AC8035P AC8025P AC8035P	AC8025P AC8035P AC8025P AC8035P	AC8025P AC8035P AC8025P AC8035P	AC8025P AC8035P AC8025P AC8035P	AC8025P AC8035P AC8025P AC8035P
	AC830P AC425K AC830P AC425K	AC830P AC425K AC830P AC425K	AC830P AC425K AC830P AC425K	AC830P AC425K AC830P AC425K	AC830P AC425K AC830P AC425K	AC830P AC425K AC830P AC425K	AC830P AC425K AC830P AC425K	AC830P AC425K AC830P AC425K	AC830P AC425K AC830P AC425K	AC830P AC425K AC830P AC425K	AC830P AC425K AC830P AC425K
	AC5015S AC5025S AC5015S AC5025S	AC5015S AC5025S AC5015S AC5025S	AC5015S AC5025S AC5015S AC5025S	AC5015S AC5025S AC5015S AC5025S	AC5015S AC5025S AC5015S AC5025S	AC5015S AC5025S AC5015S AC5025S	AC5015S AC5025S AC5015S AC5025S	AC5015S AC5025S AC5015S AC5025S	AC5015S AC5025S AC5015S AC5025S	AC5015S AC5025S AC5015S AC5025S	AC5015S AC5025S AC5015S AC5025S
	AC520U AC530U AC520U AC530U	AC520U AC530U AC520U AC530U	AC520U AC530U AC520U AC530U	AC520U AC530U AC520U AC530U	AC520U AC530U AC520U AC530U	AC520U AC530U AC520U AC530U	AC520U AC530U AC520U AC530U	AC520U AC530U AC520U AC530U	AC520U AC530U AC520U AC530U	AC520U AC530U AC520U AC530U	AC520U AC530U AC520U AC530U
	AC1030U T2500A AC1030U T2500A	AC1030U T2500A AC1030U T2500A	AC1030U T2500A AC1030U T2500A	AC1030U T2500A AC1030U T2500A	AC1030U T2500A AC1030U T2500A	AC1030U T2500A AC1030U T2500A	AC1030U T2500A AC1030U T2500A	AC1030U T2500A AC1030U T2500A	AC1030U T2500A AC1030U T2500A	AC1030U T2500A AC1030U T2500A	AC1030U T2500A AC1030U T2500A
	H10	H10	H10	H10	H10	H10	H10	H10	H10	H10	H10
	*: GNDIS Type Only		*: GNDIS Type Only			Lead Angle: 5°	Lead Angle: 10°/15°				

## ■ Improved chip control

**Grooving**



**GND Type**  
(GG Type Chipbreaker)



Conventional Tool

Work Material: SCM415  
Holder: GNDL R2525M-320, Insert: GCM N3002-GG  
Cutting Conditions:  $v_c = 100\text{m/min}$ ,  $f = 0.15\text{mm/rev}$ ,  $a_p = 12.0\text{mm Wet}$

**Traversing**




**GND Type**  
(ML Type Chipbreaker)




Conventional Tool

Work Material: SCM415  
Holder: GNDM R2525M-312, Insert: GCM N3002-ML  
Cutting Conditions:  $v_c = 100\text{m/min}$ ,  $f = 0.10\text{mm/rev}$ ,  $a_p = 0.5\text{mm Wet}$

**Cut-off**




**GND Type**  
(CG Type Chipbreaker)




Competitor's Product

Work Material: SUS316 ( $\phi 30\text{mm}$ )  
Holder: GNDL R2525M-220, Insert: GCM R2002-CG-05  
Cutting Conditions:  $v_c = 100\text{m/min}$ ,  $f = 0.15\text{mm/rev Wet}$

**Profiling**



**GND Type**  
(RG Type Chipbreaker)
















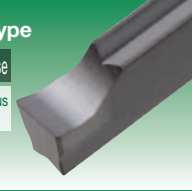
Conventional Tool

Work Material: SCM415  
Holder: GNDM R2525M-312, Insert: GCM N3015-RG  
Cutting Conditions:  $v_c = 100\text{m/min}$ ,  $f = 0.15\text{mm/rev}$ ,  $a_p = 0.1\text{mm Wet}$



# GND Type

## Chipbreaker Selection

	Grooving/Traverse Cutting	Grooving	Cut-off	
<b>1st Recommendation</b>	<b>MG Type</b> Expansion General-purpose 	<b>GG Type</b> Expansion General-purpose 	<b>GG Type</b> Expansion General-purpose 	
<b>2nd Recommendation</b>	<b>ML Type</b> Expansion Low Feed Chip control emphasised Cutting Edge Width: Up to 4.0mm Cutting Edge Width: 5.0 mm and greater 	<b>GL Type</b> Expansion General-purpose Chip control emphasised 	<b>CG Type</b> Expansion General-purpose Feed Direction Lead Angle 5° 	<b>GL Type</b> Expansion General-purpose Chip control emphasised 
		<b>GF Type</b> Expansion Low Resistance 	<b>CF Type</b> Expansion Low Resistance Feed Direction Lead Angle 10°/15° 	<b>GF Type</b> Expansion Low Resistance 
<b>Recommendation</b>	<b>External Profiling/External Radius Grooving</b>		<b>Facing/Internal Profiling/Radius Grooving/Necking</b>	
	<b>RG Type</b> Expansion General-purpose 1st Recommendation 	<b>RN Type</b> Expansion General-purpose 2nd Recommendation 2mm Width Supported 	<b>RN Type</b> Expansion General-purpose 	<b>GA Type</b> General-purpose For Non-Ferrous Metals 

## Insert Grade Selection

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

Only AC520U and AC1030U inserts are stocked for GNDIS Type holders.

Grooving Tools  
L  
Grooving  
Cut-off  
Threading  
External  
Face  
Internal  
Necking  
CBN






 For External Turning (Straight Type)

Traverse Cutting / Profiling (Cut-off)

Grooving / Cut-off (Traverse Cutting)

**GNDS Type**  
Straight Type  
For Shallow Grooves



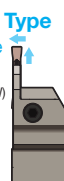
Shank Size (H x W)  
20 x 20mm  
25 x 25mm

**F28**

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 Type**  
Straight Type




Shank Size (H x W)  
20 x 20mm  
25 x 25mm  
32 x 25mm  
32 x 32mm

**F30**

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 Type**  
Straight Type  
Internal Coolant Supply




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

**F32**

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 Type**  
Straight Type




Shank Size (H x W)  
20 x 20mm  
25 x 25mm  
32 x 25mm  
32 x 32mm

**F34**

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 Type**  
Straight Type  
Internal Coolant Supply



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

**F36**

1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

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

For External Turning  
Straight Type Series Overview

MG: Multi-Functional/General-purpose Type ML: Multi-Functional/Low-Feed Type GG: Grooving/General-purpose Type GL: Grooving/Low-Feed Type GF: Grooving/Low-Resistance Type  
CG: Cut-off/General-purpose Type CF: Cut-off/Low-Resistance Type RG: Profiling/General-purpose Type RN: Facing/Necking/General-purpose Type GA: Non-Ferrous Metal/General-purpose Type

Type	Shank Size (mm) Height (A) / Width (B)	Width of Cut (mm)								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	
Straight Type	20	20	1.25	1.5							GNDM	10						F30					⊙						
			1.25	1.5								GNDL	16						F34					⊙					
		25	2									GNDS	6						F28	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
			2									GNDM	10						F30	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
		25	2									GNDM-J	10						F32	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
			2									GNDL	20						F34	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
		25	2									GNDL-J	20						F36	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
			3									GNDS	6						F28	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
		25	20	3								GNDM	12						F30	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
				3								GNDM-J	12						F32	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
		25	25	3								GNDL	20						F34	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
				3								GNDL-J	20						F36	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
	25	25	4								GNDS	10						F28	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
			4								GNDM	18						F30	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
	25	25	4								GNDM-J	18						F32	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
			4								GNDL	25						F34	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
	25	25	4								GNDL-J	25						F36	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
			5	6							GNDS	10						F28	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
	25	25	5	6							GNDM	18						F30	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
			5	6							GNDM-J	18						F32	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
	25	25	5	6							GNDL	25						F34	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
			5	6							GNDL-J	25						F36	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
	25	25	7	8							GNDM	18						F30	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
			7	8							GNDL	25						F34	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
32	25	3								GNDM	12						F30	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙		
		3								GNDL	20						F34	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙		
32	32	4								GNDM	18						F30	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙		
		4								GNDL	25						F34	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙		
32	32	5	6							GNDM	18						F30	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙		
		5	6							GNDL	25						F34	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙		
32	32	7	8							GNDM	18						F30	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙		
		7	8							GNDL	25						F34	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙		

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

⊙: Best ○: Suitable

Grooving Tools

F

Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN





# GND Type

Grooving Tools

F

Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN



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



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

Grooving / Traverse Cutting / Profiling

Grooving / Traverse Cutting / Profiling



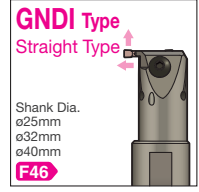
Available Edge Widths (mm)

1.5	2.0	3.0
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Applicable Chipbreaker

ML	GF
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Inserts are dedicated products.



Available Edge Widths (mm)

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
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## Internal Boring Series Overview (Work Dia.: $\phi$ 14mm up)

ML: Multi-Functional/Low-Feed Type GF: Grooving/Low-Resistance Type

Type	Shank Size DCON (mm)	Width of Cut (mm)			Series	Maximum Groove Depth (mm)					Min. bore diameter (mm)	Ref. Page	Applicable Chipbreakers (GNDIS Type Dedicated)	
		1.5	2	3		5	10	15	20	25			30	ML (GNDIS Type Dedicated)
Straight Type	$\phi$ 12	1.5			GNDIS	2.6					$\phi$ 14	F44		⊙
		1.5				3.6					$\phi$ 14	F44		⊙
		2	2	3		2.6					$\phi$ 14	F44	⊙	⊙
	$\phi$ 16	1.5			GNDIS	3.6					$\phi$ 16	F44		⊙
		1.5				4.6					$\phi$ 20	F44		⊙
		2	2	3		3.6					$\phi$ 16	F44	⊙	⊙
$\phi$ 20	1.5			GNDIS	4.6					$\phi$ 20	F44		⊙	
	2	2	3		6.6					$\phi$ 25	F44		⊙	
	2	2	3		6.6					$\phi$ 25	F44	⊙	⊙	

 : In Stock

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

⊙: Best

## Internal Boring Series Overview (Work Dia.: $\phi$ 32mm up)

MG: Multi-Functional/General-purpose Type ML: Multi-Functional/Low-Feed Type GG: Grooving/General-purpose Type GL: Grooving/Low-Feed Type GF: Grooving/Low-Resistance Type  
CG: Cut-off/General-purpose Type CF: Cut-off/Low-Resistance Type RG: Profiling/General-purpose Type RN: Facing/Necking/General-purpose Type GA: Non-Ferrous Metal/General-purpose Type

Type	Shank Size DCON (mm)	Width of Cut (mm)						Series	Maximum Groove Depth (mm)					Min. bore diameter (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 Type	$\phi$ 25	2					GNDI	6						$\phi$ 32	F46	⊙	⊙	⊙	⊙						⊙	⊙
		3	4	5	6	6							$\phi$ 32	F46	⊙	⊙	⊙	⊙						⊙	⊙	
	$\phi$ 32	2					GNDI	6						$\phi$ 32	F46	⊙	⊙	⊙	⊙						⊙	⊙
Straight Type	$\phi$ 40	3	4	5	6	GNDI	10						$\phi$ 40	F46	⊙	⊙	⊙	⊙						⊙	⊙	
		3	4	5	6		11						$\phi$ 50	F46	⊙	⊙	⊙	⊙						⊙	⊙	

 : In Stock

⊙: Best ○: Suitable



# GND Type Recommended Cutting Conditions

Width of Cut (mm)	Recommended Cutting Conditions		Corner Radius (mm)	Applicable Insert
	Grooving / Cut-off (Necking)	Traverse Cutting		
1.25	Chipbreaker 	—	0.05	MG ML GG GL GF CG CF RG RN GA
1.5	Chipbreaker 	—	0.05	MG ML GG GL GF CG CF RG RN GA
2.0	Chipbreaker 		0.03	MG ML GG GL GF CG CF RG RN GA
			0.2	MG ML GG GL GF CG CF RG RN GA
			0.4	MG ML GG GL GF CG CF RG RN GA
			1.0	MG ML GG GL GF CG CF RG RN GA
3.0	Chipbreaker 		0.03	MG ML GG GL GF CG CF RG RN GA
			0.2	MG ML GG GL GF CG CF RG RN GA
			0.4	MG ML GG GL GF CG CF RG RN GA
			1.5	MG ML GG GL GF CG CF RG RN GA
4.0	Chipbreaker 		0.2	MG ML GG GL GF CG CF RG RN GA
			0.4	MG ML GG GL GF CG CF RG RN GA
			0.8	MG ML GG GL GF CG CF RG RN GA
			2.0	MG ML GG GL GF CG CF RG RN GA
5.0	Chipbreaker 		0.2	MG ML GG GL GF CG CF RG RN GA
			0.4	MG ML GG GL GF CG CF RG RN GA
			0.8	MG ML GG GL GF CG CF RG RN GA
			2.5	MG ML GG GL GF CG CF RG RN GA
6.0	Chipbreaker 		0.2	MG ML GG GL GF CG CF RG RN GA
			0.4	MG ML GG GL GF CG CF RG RN GA
			0.8	MG ML GG GL GF CG CF RG RN GA
			3.0	MG ML GG GL GF CG CF RG RN GA
7.0	Chipbreaker 		0.2	MG ML GG GL GF CG CF RG RN GA
			0.4	MG ML GG GL GF CG CF RG RN GA
			0.8	MG ML GG GL GF CG CF RG RN GA
			3.5	MG ML GG GL GF CG CF RG RN GA
8.0	Chipbreaker 		0.2	MG ML GG GL GF CG CF RG RN GA
			0.4	MG ML GG GL GF CG CF RG RN GA
			0.8	MG ML GG GL GF CG CF RG RN GA
			4.0	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.   Expanded item  
 In cut-off applications, reduce the feed rate to around 30% to 50% near the centre of the workpiece.  
 As there is less space for chip evacuation when machining internal diameters (particularly small bore diameters), ML/GL/GF Type chipbreakers are recommended.  
 Modifications to inserts and holders are required to perform machining such as radius grooving when using the RG type chipbreaker with the GNDf type holder for facing.

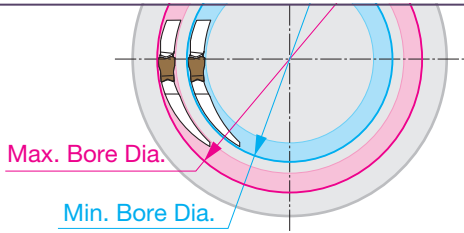
## Recommended Cutting Conditions

Recommended Cutting Conditions for GNDIS Type **F45**

Work Material	P Carbon Steel / Alloy Steel					M Stainless Steel			K Cast Iron			S Exotic Alloy		N Non-ferrous Metal	
	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 $v_c$ (m/min)	80 to 250	80 to 200	80 to 200	50 to 200	50 to 200	70 to 150	70 to 150	50 to 150	80 to 200	80 to 200	60 to 200	50 to 200	20 to 80	20 to 60	150 to 300

**Key Points for Facing**

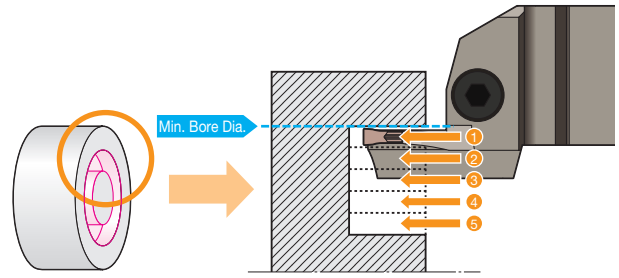
Holder Selection



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

Precautions for Groove Expansion

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

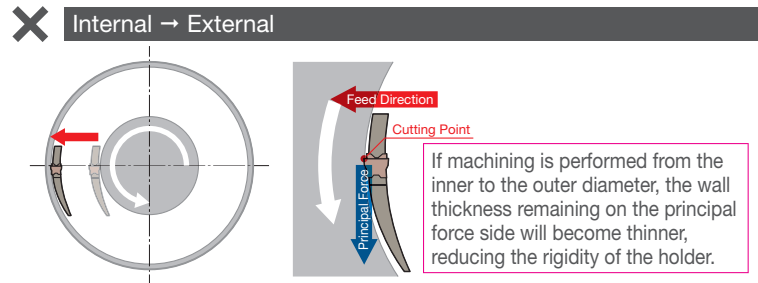
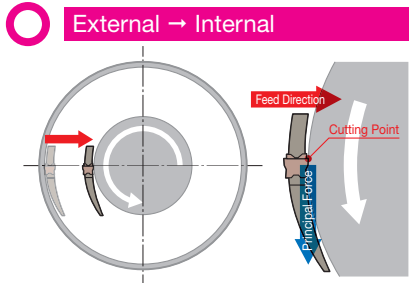


- If the first groove is within the effective work diameter range during groove expansion via plunging, the work diameter will not be limited for subsequent passes.

Precautions for Traverse Cutting

Recommended Chipbreakers **MG ML RN**

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



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

**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.



Work Material: SCM415 Prepared Hole Diameter:  $\phi 25\text{mm}$  Holder: GNDI R2532-T306 Insert: GCM N3000-00  
 Cutting Conditions:  $v_c = 100\text{m/min}$ ,  $f = 0.1\text{mm/rev}$ ,  $a_p = 3.0\text{mm Wet}$

Internal Boring



External Turning



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

Work Material: SCM415  
 Holder: GNDL R2525M-320, Insert: GCM N3002-GG  
 Cutting Conditions:  $v_c = 100\text{m/min}$ ,  $f = 0.10\text{mm/rev}$ ,  $a_p = 5.0\text{mm Wet}$

## Key Points for Necking

Precautions for Necking

Recommended Chipbreaker **RN**

Grooving Tools



Grooving

Cut-off

Threading

External

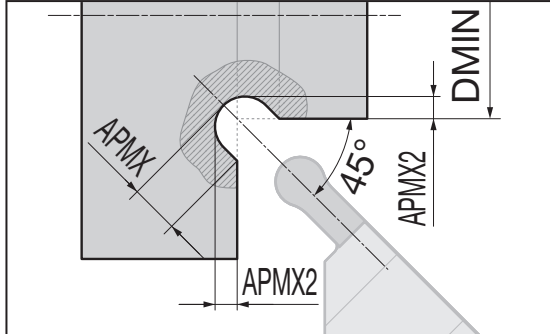
Face

Internal

Necking

CBN

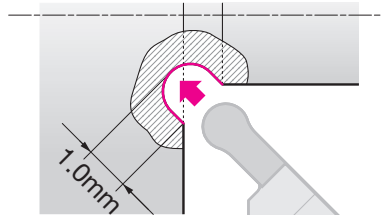
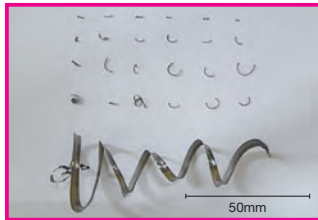
### Distance from Work Material to Necking Depth



Width of Cut CW (mm)	Necking Depth APMX (mm)	Distance from Work Material to Necking Depth APMX2 (mm)
2.0	1.5	0.64
3.0	2.0	0.79
4.0	3.0	1.29
5.0	3.5	1.44
6.0	4.0	1.59

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

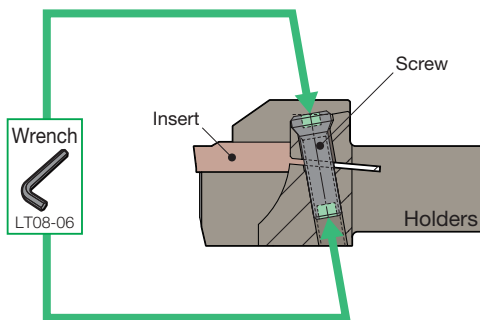
### Chip Shape



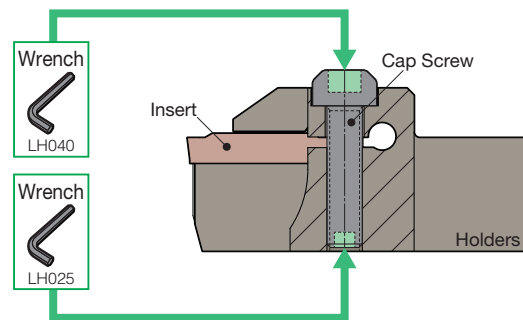
Work Material : SCM435 Groove Width: 3.0mm  
 Holder : GNDN R2020K-320-020  
 Insert : GCMN3015-RN  
 Cutting Conditions :  $v_c=100\text{m/min}$ ,  $f=0.1\text{mm/rev}$   
 Undercut Depth=1.0mm Wet

## Key Points in Internal Coolant Supply Holders For Small Lathes

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



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

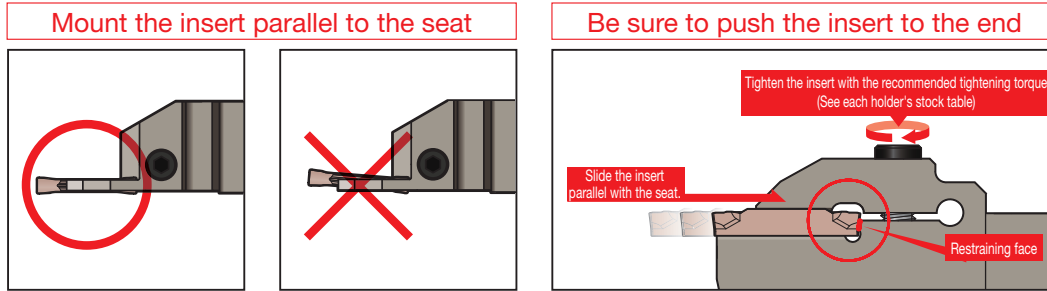


16mm square holder: **GNDM R/L1616JX-000J**  
**GNDL R/L1616JX-000J**

## Precautions for SEC-Grooving Tool Holders GND Type

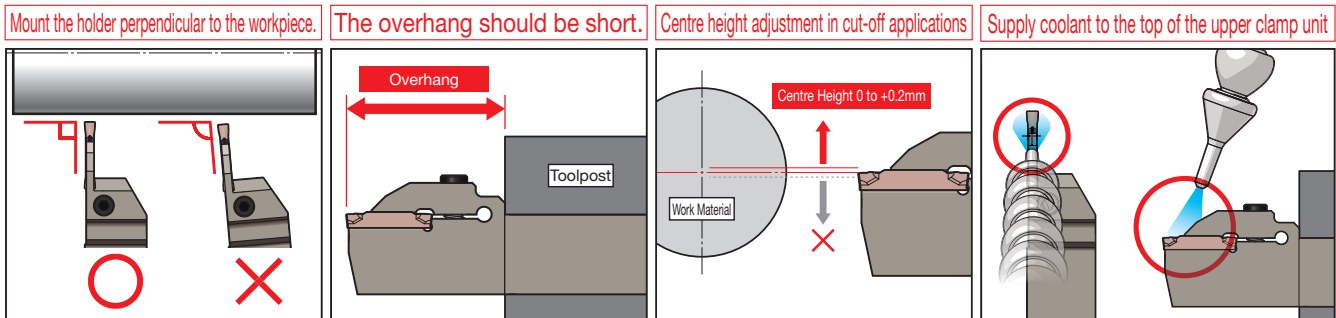
### ■ Insert Mounting Precautions

- (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 exchanging 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 centre height of the cutting edge to as close to  $\pm 0$ mm as possible. (Within  $\pm 0.1$ mm is recommended.) Incorrect centre 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 centre height will result in a larger pip at the center.
- (6) Set the oil supply nozzle so that coolant can be supplied from the top of the upper clamp unit.



### ■ Depth of Cut when Pulling Out with RG/RN Type Chipbreakers

Width of Cut (mm)	Maximum Depth of Cut when Pulling Out (mm)
CW	E1
2.0*	0.10
3.0	0.15
4.0	0.20
5.0	0.25
6.0	0.30
7.0	0.35
8.0	0.40

\*: CW = 2.0 is RN type chipbreakers only

## Precautions for SEC-Grooving Tool Holders GND Type

### ■ Piping Method for Hoses and Connectors

Internal Coolant Holder  
**GNDM R/L**○○○○□-○○○J  
**GNDL R/L**○○○○□-○○○J

Connector (Straight)  
**J-G1/8-R1/8-00**

Connector (L-Shaped)  
**J-G1/8-R1/8-90**

Hose  
**J-HOSE-G1/8-G1/8-200** (Overall length 200mm)  
**J-HOSE-G1/8-G1/8-300** (Overall length 300mm)

Machine

- 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)

Internal Coolant Supply Holders for Small Lathes  
**GNDM R/L**○○○○JX-○○○J  
**GNDL R/L**○○○○JX-○○○J

Connector (Straight)  
**J-G1/8-R1/8-00**

Connector (L-Shaped)  
**J-G1/8-R1/8-90**

Hose  
**J-HOSE-G1/8-G1/8-200** (Overall length 200mm)  
**J-HOSE-G1/8-G1/8-300** (Overall length 300mm)

Machine (small lathes, etc.)

- 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

Coolant Supply Without Hose Compatible Products

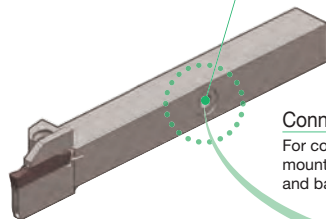
\* The plug will protrude a few millimeters when mounted on the side.

\*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.

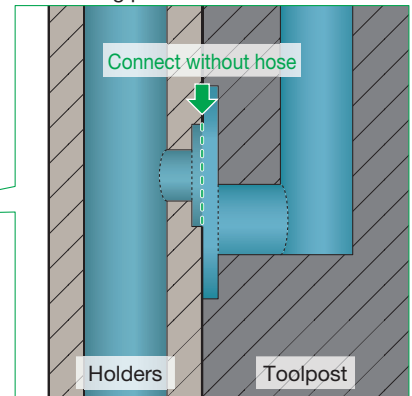


Connecting Points for Hoses  
 For coolant supply without hose, mount plugs (XP02) on the side and back end

#### Holders for Coolant Supply Without Hose

- 12mm size: **GNDL R/L1212JX-○○○,○J**
- 16mm size: **GNDM R/L1616JX-○○○J**  
**GNDL R/L1616JX-○○○J**

#### Connecting point cross-section



Compatible Toolpost for Coolant Supply Without Hose



# GNDM Type / GNDL Type



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

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



Grooving Tools

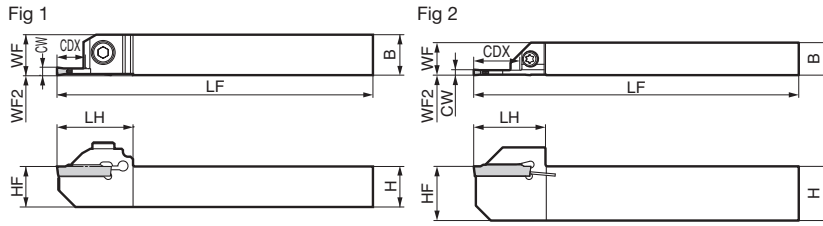
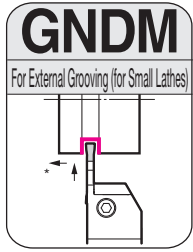


Figure shows right hand (R) tool.

## Holder

## Parts

Dimensions (mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Head	Offset	Width of Cut	Max. Groove Depth	Applicable Insert	Fig	Dimensions (mm)		
	R	L												Cap Screw	Wrench	
GNDM R/L1616JX-1.2508	●	●	16	16	120	(16)	16	26	0	1.25	8.0	GCM N125005-GF	1	BX0515 BFTX0414	4.0	LH040
GNDM R/L1616JX-1.510	●	●	16	16	120	(16)	16	26	0	1.50	10.0	GCM N150005-GF	1			
GNDM R/L1616JX-212	●	●	16	16	120	(16)	16	30	0	2.00	12.0	GC□ □20○-□□	1	BFTX0414	3.0	LT15-10
GNDM R/L1616JX-312	●	●	16	16	120	(16)	16	30	0	3.00	12.0	GC□ □30○-□□	1			
GNDM R/L2012JX-217 <span style="color:red">New</span>	●	●	20	12	120	(12)	20	26.5	0	2.00	17.0	GC□ □20○-□□	2	BFTX0414	3.0	LT15-10
GNDM R/L2012JX-317 <span style="color:red">New</span>	●	●	20	12	120	(12)	20	26.5	0	3.00	17.0	GC□ □30○-□□	2			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F25 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.



External Grooving & Cut-off Clamp-on for Small Lathes



Face

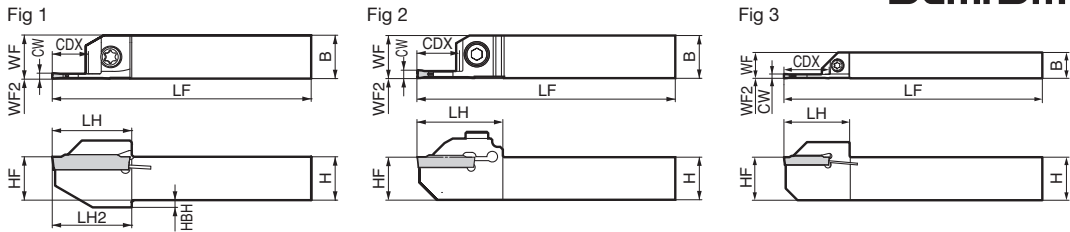
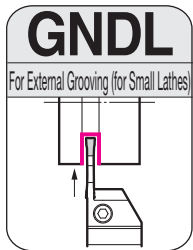


Figure shows right hand (R) tool.

Necking

## Holder

## Parts

Dimensions (mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Step	Head	Head	Offset	Width of Cut	Max. Groove Depth (mm)	Applicable Insert	Fig	Dimensions (mm)		
	R	L														Flat Screw / Cap Screw	Wrench	
GNDL R/L1010JX-1.2510	●	●	10	10	120	(10)	10	2.0	18	18.3	0	1.25	10.0	GCM N125005-GF	1	BFTX0412N BFTX0414	3.0	LT15-10
GNDL R/L1010JX-1.510	●	●	10	10	120	(10)	10	2.0	18	18.3	0	1.50	10.0	GCM N150005-GF	1			
GNDL R/L1010JX-210	●	●	10	10	120	(10)	10	2.0	22	22.3	0	2.00	10.0	GC□ □20○-□□	1	BFTX0412N	3.0	LT15-10
GNDL R/L1010JX-310	●	●	10	10	120	(10)	10	2.0	22	22.3	0	3.00	10.0	GC□ □30○-□□	1			
GNDL R/L1212JX-1.2512	●	●	12	12	120	(12)	12	2.0	19	19.3	0	1.25	12.0	GCM N125005-GF	1	BFTX0412N	3.0	LT15-10
GNDL R/L1212JX-1.512	●	●	12	12	120	(12)	12	2.0	19	19.3	0	1.50	12.0	GCM N150005-GF	1			
GNDL R/L1212JX-212.5	●	●	12	12	120	(12)	12	2.0	22	22.3	0	2.00	12.5	GC□ □20○-□□	1	BFTX0414	3.0	LT15-10
GNDL R/L1212JX-312.5	●	●	12	12	120	(12)	12	2.0	22	22.3	0	3.00	12.5	GC□ □30○-□□	1			
GNDL R/L1616JX-1.2512.5	●	●	16	16	120	(16)	16	—	28	—	0	1.25	12.5	GCM N125005-GF	2	BX0515	4.0	LH040
GNDL R/L1616JX-1.512.5	●	●	16	16	120	(16)	16	—	28	—	0	1.50	12.5	GCM N150005-GF	2			
GNDL R/L1616JX-216	●	●	16	16	120	(16)	16	—	32	—	0	2.00	16.0	GC□ □20○-□□	2	BFTX0414	3.0	LT15-10
GNDL R/L1616JX-316	●	●	16	16	120	(16)	16	—	32	—	0	3.00	16.0	GC□ □30○-□□	2			
GNDL R/L2012JX-221 <span style="color:red">New</span>	●	●	20	12	120	(12)	20	—	30.5	—	0	2.00	21.0	GC□ □20○-□□	3	BFTX0414	3.0	LT15-10
GNDL R/L2012JX-321 <span style="color:red">New</span>	●	●	20	12	120	(12)	20	—	30.5	—	0	3.00	21.0	GC□ □30○-□□	3			

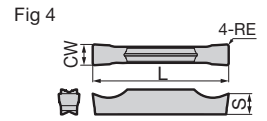
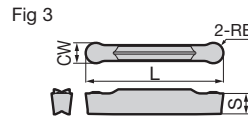
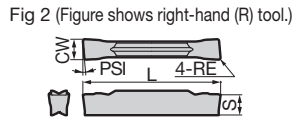
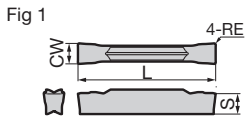
Combine the insert with a holder such that the width of cut (CW) matches. Refer to F25 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.

# GNDM Type / GNDL Type



GNDM Type (For Small Lathes)/GNDL Type (For Small Lathes) Inserts (  Coated Carbide /  Cermet /  Cemented Carbide )



## Grooving / Traverse Cutting

Cat. No.	Dimensions (mm)																				
	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	T2500A													
	Width of Cut	Tolerance						RE	L	S											
GCM N3002-MG N3004-MG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A		3.0	±0.03	0.2	21.1	3.8	5	1				
GCM N2002-ML											2.0	±0.03	0.2	21.1	3.6		1				
GCM N3002-ML N3004-ML											3.0	±0.03	0.2	21.1	3.8	5	1				

## Cut-off (Handed Edge)

Cat. No.	Dimensions (mm)																				
	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	Lead Angle	T2500A												
	Width of Cut	Tolerance							RE	L	S										
GCM R2002-CG-05 L2002-CG-05	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	AC1030U		2.0	±0.03	0.2	21.1	3.6	5	2	5°			
GCM R3002-CG-05 L3002-CG-05											3.0	±0.03	0.2	21.3	3.8		2	5°			
GCM R20003-CF-10 L20003-CF-10											2.0	±0.08	0.03	22.4	3.6	5	2	10°			
GCM R30003-CF-10 L30003-CF-10											3.0	±0.08	0.03	22.4	3.8		2	10°			
GCM R20003-CF-15 L20003-CF-15											2.0	±0.08	0.03	22.4	3.6		2	15°			
GCM R30003-CF-15 L30003-CF-15											3.0	±0.08	0.03	22.4	3.8		2	15°			

GCMR: Right Handed, GCML: Left Handed

## Grooving / Cut-off

Cat. No.	Dimensions (mm)																				
	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	T2500A													
	Width of Cut	Tolerance						RE	L	S											
GCM N2002-GG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A		2.0	±0.03	0.2	21.1	3.6	5	1				
GCM N3002-GG N3004-GG											3.0	±0.03	0.2	21.1	3.8		1				
GCM N2002-GL N2004-GL											2.0	±0.03	0.2	21.1	3.6		1				
GCM N3002-GL N3004-GL											3.0	±0.03	0.2	21.1	3.8		1				
GCM N125005-GF											1.25	±0.03	0.05	17.4	3.2		1				
GCM N150005-GF											1.5	±0.03	0.05	17.4	3.7		1				
GCM N2002-GF N2004-GF											2.0	±0.03	0.2	21.1	3.6		1				
GCM N3002-GF N3004-GF											3.0	±0.03	0.2	21.1	3.8		1				

## External Profiling / External Radius Grooving

Cat. No.	Dimensions (mm)																				
	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	T2500A													
	Width of Cut	Tolerance						RE	L	S											
GCM N3015-RG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A		3.0	±0.03	1.5	21.1	3.8	5	3				

## Profiling / Radius Grooving / Necking

Cat. No.	Dimensions (mm)																				
	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	T2500A													
	Width of Cut	Tolerance						RE	L	S											
GCM N2010-RN N3015-RN	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A		2.0	±0.03	1.0	21.7	3.6	5	3				
											3.0	±0.03	1.5	22.4	3.8		3				

## Non-Ferrous Metals

Cat. No.	H10	Dimensions (mm)																			
		Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	T2500A												
		Width of Cut	Tolerance						RE	L											
GCG N2002-GA N3002-GA											2.0	±0.025	0.2	21.1	3.6	5	4				
											3.0	±0.025	0.2	21.1	3.8		4				

## Part Number Suffix Code (Chipbreakers)

Type	Symbol	Applications	Type	Symbol	Applications
Grooving/ Traverse Cutting	MG	Multi-functional / General-purpose	Cut-off (Handed Edge)	CG	Cut-off / General-purpose
	ML	Multi-functional / Low-feed		CF	Cut-off / Low-resistance
Grooving / Cut-off	GG	Grooving / General-purpose	External Profiling / External Radius Grooving Profiling / Radius Grooving / Necking For Non-Ferrous Metals	RG	Profiling / General-purpose
	GL	Grooving / Low Feed		RN	Facing / Necking / General-purpose
	GF	Grooving / Low-resistance		GA	Non-Ferrous Metals / General-purpose

Chipbreaker Selection F13 Important Notes F22 Recommended Cutting Conditions F19

Select holders and inserts with matching width of cut (CW). Not usable with GNDIS type holders.

● mark: Standard stocked item (new product/expanded item)

Grooving  
Tools

L

Grooving

Cut-off

Threading

External

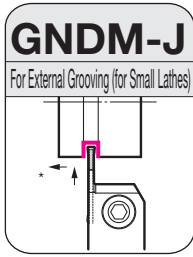
Face

Internal

Necking

CBN

# GNDM-J Type / GNDL-J Type



- External
- Zero Offset
- Internal Coolant
- New

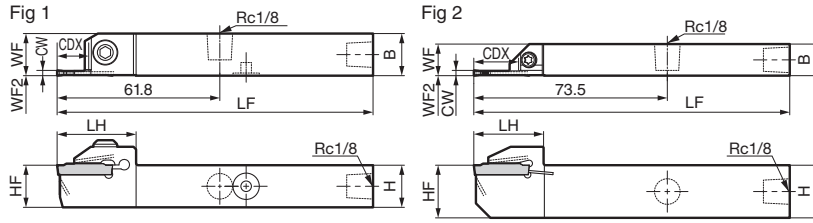


Figure shows right hand (R) tool.

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

### Parts

CP-M5-20-1			LH040	

### Holder

Dimensions (mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Head	Offset	Width of Cut	Max. Groove Depth (mm)	Max. Cut-off Dia.	Applicable Insert	Fig	Flat Screw / Cap Screw	N·m	Plug	Top Hex Wrench	Bottom Hex Wrench
	R	L																	
<b>GNDM R/L1616JX-212J</b>	●	●	16	16	120	(16)	16	30.0	0	2.0	12.0	24	GC □2000-□□	1	CP-M5-20-1	5.0	XP02	LH040	LH025
<b>GNDM R/L1616JX-312J</b>	●	●	16	16	120	(16)	16	30.0	0	3.0	12.0	24	GC □3000-□□	1	CP-M5-20-1	5.0	XP02	LH040	LH025
<b>GNDM R/L2012JX-217J</b>	●	●	20	12	120	(12)	20	26.5	0	2.0	17.0	34	GC □2000-□□	2	BFTX0414	3.0	XP02	LT15-10	—
<b>GNDM R/L2012JX-317J</b>	●	●	20	12	120	(12)	20	26.5	0	3.0	17.0	34	GC □3000-□□	2	BFTX0414	3.0	XP02	LT15-10	—

Match inserts and holders with identical widths of cut (CW). Refer to F27 for applicable inserts.  
The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.



- External
- Zero Offset
- Internal Coolant
- New

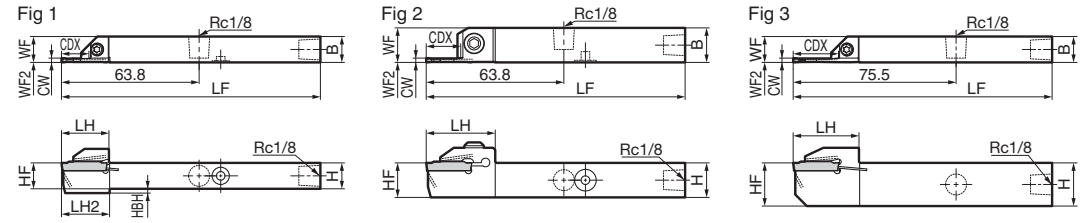


Figure shows right hand (R) tool.

### Parts

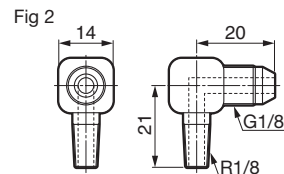
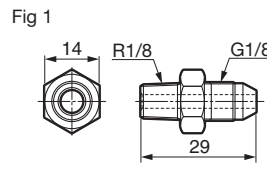
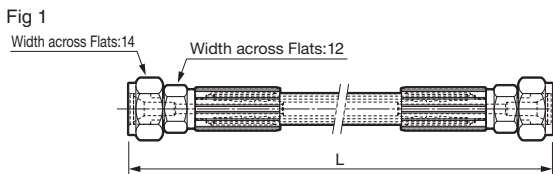
CP-M5-20-1			LH040	

### Holder

Dimensions (mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Step	Head	Head	Offset	Width of Cut	Max. Groove Depth (mm)	Max. Cut-off Dia.	Applicable Insert	Fig	Flat Screw / Cap Screw	N·m	Plug	Top Hex Wrench	Bottom Hex Wrench
	R	L																			
<b>GNDL R/L1212JX-212.5J</b>	●	●	12	12	120	(12)	12	2.0	22.0	22.3	0	2.0	12.5	25	GC □2000-□□	1	BFTX0415T8R	1.5	XP02	LT08-06	←
<b>GNDL R/L1212JX-312.5J</b>	●	●	12	12	120	(12)	12	2.0	22.0	22.3	0	3.0	12.5	25	GC □3000-□□	1	BFTX0415T8R	1.5	XP02	LT08-06	←
<b>GNDL R/L1616JX-216J</b>	●	●	16	16	120	(16)	16	—	32.0	—	0	2.0	16.0	32	GC □2000-□□	2	CP-M5-20-1	5.0	XP02	LH040	LH025
<b>GNDL R/L1616JX-316J</b>	●	●	16	16	120	(16)	16	—	32.0	—	0	3.0	16.0	32	GC □3000-□□	2	CP-M5-20-1	5.0	XP02	LH040	LH025
<b>GNDL R/L2012JX-221J</b>	●	●	20	12	120	(12)	20	—	30.5	—	0	2.0	21.0	42	GC □2000-□□	3	BFTX0414	3.0	XP02	LT15-10	—
<b>GNDL R/L2012JX-321J</b>	●	●	20	12	120	(12)	20	—	30.5	—	0	3.0	21.0	42	GC □3000-□□	3	BFTX0414	3.0	XP02	LT15-10	—

Match inserts and holders with identical widths of cut (CW). Refer to F27 for applicable inserts.  
The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.



### Parts (Hose)

Dimensions (mm)

Cat. No.	Stock	L	Screw Standard	Screw Standard	Fig
<b>J-HOSE-G1/8-G1/8-200</b>	●	200	G1/8	G1/8	1
<b>J-HOSE-G1/8-G1/8-300</b>	●	300	G1/8	G1/8	1

Hoses are sold separately.

Piping Method for Hoses and Connectors F23

### Parts (Connector)

Dimensions (mm)

Cat. No.	Stock	Screw Standard	Screw Standard	Fig
<b>J-G1/8-R1/8-00</b>	●	G1/8	R1/8	1
<b>J-G1/8-R1/8-90</b>	●	G1/8	R1/8	2

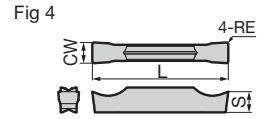
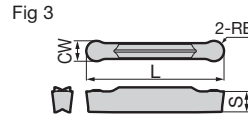
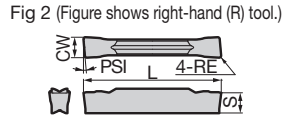
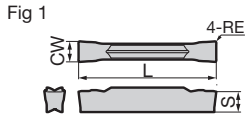
Connectors are sold separately.

Piping Method for Hoses and Connectors F23

# GNDM-J Type / GNDL-J Type



GNDM-J Type (For Small Lathes) / GNDL-J Type (For Small Lathes) Inserts (  Coated Carbide /  Cermet /  Cemented Carbide)



## Grooving / Traverse Cutting

Cat. No.	Dimensions (mm)																					
	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	AC			T											
	Width of Cut	Tolerance						8025P	8035P	830P		425K	5015S	5025S	520U	530U	2500A					
GCM N3002-MG N3004-MG	3.0	±0.03	0.2	21.1	3.8	5	1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GCM N2002-ML	2.0	±0.03	0.2	21.1	3.6	5	1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GCM N3002-ML N3004-ML	3.0	±0.03	0.2	21.1	3.8	5	1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

## Cut-off (Handed Edge)

Cat. No.	Dimensions (mm)																					
	Lead Angle PSI	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	AC			T										
		Width of Cut	Tolerance						8025P	8035P	830P		425K	5015S	5025S	520U	530U	1030U	2500A			
GCM R2002-CG-05 L2002-CG-05	5°	2.0	±0.03	0.2	21.1	3.6	5	2	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GCM R3002-CG-05 L3002-CG-05	5°	3.0	±0.03	0.2	21.3	3.8	5	2	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GCM R20003-CF-10 L20003-CF-10	10°	2.0	±0.08	0.03	22.4	3.6	5	2	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GCM R30003-CF-10 L30003-CF-10	10°	3.0	±0.08	0.03	22.4	3.8	5	2	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GCM R20003-CF-15 L20003-CF-15	15°	2.0	±0.08	0.03	22.4	3.6	5	2	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GCM R30003-CF-15 L30003-CF-15	15°	3.0	±0.08	0.03	22.4	3.8	5	2	●	●	●	●	●	●	●	●	●	●	●	●	●	●

GCMR: Right Handed, GCML: Left Handed

## Grooving / Cut-off

Cat. No.	Dimensions (mm)																					
	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	AC			T											
	Width of Cut	Tolerance						8025P	8035P	830P		425K	5015S	5025S	520U	530U	2500A					
GCM N2002-GG N3002-GG N3004-GG	2.0	±0.03	0.2	21.1	3.6	5	1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GCM N2002-GL N2004-GL	2.0	±0.03	0.2	21.1	3.6	5	1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GCM N3002-GL N3004-GL	3.0	±0.03	0.2	21.1	3.8	5	1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GCM N2002-GF N2004-GF	2.0	±0.03	0.2	21.1	3.6	5	1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GCM N3002-GF N3004-GF	3.0	±0.03	0.2	21.1	3.8	5	1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

## External Profiling / External Radius Grooving

Cat. No.	Dimensions (mm)																					
	Lead Angle PSI	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	AC			T										
		Width of Cut	Tolerance						8025P	8035P	830P		425K	5015S	5025S	520U	530U	2500A				
GCM N3015-RG	5°	3.0	±0.03	1.5	21.1	3.8	5	3	●	●	●	●	●	●	●	●	●	●	●	●	●	●

## Profiling / Radius Grooving / Necking

Cat. No.	Dimensions (mm)																					
	Lead Angle PSI	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	AC			T										
		Width of Cut	Tolerance						8025P	8035P	830P		425K	5015S	5025S	520U	530U					
GCM N2010-RN N3015-RN	5°	2.0	±0.03	1.0	21.7	3.6	5	3	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		3.0	±0.03	1.5	22.4	3.8	5	3	●	●	●	●	●	●	●	●	●	●	●	●	●	●

## Non-Ferrous Metals

Cat. No.	H10	Dimensions (mm)																				
		Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	AC			T										
		Width of Cut	Tolerance						8025P	8035P	830P		425K	5015S	5025S	520U	530U					
GCG N2002-GA N3002-GA	●	2.0	±0.025	0.2	21.1	3.6	5	4	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●	3.0	±0.025	0.2	21.1	3.8	5	4	●	●	●	●	●	●	●	●	●	●	●	●	●	●

## Part Number Suffix Code (Chipbreakers)

Type	Symbol	Applications	Type	Symbol	Applications
Grooving/ Traverse Cutting	MG	Multi-functional / General-purpose	Cut-off (Handed Edge)	CG	Cut-off / General-purpose
	ML	Multi-functional / Low-feed		CF	Cut-off / Low-resistance
Grooving / Cut-off	GG	Grooving / General-purpose	External Profiling / External Radius Grooving	RG	Profiling / General-purpose
	GL	Grooving / Low Feed	Profiling / Radius Grooving / Necking	RN	Facing / Necking / General-purpose
	GF	Grooving / Low-resistance	For Non-Ferrous Metals	GA	Non-Ferrous Metals / General-purpose

Chipbreaker Selection F13 Important Notes F22 Recommended Cutting Conditions F19

Select holders and inserts with matching width of cut (CW). Not usable with GNDIS type holders.

● mark: Standard stocked item (new product/expanded item)

Grooving  
Tools

Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN

# SEC-Grooving Tools

## GNDS Type



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

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

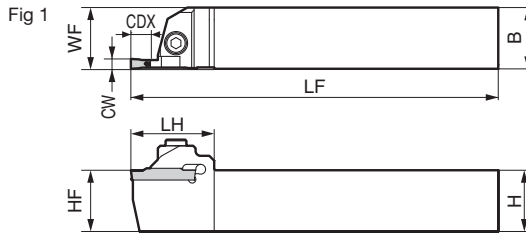
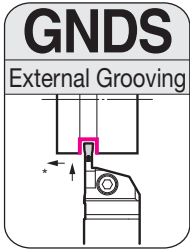


Figure shows right hand (R) tool.

### Holder

### Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Width of Cut CW	Max. Groove Depth (mm) CDX	Applicable Insert	Fig	Parts		
	R	L											Cap Screw	Wrench	
GNDS R/L2020K-206	●	●	20	20	125	20	20	30	2.0	6	GC □ □20○○-□□	1	BX0520	5.0	LH040
GNDS R/L2020K-306	●	●	20	20	125	20	20	30	3.0	6	GC □ □30○○-□□	1			
GNDS R/L2020K-410	●	●	20	20	125	20	20	34	4.0	10	GC □ □40○○-□□	1			
GNDS R/L2020K-510	●	●	20	20	125	20	20	34	5.0	10	GC □ N50○○-□□	1			
GNDS R/L2020K-610	●	●	20	20	125	20	20	34	6.0	10	GC □ N60○○-□□	1			
GNDS R/L2525M-206	●	●	25	25	150	25	25	30	2.0	6	GC □ □20○○-□□	1	BX0520	5.0	LH040
GNDS R/L2525M-306	●	●	25	25	150	25	25	30	3.0	6	GC □ □30○○-□□	1			
GNDS R/L2525M-410	●	●	25	25	150	25	25	34	4.0	10	GC □ □40○○-□□	1			
GNDS R/L2525M-510	●	●	25	25	150	25	25	34	5.0	10	GC □ N50○○-□□	1			
GNDS R/L2525M-610	●	●	25	25	150	25	25	34	6.0	10	GC □ N60○○-□□	1			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F29 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.

Grooving Tools

F

Grooving

Cut-off

Threading

External

Face

Internal

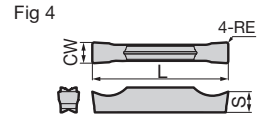
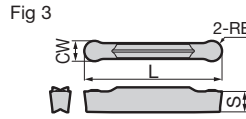
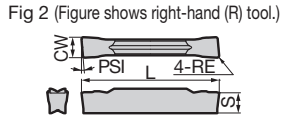
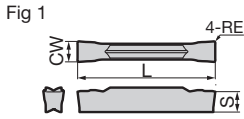
Necking

CBN





Insert for GNDS Type



( Coated Carbide / Cermet / Cemented Carbide)

Grooving / Traverse Cutting

Dimensions (mm)

Cat. No.	Material										Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	Width of Cut	Tolerance							
	RE	L	S	RE	L	S												
GCM N3002-MG	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	5	1	
N3004-MG	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8			
GCM N4002-MG	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0	5	1	
N4004-MG	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0			
GCM N4008-MG	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.8	26.4	4.0	5	1	
N5004-MG	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1			
GCM N5008-MG	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.8	26.4	4.1	5	1	
N6004-MG	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5			
GCM N6008-MG	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.8	26.4	4.5	5	1	
N2002-ML	●	●	●	●	●	●	●	●	●	●	2.0	±0.03	0.2	21.1	3.6			
GCM N3002-ML	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	5	1	
N3004-ML	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8			
GCM N4002-ML	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0	5	1	
N4004-ML	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0			
GCM N4008-ML	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.8	26.4	4.0	5	1	
N5004-ML	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1			
GCM N5008-ML	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.8	26.4	4.1	5	1	
N6004-ML	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5			
GCM N6008-ML	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.8	26.4	4.5	5	1	
N6008-ML	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.8	26.4	4.5			

Cut-off (Handed Edge)

Dimensions (mm)

Cat. No.	Material										Lead Angle PSI	Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	AC1030U	Width of Cut		Tolerance							
	RE	L	S	RE	L	S													
GCM R2002-CG-05	●	●	●	●	●	●	●	●	●	●	5°	2.0	±0.03	0.2	21.1	3.6	5	2	
L2002-CG-05	●	●	●	●	●	●	●	●	●	●	5°	2.0	±0.03	0.2	21.1	3.6			
GCM R3002-CG-05	●	●	●	●	●	●	●	●	●	●	5°	3.0	±0.03	0.2	21.3	3.8	5	2	
L3002-CG-05	●	●	●	●	●	●	●	●	●	●	5°	3.0	±0.03	0.2	21.3	3.8			
GCM R4002-CG-05	●	●	●	●	●	●	●	●	●	●	5°	4.0	±0.04	0.2	26.7	4.0	5	2	
L4002-CG-05	●	●	●	●	●	●	●	●	●	●	5°	4.0	±0.04	0.2	26.7	4.0			
GCM R20003-CF-10	●	●	●	●	●	●	●	●	●	●	10°	2.0	±0.08	0.03	22.4	3.6	5	2	
L20003-CF-10	●	●	●	●	●	●	●	●	●	●	10°	2.0	±0.08	0.03	22.4	3.6			
GCM R30003-CF-10	●	●	●	●	●	●	●	●	●	●	10°	3.0	±0.08	0.03	22.4	3.8	5	2	
L30003-CF-10	●	●	●	●	●	●	●	●	●	●	10°	3.0	±0.08	0.03	22.4	3.8			
GCM R20003-CF-15	●	●	●	●	●	●	●	●	●	●	15°	2.0	±0.08	0.03	22.4	3.6	5	2	
L20003-CF-15	●	●	●	●	●	●	●	●	●	●	15°	2.0	±0.08	0.03	22.4	3.6			
GCM R30003-CF-15	●	●	●	●	●	●	●	●	●	●	15°	3.0	±0.08	0.03	22.4	3.8	5	2	
L30003-CF-15	●	●	●	●	●	●	●	●	●	●	15°	3.0	±0.08	0.03	22.4	3.8			

GCMR: Right Handed, GCML: Left Handed

Grooving / Cut-off

Dimensions (mm)

Cat. No.	Material										Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	Width of Cut	Tolerance							
	RE	L	S	RE	L	S												
GCM N2002-GG	●	●	●	●	●	●	●	●	●	●	2.0	±0.03	0.2	21.1	3.6	5	1	
GCM N3002-GG	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8			
GCM N3004-GG	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8	5	1	
GCM N4002-GG	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0			
GCM N4004-GG	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0	5	1	
GCM N5002-GG	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.2	26.4	4.1			
GCM N5004-GG	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1	5	1	
GCM N6002-GG	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.2	26.4	4.5			
GCM N6004-GG	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5	5	1	
GCM N2002-GL	●	●	●	●	●	●	●	●	●	●	2.0	±0.03	0.2	21.1	3.6			
GCM N2004-GL	●	●	●	●	●	●	●	●	●	●	2.0	±0.03	0.4	21.1	3.6	5	1	
GCM N3002-GL	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8			
GCM N3004-GL	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8	5	1	
GCM N4002-GL	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0			
GCM N4004-GL	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0	5	1	
GCM N5002-GL	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.2	26.4	4.1			
GCM N5004-GL	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1	5	1	
GCM N6002-GL	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.2	26.4	4.5			
GCM N6004-GL	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5	5	1	
GCM N125005-GF	●	●	●	●	●	●	●	●	●	●	1.25	±0.03	0.05	17.4	3.2			
GCM N150005-GF	●	●	●	●	●	●	●	●	●	●	1.5	±0.03	0.05	17.4	3.7	5	1	
GCM N2002-GF	●	●	●	●	●	●	●	●	●	●	2.0	±0.03	0.2	21.1	3.6			
GCM N2004-GF	●	●	●	●	●	●	●	●	●	●	2.0	±0.03	0.4	21.1	3.6	5	1	
GCM N3002-GF	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8			
GCM N3004-GF	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8	5	1	
GCM N4002-GF	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0			
GCM N4004-GF	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0	5	1	
GCM N5002-GF	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.2	26.4	4.1			
GCM N5004-GF	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1	5	1	
GCM N6002-GF	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.2	26.4	4.5			
GCM N6004-GF	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5	5	1	

External Profiling / External Radius Grooving

Dimensions (mm)

Cat. No.	Material										Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	Width of Cut	Tolerance							
	RE	L	S	RE	L	S												
GCM N3015-RG	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	1.5	21.1	3.8	5	3	
GCM N4020-RG	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	2.0	26.4	4.0			
GCM N5025-RG	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	2.5	27.2	4.1	5	3	
GCM N6030-RG	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	3.0	27.5	4.5			

Profiling / Radius Grooving / Necking

Dimensions (mm)

Cat. No.	Material										Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	Width of Cut	Tolerance								
	RE	L	S	RE	L	S												
GCM N2010-RN	●	●	●															

# GNDM Type / GNDMS Type



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

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

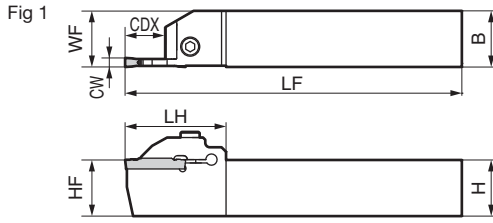
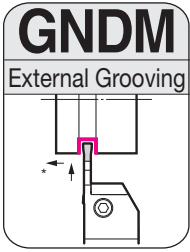


Figure shows right hand (R) tool.

## Holder

## Parts

Dimensions (mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Head	Width of Cut	Max. Groove Depth (mm)	Applicable Insert	Fig	Cap Screw		Wrench
	R	L											BX0520	N-m	
GNDM R/L2020K-1.2510	●	●	20	20	125	20	20	34.0	1.25	10	GCM N125005-GF	1	BX0520	5.0	LH040
GNDM R/L2020K-1.510	●	●	20	20	125	20	20	34.0	1.50	10	GCM N150005-GF	1			
GNDM R/L2020K-210	●	●	20	20	125	20	20	33.6	2.00	10	GC □20○-□□	1			
GNDM R/L2020K-312	●	●	20	20	125	20	20	36.6	3.00	12	GC □30○-□□	1			
GNDM R/L2020K-418	●	●	20	20	125	20	20	45.0	4.00	18	GC □40○-□□	1			
GNDM R/L2020K-518	●	●	20	20	125	20	20	45.0	5.00	18	GC □N50○-□□	1			
GNDM R/L2020K-618	●	●	20	20	125	20	20	45.0	6.00	18	GC □N60○-□□	1			
GNDM R/L2525M-1.2510	●	●	25	25	150	25	25	36.0	1.25	10	GCM N125005-GF	1	BX0520	5.0	LH040
GNDM R/L2525M-1.510	●	●	25	25	150	25	25	36.0	1.50	10	GCM N150005-GF	1			
GNDM R/L2525M-210	●	●	25	25	150	25	25	33.6	2.00	10	GC □20○-□□	1			
GNDM R/L2525M-312	●	●	25	25	150	25	25	36.6	3.00	12	GC □30○-□□	1			
GNDM R/L2525M-418	●	●	25	25	150	25	25	45.0	4.00	18	GC □40○-□□	1			
GNDM R/L2525M-518	●	●	25	25	150	25	25	45.0	5.00	18	GC □N50○-□□	1			
GNDM R/L2525M-618	●	●	25	25	150	25	25	45.0	6.00	18	GC □N60○-□□	1			
GNDM R/L3225P-312			32	25	170	25	32	36.6	3.00	12	GC □30○-□□	1	BX0520	5.0	LH040
GNDM R/L3225P-418			32	25	170	25	32	45.0	4.00	18	GC □40○-□□	1			
GNDM R/L3225P-518			32	25	170	25	32	45.0	5.00	18	GC □N50○-□□	1	BX0620	6.0	LH050
GNDM R/L3225P-618			32	25	170	25	32	45.0	6.00	18	GC □N60○-□□	1			
GNDM R/L3225P-718			32	25	170	25	32	50.0	7.00	18	GCM N70○-□□	1	BX0620	6.0	LH050
GNDM R/L3225P-818			32	25	170	25	32	50.0	8.00	18	GCM N80○-□□	1			
GNDM R/L3232P-312	●	●	32	32	170	32	32	36.6	3.00	12	GC □30○-□□	1	BX0620	6.0	LH050
GNDM R/L3232P-418	●	●	32	32	170	32	32	45.0	4.00	18	GC □40○-□□	1			
GNDM R/L3232P-518	●	●	32	32	170	32	32	45.0	5.00	18	GC □N50○-□□	1			
GNDM R/L3232P-618	●	●	32	32	170	32	32	45.0	6.00	18	GC □N60○-□□	1			
GNDM R/L3232P-718	●	●	32	32	170	32	32	50.0	7.00	18	GCM N70○-□□	1			
GNDM R/L3232P-818	●	●	32	32	170	32	32	50.0	8.00	18	GCM N80○-□□	1			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F31 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.



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

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

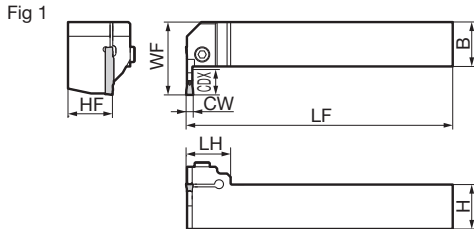
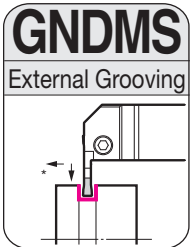


Figure shows right hand (R) tool.

## Holder

## Parts

Dimensions (mm)

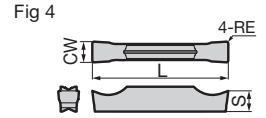
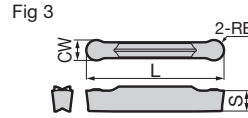
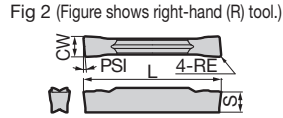
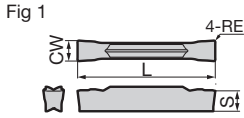
Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Head	Width of Cut	Max. Groove Depth (mm)	Applicable Insert	Fig	Cap Screw		Wrench
	R	L											BX0520	N-m	
GNDMS R/L2020K-310	●	●	20	20	125	32	20	25.0	3.0	10	GC □30○-□□	1	BX0520	5.0	LH040
GNDMS R/L2020K-412	●	●	20	20	125	34	20	25.0	4.0	12	GC □40○-□□	1			
GNDMS R/L2020K-512	●	●	20	20	125	34	20	25.0	5.0	12	GC □N50○-□□	1			
GNDMS R/L2525M-312	●	●	25	25	150	39	25	25.0	3.0	12	GC □30○-□□	1	BX0520	5.0	LH040
GNDMS R/L2525M-414	●	●	25	25	150	41	25	25.0	4.0	14	GC □40○-□□	1			
GNDMS R/L2525M-514	●	●	25	25	150	41	25	25.0	5.0	14	GC □N50○-□□	1			
GNDMS R/L2525M-614	●	●	25	25	150	41	25	25.0	6.0	14	GC □N60○-□□	1			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F31 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.

# GNDM Type / GNDMS Type

**Expansion** Inserts for GNDM Type / GNDMS Type



Coated Carbide / Cermet / Cemented Carbide

### Grooving / Traverse Cutting

Dimensions (mm)

Cat. No.	Material							Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	Width of Cut	Tolerance						
	AC530U	T2500A	RE	L	S										
GCM N3002-MG	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	1	1	
N3004-MG	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8	1	1	
GCM N4002-MG	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0	1	1	
N4004-MG	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0	1	1	
N4008-MG	●	●	●	●	●	●	●	4.0	±0.03	0.8	26.4	4.0	1	1	
GCM N5004-MG	●	●	●	●	●	●	●	5.0	±0.03	0.2	26.4	4.1	1	1	
N5008-MG	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1	5	1	
GCM N6004-MG	●	●	●	●	●	●	●	6.0	±0.03	0.2	26.4	4.5	1	1	
N6008-MG	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5	1	1	
GCM N7004-MG	●	●	●	●	●	●	●	7.0	±0.04	0.4	28.8	5.5	1	1	
N7008-MG	●	●	●	●	●	●	●	7.0	±0.04	0.8	28.8	5.5	1	1	
GCM N8004-MG	●	●	●	●	●	●	●	8.0	±0.04	0.4	28.8	6.0	1	1	
N8008-MG	●	●	●	●	●	●	●	8.0	±0.04	0.8	28.8	6.0	1	1	
GCM N2002-ML	●	●	●	●	●	●	●	2.0	±0.03	0.2	21.1	3.6	1	1	
N3002-ML	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	1	1	
N3004-ML	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8	1	1	
GCM N4002-ML	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0	1	1	
N4004-ML	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0	1	1	
N4008-ML	●	●	●	●	●	●	●	4.0	±0.03	0.8	26.4	4.0	1	1	
GCM N5004-ML	●	●	●	●	●	●	●	5.0	±0.03	0.2	26.4	4.1	1	1	
N5008-ML	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1	5	1	
GCM N6004-ML	●	●	●	●	●	●	●	6.0	±0.03	0.2	26.4	4.5	1	1	
N6008-ML	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5	1	1	
GCM N7004-ML	●	●	●	●	●	●	●	7.0	±0.04	0.4	28.8	5.5	1	1	
N7008-ML	●	●	●	●	●	●	●	7.0	±0.04	0.8	28.8	5.5	1	1	
GCM N8004-ML	●	●	●	●	●	●	●	8.0	±0.04	0.4	28.8	6.0	1	1	
N8008-ML	●	●	●	●	●	●	●	8.0	±0.04	0.8	28.8	6.0	1	1	

### Cut-off (Handed Edge)

Dimensions (mm)

Cat. No.	Material							Lead Angle PSI	Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC8025P	AC8035P	AC830P	AC5015S	AC5025S	AC520U	Width of Cut		Tolerance							
	AC530U	AC1030U	RE	L	S											
GCM R2002-CG-05	●	●	●	●	●	●	5°	2.0	±0.03	0.2	21.1	3.6	2	2		
L2002-CG-05	●	●	●	●	●	●	5°	2.0	±0.03	0.2	21.1	3.6	2	2		
GCM R3002-CG-05	●	●	●	●	●	●	5°	3.0	±0.03	0.2	21.3	3.8	5	2		
L3002-CG-05	●	●	●	●	●	●	5°	3.0	±0.03	0.2	21.3	3.8	2	2		
GCM R4002-CG-05	●	●	●	●	●	●	5°	4.0	±0.04	0.2	26.7	4.0	2	2		
L4002-CG-05	●	●	●	●	●	●	5°	4.0	±0.04	0.2	26.7	4.0	2	2		
GCM R2003-CF-10	●	●	●	●	●	●	10°	2.0	±0.08	0.03	22.4	3.6	2	2		
L2003-CF-10	●	●	●	●	●	●	10°	2.0	±0.08	0.03	22.4	3.6	2	2		
GCM R3003-CF-10	●	●	●	●	●	●	10°	3.0	±0.08	0.03	22.4	3.8	2	2		
L3003-CF-10	●	●	●	●	●	●	10°	3.0	±0.08	0.03	22.4	3.8	5	2		
GCM R2003-CF-15	●	●	●	●	●	●	15°	2.0	±0.08	0.03	22.4	3.6	2	2		
L2003-CF-15	●	●	●	●	●	●	15°	2.0	±0.08	0.03	22.4	3.6	2	2		
GCM R3003-CF-15	●	●	●	●	●	●	15°	3.0	±0.08	0.03	22.4	3.8	2	2		
L3003-CF-15	●	●	●	●	●	●	15°	3.0	±0.08	0.03	22.4	3.8	2	2		

GCMR: Right Handed, GCML: Left Handed

### External Profiling / External Radius Grooving

Dimensions (mm)

Cat. No.	Material							Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	Width of Cut	Tolerance							
	AC520U	AC530U	T2500A	RE	L	S									
GCM N3015-RG	●	●	●	●	●	●	3.0	±0.03	1.5	21.1	3.8	5	3		
N4020-RG	●	●	●	●	●	●	4.0	±0.03	2.0	26.4	4.0	3	3		
GCM N5025-RG	●	●	●	●	●	●	5.0	±0.03	2.5	27.2	4.1	3	3		
N6030-RG	●	●	●	●	●	●	6.0	±0.03	3.0	27.5	4.5	3	3		
GCM N7035-RG	●	●	●	●	●	●	7.0	±0.04	3.5	29.1	5.5	3	3		
N8040-RG	●	●	●	●	●	●	8.0	±0.04	4.0	29.3	6.0	3	3		

### Profiling / Radius Grooving / Necking

Dimensions (mm)

Cat. No.	Material							Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	Width of Cut	Tolerance							
	AC520U	AC530U	RE	L	S										
GCM N2010-RN	●	●	●	●	●	●	2.0	±0.03	1.0	21.7	3.6	5	3		
N3015-RN	●	●	●	●	●	●	3.0	±0.03	1.5	22.4	3.8	3	3		
N4020-RN	●	●	●	●	●	●	4.0	±0.03	2.0	28.0	4.0	3	3		
N5025-RN	●	●	●	●	●	●	5.0	±0.03	2.5	28.1	4.1	3	3		
N6030-RN	●	●	●	●	●	●	6.0	±0.03	3.0	28.1	4.5	3	3		

### Non-Ferrous Metals

Dimensions (mm)

Cat. No.	H10	Material							Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
		AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	Width of Cut	Tolerance							
		AC520U	AC530U	RE	L	S										
GCG N2002-GA	●	●	●	●	●	●	2.0	±0.025	0.2	21.1	3.6	5	4			
N3002-GA	●	●	●	●	●	●	3.0	±0.025	0.2	21.1	3.8	4	4			
GCG N4004-GA	●	●	●	●	●	●	4.0	±0.025	0.4	26.4	4.0	4	4			
N5004-GA	●	●	●	●	●	●	5.0	±0.025	0.4	26.4	4.1	4	4			
N6004-GA	●	●	●	●	●	●	6.0	±0.025	0.4	26.4	4.5	4	4			

### Part Number Suffix Code (Chipbreakers)

Type	Symbol	Applications	Type	Symbol	Applications
Grooving / Traverse Cutting	MG	Multi-functional / General-purpose	Cut-off (Handed Edge)	CG	Cut-off / General-purpose
	ML	Multi-functional / Low-feed		CF	Cut-off / Low-resistance
Grooving / Cut-off	GG	Grooving / General-purpose	External Profiling / External Radius Grooving	RG	Profiling / General-purpose
	GL	Grooving / Low Feed	Profiling / Radius Grooving / Necking	RN	Facing / Necking / General-purpose
	GF	Grooving / Low-resistance	For Non-Ferrous Metals	GA	Non-Ferrous Metals / General-purpose

Chipbreaker Selection **F13** Important Notes **F22** Recommended Cutting Conditions **F19**

Select holders and inserts with matching width of cut (CW). Not usable with GNDIS type holders.

● mark: Standard stocked item (new product/expanded item)

Grooving Tools  
Grooving  
Cut-off  
Threading  
External  
Face  
Internal  
Necking  
CBN



# GNDM-J Type



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

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

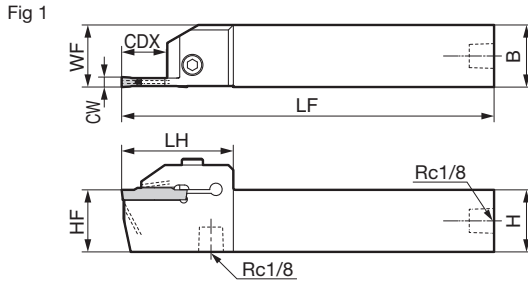
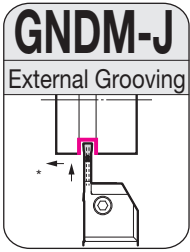


Figure shows right hand (R) tool.

## Holder

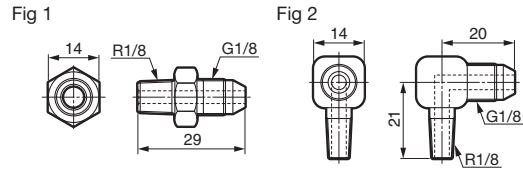
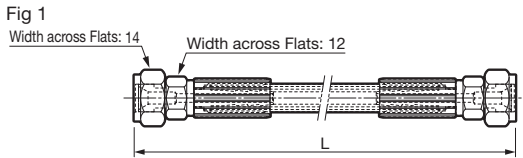
## Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Width of Cut CW	Max. Groove Depth (mm) CDX	Applicable Insert	Fig	Cap Screw	Plug	Wrench	
	R	L											Nm			
<b>GNDM R/L2020K-210J</b>	●	●	20	20	125	20	20	33.6	<b>2.00</b>	<b>10</b>	GC □ 20○○-□□	1	BX0520	6.0	XP02	LH040
<b>R/L2020K-312J</b>	●	●	20	20	125	20	20	36.6	<b>3.00</b>	<b>12</b>	GC □ 30○○-□□	1				
<b>R/L2020K-418J</b>	●	●	20	20	125	20	20	45	<b>4.00</b>	<b>18</b>	GC □ 40○○-□□	1				
<b>R/L2020K-518J</b>	●	●	20	20	125	20	20	45	<b>5.00</b>	<b>18</b>	GC □ N50○○-□□	1				
<b>R/L2020K-618J</b>	●	●	20	20	125	20	20	45	<b>6.00</b>	<b>18</b>	GC □ N60○○-□□	1				
<b>GNDM R/L2525K-210J</b>	●	●	25	25	125	25	25	33.6	<b>2.00</b>	<b>10</b>	GC □ 20○○-□□	1	BX0520	6.0	XP02	LH040
<b>R/L2525K-312J</b>	●	●	25	25	125	25	25	36.6	<b>3.00</b>	<b>12</b>	GC □ 30○○-□□	1				
<b>R/L2525K-418J</b>	●	●	25	25	125	25	25	45	<b>4.00</b>	<b>18</b>	GC □ 40○○-□□	1				
<b>R/L2525K-518J</b>	●	●	25	25	125	25	25	45	<b>5.00</b>	<b>18</b>	GC □ N50○○-□□	1				
<b>R/L2525K-618J</b>	●	●	25	25	125	25	25	45	<b>6.00</b>	<b>18</b>	GC □ N60○○-□□	1				

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F33 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.



## Parts (Hose)

Dimensions (mm)

Cat. No.	Stock	L	Screw Standard	Screw Standard	Fig
<b>J-HOSE-G1/8-G1/8-200</b>	●	200	G1/8	G1/8	1
<b>J-HOSE-G1/8-G1/8-300</b>	●	300	G1/8	G1/8	1

Hoses are sold separately.

Piping Method for Hoses and Connectors **F23**

## Parts (Connector)

Dimensions (mm)

Cat. No.	Stock	Screw Standard	Screw Standard	Fig
<b>J-G1/8-R1/8-00</b>	●	G1/8	R1/8	1
<b>J-G1/8-R1/8-90</b>	●	G1/8	R1/8	2

Connectors are sold separately.

Piping Method for Hoses and Connectors **F23**

Grooving Tools

Grooving

Cut-off

Threading

External

Face

Internal

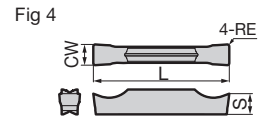
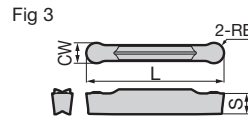
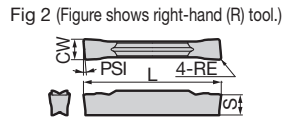
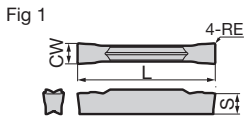
Necking

CBN

# SEC-Grooving Tools GNDM-J Type

Expansion

## Insert for GNDM-J Type



(■ Coated Carbide / ■ Cermet / □ Cemented Carbide)

## Grooving / Traverse Cutting

Dimensions (mm)

Cat. No.	Material										Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	Width of Cut	Tolerance	RE	L						S
	●	●	●	●	●	●	●	●	□	Width of Cut	Tolerance	RE	L						S
GCM N3002-MG	●	●	●	●	●	●	●	●	□	3.0	±0.03	0.2	21.1	3.8	5	1			
N3004-MG	●	●	●	●	●	●	●	□	3.0	±0.03	0.4	21.1	3.8						
GCM N4002-MG	●	●	●	●	●	●	●	●	□	4.0	±0.03	0.2	26.4	4.0	5	1			
N4004-MG	●	●	●	●	●	●	●	□	4.0	±0.03	0.4	26.4	4.0						
GCM N4008-MG	●	●	●	●	●	●	●	●	□	4.0	±0.03	0.8	26.4	4.0	5	1			
N5004-MG	●	●	●	●	●	●	●	□	5.0	±0.03	0.4	26.4	4.1						
GCM N5008-MG	●	●	●	●	●	●	●	□	5.0	±0.03	0.8	26.4	4.1	5	1				
N6004-MG	●	●	●	●	●	●	●	□	6.0	±0.03	0.4	26.4	4.5						
GCM N6008-MG	●	●	●	●	●	●	●	□	6.0	±0.03	0.8	26.4	4.5	5	1				
N2002-ML	□	□	□	□	□	□	□	□	2.0	±0.03	0.2	21.1	3.6						
GCM N3002-ML	●	●	●	●	●	●	●	□	3.0	±0.03	0.2	21.1	3.8	5	1				
N3004-ML	●	●	●	●	●	●	●	□	3.0	±0.03	0.4	21.1	3.8						
GCM N4002-ML	●	●	●	●	●	●	●	□	4.0	±0.03	0.2	26.4	4.0	5	1				
N4004-ML	●	●	●	●	●	●	●	□	4.0	±0.03	0.4	26.4	4.0						
GCM N4008-ML	●	●	●	●	●	●	●	□	4.0	±0.03	0.8	26.4	4.0	5	1				
N5004-ML	●	●	●	●	●	●	●	□	5.0	±0.03	0.4	26.4	4.1						
GCM N5008-ML	●	●	●	●	●	●	●	□	5.0	±0.03	0.8	26.4	4.1	5	1				
N6004-ML	●	●	●	●	●	●	●	□	6.0	±0.03	0.4	26.4	4.5						
GCM N6008-ML	●	●	●	●	●	●	●	□	6.0	±0.03	0.8	26.4	4.5	5	1				

## Grooving / Cut-off

Dimensions (mm)

Cat. No.	Material										Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	Width of Cut	Tolerance	RE	L						S
	●	●	●	●	●	●	●	●	□	Width of Cut	Tolerance	RE	L						S
GCM N2002-GG	□	□	□	□	□	□	□	□	□	2.0	±0.03	0.2	21.1	3.6	5	1			
GCM N3002-GG	●	●	●	●	●	●	●	□	3.0	±0.03	0.2	21.1	3.8						
GCM N3004-GG	●	●	●	●	●	●	●	□	3.0	±0.03	0.4	21.1	3.8	5	1				
GCM N4002-GG	●	●	●	●	●	●	●	□	4.0	±0.03	0.2	26.4	4.0						
GCM N4004-GG	●	●	●	●	●	●	●	□	4.0	±0.03	0.4	26.4	4.0	5	1				
GCM N5002-GG	●	●	●	●	●	●	●	□	5.0	±0.03	0.2	26.4	4.1						
GCM N5004-GG	●	●	●	●	●	●	●	□	5.0	±0.03	0.4	26.4	4.1	5	1				
GCM N6002-GG	●	●	●	●	●	●	●	□	6.0	±0.03	0.2	26.4	4.5						
GCM N6004-GG	●	●	●	●	●	●	●	□	6.0	±0.03	0.4	26.4	4.5	5	1				
GCM N2002-GL	●	●	●	●	●	●	●	□	2.0	±0.03	0.2	21.1	3.6						
GCM N2004-GL	●	●	●	●	●	●	●	□	2.0	±0.03	0.4	21.1	3.6	5	1				
GCM N3002-GL	●	●	●	●	●	●	●	□	3.0	±0.03	0.2	21.1	3.8						
GCM N3004-GL	●	●	●	●	●	●	●	□	3.0	±0.03	0.4	21.1	3.8	5	1				
GCM N4002-GL	●	●	●	●	●	●	●	□	4.0	±0.03	0.2	26.4	4.0						
GCM N4004-GL	●	●	●	●	●	●	●	□	4.0	±0.03	0.4	26.4	4.0	5	1				
GCM N5002-GL	●	●	●	●	●	●	●	□	5.0	±0.03	0.2	26.4	4.1						
GCM N5004-GL	●	●	●	●	●	●	●	□	5.0	±0.03	0.4	26.4	4.1	5	1				
GCM N6002-GL	●	●	●	●	●	●	●	□	6.0	±0.03	0.2	26.4	4.5						
GCM N6004-GL	●	●	●	●	●	●	●	□	6.0	±0.03	0.4	26.4	4.5	5	1				
GCM N125005-GF	□	□	□	□	□	□	□	□	1.25	±0.03	0.05	17.4	3.2						
GCM N150005-GF	□	□	□	□	□	□	□	□	1.5	±0.03	0.05	17.4	3.7	5	1				
GCM N2002-GF	●	●	●	●	●	●	●	□	2.0	±0.03	0.2	21.1	3.6						
GCM N2004-GF	●	●	●	●	●	●	●	□	2.0	±0.03	0.4	21.1	3.6	5	1				
GCM N3002-GF	●	●	●	●	●	●	●	□	3.0	±0.03	0.2	21.1	3.8						
GCM N3004-GF	●	●	●	●	●	●	●	□	3.0	±0.03	0.4	21.1	3.8	5	1				
GCM N4002-GF	●	●	●	●	●	●	●	□	4.0	±0.03	0.2	26.4	4.0						
GCM N4004-GF	●	●	●	●	●	●	●	□	4.0	±0.03	0.4	26.4	4.0	5	1				
GCM N5002-GF	●	●	●	●	●	●	●	□	5.0	±0.03	0.2	26.4	4.1						
GCM N5004-GF	●	●	●	●	●	●	●	□	5.0	±0.03	0.4	26.4	4.1	5	1				
GCM N6002-GF	●	●	●	●	●	●	●	□	6.0	±0.03	0.2	26.4	4.5						
GCM N6004-GF	●	●	●	●	●	●	●	□	6.0	±0.03	0.4	26.4	4.5	5	1				

## Cut-off (Handed Edge)

Dimensions (mm)

Cat. No.	Material										Lead Angle PSI	Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	AC1030U	Width of Cut		Tolerance	RE	L						S
	●	●	●	●	●	●	●	●	□	Width of Cut		Tolerance	RE	L						S
GCM R2002-CG-05	●	●	●	●	●	●	●	●	□	5°	2.0	±0.03	0.2	21.1	3.6	5	2			
L2002-CG-05	●	●	●	●	●	●	●	□	5°	2.0	±0.03	0.2	21.1	3.6						
GCM R3002-CG-05	●	●	●	●	●	●	●	●	□	5°	3.0	±0.03	0.2	21.3	3.8	5	2			
L3002-CG-05	●	●	●	●	●	●	●	□	5°	3.0	±0.03	0.2	21.3	3.8						
GCM R4002-CG-05	●	●	●	●	●	●	●	●	□	5°	4.0	±0.04	0.2	26.7	4.0	5	2			
L4002-CG-05	●	●	●	●	●	●	●	□	5°	4.0	±0.04	0.2	26.7	4.0						
GCM R20003-CF-10	□	□	□	□	□	□	□	□	□	10°	2.0	±0.08	0.03	22.4	3.6	5	2			
L20003-CF-10	□	□	□	□	□	□	□	□	□	10°	2.0	±0.08	0.03	22.4	3.6					
GCM R30003-CF-10	□	□	□	□	□	□	□	□	□	10°	3.0	±0.08	0.03	22.4	3.8	5	2			
L30003-CF-10	□	□	□	□	□	□	□	□	□	10°	3.0	±0.08	0.03	22.4	3.8					
GCM R20003-CF-15	□	□	□	□	□	□	□	□	□	15°	2.0	±0.08	0.03	22.4	3.6	5	2			
L20003-CF-15	□	□	□	□	□	□	□	□	□	15°	2.0	±0.08	0.03	22.4	3.6					
GCM R30003-CF-15	□	□	□	□	□	□	□	□	□	15°	3.0	±0.08	0.03	22.4	3.8	5	2			
L30003-CF-15	□	□	□	□	□	□	□	□	□	15°	3.0	±0.08	0.03	22.4	3.8					

GCMR: Right Handed, GCML: Left Handed

## External Profiling / External Radius Grooving

Dimensions (mm)

Cat. No.	Material										Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	Width of Cut	Tolerance	RE	L						S
	●	●	●	●	●	●	●	●	□	Width of Cut	Tolerance	RE	L						S
GCM N3015-RG	●	●	●	●	●	●	●	●	□	3.0	±0.03	1.5	21.1	3.8	5	3			
N4020-RG	●	●	●	●	●	●	●	□	4.0	±0.03	2.0	26.4	4.0						
GCM N5025-RG	●	●	●	●	●	●	●	□	5.0	±0.03	2.5	27.2	4.1	5	3				
N6030-RG	●	●	●	●	●	●	●	□	6.0	±0.03	3.0	27.5	4.5						

## Profiling / Radius Grooving / Necking

Dimensions (mm)

Cat. No.	Material										Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	Width of Cut	Tolerance	RE	L	S					
	●	●	●	●	●	●	●	●	Width of Cut	Tolerance	RE	L	S					



# GNDL Type / GNDLS Type



External Deep Grooving & Cut-off Clamp-on

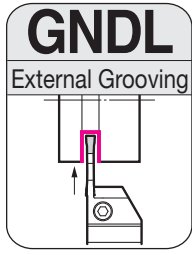


Fig 1

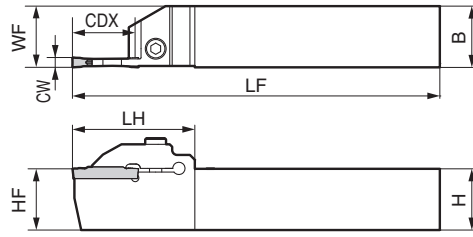


Figure shows right hand (R) tool.

Grooving Tools

F

Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Width of Cut CW	Max. Groove Depth (mm) CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L											BX0520	N-m	
GNDL R/L2020K-1.2516	●	●	20	20	125	20	20	38.0	1.25	16	GCM N125005-GF	1	BX0520	5.0	LH040
GNDL R/L2020K-1.516	●	●	20	20	125	20	20	38.0	1.50	16	GCM N150005-GF	1			
GNDL R/L2020K-220	●	●	20	20	125	20	20	44.5	2.00	20(18)	GC □2000-□□	1			
GNDL R/L2020K-320	●	●	20	20	125	20	20	44.5	3.00	20(18)	GC □3000-□□	1			
GNDL R/L2020K-425	●	●	20	20	125	20	20	50.0	4.00	25(23)	GC □4000-□□	1			
GNDL R/L2020K-525	●	●	20	20	125	20	20	50.0	5.00	25(23)	GC □5000-□□	1			
GNDL R/L2020K-625	●	●	20	20	125	20	20	50.0	6.00	25(23)	GC □6000-□□	1			
GNDL R/L2525M-1.2516	●	●	25	25	150	25	25	40.0	1.25	16	GCM N125005-GF	1	BX0520	5.0	LH040
GNDL R/L2525M-1.516	●	●	25	25	150	25	25	40.0	1.50	16	GCM N150005-GF	1			
GNDL R/L2525M-220	●	●	25	25	150	25	25	44.5	2.00	20(18)	GC □2000-□□	1			
GNDL R/L2525M-320	●	●	25	25	150	25	25	44.5	3.00	20(18)	GC □3000-□□	1			
GNDL R/L2525M-425	●	●	25	25	150	25	25	50.0	4.00	25(23)	GC □4000-□□	1			
GNDL R/L2525M-525	●	●	25	25	150	25	25	50.0	5.00	25(23)	GC □5000-□□	1			
GNDL R/L2525M-625	●	●	25	25	150	25	25	50.0	6.00	25(23)	GC □6000-□□	1			
GNDL R/L3225P-320			32	25	170	25	32	44.5	3.00	20(18)	GC □3000-□□	1	BX0520	5.0	LH040
GNDL R/L3225P-425			32	25	170	25	32	50.0	4.00	25(23)	GC □4000-□□	1			
GNDL R/L3225P-525			32	25	170	25	32	50.0	5.00	25(23)	GC □5000-□□	1			
GNDL R/L3225P-625			32	25	170	25	32	50.0	6.00	25(23)	GC □6000-□□	1			
GNDL R/L3225P-725			32	25	170	25	32	50.0	7.00	25(23)	GCM N7000-□□	1			
GNDL R/L3225P-825			32	25	170	25	32	50.0	8.00	25(23)	GCM N8000-□□	1			
GNDL R/L3232P-320	●	●	32	32	170	32	32	44.5	3.00	20(18)	GC □3000-□□	1	BX0620	6.0	LH050
GNDL R/L3232P-425	●	●	32	32	170	32	32	50.0	4.00	25(23)	GC □4000-□□	1			
GNDL R/L3232P-525	●	●	32	32	170	32	32	50.0	5.00	25(23)	GC □5000-□□	1			
GNDL R/L3232P-625	●	●	32	32	170	32	32	50.0	6.00	25(23)	GC □6000-□□	1			
GNDL R/L3232P-725	●	●	32	32	170	32	32	50.0	7.00	25(23)	GCM N7000-□□	1			
GNDL R/L3232P-825	●	●	32	32	170	32	32	50.0	8.00	25(23)	GCM N8000-□□	1			

Combine the insert with a holder such that the width of cut (CW) matches. Dimensions in parentheses under maximum groove depth are for profiling inserts (RG type/RN type chipbreakers). Refer to F35 for applicable inserts. The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.



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

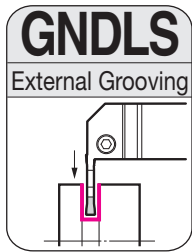


Fig 1

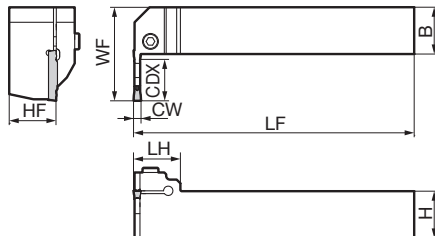


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Width of Cut CW	Max. Groove Depth (mm) CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L											BX0520	N-m	
GNDLS R/L2020K-216	●	●	20	20	125	38	20	25	2.0	16	GC □2000-□□	1	BX0520	5.0	LH040
GNDLS R/L2020K-316	●	●	20	20	125	38	20	25	3.0	16	GC □3000-□□	1			
GNDLS R/L2525M-218	●	●	25	25	150	45	25	25	2.0	18	GC □2000-□□	1			
GNDLS R/L2525M-318	●	●	25	25	150	45	25	25	3.0	18	GC □3000-□□	1			
GNDLS R/L2525M-423	●	●	25	25	150	50	25	25	4.0	23	GC □4000-□□	1			
GNDLS R/L2525M-523	●	●	25	25	150	50	25	25	5.0	23	GC □5000-□□	1			
GNDLS R/L2525M-623	●	●	25	25	150	50	25	25	6.0	23	GC □6000-□□	1			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F35 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.



# GNDL-J Type



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

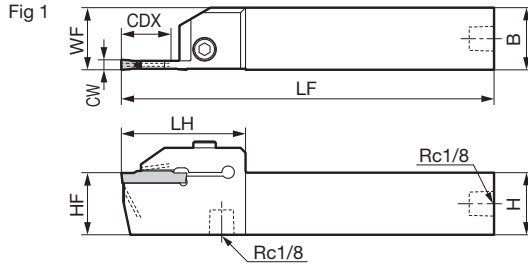
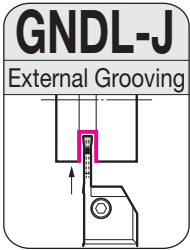


Figure shows right hand (R) tool.

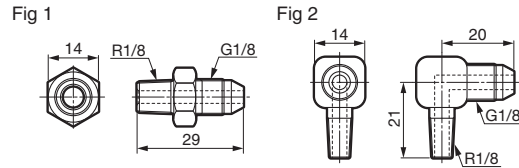
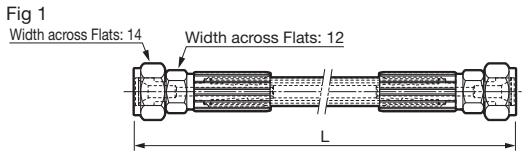
## Holder

## Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Width of Cut CW	Max. Groove Depth (mm) CDX	Applicable Insert	Fig	Cap Screw		Plug	Wrench
	R	L											N·m			
<b>GNDL R/L2020K-220J</b>	●	●	20	20	125	20	20	44.5	<b>2.00</b>	<b>20(18)</b>	GC □ 20○ ○ - □ □	1	BX0520	<b>6.0</b>	XP02	LH040
<b>R/L2020K-320J</b>	●	●	20	20	125	20	20	44.5	<b>3.00</b>	<b>20(18)</b>	GC □ 30○ ○ - □ □	1				
<b>R/L2020K-425J</b>	●	●	20	20	125	20	20	50	<b>4.00</b>	<b>25(23)</b>	GC □ 40○ ○ - □ □	1				
<b>R/L2020K-525J</b>	●	●	20	20	125	20	20	50	<b>5.00</b>	<b>25(23)</b>	GC □ N50○ ○ - □ □	1				
<b>R/L2020K-625J</b>	●	●	20	20	125	20	20	50	<b>6.00</b>	<b>25(23)</b>	GC □ N60○ ○ - □ □	1				
<b>GNDL R/L2525K-220J</b>	●	●	25	25	125	25	25	44.5	<b>2.00</b>	<b>20(18)</b>	GC □ 20○ ○ - □ □	1	BX0520	<b>6.0</b>	XP02	LH040
<b>R/L2525K-320J</b>	●	●	25	25	125	25	25	44.5	<b>3.00</b>	<b>20(18)</b>	GC □ 30○ ○ - □ □	1				
<b>R/L2525K-425J</b>	●	●	25	25	125	25	25	50	<b>4.00</b>	<b>25(23)</b>	GC □ 40○ ○ - □ □	1				
<b>R/L2525K-525J</b>	●	●	25	25	125	25	25	50	<b>5.00</b>	<b>25(23)</b>	GC □ N50○ ○ - □ □	1				
<b>R/L2525K-625J</b>	●	●	25	25	125	25	25	50	<b>6.00</b>	<b>25(23)</b>	GC □ N60○ ○ - □ □	1				

Combine the insert with a holder such that the width of cut (CW) matches. Dimensions in parentheses under maximum groove depth are for profiling inserts (RG type/RN type chipbreakers). Refer to F37 for applicable inserts. The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.

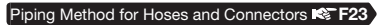


## Parts (Hose)

Dimensions (mm)

Cat. No.	Stock	L	Screw Standard	Screw Standard	Fig
<b>J-HOSE-G1/8-G1/8-200</b>	●	200	G1/8	G1/8	1
<b>J-HOSE-G1/8-G1/8-300</b>	●	300	G1/8	G1/8	1

Hoses are sold separately.

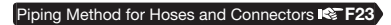


## Parts (Connector)

Dimensions (mm)

Cat. No.	Stock	Screw Standard	Screw Standard	Fig
<b>J-G1/8-R1/8-00</b>	●	G1/8	R1/8	1
<b>J-G1/8-R1/8-90</b>	●	G1/8	R1/8	2

Connectors are sold separately.



# SEC-Grooving Tools GNDL-J Type

Expansion

## Insert for GNDL-J Type

Fig 1

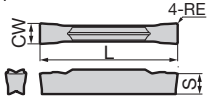


Fig 2 (Figure shows right-hand (R) tool.)

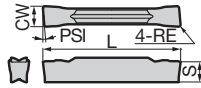


Fig 3

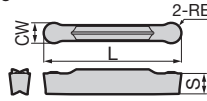
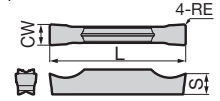


Fig 4



( Coated Carbide / Cermet / Cemented Carbide)

## Grooving / Traverse Cutting

Dimensions (mm)

Cat. No.	Material										Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	Width of Cut	Tolerance							
	RE	L	S	RE	L	S												
GCM N3002-MG	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	5	1	
N3004-MG	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8			
GCM N4002-MG	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0	5	1	
N4004-MG	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0			
GCM N4008-MG	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.8	26.4	4.0	5	1	
N5004-MG	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1			
GCM N5008-MG	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.8	26.4	4.1	5	1	
N6004-MG	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5			
GCM N6008-MG	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.8	26.4	4.5	5	1	
N2002-ML	●	●	●	●	●	●	●	●	●	●	2.0	±0.03	0.2	21.1	3.6			
GCM N3002-ML	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	5	1	
N3004-ML	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8			
GCM N4002-ML	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0	5	1	
N4004-ML	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0			
GCM N4008-ML	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.8	26.4	4.0	5	1	
N5004-ML	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1			
GCM N5008-ML	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.8	26.4	4.1	5	1	
N6004-ML	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5			
GCM N6008-ML	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.8	26.4	4.5	5	1	
N6008-ML	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.8	26.4	4.5			

## Cut-off (Handed Edge)

Dimensions (mm)

Cat. No.	Material										Lead Angle PSI	Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	AC1030U	Width of Cut		Tolerance							
	RE	L	S	RE	L	S													
GCM R2002-CG-05	●	●	●	●	●	●	●	●	●	●	5°	2.0	±0.03	0.2	21.1	3.6	5	2	
L2002-CG-05	●	●	●	●	●	●	●	●	●	●	5°	2.0	±0.03	0.2	21.1	3.6			
GCM R3002-CG-05	●	●	●	●	●	●	●	●	●	●	5°	3.0	±0.03	0.2	21.3	3.8	5	2	
L3002-CG-05	●	●	●	●	●	●	●	●	●	●	5°	3.0	±0.03	0.2	21.3	3.8			
GCM R4002-CG-05	●	●	●	●	●	●	●	●	●	●	5°	4.0	±0.04	0.2	26.7	4.0	5	2	
L4002-CG-05	●	●	●	●	●	●	●	●	●	●	5°	4.0	±0.04	0.2	26.7	4.0			
GCM R20003-CF-10	●	●	●	●	●	●	●	●	●	●	10°	2.0	±0.08	0.03	22.4	3.6	5	2	
L20003-CF-10	●	●	●	●	●	●	●	●	●	●	10°	2.0	±0.08	0.03	22.4	3.6			
GCM R30003-CF-10	●	●	●	●	●	●	●	●	●	●	10°	3.0	±0.08	0.03	22.4	3.8	5	2	
L30003-CF-10	●	●	●	●	●	●	●	●	●	●	10°	3.0	±0.08	0.03	22.4	3.8			
GCM R20003-CF-15	●	●	●	●	●	●	●	●	●	●	15°	2.0	±0.08	0.03	22.4	3.6	5	2	
L20003-CF-15	●	●	●	●	●	●	●	●	●	●	15°	2.0	±0.08	0.03	22.4	3.6			
GCM R30003-CF-15	●	●	●	●	●	●	●	●	●	●	15°	3.0	±0.08	0.03	22.4	3.8	5	2	
L30003-CF-15	●	●	●	●	●	●	●	●	●	●	15°	3.0	±0.08	0.03	22.4	3.8			

GCMR: Right Handed, GCML: Left Handed

## Grooving / Cut-off

Dimensions (mm)

Cat. No.	Material										Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	Width of Cut	Tolerance							
	RE	L	S	RE	L	S												
GCM N2002-GG	●	●	●	●	●	●	●	●	●	●	2.0	±0.03	0.2	21.1	3.6	5	1	
GCM N3002-GG	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8			
GCM N3004-GG	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8	5	1	
GCM N4002-GG	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0			
GCM N4004-GG	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0	5	1	
GCM N5002-GG	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.2	26.4	4.1			
GCM N5004-GG	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1	5	1	
GCM N6002-GG	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.2	26.4	4.5			
GCM N6004-GG	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5	5	1	
GCM N2002-GL	●	●	●	●	●	●	●	●	●	●	2.0	±0.03	0.2	21.1	3.6			
GCM N2004-GL	●	●	●	●	●	●	●	●	●	●	2.0	±0.03	0.4	21.1	3.6	5	1	
GCM N3002-GL	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8			
GCM N3004-GL	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8	5	1	
GCM N4002-GL	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0			
GCM N4004-GL	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0	5	1	
GCM N5002-GL	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.2	26.4	4.1			
GCM N5004-GL	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1	5	1	
GCM N6002-GL	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.2	26.4	4.5			
GCM N6004-GL	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5	5	1	
GCM N125005-GF	●	●	●	●	●	●	●	●	●	●	1.25	±0.03	0.05	17.4	3.2			
GCM N150005-GF	●	●	●	●	●	●	●	●	●	●	1.5	±0.03	0.05	17.4	3.7	5	1	
GCM N2002-GF	●	●	●	●	●	●	●	●	●	●	2.0	±0.03	0.2	21.1	3.6			
GCM N2004-GF	●	●	●	●	●	●	●	●	●	●	2.0	±0.03	0.4	21.1	3.6	5	1	
GCM N3002-GF	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8			
GCM N3004-GF	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8	5	1	
GCM N4002-GF	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0			
GCM N4004-GF	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0	5	1	
GCM N5002-GF	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.2	26.4	4.1			
GCM N5004-GF	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1	5	1	
GCM N6002-GF	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.2	26.4	4.5			
GCM N6004-GF	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5	5	1	
N6004-GF	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5			

## External Profiling / External Radius Grooving

Dimensions (mm)

Cat. No.	Material										Width of Cut CW			Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	Width of Cut	Tolerance							
	RE	L	S	RE	L	S												
GCM N3015-RG	●	●	●	●	●	●	●	●	●	●	3.0	±0.03	1.5	21.1	3.8	5	3	
N4020-RG	●	●	●	●	●	●	●	●	●	●	4.0	±0.03	2.0	26.4	4.0			
GCM N5025-RG	●	●	●	●	●	●	●	●	●	●	5.0	±0.03	2.5	27.2	4.1	5	3	
N6030-RG	●	●	●	●	●	●	●	●	●	●	6.0	±0.03	3.0	27.5	4.5			

## Profiling / Radius Grooving / Necking



# GNDN Type



Clamp-on for Necking

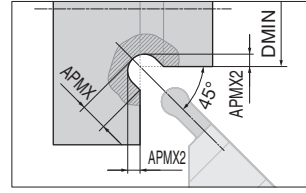
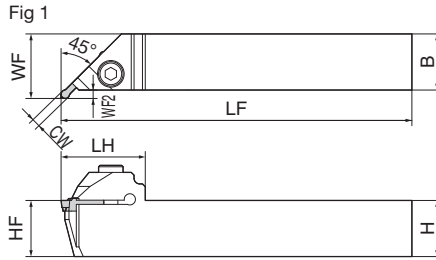
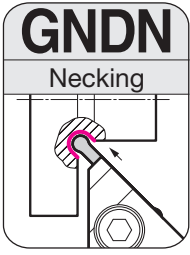


Figure shows right hand (R) tool.

## Holder

## Parts Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Offset WF2	Min. Work Dia. DMIN	Width of Cut CW	APMX	APMX2	Applicable Insert	Fig	Parts		
	R	L														Cap Screw	Wrench	
GNDN R/L2020K-215-020	●	●	20	20	125	23	20	35	3.0	20	2.0	1.5	0.64	GCM N2010-RN	1	BX0520	5.0	LH040
GNDN R/L2020K-320-020	●	●	20	20	125	23	20	35	3.0	20	3.0	2.0	0.79	GCM N3015-RN	1			
GNDN R/L2020K-430-030	●	●	20	20	125	24	20	37	4.0	30	4.0	3.0	1.29	GCM N4020-RN	1			
GNDN R/L2020K-535-030	●	●	20	20	125	25	20	40	5.0	30	5.0	3.5	1.44	GCM N5025-RN	1			
GNDN R/L2020K-640-030	●	●	20	20	125	25	20	40	5.0	30	6.0	4.0	1.59	GCM N6030-RN	1			
GNDN R/L2525M-215-020	●	●	25	25	150	28	25	35	3.0	20	2.0	1.5	0.64	GCM N2010-RN	1	BX0520	5.0	LH040
GNDN R/L2525M-320-020	●	●	25	25	150	28	25	35	3.0	20	3.0	2.0	0.79	GCM N3015-RN	1			
GNDN R/L2525M-430-030	●	●	25	25	150	29	25	37	4.0	30	4.0	3.0	1.29	GCM N4020-RN	1			
GNDN R/L2525M-535-030	●	●	25	25	150	30	25	40	5.0	30	5.0	3.5	1.44	GCM N5025-RN	1			
GNDN R/L2525M-640-030	●	●	25	25	150	30	25	40	5.0	30	6.0	4.0	1.59	GCM N6030-RN	1			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F39 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.

## Identification Code

# GND N R 20 20 K - 2 15 - 020

Series	Application Symbol	Feed Direction	Shank Height (mm)	Shank Width (mm)	Shank Length	Width of Cut (mm)	APMX ×10 (mm)	Min. Work Dia. (mm)
GND	N	R	20	20	K	2	15	020



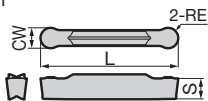
# GNDN Type



Insert for GNDN Type

(  Coated Carbide /  Cermet /  Cemented Carbide)

Fig 1



## Profiling / Radius Grooving / Necking

Dimensions (mm)

Cat. No.	Material						Width of Cut		Corner Radius	Overall Length	Thickness	Pcs/Pack	Fig
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	Width of Cut	Tolerance	RE	L	S		
	AC520U	AC530U	Width of Cut	Tolerance	RE	L			S				
GCM N2010-RN	—	—	—	—	—	—	2.0	±0.03	1.0	21.7	3.6	5	1
N3015-RN	●	●	●	●	●	●	3.0	±0.03	1.5	22.4	3.8		1
N4020-RN	●	●	●	●	●	●	4.0	±0.03	2.0	28.0	4.0		1
N5025-RN	●	●	●	●	●	●	5.0	±0.03	2.5	28.1	4.1		1
N6030-RN	●	●	●	●	●	●	6.0	±0.03	3.0	28.1	4.5		1
													1

- Grooving Tools
- L
- Grooving
- Cut-off
- Threading
- External
- Face
- Internal
- Necking
- CBN

### Part Number Suffix Code (Chipbreakers)

Type	Symbol	Applications
Profiling / Radius Grooving / Necking	RN	Facing / Necking / General-purpose

Chipbreaker Selection **F13** Important Notes **F22** Recommended Cutting Conditions **F19**

Select holders and inserts with matching width of cut (CW). Not usable with GNDIS type holders.

● mark: Standard stocked item (new product/expanded item)

# SEC-Grooving Tools

## GNDF Type



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

Clamp-on for Face Grooving

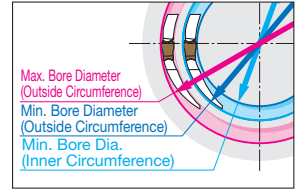
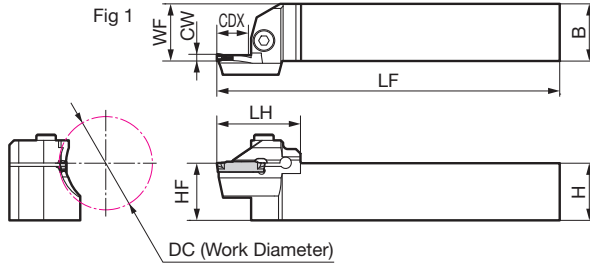
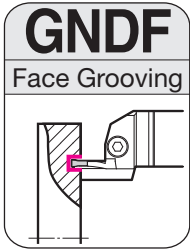


Figure shows right hand (R) tool.

### Holder

### Parts

Dimensions (mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Head	Work Dia.	Min. bore Diameter Inner Circumference	Width of Cut	Max. Groove Depth (mm)	Applicable Insert	Fig	Cap Screw		Wrench
	R	L													H	B	
GNDF R/L2020K-312-035	●	●	20	20	125	20	20	35.6	35 to 45	29	3.0	12	GC□ N300○-□□	1	BX0520	5.0	LH040
GNDF R/L2020K-312-040	●	●	20	20	125	20	20	35.6	40 to 55	34	3.0	12					
GNDF R/L2020K-318-050	●	●	20	20	125	20	20	41.6	50 to 70	44	3.0	18					
GNDF R/L2020K-318-065	●	●	20	20	125	20	20	41.6	65 to 100	59	3.0	18					
GNDF R/L2020K-318-090	●	●	20	20	125	20	20	41.6	90 to 150	84	3.0	18					
GNDF R/L2020K-318-140	●	●	20	20	125	20	20	41.6	140 to 200	134	3.0	18					
GNDF R/L2020K-318-180	●	●	20	20	125	20	20	41.6	180 to 300	174	3.0	18					
GNDF R/L2020K-418-040	●	●	20	20	125	20	20	41.6	40 to 55	32	4.0	18	GC□ N400○-□□	1	BX0520	5.0	LH040
GNDF R/L2020K-423-050	●	●	20	20	125	20	20	46.6	50 to 70	42	4.0	23					
GNDF R/L2020K-423-065	●	●	20	20	125	20	20	46.6	65 to 90	57	4.0	23					
GNDF R/L2020K-423-085	●	●	20	20	125	20	20	46.6	85 to 130	77	4.0	23					
GNDF R/L2020K-423-125	●	●	20	20	125	20	20	46.6	125 to 200	117	4.0	23					
GNDF R/L2020K-423-180	●	●	20	20	125	20	20	46.6	180 to 300	172	4.0	23					
GNDF R/L2020K-423-280	●	●	20	20	125	20	20	46.6	280 to 1000	272	4.0	23					
GNDF R/L2020K-523-050	●	●	20	20	125	20	20	46.6	50 to 70	40	5.0	23	GC□ N500○-□□	1	BX0520	5.0	LH040
GNDF R/L2020K-523-065	●	●	20	20	125	20	20	46.6	65 to 90	55	5.0	23					
GNDF R/L2020K-523-085	●	●	20	20	125	20	20	46.6	85 to 130	75	5.0	23					
GNDF R/L2020K-523-125	●	●	20	20	125	20	20	46.6	125 to 200	115	5.0	23					
GNDF R/L2020K-523-180	●	●	20	20	125	20	20	46.6	180 to 300	170	5.0	23					
GNDF R/L2020K-523-280	●	●	20	20	125	20	20	46.6	280 to 1000	270	5.0	23					
GNDF R/L2020K-623-050	●	●	20	20	125	20	20	46.6	50 to 75	38	6.0	23	GC□ N600○-□□	1	BX0520	5.0	LH040
GNDF R/L2020K-623-070	●	●	20	20	125	20	20	46.6	70 to 110	58	6.0	23					
GNDF R/L2020K-623-100	●	●	20	20	125	20	20	46.6	100 to 200	88	6.0	23					
GNDF R/L2020K-623-180	●	●	20	20	125	20	20	46.6	180 to 300	168	6.0	23					
GNDF R/L2020K-623-280	●	●	20	20	125	20	20	46.6	280 to 1000	268	6.0	23					
GNDF R/L2525M-312-035	●	●	25	25	150	25	25	35.6	35 to 45	29	3.0	12					
GNDF R/L2525M-312-040	●	●	25	25	150	25	25	35.6	40 to 55	34	3.0	12					
GNDF R/L2525M-318-050	●	●	25	25	150	25	25	41.6	50 to 70	44	3.0	18					
GNDF R/L2525M-318-065	●	●	25	25	150	25	25	41.6	65 to 100	59	3.0	18					
GNDF R/L2525M-318-090	●	●	25	25	150	25	25	41.6	90 to 150	84	3.0	18					
GNDF R/L2525M-318-140	●	●	25	25	150	25	25	41.6	140 to 200	134	3.0	18					
GNDF R/L2525M-318-180	●	●	25	25	150	25	25	41.6	180 to 300	174	3.0	18					
GNDF R/L2525M-418-040	●	●	25	25	150	25	25	41.6	40 to 55	32	4.0	18	GC□ N400○-□□	1	BX0520	5.0	LH040
GNDF R/L2525M-423-050	●	●	25	25	150	25	25	46.6	50 to 70	42	4.0	23					
GNDF R/L2525M-423-065	●	●	25	25	150	25	25	46.6	65 to 90	57	4.0	23					
GNDF R/L2525M-423-085	●	●	25	25	150	25	25	46.6	85 to 130	77	4.0	23					
GNDF R/L2525M-423-125	●	●	25	25	150	25	25	46.6	125 to 200	117	4.0	23					
GNDF R/L2525M-423-180	●	●	25	25	150	25	25	46.6	180 to 300	172	4.0	23					
GNDF R/L2525M-423-280	●	●	25	25	150	25	25	46.6	280 to 1000	272	4.0	23					
GNDF R/L2525M-523-050	●	●	25	25	150	25	25	46.6	50 to 70	40	5.0	23	GC□ N500○-□□	1	BX0520	5.0	LH040
GNDF R/L2525M-523-065	●	●	25	25	150	25	25	46.6	65 to 90	55	5.0	23					
GNDF R/L2525M-523-085	●	●	25	25	150	25	25	46.6	85 to 130	75	5.0	23					
GNDF R/L2525M-523-125	●	●	25	25	150	25	25	46.6	125 to 200	115	5.0	23					
GNDF R/L2525M-523-180	●	●	25	25	150	25	25	46.6	180 to 300	170	5.0	23					
GNDF R/L2525M-523-280	●	●	25	25	150	25	25	46.6	280 to 1000	270	5.0	23					
GNDF R/L2525M-623-050	●	●	25	25	150	25	25	46.6	50 to 75	38	6.0	23	GC□ N600○-□□	1	BX0520	5.0	LH040
GNDF R/L2525M-623-070	●	●	25	25	150	25	25	46.6	70 to 110	58	6.0	23					
GNDF R/L2525M-623-100	●	●	25	25	150	25	25	46.6	100 to 200	88	6.0	23					
GNDF R/L2525M-623-180	●	●	25	25	150	25	25	46.6	180 to 300	168	6.0	23					
GNDF R/L2525M-623-280	●	●	25	25	150	25	25	46.6	280 to 1000	268	6.0	23					

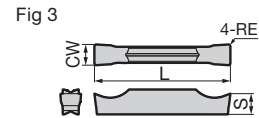
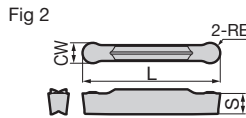
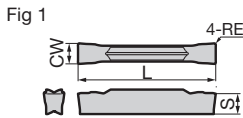
Combine the insert with a holder such that the width of cut (CW) matches. Refer to F41 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.



Insert for GNDF Type

(      Coated Carbide /      Cermet /  Cemented Carbide)



Grooving / Traverse Cutting

Dimensions (mm)

Cat. No.	Width of Cut CW							Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig			
	Width of Cut		Tolerance	RE	L	S	Pcs/Pack								
	Width of Cut	Tolerance													
GCM N3002-MG N3004-MG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	3.0	±0.03	0.2	21.1	3.8	1
GCM N4002-MG N4004-MG N4008-MG										4.0	±0.03	0.2	26.4	4.0	1
GCM N5004-MG N5008-MG										5.0	±0.03	0.4	26.4	4.1	1
GCM N6004-MG N6008-MG										6.0	±0.03	0.4	26.4	4.5	1
GCM N3002-ML N3004-ML										3.0	±0.03	0.2	21.1	3.8	1
GCM N4002-ML N4004-ML N4008-ML										4.0	±0.03	0.2	26.4	4.0	1
GCM N5004-ML N5008-ML										5.0	±0.03	0.4	26.4	4.1	1
GCM N6004-ML N6008-ML										6.0	±0.03	0.4	26.4	4.5	1

Profiling / Radius Grooving / Necking

Dimensions (mm)

Cat. No.	Width of Cut CW							Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig			
	Width of Cut		Tolerance	RE	L	S	Pcs/Pack								
	Width of Cut	Tolerance													
GCM N3015-RN N4020-RN N5025-RN N6030-RN	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U		3.0	±0.03	1.5	22.4	3.8	2
										4.0	±0.03	2.0	28.0	4.0	2
										5.0	±0.03	2.5	28.1	4.1	2
										6.0	±0.03	3.0	28.1	4.5	2

Non-Ferrous Metals

Dimensions (mm)

Cat. No.	H10	Width of Cut CW							Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig		
		Width of Cut		Tolerance	RE	L	S	Pcs/Pack							
		Width of Cut	Tolerance												
GCG N2002-GA N3002-GA										2.0	±0.025	0.2	21.1	3.6	3
GCG N4004-GA N5004-GA N6004-GA										3.0	±0.025	0.2	21.1	3.8	3
										4.0	±0.025	0.4	26.4	4.0	3
										5.0	±0.025	0.4	26.4	4.1	3
										6.0	±0.025	0.4	26.4	4.5	3

Grooving / Cut-off

Dimensions (mm)

Cat. No.	Width of Cut CW							Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig			
	Width of Cut		Tolerance	RE	L	S	Pcs/Pack								
	Width of Cut	Tolerance													
GCM N3002-GG N3004-GG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	3.0	±0.03	0.2	21.1	3.8	1
GCM N4002-GG N4004-GG										4.0	±0.03	0.2	26.4	4.0	1
GCM N5002-GG N5004-GG										5.0	±0.03	0.2	26.4	4.1	1
GCM N6002-GG N6004-GG										6.0	±0.03	0.2	26.4	4.5	1
GCM N3002-GL N3004-GL										3.0	±0.03	0.2	21.1	3.8	1
GCM N4002-GL N4004-GL										4.0	±0.03	0.2	26.4	4.0	1
GCM N5002-GL N5004-GL										5.0	±0.03	0.2	26.4	4.1	1
GCM N6002-GL N6004-GL										6.0	±0.03	0.2	26.4	4.5	1
GCM N3002-GF N3004-GF										3.0	±0.03	0.2	21.1	3.8	1
GCM N4002-GF N4004-GF										4.0	±0.03	0.2	26.4	4.0	1
GCM N5002-GF N5004-GF										5.0	±0.03	0.2	26.4	4.1	1
GCM N6002-GF N6004-GF										6.0	±0.03	0.2	26.4	4.5	1

Part Number Suffix Code (Chipbreakers)

Type	Symbol	Applications	Type	Symbol	Applications
Grooving/ Traverse Cutting	MG	Multi-functional / General-purpose	Profiling / Radius Grooving / Necking For Non-Ferrous Metals	RN	Facing / Necking / General-purpose
	ML	Multi-functional / Low-feed		GA	Non-Ferrous Metals / General-purpose
Grooving / Cut-off	GG	Grooving / General-purpose			
	GL	Grooving / Low Feed			
	GF	Grooving / Low-resistance			

Chipbreaker Selection **F13** Important Notes **F22** Recommended Cutting Conditions **F19**

Select holders and inserts with matching width of cut (CW). Not usable with GNDIS type holders.

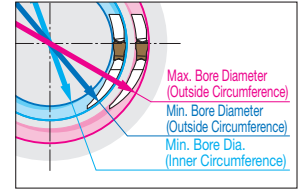
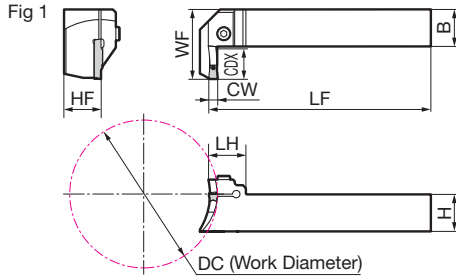
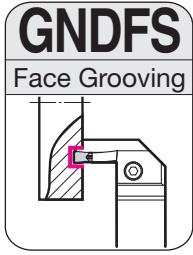
● mark: Standard stocked item (new product/expanded item)

# SEC-Grooving Tools GNDFS Type



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

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



## Holder

Figure shows right hand (R) tool.

## Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Work Dia. DC	Min. bore Diameter Inner Circumference	Width of Cut CW	Max. Groove Depth (mm) CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L													BX0520	N·m	
GNDFS R/L2525M-620-070			25	25	150	47	25	25	70 to 100	58	6.0	20	GC□ N60○○-□□	1	BX0520	5.0	LH040
GNDFS R/L2525M-620-100			25	25	150	47	25	25	100 to 200	88	6.0	20		1			
GNDFS R/L2525M-620-180			25	25	150	47	25	25	180 to 300	168	6.0	20		1			
GNDFS R/L2525M-620-280			25	25	150	47	25	25	280 to 1000	268	6.0	20	GC□ N60○○-□□	1	BX0620	6.0	LH050
GNDFS R/L2525M-620-450			25	25	150	47	25	25	450 up	438	6.0	20		1			
GNDFS R/L3232P-620-070			32	32	170	54	32	25	70 to 100	58	6.0	20		1			
GNDFS R/L3232P-620-100			32	32	170	54	32	25	100 to 200	88	6.0	20	GC□ N60○○-□□	1	BX0620	6.0	LH050
GNDFS R/L3232P-620-180			32	32	170	54	32	25	180 to 300	168	6.0	20		1			
GNDFS R/L3232P-620-280			32	32	170	54	32	25	280 to 1000	268	6.0	20		1			
GNDFS R/L3232P-620-450			32	32	170	54	32	25	450 up	438	6.0	20	GCM N80○○-□□	1	BX0620	6.0	LH050
GNDFS R/L2525M-820-070			25	25	150	47	25	30	70 to 100	54	8.0	20		1			
GNDFS R/L2525M-820-100			25	25	150	47	25	30	100 to 200	84	8.0	20		1			
GNDFS R/L2525M-820-180			25	25	150	47	25	30	180 to 300	164	8.0	20	GCM N80○○-□□	1	BX0620	6.0	LH050
GNDFS R/L2525M-820-280			25	25	150	47	25	30	280 to 1000	264	8.0	20		1			
GNDFS R/L2525M-820-450			25	25	150	47	25	30	450 up	434	8.0	20		1			
GNDFS R/L3232P-820-070			32	32	170	54	32	30	70 to 100	54	8.0	20	GCM N80○○-□□	1	BX0620	6.0	LH050
GNDFS R/L3232P-820-100			32	32	170	54	32	30	100 to 200	84	8.0	20		1			
GNDFS R/L3232P-820-180			32	32	170	54	32	30	180 to 300	164	8.0	20		1			
GNDFS R/L3232P-820-280			32	32	170	54	32	30	280 to 1000	264	8.0	20	GCM N80○○-□□	1	BX0620	6.0	LH050
GNDFS R/L3232P-820-450			32	32	170	54	32	30	450 up	264	8.0	20		1			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F43 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.

Grooving Tools

Grooving

Cut-off

Threading

External

Face

Internal

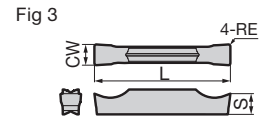
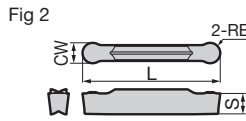
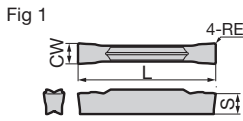
Necking

CBN



## Insert for GNDFS Type

(  Coated Carbide /  Cermet /  Cemented Carbide )



### Grooving / Traverse Cutting

Dimensions (mm)

Cat. No.	Width of Cut CW							Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig				
	Width of Cut		Tolerance													
	Width of Cut	Tolerance	RE	L	S	Pcs/Pack	Fig									
GCM N6004-MG N6008-MG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	6.0	±0.03	0.4	26.4	4.5	5	1
	6.0	±0.03	0.8	26.4	4.5											
GCM N8004-MG N8008-MG	6.0	±0.03	0.4	26.4	4.5	5	1									
	8.0	±0.04	0.4	28.8	6.0											
GCM N6004-ML N6008-ML	6.0	±0.03	0.4	26.4	4.5	5	1									
	6.0	±0.03	0.8	26.4	4.5											
GCM N8004-ML N8008-ML	6.0	±0.03	0.4	26.4	4.5	5	1									
	8.0	±0.04	0.4	28.8	6.0											
	8.0	±0.04	0.8	28.8	6.0		1									

### Profiling / Radius Grooving / Necking

Dimensions (mm)

Cat. No.	Width of Cut CW							Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig			
	Width of Cut		Tolerance												
	Width of Cut	Tolerance	RE	L	S	Pcs/Pack	Fig								
GCM N6030-RN	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	6.0	±0.03	3.0	28.1	4.5	5	2

### Non-Ferrous Metals

Dimensions (mm)

Cat. No.	H10	Width of Cut CW							Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
		Width of Cut		Tolerance									
		Width of Cut	Tolerance	RE	L	S	Pcs/Pack	Fig					
GCG N6004-GA	●	6.0	±0.025	0.4	26.4	4.5	5	3					

### Grooving / Cut-off

Dimensions (mm)

Cat. No.	Width of Cut CW							Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig				
	Width of Cut		Tolerance													
	Width of Cut	Tolerance	RE	L	S	Pcs/Pack	Fig									
GCM N6002-GG N6004-GG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	6.0	±0.03	0.2	26.4	4.5	5	1
	6.0	±0.03	0.4	26.4	4.5											
GCM N8004-GG	6.0	±0.03	0.2	26.4	4.5	5	1									
	8.0	±0.04	0.4	28.8	6.0											
GCM N6002-GL N6004-GL	6.0	±0.03	0.2	26.4	4.5	5	1									
	6.0	±0.03	0.4	26.4	4.5											
GCM N8004-GL	6.0	±0.03	0.2	26.4	4.5	5	1									
	8.0	±0.04	0.4	28.8	6.0											
GCM N6002-GF N6004-GF	6.0	±0.03	0.2	26.4	4.5	5	1									
	6.0	±0.03	0.4	26.4	4.5											
GCM N8002-GF N8004-GF	6.0	±0.03	0.2	26.4	4.5	5	1									
	8.0	±0.04	0.2	28.8	6.0											
	8.0	±0.04	0.4	28.8	6.0		1									

### Part Number Suffix Code (Chipbreakers)

Type	Symbol	Applications	Type	Symbol	Applications
Grooving/ Traverse Cutting	MG	Multi-functional / General-purpose	Profiling / Radius Grooving / Necking For Non-Ferrous Metals	RN	Facing / Necking / General-purpose
	ML	Multi-functional / Low-feed		GA	Non-Ferrous Metals / General-purpose
Grooving / Cut-off	GG	Grooving / General-purpose			
	GL	Grooving / Low Feed			
	GF	Grooving / Low-resistance			

Chipbreaker Selection **F13** Important Notes **F22** Recommended Cutting Conditions **F19**

Select holders and inserts with matching width of cut (CW). Not usable with GNDIS type holders.

● mark: Standard stocked item (new product/expanded item)



# SEC-Grooving Tools GNDIS Type



Clamp-on  
for Internal Diameter Grooving

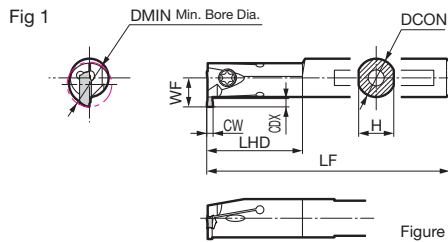
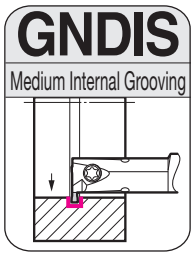


Figure shows right hand (R) tool.

## Holder

## Parts

Dimensions (mm)

Cat. No.	Stock		Diameter DCON	Height H	Overall Length LF	Head LHD	Cutting Edge Distance WF	Min. Bore Dia. DMIN	Width of Cut CW	Max. Groove Depth (mm) CDX	Applicable Insert	Fig	Screw		Wrench
	R	L											N·m	Icon	
GNDIS R/L1214-T1526	●	●	12	11	150	30	9.0	14	1.5	2.6	GXM N150005S-GF	1	BFTX0409N	3.4	LT15
GNDIS R/L1214-T1536	●	●	12	11	150	30	10.0	14	1.5	3.6		1			
GNDIS R/L1616-T1536	●	●	16	15	160	35	11.5	16	1.5	3.6		1			
GNDIS R/L1620-T1546	●	●	16	15	160	40	14.5	20	1.5	4.6	GXM N2002S-□□	1	BFTX0511N	5.0	LT20
GNDIS R/L2025-T1566	●	●	20	19	180	40	19.0	25	1.5	6.6		1			
GNDIS R/L1214-T2026	●	●	12	11	150	30	9.0	14	2.0	2.6		1			
GNDIS R/L1214-T2036	●	●	12	11	150	30	10.0	14	2.0	3.6	GXM N3002S-□□	1	BFTX0409N	3.4	LT15
GNDIS R/L1616-T2036	●	●	16	15	160	35	11.5	16	2.0	3.6		1			
GNDIS R/L1620-T2046	●	●	16	15	160	40	14.5	20	2.0	4.6		1			
GNDIS R/L2025-T2066	●	●	20	19	180	40	19.0	25	2.0	6.6	1	BFTX0511N	5.0	LT20	
GNDIS R/L1214-T3026	●	●	12	11	150	30	9.0	14	3.0	2.6	GXM N3002S-□□	1	BFTX0409N	3.4	LT15
GNDIS R/L1214-T3036	●	●	12	11	150	30	10.0	14	3.0	3.6		1			
GNDIS R/L1616-T3036	●	●	16	15	160	35	11.5	16	3.0	3.6		1			
GNDIS R/L1620-T3046	●	●	16	15	160	40	14.5	20	3.0	4.6	GXM N3002S-□□	1	BFTX0511N	5.0	LT20
GNDIS R/L2025-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.** Refer to F45 for applicable inserts. The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.

## Identification Code

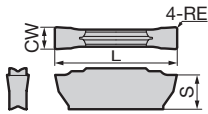
# GND IS R 12 14 - T 15 26

Series	Application Symbol: Direction	Feed Internal Boring	Shank Dia. (mm)	Min. Bore Dia. (mm)	For Internal Boring	Width of Cut x 10 (mm)	Maximum Groove Depth x 10 (mm)
GND	IS	R	12	14	-	T	15 26

Insert for GNDIS Type

( Coated Carbide)

Fig 1



Grooving/Traverse Cutting

Dimensions (mm)

Cat. No.	AC520U	AC1030U	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
			Width of Cut	Tolerance					
GXM N2002S-ML	●	●	2.0	±0.03	0.2	11.1	3.1	5	1
N3002S-ML	●	●	3.0	±0.03	0.2	11.1	3.1	5	1

Grooving / Cut-off

Dimensions (mm)

Cat. No.	AC520U	AC1030U	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
			Width of Cut	Tolerance					
GXM N150005S-GF	—	●	1.5	±0.03	0.05	11.1	3.1	5	1
GXM N2002S-GF	●	●	2.0	±0.03	0.2	11.1	3.1	5	1
N3002S-GF	●	●	3.0	±0.03	0.2	11.1	3.1	5	1

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

Recommended Cutting Conditions (GNDIS)

Work Material	P Carbon Steel / Alloy Steel		M Stainless Steel		K Cast Iron		S Exotic Alloy	
Insert Grade	AC520U	AC1030U	AC520U	AC1030U	AC520U	AC1030U	AC520U	AC1030U
Cutting Speed $v_c$ (m/min)	80-200	50-200	70-150	50-150	60-200	50-200	20-80	20-60

Grooving / Cut-off / Necking

Chipbreaker	Feed Rate $f$ (mm/rev)	
	ML	GF
Width of Cut CW (mm)	1.5	0.02 to 0.10
	2.0	0.03 to 0.12
	3.0	0.05 to 0.15

Traverse Cutting

Chipbreaker	ML	
	Feed Rate $f$ (mm/rev)	Depth of Cut $a_p$ (mm/rev)
Width of Cut CW (mm)	2.0	0.2 to 0.8
	3.0	0.3 to 1.2

Important Notes F22

Grooving Tools

L

Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN

# SEC-Grooving Tools GNDI Type



Clamp-on  
for Internal Diameter Grooving

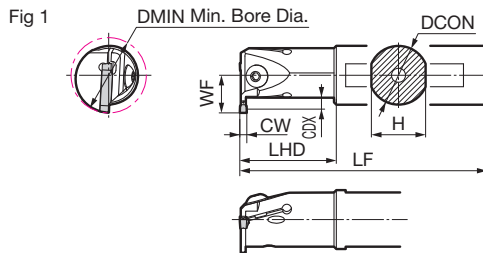


Figure shows right hand (R) tool.

## Holder

## Parts

Dimensions (mm)

Cat. No.	Stock		Diameter DCON	Height H	Head LHD	Overall Length LF	Cutting Edge Distance WF	Min. Bore Dia. DMIN	Width of Cut CW	Max. Groove Depth (mm) CDX	Applicable Insert	Fig	Dimensions (mm)		
	R	L											Bolt	N-m	Wrench
<b>GNDI R/L2532-T206</b>	●	●	25	23	40	200	16	32	<b>2.0</b>	<b>6</b>	GC□ N20○○-□□	1	BH0516	<b>5.0</b>	LH030
<b>GNDI R/L3240-T210</b>	●	●	32	30	50	250	26	40	<b>2.0</b>	<b>10</b>		1	BH0616	<b>6.0</b>	LH040
<b>GNDI R/L2532-T306</b>	●	●	25	23	40	200	16	32	<b>3.0</b>	<b>6</b>	GC□ N30○○-□□	1	BH0516	<b>5.0</b>	LH030
<b>GNDI R/L3240-T310</b>	●	●	32	30	50	250	26	40	<b>3.0</b>	<b>10</b>		1	BH0616	<b>6.0</b>	LH040
<b>GNDI R/L4050-T311</b>	●	●	40	38	60	300	31	50	<b>3.0</b>	<b>11</b>		1	BH0616	<b>6.0</b>	LH040
<b>GNDI R/L2532-T406</b>	●	●	25	23	40	200	19	32	<b>4.0</b>	<b>6</b>	GC□ N40○○-□□	1	BH0516	<b>5.0</b>	LH030
<b>GNDI R/L3240-T410</b>	●	●	32	30	50	250	26	40	<b>4.0</b>	<b>10</b>		1	BH0616	<b>6.0</b>	LH040
<b>GNDI R/L4050-T411</b>	●	●	40	38	60	300	31	50	<b>4.0</b>	<b>11</b>		1	BH0616	<b>6.0</b>	LH040
<b>GNDI R/L2532-T506</b>	●	●	25	23	40	200	19	32	<b>5.0</b>	<b>6</b>	GC□ N50○○-□□	1	BH0516	<b>5.0</b>	LH030
<b>GNDI R/L3240-T510</b>	●	●	32	30	50	250	26	40	<b>5.0</b>	<b>10</b>		1	BH0616	<b>6.0</b>	LH040
<b>GNDI R/L4050-T511</b>	●	●	40	38	60	300	31	50	<b>5.0</b>	<b>11</b>		1	BH0616	<b>6.0</b>	LH040
<b>GNDI R/L4050-T611</b>	●	●	40	38	60	300	31	50	<b>6.0</b>	<b>11</b>	GC□ N60○○-□□	1	BH0616	<b>6.0</b>	LH040

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F47 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.

Grooving Tools

F

Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN



# SEC-Grooving Tools SumiPolygon GNDCM Type



SumiPolygon Cassette Clamp-on for External Grooving

Grooving Tools

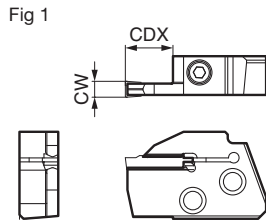


Figure shows right hand (R) tool.

## SumiPolygon GND Type Cassette

Cat. No.	Stock		Width of Cut CW	Max. Groove Depth (mm) CDX	Applicable Insert	Applicable Holders	Fig	Dimensions (mm)		
	R	L						Cap Screw	N-m	Wrench
<b>GNDCM R/L 212</b>	●	●	2	12	GC□□20○○-□□	PSC○○GND○○○○○○ R/L	1	BX0512	5.0	LH040
<b>GNDCM R/L 312</b>	●	●	3	12	GC□□30○○-□□		1			
<b>GNDCM R/L 418</b>	●	●	4	18	GC□□40○○-□□	1				
<b>GNDCM R/L 518</b>	●	●	5	18	GC□N50○○-□□	1				
<b>GNDCM R/L 618</b>	●	●	6	18	GC□N60○○-□□	1				

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F49 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For the max. depth of cut during traverse cutting and profiling, refer to F19.

## Identification Code Cassette

**GNDCM R 2 12**  
 Series      Feed Direction      Width of Cut (mm)      Maximum Groove Depth (mm)

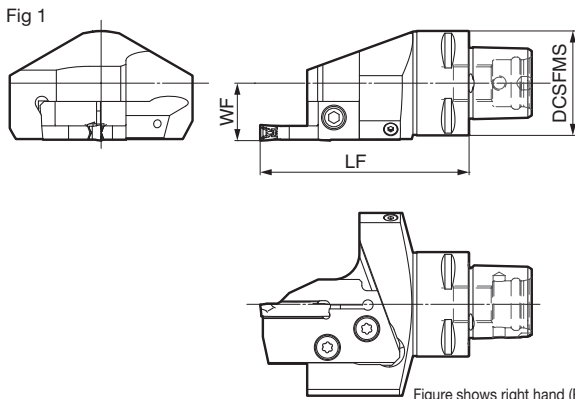


Figure shows right hand (R) tool.

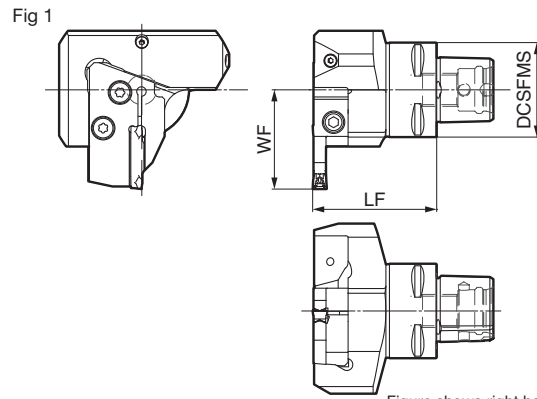


Figure shows right hand (R) tool.

## SumiPolygon GND Type Tool Holder (Straight) Parts

Cat. No.	Stock		Cutting Edge WF	Overhang LF	Mounting DCS-FMS	Applicable Cassettes	Fig	Dimensions (mm)		
	R	L						Flat Screw	N-m	Wrench
<b>PSC40 GND 228000 R/L</b>	●	●	22	80	40	GNDCM R/LOO	1	BFTX0619N	7.5	TT25
<b>PSC50 GND 278000 R/L</b>	●	●	27	80	50		1			
<b>PSC63 GND 338000 R/L</b>	●	●	33	80	63		1			

Inserts and cassettes are not embedded into tool holders.

## SumiPolygon GND Type Tool Holder (L Type) Parts

Cat. No.	Stock		Cutting Edge WF	Overhang LF	Mounting DCS-FMS	Applicable Cassettes	Fig	Dimensions (mm)		
	R	L						Flat Screw	N-m	Wrench
<b>PSC40 GND 425290 R/L</b>	●	●	42	52.5	40	GNDCM L/ROO	1	BFTX0619N	7.5	TT25
<b>PSC50 GND 475590 R/L</b>	●	●	47	55	50		1			
<b>PSC63 GND 545790 R/L</b>	●	●	54	57	63		1			

Inserts and cassettes are not embedded into tool holders.

## Identification Code Holder

**PSC40 GND 42 52 90 R**  
 SumiPolygon Shank Size      Series: GND Type      WF Dimensions (mm)      LF Dimensions (mm)      00: Straight      Feed Direction      90: L Type



# SEC-Grooving Tools SumiPolygon GNDCM Type

Expansion

## Insert for GNDCM Type

Fig 1

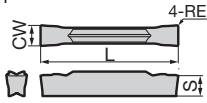


Fig 2 (Figure shows right-hand (R) tool.)

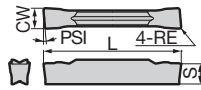


Fig 3

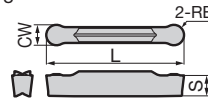
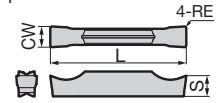


Fig 4



( ■ Coated Carbide / ■ Cermet / ■ Cemented Carbide)

## Grooving / Traverse Cutting

Dimensions (mm)

Cat. No.	Width of Cut CW								Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig		
	Width of Cut		Tolerance		RE		L								
	RE	L	±	mm	±	mm	±	mm							
GCM N3002-MG N3004-MG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	3.0	±0.03	0.2	21.1	3.8	1
GCM N4002-MG N4004-MG N4008-MG	●	●	●	●	●	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	1
GCM N5004-MG N5008-MG	●	●	●	●	●	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	1
GCM N6004-MG N6008-MG	●	●	●	●	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	1
GCM N2002-ML N3002-ML N3004-ML	—	—	—	—	—	—	—	—	—	2.0	±0.03	0.2	21.1	3.6	1
GCM N4002-ML N4004-ML N4008-ML	●	●	●	●	●	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1
GCM N5004-ML N5008-ML	●	●	●	●	●	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	1
GCM N6004-ML N6008-ML	●	●	●	●	●	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	1
										6.0	±0.03	0.8	26.4	4.5	1

## Cut-off (Handed Edge)

Dimensions (mm)

Cat. No.	Width of Cut CW								Lead Angle PSI	Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig		
	Width of Cut		Tolerance		RE		L									
	RE	L	±	mm	±	mm	±	mm								
GCM R2002-CG-05 L2002-CG-05	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	AC1030U	5°	2.0	±0.03	0.2	21.1	3.6	2
GCM R3002-CG-05 L3002-CG-05	●	●	●	●	●	●	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	2
GCM R4002-CG-05 L4002-CG-05	●	●	●	●	●	●	●	●	—	5°	4.0	±0.04	0.2	26.7	4.0	2
GCM R2003-CF-10 L2003-CF-10	—	—	—	—	—	—	—	—	—	10°	2.0	±0.08	0.03	22.4	3.6	2
GCM R3003-CF-10 L3003-CF-10	—	—	—	—	—	—	—	—	—	10°	3.0	±0.08	0.03	22.4	3.8	2
GCM R2003-CF-15 L2003-CF-15	—	—	—	—	—	—	—	—	—	15°	2.0	±0.08	0.03	22.4	3.6	2
GCM R3003-CF-15 L3003-CF-15	—	—	—	—	—	—	—	—	—	15°	3.0	±0.08	0.03	22.4	3.8	2

GCMR: Right Handed, GCMML: Left Handed

## Grooving / Cut-off

Dimensions (mm)

Cat. No.	Width of Cut CW								Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig		
	Width of Cut		Tolerance		RE		L								
	RE	L	±	mm	±	mm	±	mm							
GCM N2002-GG N3002-GG N3004-GG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	2.0	±0.03	0.2	21.1	3.6	1
GCM N4002-GG N4004-GG N5002-GG N5004-GG	●	●	●	●	●	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1
GCM N6002-GG N6004-GG	●	●	●	●	●	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	1
GCM N2002-GL N2004-GL	—	—	—	—	—	—	—	—	—	5.0	±0.03	0.2	26.4	4.1	1
GCM N3002-GL N3004-GL	●	●	●	●	●	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	1
GCM N4002-GL N4004-GL	●	●	●	●	●	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	1
GCM N5002-GL N5004-GL	●	●	●	●	●	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1
GCM N6002-GL N6004-GL	●	●	●	●	●	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	1
GCM N125005-GF N150005-GF	—	—	—	—	—	—	—	—	—	5.0	±0.03	0.2	26.4	4.1	1
GCM N2002-GF N2004-GF	—	—	—	—	—	—	—	—	—	6.0	±0.03	0.2	26.4	4.5	1
GCM N3002-GF N3004-GF	●	●	●	●	●	●	●	●	—	1.25	±0.03	0.05	17.4	3.2	1
GCM N4002-GF N4004-GF	●	●	●	●	●	●	●	●	—	1.5	±0.03	0.05	17.4	3.7	1
GCM N5002-GF N5004-GF	●	●	●	●	●	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	1
GCM N6002-GF N6004-GF	●	●	●	●	●	●	●	●	—	2.0	±0.03	0.4	21.1	3.6	1
										3.0	±0.03	0.2	21.1	3.8	1
										3.0	±0.03	0.4	21.1	3.8	1
										4.0	±0.03	0.2	26.4	4.0	1
										4.0	±0.03	0.4	26.4	4.0	1
										5.0	±0.03	0.2	26.4	4.1	1
										5.0	±0.03	0.4	26.4	4.1	1
										6.0	±0.03	0.2	26.4	4.5	1
										6.0	±0.03	0.4	26.4	4.5	1

## External Profiling / External Radius Grooving

Dimensions (mm)

Cat. No.	Width of Cut CW								Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig		
	Width of Cut		Tolerance		RE		L								
	RE	L	±	mm	±	mm	±	mm							
GCM N3015-RG N4020-RG N5025-RG N6030-RG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	3.0	±0.03	1.5	21.1	3.8	3
										4.0	±0.03	2.0	26.4	4.0	5
										5.0	±0.03	2.5	27.2	4.1	3
										6.0	±0.03	3.0	27.5	4.5	3

## Profiling / Radius Grooving / Necking

Dimensions (mm)

Cat. No.	Width of Cut CW								Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig		
	Width of Cut		Tolerance		RE		L								
	RE	L	±	mm	±	mm	±	mm							
GCM N2010-RN N3015-RN N4020-RN N5025-RN N6030-RN	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	—	2.0	±0.03	1.0	21.7	3.6	3
										3.0	±0.03	1.5	22.4	3.8	3
										4.0	±0.03	2.0	28.0	4.0	3
										5.0	±0.03	2.5	28.1	4.1	3
										6.0	±0.03	3.0	28.1	4.5	3

## Non-Ferrous Metals

Dimensions (mm)

Cat. No.	H10	Width of Cut CW								Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	
		Width of Cut		Tolerance		RE		L							
		RE	L	±	mm	±	mm	±	mm						
GCG N2002-GA N3002-GA	●									2.0	±0.025	0.2	21.1	3.6	4
GCG N4004-GA N5004-GA N6004-GA	●									3.0	±0.025	0.2	21.1	3.8	4
										4.0	±0.025	0.4	26.4	4.0	5
										5.0	±0.025	0.4	26.4	4.1	4
										6.0	±0.025	0.4	26.4	4.5	4

## Part Number Suffix Code (Chipbreakers)

Type	Symbol	Applications	Type	Symbol	Applications
Grooving/ Traverse Cutting	MG ML	Multi-functional / General-purpose Multi-functional / Low-feed	Cut-off (Handed Edge)	CG CF	Cut-off / General-purpose Cut-off / Low-resistance
Grooving / Cut-off	GG GL GF	Grooving / General-purpose Grooving / Low Feed Grooving / Low-resistance	External Profiling / External Radius Grooving	RG	Profiling / General-purpose
			Profiling / Radius Grooving / Necking For Non-Ferrous Metals	RN GA	Facing / Necking / General-purpose Non-Ferrous Metals / General-purpose

Chipbreaker Selection **F13** Important Notes **F22** Recommended Cutting Conditions **F19**

Select holders and inserts with matching width of cut (CW). Not usable with GNDIS type holders.

● mark: Standard stocked item (new product/expanded item)

Grooving Tools

Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN

## SEC-Grooving Tool GND Type Special Grooving Insert Request Form

Applicable Tool Holders (Width of Cut 2 to 6mm)

External Turning: GNDS Type (→F28), GNDM Type (→F24,F26,F30,F32), GNDMS Type (→F30), GNDL Type (→F24,F26,F34,F36), GNDLS Type (→F34), GNDCM Type (→F48)

Internal Boring: GNDI Type (→F46) \*GNDIS types cannot be used as the insert shape is different

Facing: GNDF Type (→F40), GNDFS Type (→F42)

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

Special inserts with ground chipbreaker (customized 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 Hardmetal dealer or 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 Hardmetal sales office (refer to the back of this catalog)

Shape	Items	Description
	Width of Cut 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
	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

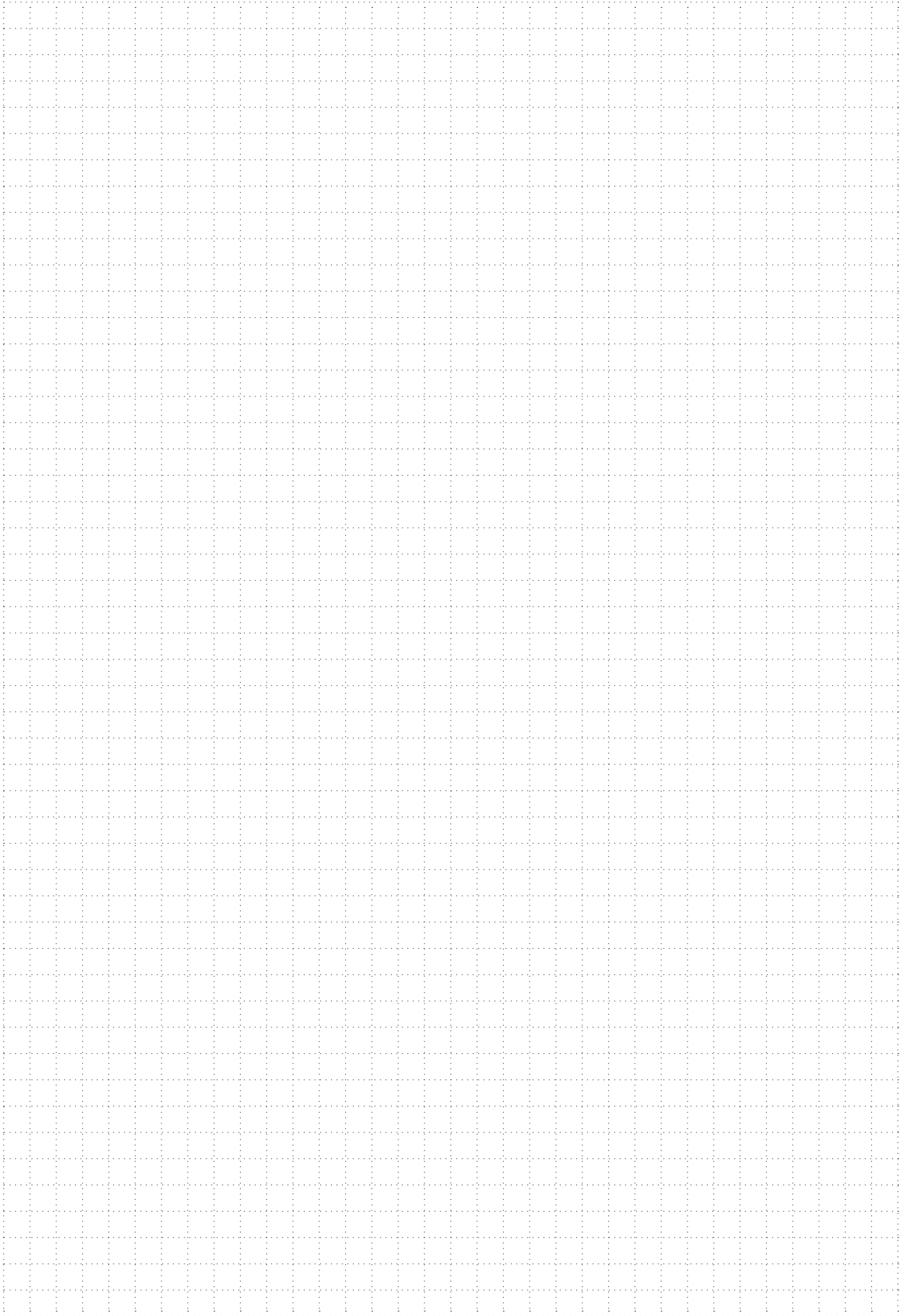
- The applicable standard holder depends on the width of cut. Refer to the chart on the right for manufacturable widths of cut and corner radius range for facing. (If using a corner radius exceeding this for facing, modification is required to prevent the holder from interfering with the work material.)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

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

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

Contact your local sales office for details.

# MEMO



# SEC-Grooving Tools SGE Type



Clamp-on for  
External Shallow Grooves

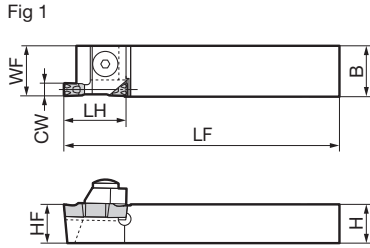
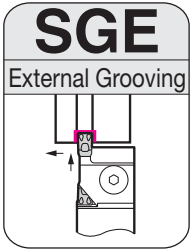


Figure shows right hand (R) tool.

## Holder

## Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Width of Cut CW	Max. Groove Depth (mm) CDX	Applicable Insert	Fig	Clamp Plate	Bolt	Spring	Wrench
	R	L											Fig	Fig	Fig	Fig
SGE R/L1016-3	●	●	10	16	120	15.7	10	19.5	3.0	6.2	GEN3000	1	GCL R/L-3	FBH 0516NT	GSP-5	LH025NT
SGE R/L1216-3	●	●	12	16	120	15.7	12	19.5								
SGE R/L1616-3	●	●	16	16	120	15.7	16	22.0								
SGE R/L2020-3	●	●	20	20	120	19.7	20	22.0	4.0	6.2	GEN4000 GEN5000	1	GCL R/L-4	FBH 0516NT	GSP-5	LH025NT
SGE R/L1016-45	●	●	10	16	120	15.7	10	19.5								
SGE R/L1216-45	●	●	12	16	120	15.7	12	19.5								
SGE R/L1616-45	●	●	16	16	120	15.7	16	22.0	5.0	8.0	GEN5000	1	GCL R/L-4	FBH 0520NT	GSP-5	LH025NT
SGE R/L2020-45	●	●	20	20	120	19.7	20	22.0								
SGE R/L1020-6	●	●	10	20	120	19.7	10	19.5	6.0	6.2	GEN6000	1	GCL R/L-6	FBH 0516NT	GSP-5	LH025NT
SGE R/L1220-6	●	●	12	20	120	19.7	12	19.5								
SGE R/L1620-6	●	●	16	20	120	19.7	16	22.0								
SGE R/L2020-6	●	●	20	20	120	19.7	20	22.0								

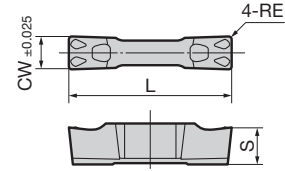
\*Width of cut CW = 4mm is the dimension with insert mounted. When width of cut CW = 5mm, the dimension is 0.5mm larger with insert mounted.

## Inserts (Coated Carbide)

Dimensions (mm)

Cat. No.	ACZ150	Width of Cut	Overall Length	Thickness	Corner Radius	Applicable Holders	Fig
		CW	L	S	RE		
GEN 3002	●	3.0	20	4.64	0.2	SGE R/L 0000-3	1
GEN 3004	●	3.0	20	4.64	0.4		1
GEN 4002	●	4.0	20	4.50	0.2	SGE R/L 0000-45	1
GEN 4004	●	4.0	20	4.50	0.4		1
GEN 5002	●	5.0	20	4.50	0.2	SGE R/L 0000-45	1
GEN 5004	●	5.0	20	4.50	0.4		1
GEN 6002	●	6.0	20	4.50	0.2	SGE R/L 0000-6	1
GEN 6004	●	6.0	20	4.50	0.4		1

Fig 1



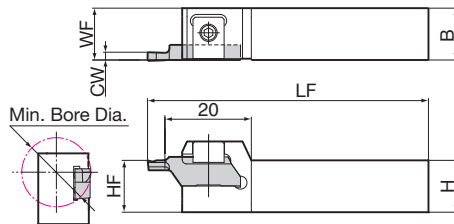
Recommended Cutting Conditions **A24**



Clamp-on for Very Small Diameter  
 Face Grooving



Fig 1



Holder

Parts

Dimensions (mm)

Cat. No.	Stock	Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Fig	Parts		
		H	B	LF	WF	HF		Clamp Plate	Double Screw	Wrench
CKBR 1010-16	●	10	10	111	10	10	1	CKBW16	WB4-8	LH020
CKBR 1212-16	●	12	12	136	12	12	1			
CKBR 1616-16	●	16	16	136	16	16	1			
CKBR 2020-16	●	20	20	136	20	20	1			
CKBR 2525-16	●	25	25	161	25	25	1			

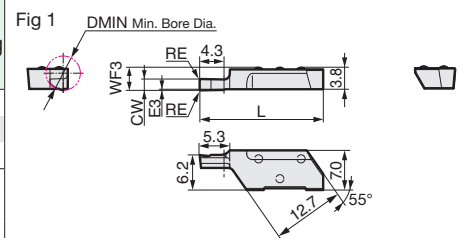
\*For round shank holders, refer to page E58.

Round Shank Holder E66

Inserts ( Coated Carbide)

Dimensions (mm)

Cat. No.	ACZ150	Min. Bore Dia.	Cutting Edge Distance	Cutting Edge Distance	Width of Cut	Corner Radius	Overall Length	Max. Groove Depth (mm)	Fig
		DMIN	WF3	E3	CW	RE	L	CDX	
KBMF R0615-05	●	6.0	4.0	0.2	1.5	0.05	21.8	4.0	1
KBMF R0620-05	●	6.0	4.0	0.2	2.0	0.05	21.8	4.0	1
KBMF R0630-05	●	6.0	4.0	0.2	3.0	0.05	21.8	4.0	1



Recommended Cutting Conditions A24

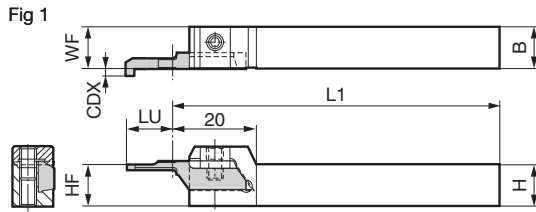
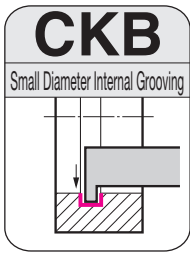
Grooving Tools  
 Grooving  
 Cut-off  
 Threading  
 External  
 Face  
 Internal  
 Necking  
 CBN



# SEC-Grooving Tools CKB Type



Clamp-on for Internal Diameter  
Narrow Grooving



Refer to the insert table for CDX and LU values.

## Holder

## Parts

Dimensions (mm)

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

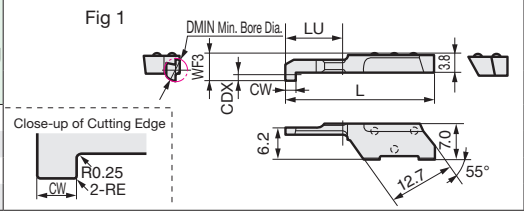
Refer to the insert table for CDX and LU values.

Round Shank Holder **E66**

## Inserts (Coated Carbide)

Dimensions (mm)

Cat. No.	AC1030U	Min. Bore Dia.	Width of Cut	Cutting Edge Distance	Corner Radius	Overall Length	Max. Groove Depth (mm)	Machinable Length	Fig
		DMIN	CW	WF3	RE	L	CDX	LU	
<b>KBMG R0411-05</b>	●	4.0	1.00	4.90	0.05	28.5	1.1	11	1
<b>KBMG R0411-10</b>	●	4.0	2.00	4.90	0.10	28.5	1.1	11	1
<b>KBMG R0511-05</b>	●	5.0	1.00	5.10	0.05	28.5	1.3	11	1
<b>KBMG R0511-10</b>	●	5.0	2.00	5.10	0.10	28.5	1.3	11	1



Recommended Cutting Conditions **A24**

Grooving Tools

Grooving

Cut-off

Threading

External

Face

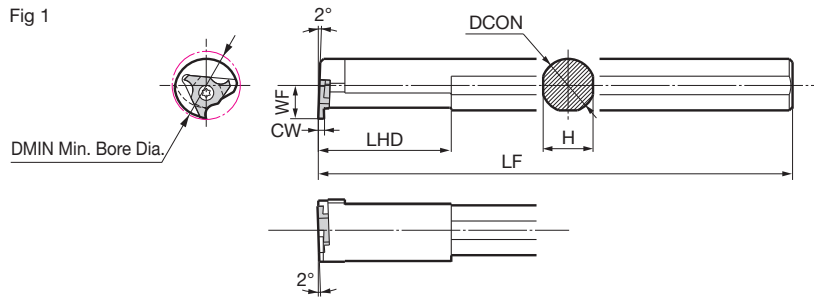
Internal

Necking

CBN



Screw-on for Internal Diameter  
 Narrow Grooving



Holder

Parts Dimensions (mm)

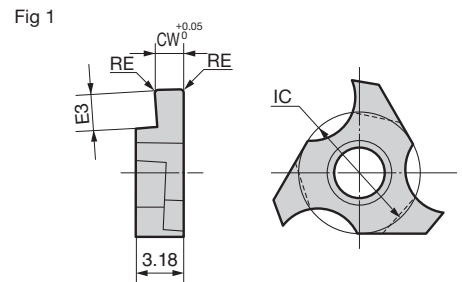
Cat. No.	Stock	Diameter DCON	Height H	Overall Length LF	Cutting Edge Distance WF	Head LHD	Min. Bore Dia.	Width of Cut CW	Max. Groove Depth (mm)	Applicable Inserts	Fig	Parts	
												Screw	Wrench
SGIT R08	●	8	7.0	125	5.0	20	10.0	0.50 to 2.00	0.8*	GITL3000	1	BFTX02506NS	RT08
SGIT R10	●	10	9.0	150	6.0	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)

Inserts ( Coated Carbide)

Dimensions (mm)

Cat. No.	ACZ150	Width of Cut CW	Cutting Edge Distance E3	Corner Radius RE	Inscribed Circle IC	Applicable Holders	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



Recommended Cutting Conditions **A24**

Grooving  
Tools



Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN

# SSH Type

Grooving Tools

Grooving

Cut-off

Threading

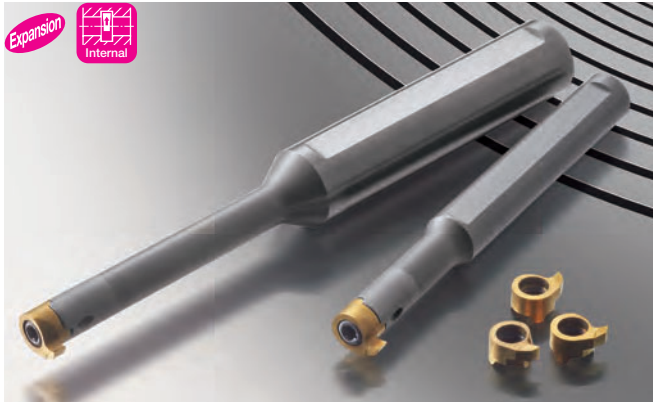
External

Face

Internal

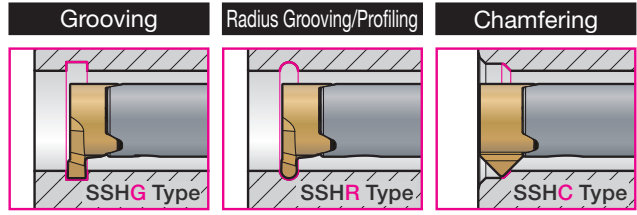
Necking

CBN

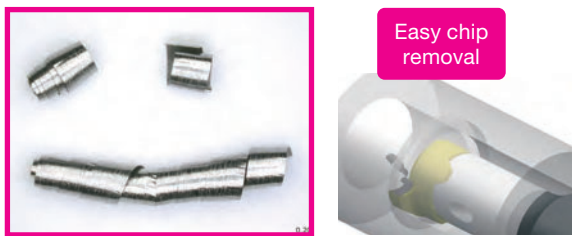


## ■ Features

- Internal coolant supply for outstanding chip evacuation
  - Tough carbide body for stable machining even with small diameters, suppressing chatter
  - Adopts AC1030U for excellent machined surface quality
  - Min. bore diameter of  $\varnothing 8\text{mm}$  and up supported
  - Wide variety of grooving widths
- In addition to grooving applications, we have a lineup for circlip groove machining.

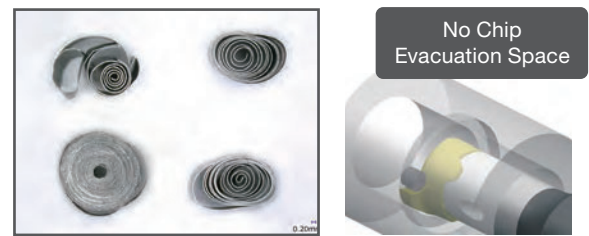


## ■ Chip Control



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

SSH Type



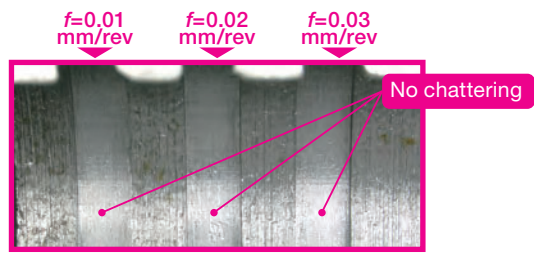
Evacuation from grooves is poor, may cause sudden breakage

Competitor's Product

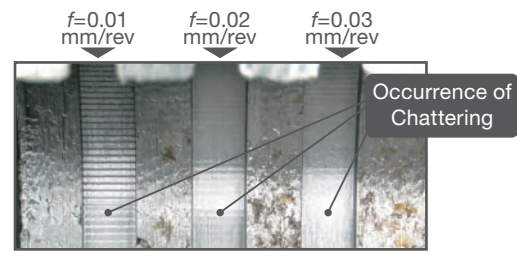
Work Material: S45C Work Diameter:  $\varnothing 13\text{mm}$  Cutting Conditions:  $v_c=50\text{m/min}$ ,  $f=0.02\text{mm/rev}$ ,  $a_p=1.0\text{mm}$  Wet (Oil-based)

## ■ Chatter Resistance

Outstanding sharpness and carbide shank suppress chatter



SSH Type

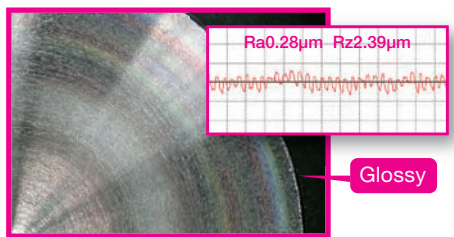


Competitor's Product

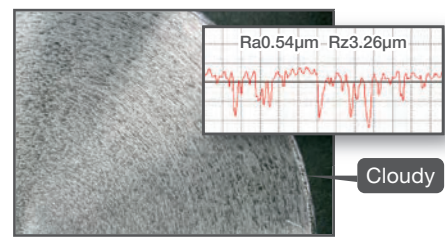
Work Material: S45C Work Diameter:  $\varnothing 13\text{mm}$  Cutting Conditions:  $v_c=100\text{m/min}$ ,  $f=0.01, 0.02, 0.03\text{mm/rev}$ ,  $a_p=0.2\text{mm}$  Wet (Oil-based)

## ■ Machined Surface Quality

Glossy, Beautiful Surface Finish



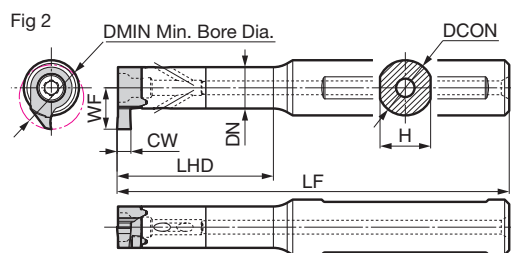
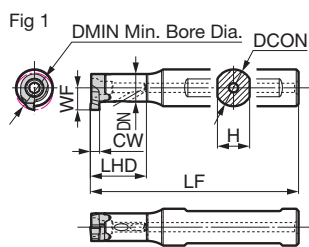
SSH Type



Competitor's Product

Work Material: SCM440 Work 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)

# SEC-Grooving Tools SSH Type



## Holder

## Parts

Dimensions (mm)

Cat. No.	Stock	Diameter DCON	Head Dia. DN	Height H	Overall Length LF	Head LHD	Min. Bore Dia. DMIN	Width of Cut CW	Applicable Insert	Fig	Screw		Wrench	
												(N·m)		LT15IP
<b>E08D-SSH M N125-08</b>	●	8	6	7	60	12.5	8	<b>0.74 to 2.00</b>	SSH□ R/L 08...	1	BFTX02608IPS	<b>1.2</b>	TRX08IP	
<b>E08E-SSH M N210-08</b>	●	8	6	7	70	21.0	8	<b>0.74 to 2.00</b>		1	BFTX02608IPS	<b>1.2</b>	TRX08IP	
<b>E12E-SSH M N125-08</b>	●	12	6	11	70	12.5	8	<b>0.74 to 2.00</b>		1	BFTX02608IPS	<b>1.2</b>	TRX08IP	
<b>E12F-SSH M N210-08</b>	●	12	6	11	80	21.0	8	<b>0.74 to 2.00</b>		1	BFTX02608IPS	<b>1.2</b>	TRX08IP	
<b>E12G-SSH M N300-08</b>	●	12	6	11	90	30.0	8	<b>0.74 to 2.00</b>		1	BFTX02608IPS	<b>1.2</b>	TRX08IP	
<b>E12H-SSH M N420-08</b>	●	12	6	11	100	42.0	8	<b>0.74 to 2.00</b>	SSH□ R/L 14...	2	BFTX0412IPS	<b>5.0</b>	LT15IP	
<b>E12X-SSH M N195-14</b>	●	12	9	11	75	19.5	14	<b>0.74 to 3.00</b>		2	BFTX0412IPS	<b>5.0</b>	LT15IP	
<b>E12H-SSH M N340-14</b>	●	12	9	11	100	34.0	14	<b>0.74 to 3.00</b>		2	BFTX0412IPS	<b>5.0</b>	LT15IP	
<b>E12J-SSH M N450-14</b>	●	12	9	11	110	45.0	14	<b>0.74 to 3.00</b>		2	BFTX0412IPS	<b>5.0</b>	LT15IP	
<b>E12X-SSH M N640-14</b>	●	12	9	11	130	64.0	14	<b>0.74 to 3.00</b>		2	BFTX0412IPS	<b>5.0</b>	LT15IP	
<b>E16F-SSH M N195-14</b>	●	16	9	14	80	19.5	14	<b>0.74 to 3.00</b>		2	BFTX0412IPS	<b>5.0</b>	LT15IP	
<b>E16H-SSH M N340-14</b>	●	16	9	14	100	34.0	14	<b>0.74 to 3.00</b>		2	BFTX0412IPS	<b>5.0</b>	LT15IP	
<b>E16J-SSH M N450-14</b>	●	16	9	14	110	45.0	14	<b>0.74 to 3.00</b>		2	BFTX0412IPS	<b>5.0</b>	LT15IP	
<b>E16X-SSH M N640-14</b>	●	16	9	14	130	64.0	14	<b>0.74 to 3.00</b>		2	BFTX0412IPS	<b>5.0</b>	LT15IP	

\* The LF dimensions above are dimensions with SSHG/SSHR type insert mounted. Refer to the Insert Stock Table on pages F57 and F58 for WF dimensions.

## Inserts (For E08□-SSH M N○○○-08 / E12□-SSH M N○○○-08) (Coated Carbide)

Dimensions (mm)

Applications	Cat. No.	AC1030U		Width of Cut CW	Max. Groove Depth (mm) CDX	Corner Radius RE	Cutting Edge Distance WF3	Cutting Edge Distance WF	Thickness S	Cutting Edge Distance E2	Applicable Holders	Fig	Fig. 1 (Grooving)	Fig. 2 (Grooving)	Fig. 3 (For Radius Grooving/Profiling)	Fig. 4 (Chamfering)
		R	L													
Grooving	<b>SSHG R/L 0807400</b>	●	●	0.74	1.0	—	3.2	4.80	3.6	0.4	E08□-SSH M N○○○-08 E12□-SSH M N○○○-08	1				
	<b>R/L 0808400</b>	●	●	0.84	1.0	—	3.2	4.80	3.6	0.4		1				
	<b>R/L 0809400</b>	●	●	0.94	1.0	—	3.2	4.80	3.6	0.4		1				
	<b>R/L 0810000</b>	●	●	1.00	1.0	—	3.2	4.80	3.1	—		1				
	<b>R/L 0810010</b> <small>NEW</small>	●	●	1.00	1.0	0.10	3.2	4.80	3.1	—		2				
	<b>R/L 0811900</b>	●	●	1.19	1.0	—	3.2	4.80	3.1	—		1				
	<b>R/L 0813900</b>	●	●	1.39	1.0	—	3.2	4.80	3.0	—		1				
	<b>R/L 0815000</b>	●	●	1.50	1.0	—	3.2	4.80	3.0	—		1				
	<b>R/L 0815010</b> <small>NEW</small>	●	●	1.50	1.0	0.10	3.2	4.80	3.0	—		2				
	<b>R/L 0816900</b>	●	●	1.69	1.0	—	3.2	4.80	3.0	—		1				
Radius Grooving/Profiling	<b>SSHR R/L 08080</b>	●	●	0.80	1.0	0.40	3.2	4.80	3.1	—	E08□-SSH M N○○○-08 E12□-SSH M N○○○-08	3				
	<b>R/L 08100</b> <small>NEW</small>	●	●	1.00	1.0	0.50	3.2	4.80	3.1	—		3				
	<b>R/L 08120</b>	●	●	1.20	1.0	0.60	3.2	4.80	3.1	—		3				
	<b>R/L 08150</b> <small>NEW</small>	●	●	1.50	1.0	0.75	3.2	4.80	3.0	—		3				
	<b>R/L 08180</b>	●	●	1.80	1.0	0.90	3.2	4.80	3.0	—		3				
Chamfer	<b>SSHC R/L 08454502</b>	●	●	—	1.4	0.20	1.8	4.65	3.6	—		4				

\* Refer to the Holder Stock Table on page F57 for the DMIN dimensions.

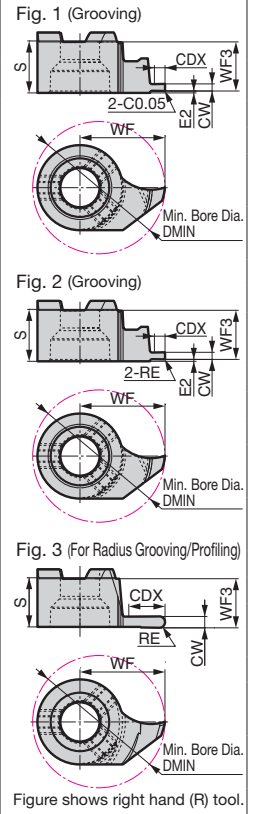
Recommended Cutting Conditions **E58**

# SEC-Grooving Tools SSH Type

Inserts (For E08□-SSHMN○○○-08 / E12□-SSHMN○○○-08) (      Coated Carbide)

Dimensions (mm)

Applications	Cat. No.	AC10300		Width of Cut CW	Max. Groove Depth (mm) CDX	Corner Radius RE	Cutting Edge Distance WF3	Cutting Edge Distance WF	Thickness S	Cutting Edge Distance E2	Applicable Holders	Fig
		R	L									
Grooving	<b>SSHG R/L 1407400</b>	●	●	0.74	1.2	—	5.3	9.0	5.5	0.2	E12□-SSHMN○○○-14 E16□-SSHMN○○○-14	1
	R/L 1408400	●	●	0.84	1.3	—	5.3	9.0	5.5	0.2		1
	R/L 1409400	●	●	0.94	1.5	—	5.3	9.0	5.5	0.2		1
	R/L 1410000	●	●	1.00	1.6	—	5.3	9.0	5.5	0.2		1
	R/L 1410010 <small>eNew</small>	●	●	1.00	1.6	0.10	5.3	9.0	5.5	0.2		2
	R/L 1411900	●	●	1.19	4.0	—	5.3	9.0	5.2	—		1
	R/L 1413900	●	●	1.39	4.0	—	5.3	9.0	5.1	—		1
	R/L 1415000	●	●	1.50	4.0	—	5.3	9.0	5.1	—		1
	R/L 1415010 <small>eNew</small>	●	●	1.50	4.0	0.10	5.3	9.0	5.1	—		2
	R/L 1416900	●	●	1.69	4.0	—	5.3	9.0	5.1	—		1
	R/L 1420000	●	●	2.00	4.0	—	5.3	9.0	5.1	—		1
	R/L 1420010 <small>eNew</small>	●	●	2.00	4.0	0.10	5.3	9.0	5.1	—		2
	R/L 1420020 <small>eNew</small>	●	●	2.00	4.0	0.20	5.3	9.0	5.1	—		2
	R/L 1425000	●	●	2.50	4.0	—	5.3	9.0	5.1	—		1
	R/L 1425010 <small>eNew</small>	●	●	2.50	4.0	0.10	5.3	9.0	5.1	—		2
	R/L 1425020 <small>eNew</small>	●	●	2.50	4.0	0.20	5.3	9.0	5.1	—		2
	R/L 1430000	●	●	3.00	4.0	—	5.3	9.0	5.1	—		1
	R/L 1430010 <small>eNew</small>	●	●	3.00	4.0	0.10	5.3	9.0	5.1	—		2
R/L 1430020 <small>eNew</small>	●	●	3.00	4.0	0.20	5.3	9.0	5.1	—	2		
Radius Grooving/ Profiling	<b>SSHR R/L 14100 <small>eNew</small></b>	●	●	1.00	1.6	0.50	5.3	9.0	5.2	—	E12□-SSHMN○○○-14 E16□-SSHMN○○○-14	3
	R/L 14120	●	●	1.20	4.0	0.60	5.3	9.0	5.2	—		3
	R/L 14150 <small>eNew</small>	●	●	1.50	4.0	0.75	5.3	9.0	5.1	—		3
	R/L 14180	●	●	1.80	4.0	0.90	5.3	9.0	5.1	—		3
	R/L 14200	●	●	2.00	4.0	1.00	5.3	9.0	5.1	—		3
	R/L 14220	●	●	2.20	4.0	1.10	5.3	9.0	5.1	—		3
	R/L 14250 <small>eNew</small>	●	●	2.50	4.0	1.25	5.3	9.0	5.1	—		3
R/L 14300	●	●	3.00	4.0	1.50	5.3	9.0	5.1	—	3		



\* Refer to the Holder Stock Table on page F57 for the DMIN dimensions.

## Recommended Cutting Conditions

Work Material	<span style="background-color: #e6f2ff;">P</span> Carbon Steel / Alloy Steel	<span style="background-color: #fff9c4;">M</span> Stainless Steel	<span style="background-color: #ffe0b2;">K</span> Cast Iron
Cutting Speed $v_c$ (m/min)	20-200	15-80	20-160
Feed Rate: $f$ (mm/rev)	0.01-0.03	0.01-0.03	0.01-0.03



# GWB Type



### ■ Features

- Tangentially-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 new Coated SUMIBORON BNC30G grade for grooving (BN2000 recommended for continuous cutting)
- Suited for grooving various types of hardened steel. Variety of widths of cut available from 1.5 to 6.0mm.



Double Clamp  
for Hardened Steel Shallow Grooves

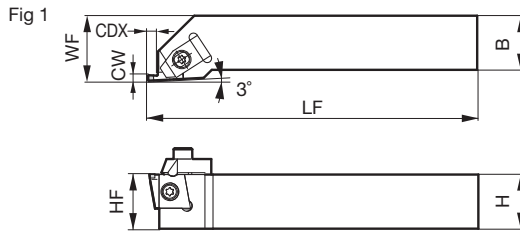
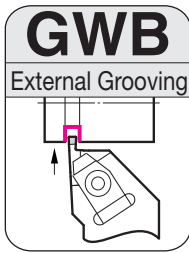


Figure shows right hand (R) tool.

### Holder

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Width of Cut CW	Max. Groove Depth (mm) CDX	Group No.	Fig	Parts					
	R	L										Clamp Plate	Cap Screw	Screw	Spring	Wrench	
<b>GWB R/L 2525-45</b>	●	●	25	25	151 (150)	30	25	1.5 ≤ CW ≤ 4.5	3.5 to 5.0	1	1	TF72/TF73	BX0520T	5.0	BFTX0511N	GSP06	TRX20
<b>GWB R/L 2525-60</b>	●	●	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. Right-handed (R) tool holders are applicable with right-handed (R) inserts and clamp plates (TF72).

### Inserts ( SUMIBORON)

Cat. No.	BN2000		BNC30G		Width of Cut CW	Groove Depth CDX	Inscribed Circle IC	Thickness S	Group No.	Applicable Holders	Fig
	R	L	R	L							
<b>CGA R/L 1504150</b>	●	●	●	●	1.5	3.5	15.875	4.76	1	GWB R/L 2525-45	1
<b>CGA R/L 1504200</b>	●	●	●	●	2.0	3.5	15.875	4.76			
<b>CGA R/L 1504250</b>	●	●	●	●	2.5	4.0	15.875	4.76			
<b>CGA R/L 1504300</b>	●	●	●	●	3.0	4.0	15.875	4.76			
<b>CGA R/L 1504350</b>	●	●	●	●	3.5	5.0	15.875	4.76			
<b>CGA R/L 1504400</b>	●	●	●	●	4.0	5.0	15.875	4.76			
<b>CGA R/L 1504450</b>	●	●	●	●	4.5	5.0	15.875	4.76			
<b>CGA R/L 1506500</b>	●	●	●	●	5.0	5.0	15.875	6.35	2	GWB R/L 2525-60	1
<b>CGA R/L 1506550</b>	●	●	●	●	5.5	5.0	15.875	6.35			
<b>CGA R/L 1506600</b>	●	●	●	●	6.0	5.0	15.875	6.35			

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

### Grade Features

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 with 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 $v_c$ (m/min)	80 to 120	
Feed Rate $f$ (mm/rev)	0.04 to 0.08	

\* 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 Conditions	Tool Life Comparison
Shaft Grooving: Continuous  Required Surface Roughness for Groove Sides: Ra 0.4μm	Carburised steel 58 to 62 HRC	CGAR1504200 <b>BN2000</b>	$v_c$ : 120m/min $f$ : 0.05mm/rev Groove Depth: 2mm Dry	
Spline Grooving: Interrupted 	Carburised steel 58 to 62 HRC	CGAR1504200 <b>BNC30G</b>	$v_c$ : 100m/min $f$ : 0.05mm/rev Groove Depth: 1.6mm Dry	

# SUMIBORON Grooving Tools

## BNGG Type

Grooving Tools



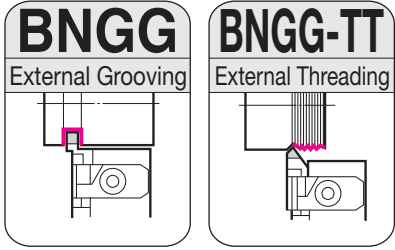
### Features

- 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

F



Grooving



Cut-off

Threading

### Holder

Dimensions (mm)

	Cat. No.	Stock		Cutting Edge Distance WF	Groove Depth CDX	Overall Length LF	Applicable Inserts	Fig
		R	L					
Grooving	<b>BNGG R/L2525-200</b>	●		30.5	4	150	BNGNT0200 R/L	1
	<b>BNGG R/L2525-250</b>	●		30.5	4	150	BNGNT0250 R/L	1
	<b>BNGG R/L2525-300</b>	●		30.5	5	150	BNGNT0300 R/L	1
	<b>BNGG R/L2525-400</b>	●		30.5	6	151	BNGNT0400 R/L	1
	<b>BNGG R/L2525-500</b>	●		30.5	6	151	BNGNT0500 R/L	1
	<b>BNGG R/L2525-600</b>	●		30.5	7	152	BNGNT0600 R/L	1
Threading	<b>BNGG R/L2525-TT</b>	●		28.5	5	150	BNTT1020 R/L, BNTT1530 R/L	2

Inserts are not embedded into tool holders.

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

External

Face

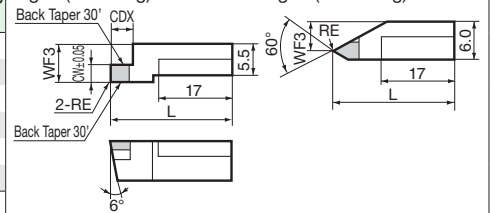
### Inserts (SUMIBORON)

Dimensions (mm)

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

Fig. 1 (Grooving)

Fig. 2 (Threading)



Internal

Necking

CBN

### Parts

Applicable Holders	Support	Clamp Plate	Adjustment Screw	Spring	Cap Screw	Wrench	
BNGG R/L2525-200	BNGS R/L 200	BNGC R/L	FMJ	GSP06	BX0615 (For Clamp Plate) BX0414 (For Support)	LH050 (For Clamp Plate) LH030 (For Support)	1.8x45
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 $v_c$ (m/min)	80 to 120
Feed Rate $f$ (mm/rev)	0.03 to 0.07

#### • Threading

Cutting Conditions	H Hardened Steel
Cutting Speed $v_c$ (m/min)	80 to 120
Feed Rate $f$ (mm)	Maximum Pitch 3.0