

Grooving/Cut-off Threading Tools

F1 to F68



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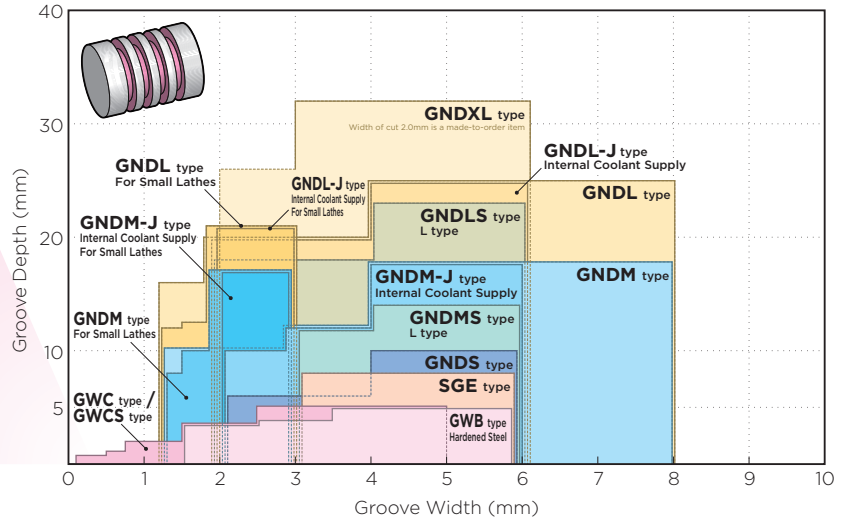
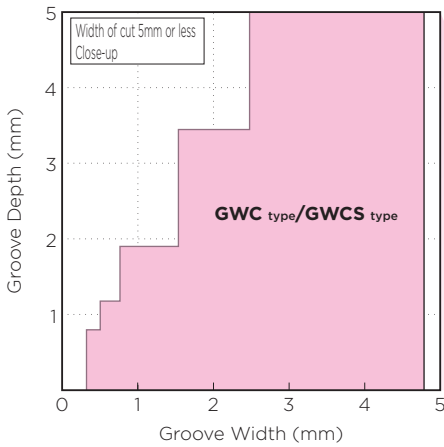
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Stock Markings and Symbols

- 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

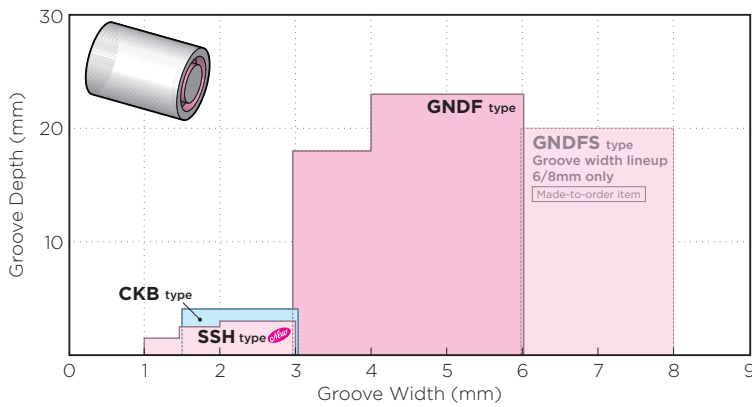
* mark: For groove depth and width combinations, refer to the above figures or the relevant page.

Application	Series	Shape	Structure Screw-on Clamp-on Multiple Clamp	Insert Shape () indicates no. of cutting edges	Groove Depth* (mm)				Features	
					10	20	30	40		
					Groove Width* (mm)					
					2	4	6	8	10	
For Shallow Grooves	GWC <i>Expansion</i>	 → F4 (→ D18)	●	 (3) (Standard, with Chipbreaker) Traverse Cutting Possible	5.0	4.8				· High rigidity double clamping (Screw-on for Mini Holders) · Triangular type insert with 3 usable corners
	GWCS <i>Expansion</i>	 → F5	●	Traverse Cutting Possible	5.0	4.8				· "L-shaped" (side cut) GWC holder
	GWB ¹ Hardened Steel	 → F67	●	 (1) Traverse Cutting Possible	5.0	6.0				· High rigidity double clamping · Employs Coated SUMIBORON for interrupted turning of hardened steel
For Shallow Grooves to General Grooves	SGE	 → F56	●	 (2) Traverse Cutting Possible	8.0	6.0				· Traverse cutting (groove expansion) is possible
	GNDS <i>Expansion</i>	 → F30	●		10.0	6.0				· High-rigidity design reduces vibration · Enables high-efficiency turning and traversing thanks to its short tool overhang length
	GNDM For Small Lathes <i>Expansion</i>	 → F26	●		17.0	3.0				· High-rigidity design reduces vibration · 16x16, 20x12mm square shanks available
	GNDM-J Internal Coolant Supply For Small Lathes <i>Expansion</i>	 → F28 (→ D20)	●	 (2)	17.0	3.0				· GNDM type with internal coolant supply for small lathes
	GNDM <i>Expansion</i>	 → F32	●	 (2) Traverse Cutting Possible	18.0	8.0				· High-rigidity design reduces vibration · Perfect for traverse cutting and profiling
	GNDM-J Internal Coolant Supply <i>Expansion</i>	 → F34	●		18.0	6.0				· GNDM type with internal coolant supply
	GNDMS <i>Expansion</i>	 → F32	●		14.0	6.0				· "L-shaped" (side cut) GNDM type
	For Deep Grooves	GNDL For Small Lathes <i>Expansion</i>	 → F26	●		21.0	3.0			
GNDL-J Internal Coolant Supply For Small Lathes <i>Expansion</i>		 → F28 (→ D20)	●		21.0	3.0				· GNDL type with internal coolant supply for small lathes
GNDL <i>Expansion</i>		 → F36	●	 (2)	25.0	8.0				· High-rigidity design reduces vibration · Perfect for grooving, deep grooving and cut-off applications
GNDL-J Internal Coolant Supply <i>Expansion</i>		 → F38	●		25.0	6.0				· GNDL type with internal coolant supply
GNDLS <i>Expansion</i>		 → F36	●		25.0	6.0				· "L-shaped" (side cut) GNDL type
GNDXL		 → F40	●	 (1)	32.0	6.0				· Supports a maximum grooving depth of 32mm

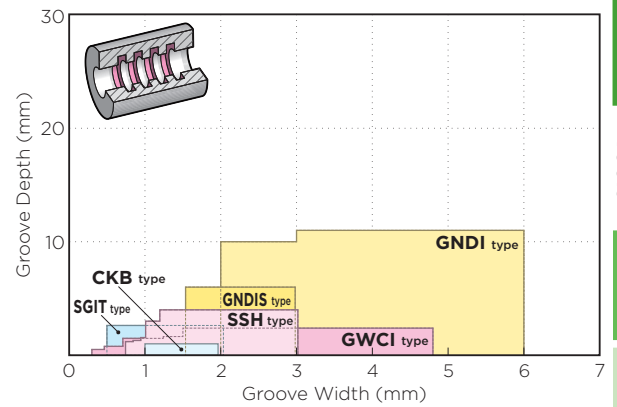
¹: For hardened steel, refer to page F68 for SUMIBORON Grooving Holder BNGG series. ²: Width of cut 2.0mm is a made-to-order item. Page numbers in () indicate Indexable Heads.

Selection Guide

Face Grooving



Internal Grooving



Face Grooving Tools

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

Application	Series	Shape	Structure			Insert Shape () indicates no. of cutting edges	Groove Depth* Groove Width*				Machining Diameter (mm)	Features	
			Screw-on	Clamp-on	Double Clamp		10	20	30 (mm)	2			4
For Very Small Dia.	CKB For Small Lathes			●			4.0	1.5	3.0			ø6 ~	· Face grooving for small lathes
For Small Diameters	SSH Internal Coolant Supply For Small Lathes			●			3.0	1.0	3.0			ø14 ~	· Face grooving for small lathes · Internal coolant supply for outstanding chip evacuation
For General Grooves to Deep Grooves	GNDF			●			23	3.0	6.0			ø35 ~ ø1,000	· High-rigidity design reduces vibration
	GNDFS Made-to-order item			●			20			16.0	18.0	ø70 ~	· L-shape (horizontal) type · For wide grooves

Internal Grooving Tools

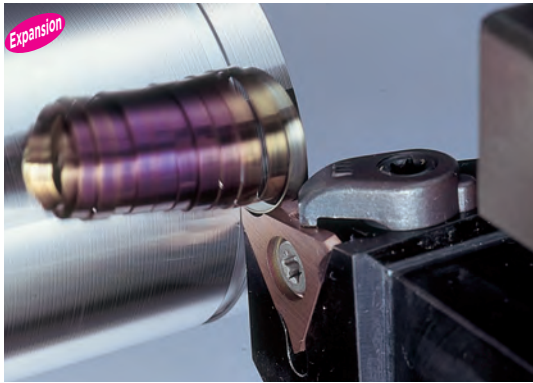
* mark: For groove depth and width combinations, refer to the above figures or the relevant page.

Application	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 For Small Lathes			●			1.0	1.0	2.0			ø4	· Very small diameter grooving · High clamping force · Wide variety of tool holders
	SGIT For Small Lathes			●			3.2	0.5	2.0			ø10	· 3-cornered type
For Small Diameters	SSH Internal Coolant Supply For Small Lathes			●			4.0	0.74	3.0			ø8	· Internal coolant supply for outstanding chip evacuation · Wide range of grooving widths · Tough carbide body for stable grooving · Also supports threading
For Shallow Grooves	GWCI			●			2.5	0.33	4.8			ø35	· Using same inserts as GWC series holders · Inserts with chipbreakers now in stock
For General Grooves to Deep Grooves	GNDIS Internal Coolant Supply For Small Lathes			●			6.6	1.5	3.0			ø14	· Supports grooving with minimum machining diameter from ø14
	GNDI Internal Coolant Supply			●			11.0	2.0	6.0			ø32	· High-rigidity design reduces vibration

Necking Tools

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

Application	Series	Shape	Structure			Insert Shape () indicates no. of cutting edges	Groove Depth* Groove Width*				Machining 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 ~	· Necking at corners possible



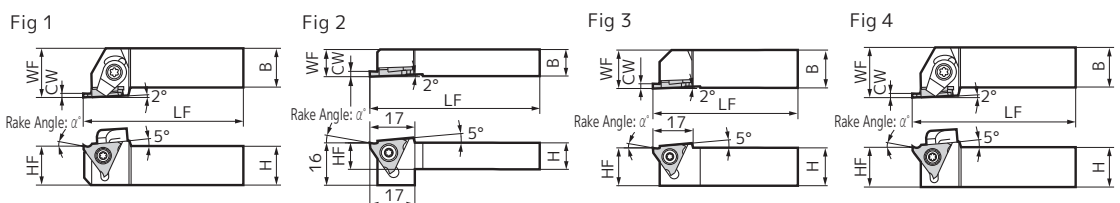
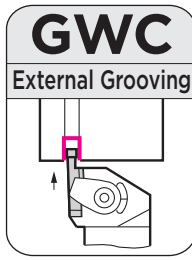
Features of GWC series for Shallow Groove

- The same insert can be used for both external and internal grooving.
- Full range of insert grades to cover a wide range of work materials.
Coated Carbide AC5015S ^{new} / AC5025S ^{new} / AC530U, Cemented Carbide H1, DLC Coat DL1500 ^{new}, Coated Cermet T2500Z, Cermet T1500A, SUMIBORON BN2000, and SUMIDIA DA2200 are now in stock.
- A wide range of grooving widths from 0.33mm to 4.8mm. ^{new}
- 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.)
- Inserts for threading are now available as a series. ^{new}

Inserts for Threading F7



Double Clamp / Screw-on for External Shallow Grooves



Note 1: Rake angle α° varies depending on the insert grade. Refer to the insert table on page 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	Maximum Groove Depth	Group No.	Fig	Flat Head 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	CCM6BL/R	WB6-20T/TL	5.0*	LT20
R/L1212-3	●	●	12	12	125	12	12	0.33 to 2.80	0.8 to 2.5	1	2							
R/L1616-3	●	●	16	16	125	16	16	0.33 to 2.80	0.8 to 2.5	1	3							
R/L2020-3	●	●	20	20	125	20	20	0.33 to 2.80	0.8 to 2.5	1	1							
R/L2525-3	●	●	25	25	150	30	25	0.33 to 2.80	0.8 to 2.5	1	1							
GWC R/L2020-15	●	●	20	20	125	25	20	1.00 to 1.45	2.0	2	4	BFTX0511N	5.0	TRX20	CCM8UL/R	WB8-22T/TL	5.0*	LT27
R/L2020-25	●	●	20	20	125	25	20	1.50 to 2.30	3.5	3	1							
R/L2020-35	●	●	20	20	125	25	20	2.50 to 4.80	5.0	4	1							
R/L2525-15	●	●	25	25	150	30	25	1.00 to 1.45	2.0	2	4							
R/L2525-25	●	●	25	25	150	30	25	1.50 to 2.30	3.5	3	1							
R/L2525-35	●	●	25	25	150	30	25	2.50 to 4.80	5.0	4	1							

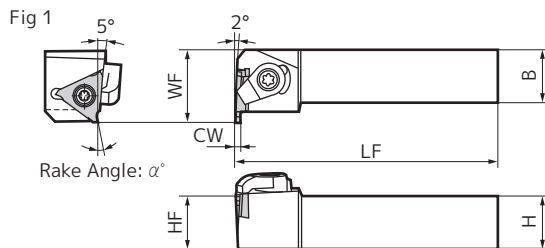
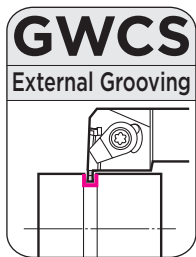
* mark: Cermet inserts have a recommended tightening torque of 4.0N · m.
Right-handed (R) tool holders are used with right-handed (R) inserts.
*Refer to TGA type insert group numbers on pages F6 to F9 for applicable inserts. Select applicable inserts for the holders by using matching group numbers.
*Right-handed (R) tool holders are compatible with left-handed clamp plates (CCMO□L) and right-handed double screws (WBO-20T)
Left-handed (L) tool holders are compatible with right-handed clamp plates (CCMO□R) and left-handed double screws (WBO-20TL).

Indexable Heads D18

GWCS type/GWCI type



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



Note 1: Rake angle α° varies depending on the insert grade. Refer to the insert table at the bottom of this page for details.

Note 2: Figure shows right-handed (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Width of Cut	Maximum Groove Depth	Group No.	Fig	Flat Head Screw	Wrench	Clamp Plate	Double Screw	Wrench		
	R	L										H	B	LF	WF	HF	CW	Maximum Groove Depth
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	CCM6BR/L	WB6-20TL/T	5.0*	LT20
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							
R/L2020-25	●	●	20	20	125	27	20	1.50 to 2.30	3.5	3	1							
R/L2020-35	●	●	20	20	125	27	20	2.50 to 4.80	5.0	4	1							
R/L2525-15	●	●	25	25	150	32	25	1.00 to 1.45	2.0	2	1	BFTX0511N	5.0	TRX20	CCM8UR/L	WB8-22TL/T	5.0*	LT27
R/L2525-25	●	●	25	25	150	32	25	1.50 to 2.30	3.5	3	1							
R/L2525-35	●	●	25	25	150	32	25	2.50 to 4.80	5.0	4	1							

*mark: Cermet inserts have a recommended tightening torque of 4.0N·m.

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

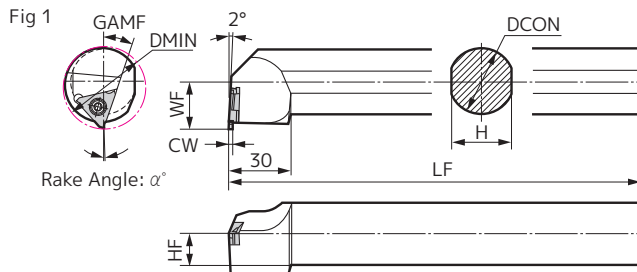
*Refer to TGA type insert group numbers on pages F6 to F9 for GWCS type holder applicable inserts. Select applicable inserts for the holders by using matching group numbers. TTE type inserts cannot be used.

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

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



Screw-on for Internal Diameter Shallow Grooves



Note 1: Rake angle α° varies depending on the insert grade. Refer to the insert table at the bottom of this page for details.

Note 2: Figure shows right-handed (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Diameter	Height	Overall Length	Cutting Edge Distance	Cutting Edge Height	Min. Bore Dia.	Rake Angle	Width of Cut	Maximum Groove Depth	Group No.	Fig	Flat Head Screw	Wrench	
	R	L												DCON	H	LF
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
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 are used with left-handed (L) inserts.

*Refer to TGA type insert group numbers on pages F6 to F9 for GWCI type holder applicable inserts. TTE type inserts cannot be used.

● Rake angle when mounted on a holder (α°)

	Coated Carbide	Cemented Carbide	DLC	Coated Cermet	Cermet	SUMIBORON	SUMIDIA
	AC5015S AC5025S AC530U	H1	DL1500	T2500Z	T1500A	BN2000	DA2200
External Grooving GWC GWCS	10°	20°	20°	10°	5°	0°	10°
Internal Grooving GWCI R/L325	1°	11°	11°	1°	-4°	-9°	1°
Internal Grooving GWCI R/L432	-1°	9°	9°	-1°	-6°	-11°	-1°

SEC-Grooving Tool Holders

GWC series

Expansion

Coated Carbide / Cemented Carbide / DLC / Cermet / SUMIBORON / SUMIDIA

Fig 1

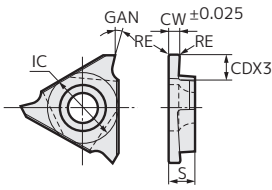
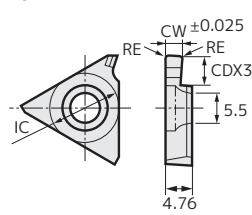


Fig 2 (For BN2000 / DA2200)



Grade	Cutting Edge Shape	GAN
Coated Carbide AC5015S/AC5025S	Honing	15°
Coated Carbide AC530U	Honing	15°
Cemented Carbide H1	Sharp Edged	25°
Coated Cermet T2500Z	Honing	15°
Cermet T1500A	Sharp Edged	10°
SUMIBORON BN2000	Negative Land	5°
SUMIDIA DA2200	Sharp Edged	15°

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

Square Edged Grooving Insert

Figure shows right-handed (R) tool.

Dimensions (mm)

Cat. No.*	AC5015S		AC5025S		AC530U		H1		DL1500		T2500Z		T1500A		BN2000		DA2200		Width of Cut	Maximum Depth of Cut CDX3		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	R	L	R	L		External Turning	Internal Threading					
TGA R/L3033(E)					●	●	●	●			●	●	●	●					0.33	0.8	0.5	0.05	9.525	3.18	1	1
R/L3043(E)					●	●	●	●			●	●	●	●					0.43	0.8	0.5	0.05	9.525	3.18	1	1
TGA R/L3050(E)					●	●	●	●	●	●	●	●	●	●					0.50	1.2	0.8	0.05	9.525	3.18	1	1
R/L3053(E)					●	●	●	●	●	●	●	●	●	●					0.53	1.2	0.8	0.05	9.525	3.18	1	1
R/L3065(E)					●	●	●	●			●	●	●	●					0.65	1.2	0.8	0.05	9.525	3.18	1	1
TGA R/L3075(E)					●	●	●	●	●	●	●	●	●	●					0.75	2.0	1.5	0.1*3	9.525	3.18	1	1
R/L3080(E)					●	●	●	●	●	●	●	●	●	●					0.80	2.0	1.5	0.1*3	9.525	3.18	1	1
R/L3095(E)					●	●	●	●			●	●	●	●					0.95	2.0	1.5	0.1*3	9.525	3.18	1	1
R/L3100(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●					1.00	2.0	1.5	0.1*3	9.525	3.18	1	1
R/L3110(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●					1.10	2.0	1.5	0.1*3	9.525	3.18	1	1
R/L3120(E)					●	●	●	●	●	●	●	●	●	●					1.20	2.0	1.5	0.1*3	9.525	3.18	1	1
R/L3125(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●					1.25	2.0	1.5	0.1*3	9.525	3.18	1	1
R/L3130(E)					●	●	●	●			●	●	●	●					1.30	2.0	1.5	0.1*3	9.525	3.18	1	1
R/L3135(E)					●	●	●	●			●	●	●	●					1.35	2.0	1.5	0.1*3	9.525	3.18	1	1
R/L3140(E)					●	●	●	●			●	●	●	●					1.40	2.0	1.5	0.1*3	9.525	3.18	1	1
R/L3145(E)					●	●	●	●	●	●	●	●	●	●					1.45	2.0	1.5	0.1*3	9.525	3.18	1	1
R/L3150(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●					1.50	2.0	1.5	0.1*3	9.525	3.18	1	1
R/L3160(E)					●	●	●	●			●	●	●	●					1.60	2.0	1.5	0.1*3	9.525	3.18	1	1
R/L3165(E)					●	●	●	●			●	●	●	●					1.65	2.0	1.5	0.1*3	9.525	3.18	1	1
R/L3175(E)					●	●	●	●			●	●	●	●					1.75	2.0	1.5	0.1*3	9.525	3.18	1	1
R/L3185(E)					●	●	●	●			●	●	●	●					1.85	2.0	1.5	0.1*3	9.525	3.18	1	1
TGA R/L3200(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●					2.00	2.5	2.0	0.1*3	9.525	3.18	1	1
R/L3220(E)					●	●	●	●			●	●	●	●					2.20	2.5	2.0	0.1*3	9.525	3.18	1	1
R/L3230(E)					●	●	●	●			●	●	●	●					2.30	2.5	2.0	0.1*3	9.525	3.18	1	1
R/L3250(E)					●	●	●	●			●	●	●	●					2.50	2.5	2.0	0.1*3	9.525	3.18	1	1
R/L3265(E)					●	●	●	●			●	●	●	●					2.65	2.5	2.0	0.1*3	9.525	3.18	1	1
R/L3270(E)					●	●	●	●			●	●	●	●					2.70	2.5	2.0	0.1*3	9.525	3.18	1	1
R/L3280(E)					●	●	●	●			●	●	●	●					2.80	2.5	2.0	0.1*3	9.525	3.18	1	1
R/L3300(E)	●	●	●	●	●	●	●	●	●	●	●	●	●	●					3.00	2.5	2.0	0.1*3	9.525	3.18	1	1
TGA R/L4125(E)					●	●	●	●			●	●	●	●	●	●	●	●	1.25	2.0	1.7	0.2*2	12.70	4.76	2	1(2)
R/L4145(E)					●	●	●	●			●	●	●	●	●	●	●	●	1.45	2.0	1.7	0.2*2	12.70	4.76	2	1
R/L4150(E)					●	●	●	●			●	●	●	●	●	●	●	●	1.50	3.5	2.5	0.2*2	12.70	4.76	3	1(2)
R/L4165(E)					●	●	●	●			●	●	●	●	●	●	●	●	1.65	3.5	2.5	0.2*2	12.70	4.76	3	1
R/L4175(E)					●	●	●	●			●	●	●	●	●	●	●	●	1.75	3.5	2.5	0.2*2	12.70	4.76	3	1
R/L4185(E)					●	●	●	●			●	●	●	●	●	●	●	●	1.85	3.5	2.5	0.2*2	12.70	4.76	3	1
R/L4200(E)					●	●	●	●			●	●	●	●	●	●	●	●	2.00	3.5	2.5	0.2*2	12.70	4.76	3	1(2)
R/L4220(E)					●	●	●	●			●	●	●	●	●	●	●	●	2.20	3.5	2.5	0.2*2	12.70	4.76	3	1
R/L4230(E)					●	●	●	●			●	●	●	●	●	●	●	●	2.30	3.5	2.5	0.2*2	12.70	4.76	3	1
R/L4250(E)					●	●	●	●			●	●	●	●	●	●	●	●	2.50	5.0 ⁻¹	2.5	0.3*2	12.70	4.76	4	1(2)
R/L4265(E)					●	●	●	●			●	●	●	●	●	●	●	●	2.65	5.0 ⁻¹	2.5	0.3*2	12.70	4.76	4	1
R/L4270(E)					●	●	●	●			●	●	●	●	●	●	●	●	2.70	5.0 ⁻¹	2.5	0.3*2	12.70	4.76	4	1
R/L4280(E)					●	●	●	●			●	●	●	●	●	●	●	●	2.80	5.0 ⁻¹	2.5	0.3*2	12.70	4.76	4	1
R/L4300(E)					●	●	●	●			●	●	●	●	●	●	●	●	3.00	5.0 ⁻¹	2.5	0.3*2	12.70	4.76	4	1(2)
R/L4320(E)					●	●	●	●			●	●	●	●	●	●	●	●	3.20	5.0 ⁻¹	2.5	0.3*2	12.70	4.76	4	1
R/L4330(E)					●	●	●	●			●	●	●	●	●	●	●	●	3.30	5.0 ⁻¹	2.5	0.3*2	12.70	4.76	4	1
R/L4350(E)					●	●	●	●			●	●	●	●	●	●	●	●	3.50	5.0	2.5	0.3*2	12.70	4.76	4	1(2)
R/L4370(E)					●	●	●	●			●	●	●	●	●	●	●	●	3.70	5.0	2.5	0.3*2	12.70	4.76	4	1
R/L4390(E)					●	●	●	●			●	●	●	●	●	●	●	●	3.90	5.0	2.5	0.3*2	12.70	4.76	4	1
R/L4400(E)					●	●	●	●			●	●	●	●	●	●	●	●	4.00	5.0	2.5	0.4*2	12.70	4.76	4	1(2)
R/L4410(E)					●	●	●	●			●	●	●	●	●	●	●	●	4.10	5.0	2.5	0.4*2	12.70	4.76	4	1
R/L4420(E)					●	●	●	●			●	●	●	●	●	●	●	●	4.20	5.0	2.5	0.4*2	12.70	4.76	4	1
R/L4430(E)					●	●	●	●			●	●	●	●	●	●	●	●	4.30	5.0	2.5	0.4*2	12.70	4.76	4	1
R/L4440(E)					●	●	●	●			●	●	●	●	●	●	●	●	4.40	5.0	2.5	0.4*2	12.70	4.76	4	1
R/L4450(E)					●	●	●	●			●	●	●	●	●	●	●	●	4.50	5.0	2.5	0.4*2	12.70	4.76	4	1
R/L4480(E)					●	●	●	●			●	●	●	●	●	●	●	●	4.80	5.0	2.5	0.4*2	12.70	5.00	4	1

*Add E as the part number suffix for T1500A. Select holders and inserts with matching group numbers. Also usable with Indexable Heads for APM series.

*1: For BN2000 and DA2200, the maximum depth of cut CDX3 is 4.0 for external turning and 2.5 for internal threading *2: RE = 0.2 for BN2000, RE = 0.1 for DA2200 *3: RE = 0.2 for T1500A

Recommended Cutting Conditions

Work Material	P General Steel			M Stainless Steel		S Exotic Alloy	N Non-Ferrous Metal			H Hardened Steel
Insert Grade	AC530U	T2500Z	T1500A	AC5015S AC5025S	AC530U	AC5015S AC5025S	H1	DL1500	DA2200	BN2000
Cutting Speed vc (m/min)	50-200	100-180	100-180	50-200	50-200	50-200	100-300	50-300	200-300	80-120
Feed Rate f (mm/rev)	0.02-0.10	0.05-0.10	0.05-0.08	0.02-0.10	0.02-0.10	0.02-0.10	0.02-0.15	0.02-0.15	0.05-0.15	0.03-0.07

(Coated Carbide / Cermet / Cemented Carbide)

Fig 1 (Round Edged Grooving)

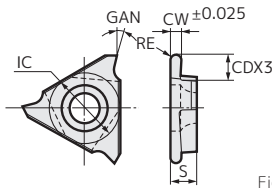


Figure shows right-handed (R) tool.

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

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

Round Edged Grooving Insert

Dimensions (mm)

Cat. No.	AC530U		H1		T2500Z		Width of Cut CW	Maximum Depth of Cut CDX3		Corner Radius RE	Inscribed Circle IC	Thickness S	* Group No.	Fig
	R	L	R	L	R	L		External Turning	Internal Threading					
	●	●	●	●	●	●								
TGA R/L4050R	●	●	●	●	●	●	1.00	2.0	1.7	0.50	12.70	4.76	2	1
TGA R/L4075R	●	●	●	●	●	●	1.50	3.5	2.5	0.75	12.70	4.76	3	1
R/L4100R	●	●	●	●	●	●	2.00	3.5	2.5	1.00	12.70	4.76	3	1
TGA R/L4125R	●	●	●	●	●	●	2.50	5.0	2.5	1.25	12.70	4.76	4	1
R/L4150R	●	●	●	●	●	●	3.00	5.0	2.5	1.50	12.70	4.76	4	1
R/L4200R	●	●	●	●	●	●	4.00	5.0	2.5	2.00	12.70	4.76	4	1

*Refer to pages F4 and F5 for group numbers of holders that can be used with GWC, GWCS and GWCI types. Select applicable inserts for the holders by using matching group numbers.

Recommended Cutting Conditions

Work Material	P General Steel			M Stainless Steel			N Non-Ferrous Metal		H Hardened Steel
Insert Grade	AC530U	T2500Z	T1500A	AC530U	T2500Z / T3000Z	T1500A	H1	DA2200	BN2000
Cutting Speed vc (m/min)	50-200	100-180	100-180	50-200	80-150	80-120	100-300	200-300	80-120
Feed Rate f (mm/rev)	0.02-0.10	0.05-0.10	0.05-0.08	0.02-0.10	0.05-0.08	0.05-0.08	0.02-0.15	0.05-0.15	0.03-0.07

New

Fig 1 (Threading)

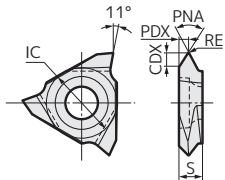


Figure shows right-handed (R) tool.

(Coated Carbide / DLC / Cermet)

Insert for Threading (General-purpose 60°/55° Threads)

Dimensions (mm)

Cat. No.	AC5015S		AC5025S		AC1030U		DL1500		T1500A		Pitch		Corner Radius RE	X Direction PDX	Depth of Cut CDX	Included Angle PNA	Inscribed Circle IC	Thickness S	* Group No.	Fig	
	R	L	R	L	R	L	R	L	R	L	mm	Threads/Inch									
	●	●	●	●	●	●	●	●	●	●											
TTE R/L36002075 <i>New</i>	●	●	●	●	●	●	●	●	●	●	●	0.20 to 0.75	80 to 32	0.05	0.55	0.65	60	9.525	3.18	1	1
R/L36005125 <i>New</i>	●	●	●	●	●	●	●	●	●	●	●	0.50 to 1.25	56 to 20	0.05	1.00	1.30	60	9.525	3.18	1	1
R/L3601015 <i>New</i>	●	●	●	●	●	●	●	●	●	●	●	1.00 to 1.50	24 to 16	0.10	1.30	1.80	60	9.525	3.18	1	1
R/L3601530 <i>New</i>	●	●	●	●	●	●	●	●	●	●	●	1.50 to 3.00	16 to 8	0.20	1.70	2.40	60	9.525	3.18	1	1
TTE R/L3554816 <i>New</i>	●	●	●	●	●	●	●	●	●	●	●	—	48 to 16	0.05	1.00	1.50	55	9.525	3.18	1	1
R/L3552008 <i>New</i>	●	●	●	●	●	●	●	●	●	●	●	—	20 to 8	0.10	1.50	2.40	55	9.525	3.18	1	1

*Refer to GWC series group numbers on page F4 for applicable holders. Not usable with GWCS or GWCI series. Select applicable inserts for the holders by using matching group numbers. Also usable with Indexable Heads for APM series.

Fig 1

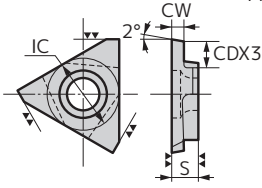


Fig 2

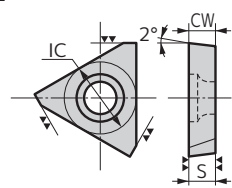


Figure shows right-handed (R) tool.

Insert Blank
 (Uncompleted inserts: Width of cut, corner radius and rake angle modifications are required.)

(Cermet / Cemented Carbide)

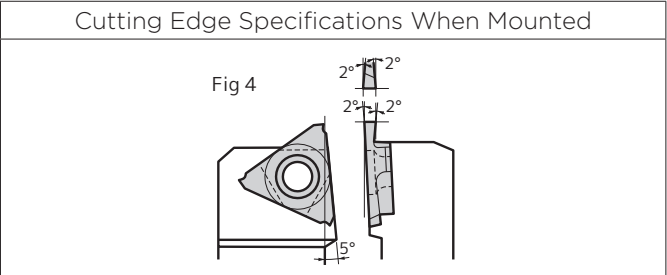
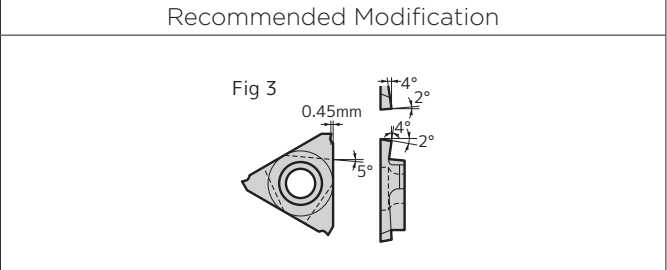
Dimensions (mm)

Cat. No.	KHO3		H1		EH510		T1500A		Width of Cut CW	Maximum Depth of Cut CDX3	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
R/L3-T23	●	●	●	●	●	●	●	●	2.35	(3.4)	9.525	3.18	1
R/L3-T31	●	●	●	●	●	●	●	●	3.18	—	9.525	3.18	2
R/L4-T22	●	●	●	●	●	●	●	●	2.20	(4.8)	12.70	4.76	1
R/L4-T37	●	●	●	●	●	●	●	●	3.75	(6.2)	12.70	4.76	1
R/L4-T47	●	●	●	●	●	●	●	●	4.76	—	12.70	4.76	2

[Note] Figures in () for CDX3 are reference values.

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.



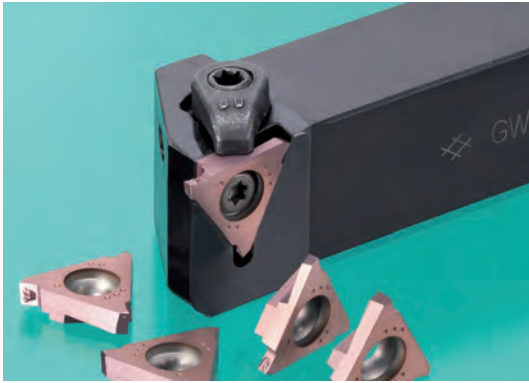
● **Ordering TGA type Blanks and Special Inserts**

Sumitomo Electric Hardmetal also accepts orders for insert blanks. Use the "Special Grooving Insert Request Form" on page F10 when ordering.

Use the "Special Grooving Insert Request Form" on page F10 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.

Fig 1

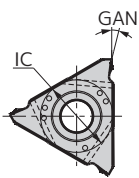
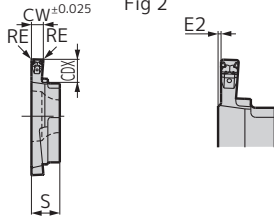


Fig 2



Grade	Cutting Edge Shape	GAN
Coated Carbide AC530U	Honing	15°

* For the rake angle when fitted on the holder, refer to page 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-handed (R) tool.



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

Cat. No.	AC530U		CDX3			Corner Radius RE	Inscribed Circle IC	Thickness S	Cutting Edge Distance E2	Group No.	Fig
	R	L	Width of Cut CW		Maximum Depth of Cut						
			External Turning	Internal Threading							
TGA R/L4140BF01	●	●	1.40	2.0	1.7	0.1	12.70	4.76	0.300	2	2
TGA R/L4165BF01	●	●	1.65	3.5	2.5	0.1	12.70	4.76	0.175	3	2
R/L4190BF01	●	●	1.90	3.5	2.5	0.1	12.70	4.76	—	3	1
R/L4220BF01	●	●	2.20	3.5	2.5	0.1	12.70	4.76	—	3	1
TGA R/L4270BF02	●	●	2.70	5.0	2.5	0.2	12.70	4.76	—	4	1
R/L4320BF02	●	●	3.20	5.0	2.5	0.2	12.70	4.76	—	4	1
R/L4420BF02	●	●	4.20	5.0	2.5	0.2	12.70	4.76	—	4	1
TGA R/L4150BF	●	●	1.50	3.5	2.5	0.2	12.70	4.76	0.250	3	2
R/L4165BF	●	●	1.65	3.5	2.5	0.2	12.70	4.76	0.175	3	2
R/L4175BF	●	●	1.75	3.5	2.5	0.2	12.70	4.76	0.125	3	2
R/L4185BF	●	●	1.85	3.5	2.5	0.2	12.70	4.76	0.075	3	2
R/L4200BF	●	●	2.00	3.5	2.5	0.2	12.70	4.76	—	3	1
R/L4220BF	●	●	2.20	3.5	2.5	0.2	12.70	4.76	—	3	1
R/L4230BF	●	●	2.30	3.5	2.5	0.2	12.70	4.76	—	3	1
TGA R/L4250BF	●	●	2.50	5.0	2.5	0.3	12.70	4.76	—	4	1
R/L4265BF	●	●	2.65	5.0	2.5	0.3	12.70	4.76	—	4	1
R/L4270BF	●	●	2.70	5.0	2.5	0.3	12.70	4.76	—	4	1
R/L4280BF	●	●	2.80	5.0	2.5	0.3	12.70	4.76	—	4	1
R/L4300BF	●	●	3.00	5.0	2.5	0.3	12.70	4.76	—	4	1
R/L4320BF	●	●	3.20	5.0	2.5	0.3	12.70	4.76	—	4	1
R/L4330BF	●	●	3.30	5.0	2.5	0.3	12.70	4.76	—	4	1
R/L4350BF	●	●	3.50	5.0	2.5	0.3	12.70	4.76	—	4	1
R/L4370BF	●	●	3.70	5.0	2.5	0.3	12.70	4.76	—	4	1
R/L4390BF	●	●	3.90	5.0	2.5	0.3	12.70	4.76	—	4	1
TGA R/L4400BF	●	●	4.00	5.0	2.5	0.4	12.70	4.76	—	4	1
R/L4410BF	●	●	4.10	5.0	2.5	0.4	12.70	4.76	—	4	1
R/L4420BF	●	●	4.20	5.0	2.5	0.4	12.70	4.76	—	4	1
R/L4430BF	●	●	4.30	5.0	2.5	0.4	12.70	4.76	—	4	1
R/L4440BF	●	●	4.40	5.0	2.5	0.4	12.70	4.76	—	4	1
R/L4450BF	●	●	4.50	5.0	2.5	0.4	12.70	4.76	—	4	1

Recommended Cutting Conditions

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

*Refer to pages F4 and F5 for group numbers of holders that can be used with GWC, GWCS and GWCI series.
 Select applicable inserts for the holders by using matching group numbers.

GWC series 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 your 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.)

Grooving Tools

T

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

Necking

CBN

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				

*Inquire about applicable holders.

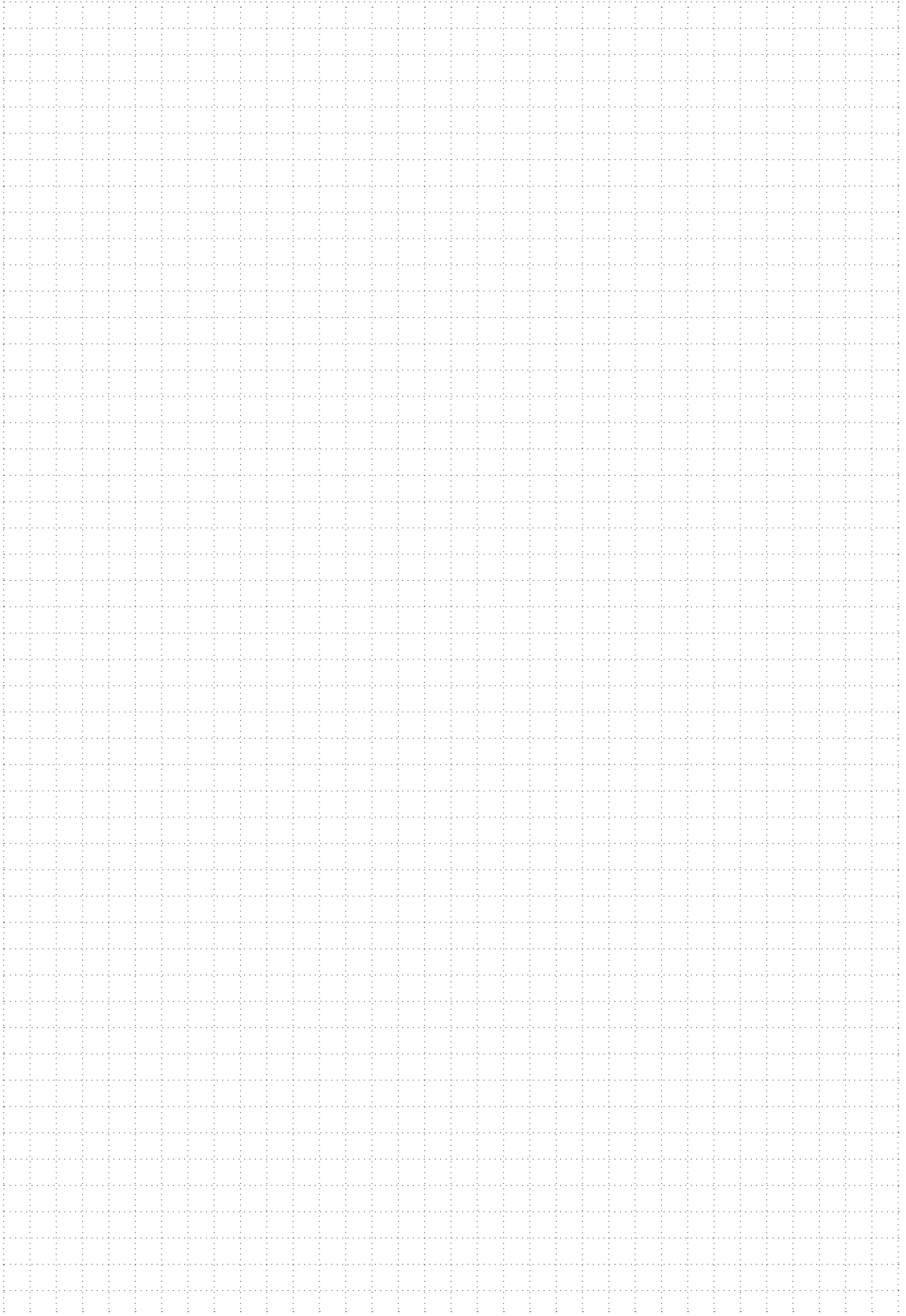
Form instructions

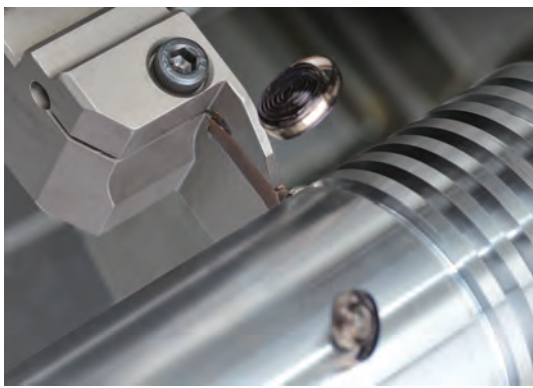
- The above illustration shows only external right-hand and internal left-hand inserts. (The external left-hand and internal right-hand inserts will be opposite to the above illustration.)
- The following two insert sizes are available.
 - Inscribed circle 9.525mm
 - Inscribed circle 12.70mm
- Dimension limits for groove width and groove depth.
 - Maximum Width of Cut (CW): 4.8mm
 - For Models (1) and (4): CW ≤ 4.8 (SumiTurn B-Groove (BF type) is 4.5mm)
 - For Model (2) : CW + C1 ≤ 4.8 (SumiTurn B-Groove (BF type) is 4.5mm)
 - For Model (3) : CW + E1 (or C1) + C2 ≤ 4.8 (SumiTurn B-Groove (BF type) is 4.5mm)
 - Minimum Width of Cut (CW)
 - For Insert Size "3": CW ≥ 0.33mm
 - For Insert Size "4": CW ≥ 0.75mm
 - Groove Depth (CDX)
 - For Insert Size "3": CDX ≤ 0.8 to CDX ≤ 2.5mm (For I.D.: CDX ≤ 0.8 to CDX ≤ 2.0)
 - For Insert Size "4": CDX ≤ 2.0 to CDX ≤ 5.0mm (For I.D.: CDX ≤ 2.0 to CDX ≤ 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	±0.025mm
CDX	±0.05mm
KAPR1, KAPR2	±1°

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).

MEMO





■ Features

- **Suitable for a wide variety of applications**
Applicable for grooving, traverse cutting, profiling, necking, facing and internal threading
- **Stable tool life**
A variety of chipbreakers improve chip control in various applications
Prevents sudden fractures due to chip clogging
- **Achieving high-efficiency grooving with reduced chattering**
The mono-block structure and die steel body reduce vibration during grooving 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 1.25mm to 6.0mm (lead angle of 0° or 5°)

■ Cutting Performance

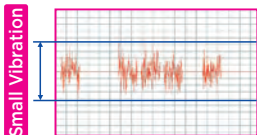
Reduced chattering

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

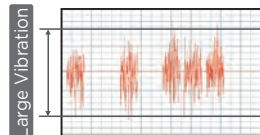
Die Steel Body



Mono-block Structure



GND series

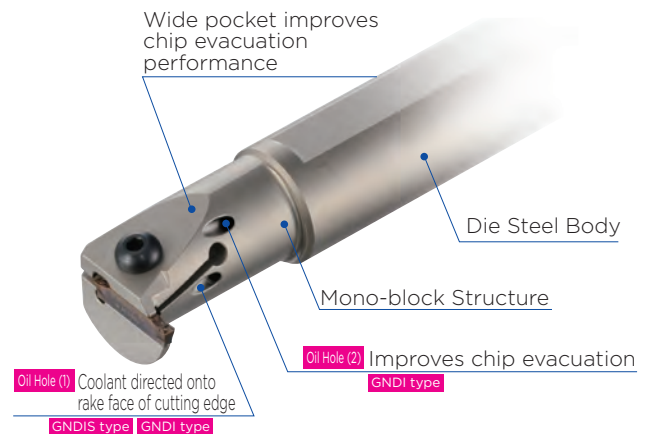


Competitor's Product A (Cassette type)

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

Both high rigidity and good chip evacuation performance **Internal Grooving**

Wide pocket improves chip evacuation performance



Die Steel Body

Mono-block Structure

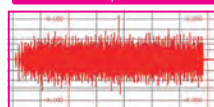
Oil Hole (2) Improves chip evacuation

GNDI type

Oil Hole (1) Coolant directed onto rake face of cutting edge

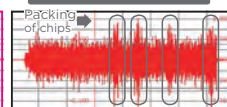
GNDIS type GNDI type

Stable Vibration / Reduced Runout



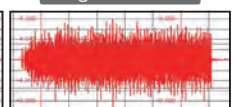
GND series

Unstable Vibration



Competitor's Product B

Large Vibration



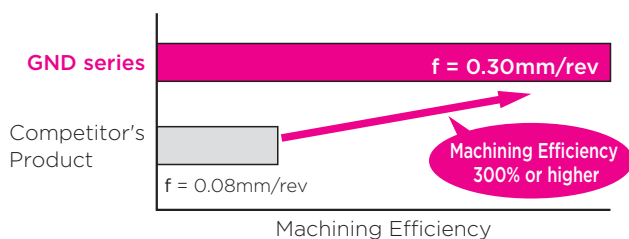
Competitor's Product C

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

■ Application Examples

Substantially improved machining efficiency

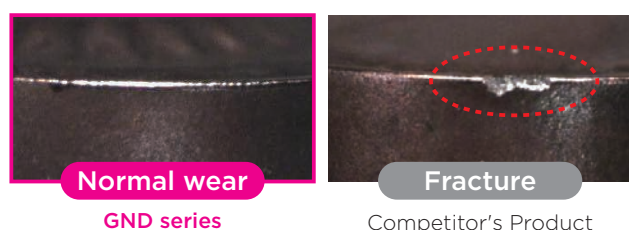
High-rigidity holder enables grooving at high feed rates



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

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

Reduction of chattering prevents unexpected breakage

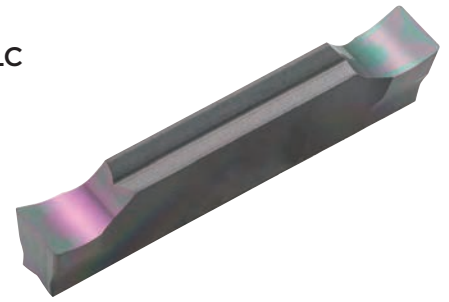


Work Material: S53C
Holder: GNDM L2525M-618 Insert: GCM N6030-RG (AC530U)
Cutting Conditions: $vc = 130\text{m/min}$ $f = 0.3\text{mm/rev}$ Wet

GND series

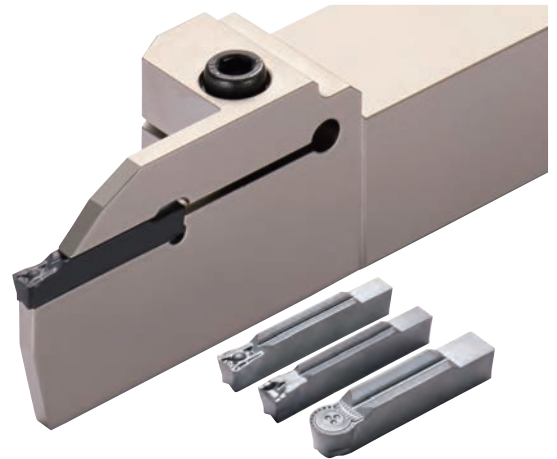
■ DL1500 Grade for Non-Ferrous Metal Grooving *New*

- DL1500 grade for grooving of non-ferrous metals, utilising DLC Coat with a low coefficient of friction and excellent adhesion resistance, is now available as a series

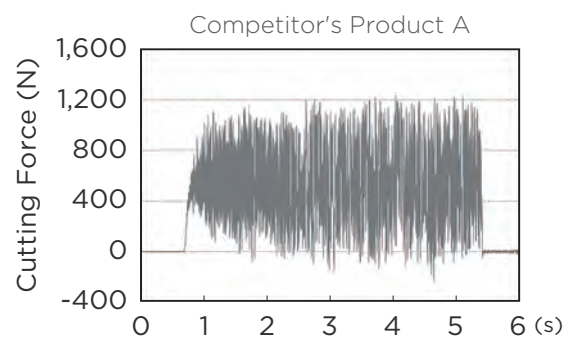
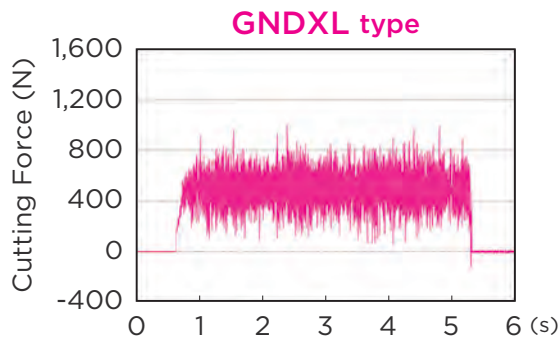


■ New Holders for Deep Grooves GNDXL type

- SEC-Grooving Tool Holders GND series lineup includes holders for deep grooves with groove depths of up to 32mm
- Mono-block high-rigidity body and insert realise superb vibration resistance with extra-strong clamp-on specifications
- Shank size lineup includes 20mm square and 25mm square
- Dedicated 1-cornered inserts for deep grooving with widths of cut from 3.0 to 6.0mm are stocked (2.0mm is a made-to-order item)
- Chipbreaker lineup includes ML type / GF type / RN type



● Vibration Resistance

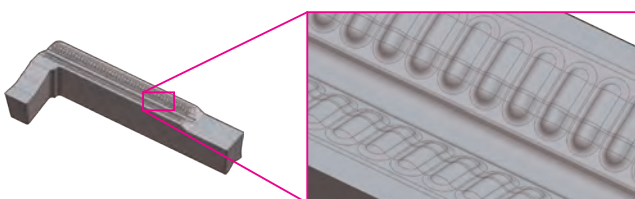


Work Material: SUS316 Holder: GNDXL R2525M-332 Insert: GCMN3002-GF1 (AC530U) Cutting Conditions: $v_c = 100\text{m/min}$ $f = 0.10\text{mm/rev}$ $a_p = 10\text{mm}$ Wet (External Coolant Supply)

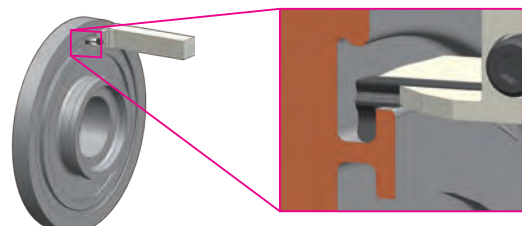
■ 90° Insert for Special Grooving (made-to-order item)

- Ideal for grooving in narrow spaces
- Widths of cut from 2.0mm to 5.0mm available as made-to-order items
- Various cutting edge designs possible with ground type inserts
- Utilises an unique insert fallout prevention design

Usage Example: Aerospace Engine Disc



Grip effect for extra-strong clamping



GND series 90° Insert Request Form F55

GND series

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

Grooving Tools

T

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

Necking

CBN

Grooving / Traverse Cutting			Grooving / Cut-off			Cut-off		Profiling	Profiling Necking	Non-Ferrous Metals	
General-purpose		Low Feed	General-purpose		Low Feed	Low Cutting Force	General-purpose	Low Cutting Force	General-purpose	General-purpose	
MG type		ML type	GG type		GL type	GF type	CG type	CF type	RG type	RN type	GA type
Standard chipbreaker for traverse cutting		For low-feed chip control	1st recommendation for grooving		For low-feed chip control	For low cutting force and chip control at low feeds	1st recommendation for cut-off machining	For low-feed chip control	For external profiling and radius grooving	For facing, internal profiling, radius grooving and necking	Ideal for aluminum alloy machining
Cutting Edge Cross Section 		Cutting Edge Cross Section 	Cutting Edge Cross Section 		Cutting Edge Cross Section 	Cutting Edge Cross Section 	Cutting Edge Cross Section 	Cutting Edge Cross Section 	Cutting Edge Cross Section 	Cutting Edge Cross Section 	Cutting Edge Cross Section
Edge Widths in Stock (mm) 1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0		Edge Widths in Stock (mm) 1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0	Edge Widths in Stock (mm) 1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0		Edge Widths in Stock (mm) 1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0	Edge Widths in Stock (mm) 1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0	Edge Widths in Stock (mm) 1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0	Edge Widths in Stock (mm) 1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0	Edge Widths in Stock (mm) 1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0	Edge Widths in Stock (mm) 1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0	Edge Widths in Stock (mm) 1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0
Stocked Grades AC8025P AC8035P AC8025P AC8035P AC830P AC425K AC830P AC425K AC5015S AC5025S AC5015S AC5025S AC520U AC530U AC520U AC530U AC1030U T2500A DL1500 H10		Stocked Grades AC8025P AC8035P AC830P AC425K AC5015S AC5025S AC520U AC530U AC1030U T2500A DL1500 H10	Stocked Grades AC8025P AC8035P AC8025P AC8035P AC830P AC425K AC830P AC425K AC5015S AC5025S AC5015S AC5025S AC520U AC530U AC520U AC530U AC1030U T2500A DL1500 H10		Stocked Grades AC8025P AC8035P AC830P AC425K AC5015S AC5025S AC520U AC530U AC1030U T2500A DL1500 H10	Stocked Grades AC8025P AC8035P AC830P AC425K AC5015S AC5025S AC520U AC530U AC1030U T2500A DL1500 H10	Stocked Grades AC8025P AC8035P AC830P AC425K AC5015S AC5025S AC520U AC530U AC1030U T2500A DL1500 H10	Stocked Grades AC8025P AC8035P AC830P AC425K AC5015S AC5025S AC520U AC530U AC1030U T2500A DL1500 H10	Stocked Grades AC8025P AC8035P AC830P AC425K AC5015S AC5025S AC520U AC530U AC1030U T2500A DL1500 H10	Stocked Grades AC8025P AC8035P AC830P AC425K AC5015S AC5025S AC520U AC530U AC1030U T2500A DL1500 H10	Stocked Grades AC8025P AC8035P AC830P AC425K AC5015S AC5025S AC520U AC530U AC1030U T2500A DL1500 H10
*: GNDIS type Only		*: GNDIS type Only	*: GNDIS type Only		*: GNDIS type Only	*: GNDIS type Only	*: GNDIS type Only	*: GNDIS type Only	*: GNDIS type Only	*: GNDIS type Only	*: GNDIS type Only
Lead Angle 5°		Lead Angle 10°/15°	Lead Angle 5°		Lead Angle 10°/15°	Lead Angle 5°	Lead Angle 10°/15°	Lead Angle 5°	Lead Angle 10°/15°	Lead Angle 5°	Lead Angle 10°/15°

■ Improved Chip Control

Grooving



GND series
(GG type Chipbreaker)



Conventional Tool

Work Material: SCM415
Holder: GNDL R2525M-320, Insert: GCM N3002-GG
Cutting Conditions: vc = 100m/min, f = 0.15mm/rev, ap = 12.0mm Wet

Traverse cutting



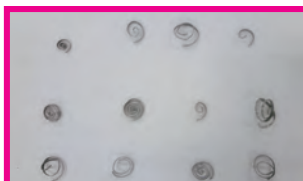
GND series
(ML type Chipbreaker)




Conventional Tool

Work Material: SCM415
Holder: GNDM R2525M-312 Insert: GCM N3002-ML
Cutting Conditions: vc = 100m/min, f = 0.10mm/rev, ap = 0.5mm Wet

Cut-off




GND series
(CG type Chipbreaker)




Competitor's Product

Work Material: SUS316 (ø30mm)
Holder: GNDL R2525M-220 Insert: GCM R2002-CG-05
Cutting Conditions: vc = 100m/min, f = 0.15mm/rev Wet

Profiling



GND series
(RG type Chipbreaker)



Conventional Tool

Work Material: SCM415
Holder: GNDM R2525M-312 Insert: GCM N3015-RG
Cutting Conditions: vc = 100m/min, f = 0.15mm/rev, ap = 0.1mm Wet

GND series



For External Turning (Straight Type, Groove Depth up to 25mm)

For External Machining (Straight Edge type Groove Depth up to 32mm)

Traverse Cutting / Profiling (Cut-off)

Grooving / Cut-off (Traverse Cutting)

Grooving / Cut-off (Traverse Cutting)

GND S type
Straight type
For Shallow Grooves

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

F30

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

GND M type
Straight type

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

F32

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

GND M-J type
Straight type
Internal Coolant Supply

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

F34

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

GND L type
Straight type

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

F36

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

GND L-J type
Straight type
Internal Coolant Supply

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

F38

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

GND XL type
Straight type

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

F40

Available Edge Widths (mm)

2.0	3.0	4.0
5.0	6.0	

Applicable Chipbreaker
ML GF RN

Inserts are dedicated products.

For External Machining Straight type series (Groove Depth up to 25mm)

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 cutting force type
CG: Cut-off / General-purpose type CF: Cut-off / Low cutting force type RG: Profiling / General-purpose type RN: Facing / Necking / General-purpose type GA: Non-Ferrous Metal / General-purpose type

Type	Shank Size (mm) Height H / Width B	Cutting Edge Width (mm)								Series	Max. Groove Depth (mm)							Ref. Page	Applicable Chipbreakers										
		1.25	1.5	2	3	4	5	6	7		8	5	10	15	20	25	30		35	MG	ML	GG	GL	GF	CG	CF	RG	RN	GA
Straight type	20	20	1.25	1.5							GNDM	10							F32					⊙					
			1.25	1.5							GNDL	16							F36					⊙					
			2	2							GND S	6							F30	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
			2	2							GNDM	10							F32	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
			2	2							GNDM-J	10							F34	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
			2	2							GNDL	20							F36	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
		25	2	2							GNDL-J	20							F38	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
			3	3							GND S	6							F30	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
			3	3							GNDM	12							F32	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
			3	3							GNDM-J	12							F34	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
			3	3							GNDL	20							F36	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
			3	3							GNDL-J	20							F38	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
	25	25	4	4						GND S	10							F30	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
			4	4						GNDM	18							F32	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
			4	4						GNDM-J	18							F34	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
			4	4						GNDL	25							F36	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
			4	4						GNDL-J	25							F38	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
			5	6						GND S	10							F30	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙	
		32	25	5	6						GNDM	18							F32	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
				5	6						GNDM-J	18							F34	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
				5	6						GNDL	25							F36	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
				5	6						GNDL-J	25							F38	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
				3	3						GNDM	12							F32	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
				3	3						GNDL	20							F36	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙
32	32	4	4						GNDM	18							F32	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙		
		4	4						GNDL	25							F36	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙		
		5	6						GNDM	18							F32	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙		
		5	6						GNDL	25							F36	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙		
		7	8						GNDM	18							F32	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙		
		7	8						GNDL	25							F36	⊙	⊙	⊙	⊙	⊙	⊙			⊙	⊙		

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

⊙: Best ○: Suitable

For External Machining Straight type series (Groove Depth up to 32mm)

ML: Multi-functional / Low-feed type GF: Grooving / Low cutting force type RN: Facing / Necking / General-purpose type

Type	Shank Size (mm) Height H / Width B	Cutting Edge Width (mm)					Series	Max. Groove Depth (mm)							Ref. Page	Applicable Chipbreakers (GNDXL type Dedicated)			
		2	3	4	5	6		5	10	15	20	25	30	35		ML	GF	RN	
Straight Edge type	20	20	2					GNDXL	26							F40	○	⊙	○
	25	25	3	4	5	6		GNDXL	32							F40	○	⊙	○

■: In Stock ■: Made-to-order item Note: Only dedicated 1-cornered inserts (insert part number suffix [1]) can be used for GNDXL type. ⊙: Best ○: Suitable

Grooving Tools

L

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

Necking

CBN

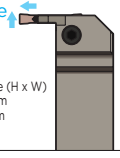
GND series

For External Machining (L type)

Traverse Cutting / Profiling (Cut-off)

Grooving / Cut-off (Traverse Cutting)

GNDMS type
L type



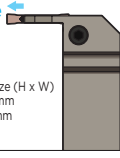
Shank Size (H x W)
20 x 20mm
25 x 25mm

F32

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

GNDLS type
L type



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

F36

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

For External Machining L type series

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 cutting force type
CG: Cut-off / General-purpose type CF: Cut-off / Low cutting force type RG: Profiling / General-purpose type RN: Facing / Necking / General-purpose type GA: Non-Ferrous Metal / General-purpose type

Type	Shank Size (mm)		Cutting Edge Width (mm)								Series	Max. Groove Depth (mm)						Ref. Page	Applicable Chipbreakers													
	Height H	Width B	1.25	1.5	2	3	4	5	6	7		8	5	10	15	20	25		30	MG	ML	GG	GL	GF	CG	CF	RG	RN	GA			
L type	20	20			2													16	F36													
						3							GNDLS							10	F32											
							3							GNDMS							16	F36										
								4						GNDMS							12	F32										
									5					GNDMS							12	F32										
										5				GNDMS							12	F32										
	25	25			2							GNDLS							18	F36												
						3							GNDMS							12	F32											
							3							GNDLS							18	F36										
								4						GNDMS							14	F32										
									4					GNDLS							23	F36										
										5	6			GNDMS							14	F32										
								5	6		GNDLS							23	F36													

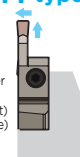
■: In Stock

◎: Best ○: Suitable

For External Turning (SumiPolygon Cassette)

Grooving / Cut-off / Traverse Cutting / Profiling

GNDCM type
Cassette



Applicable Holder
SumiPolygon
GND00 (Straight)
GND90 (L-Shape)

F52

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

SumiPolygon Cassette series

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 cutting force type
CG: Cut-off / General-purpose type CF: Cut-off / Low cutting force type RG: Profiling / General-purpose type RN: Facing / Necking / General-purpose type GA: Non-Ferrous Metal / General-purpose type

Type	Applicable SumiPolygon Holders	Cutting Edge Width (mm)								Series	Max. Groove Depth (mm)						Ref. Page	Applicable Chipbreakers											
		1.25	1.5	2	3	4	5	6	7		8	5	10	15	20	25		30	MG	ML	GG	GL	GF	CG	CF	RG	RN	GA	
Cassette	GND00 (Straight) GND90 (L type)			2													12	F52											
					3							GNDCM						12	F52										
						4												18	F52										
							5	6										18	F52										

■: In Stock

◎: Best ○: Suitable

GND series


For Necking

For Facing

Necking

Grooving / Traverse Cutting / Profiling

GNDN type
Straight type



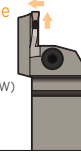
Shank Size (H x W)
20 x 20mm
25 x 25mm

F42

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 RN GA

GNDF type
Straight type



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

F44

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 RN GA

GNDFS type
L type



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

F46

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 RN GA

Necking series

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 cutting force type
CG: Cut-off / General-purpose type CF: Cut-off / Low cutting force type RG: Profiling / General-purpose type RN: Facing / Necking / General-purpose type GA: Non-Ferrous Metal / General-purpose type

Type	Shank Size (mm) Height H x Width B	Cutting Edge Width (mm)						Series	Max. Groove Depth (mm)						Min. Bore Dia. (mm)				Ref. Page	Applicable Chipbreakers											
		2	3	4	5	6	5		10	15	20	25	30	ø20	ø20	ø30	ø30	MG		ML	GG	GL	GF	CG	CF	RG	RN	GA			
Straight type	20 20	2						GNDN	1.5						ø20				F42												
		3							2.0						ø20					F42											
		4							3.0						ø30						F42										
		5							3.5						ø30							F42									
6						4.0						ø30				F42															

■: In Stock

⊙: Best

For Facing Straight / L type series

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 cutting force type
CG: Cut-off / General-purpose type CF: Cut-off / Low cutting force type RG: Profiling / General-purpose type RN: Facing / Necking / General-purpose type GA: Non-Ferrous Metal / General-purpose type

Type	Shank Size (mm) Height H x Width B	Cutting Edge Width (mm)								Series	Max. Groove Depth (mm)						Machining Diameter (mm)										Ref. Page	Applicable Chipbreakers													
		3	4	5	6	7	8	5	10		15	20	25	30	50	100	150	200	250	300	1,000	MG	ML	GG	GL	GF		CG	CF	RG	RN	GA									
Straight type	20 20	3								GNDF	12						ø35 ø45										F44														
		3									12						ø40 ø55											F44													
		3									18						ø50 ø70												F44												
		3									18						ø65 ø100													F44											
		3									18						ø90 ø150														F44										
		3									18						ø140 ø200															F44									
		3								18						ø180 ø300										F44															
		4								GNDF	18						ø40 ø55										F44														
		4									23						ø50 ø70											F44													
		4									23						ø65 ø90												F44												
		4									23						ø85 ø130													F44											
		4									23						ø125 ø200														F44										
	4								23						ø180 ø300										F44																
	5								GNDF	23						ø50 ø70										F44															
	5									23						ø65 ø90											F44														
	5									23						ø85 ø130												F44													
	5									23						ø125 ø200													F44												
	5									23						ø180 ø300														F44											
	5									23						ø280 ø1,000															F44										
	6								GNDF	23						ø50 ø75										F44															
	6									23						ø70 ø110											F44														
	6									23						ø100 ø200												F44													
	6									23						ø180 ø300													F44												
	6									23						ø280 ø1,000														F44											
6								23						ø280 ø1,000										F44																	
L type	25 25	6								GNDFS	20						ø70 ø100										F46														
		6									20						ø100 ø200											F46													
		6									20						ø180 ø300												F46												
		6									20						ø280 ø1,000													F46											
		6									20						ø450 -														F46										
		6									20						ø280 ø1,000															F46									
	8								GNDFS	20						ø70 ø100										F46															
	8									20						ø100 ø200											F46														
	8									20						ø180 ø300												F46													
	8									20						ø280 ø1,000													F46												
	8									20						ø450 -														F46											
	8									20						ø280 ø1,000															F46										

■: In Stock ■: Made-to-order item

⊙: Best

Grooving Tools

L

Grooving

Cut-off

Threading

External

Facing

Internal Turning

Necking

CBN

GND series

Grooving Tools

T

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

Necking

CBN

For Internal Machining (Bore Dia.: ϕ 14mm ~)

Grooving / Traverse Cutting / Profiling



Available Edge Widths (mm)

1.5	2.0	3.0
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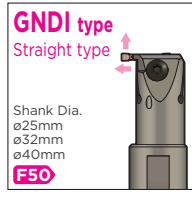
Applicable Chipbreaker

ML	GF
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Inserts are dedicated products.

For Internal Machining (Bore Dia.: ϕ 32mm ~)

Grooving / Traverse Cutting / Profiling



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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For Internal Machining (Bore Diameter ϕ 14mm ~)

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

Type	Shank Size DCON (mm)	Cutting Edge Width (mm)			Series	Max. Groove Depth (mm)	Min. Bore Dia. (mm)	Ref. Page	Applicable Chipbreakers (Dedicated to GNDIS type)	
		1.5	2	3					ML	GF
Straight type	ϕ 12	1.5			GNDIS	2.6	ϕ 14	F48		⊙
		1.5				3.6	ϕ 14	F48		⊙
			2	3		2.6	ϕ 14	F48	⊙	⊙
	ϕ 16	1.5			GNDIS	3.6	ϕ 16	F48		⊙
		1.5				4.6	ϕ 20	F48		⊙
			2	3		3.6	ϕ 16	F48	⊙	⊙
ϕ 20	1.5			GNDIS	4.6	ϕ 20	F48		⊙	
		2	3		6.6	ϕ 25	F48	⊙	⊙	
		2	3		6.6	ϕ 25	F48	⊙	⊙	

■: In Stock

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

⊙: Best

For Internal Machining (Bore Diameter ϕ 32mm ~)

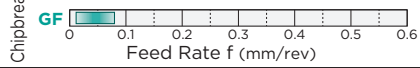
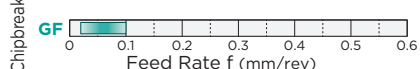
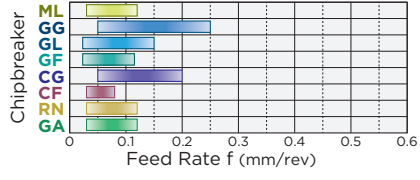
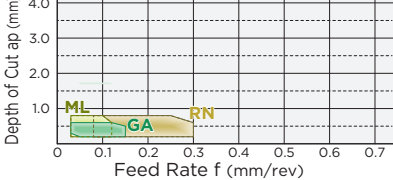
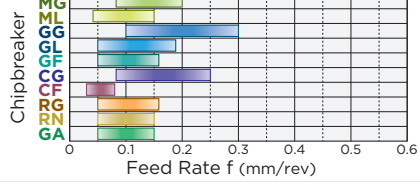
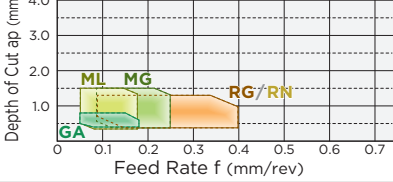
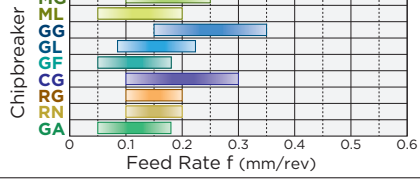
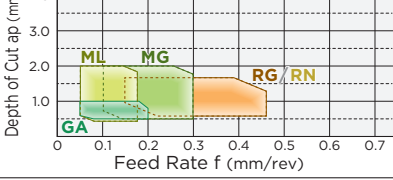
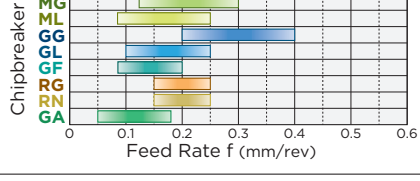
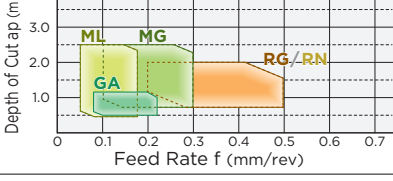
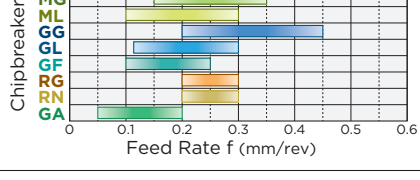
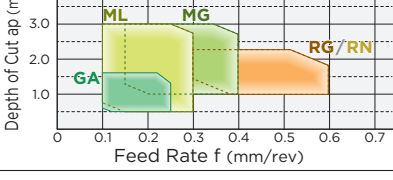
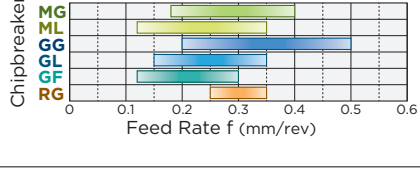
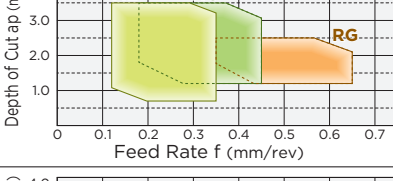
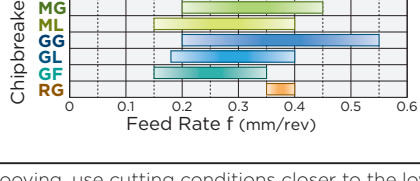
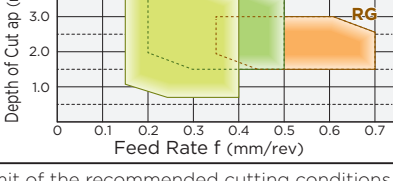
MG: Multi-functional / General-purpose type ML: Multi-functional / Low-feed type GC: Grooving / General-purpose type GL: Grooving / Low-feed type GF: Grooving / Low cutting force type CG: Cut-off / General-purpose type CF: Cut-off / Low cutting force type RG: Profiling / General-purpose type RN: Facing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

Type	Shank Size DCON (mm)	Cutting Edge Width (mm)					Series	Max. Groove Depth (mm)	Min. Bore Dia. (mm)	Ref. Page	Applicable Chipbreakers									
		2	3	4	5	6					MG	ML	GG	GL	GF	CG	CF	RG	RN	GA
Straight type	ϕ 25	2					GNDI	6	ϕ 32	F50	⊙	⊙	⊙	⊙					⊙	⊙
			3	4	5			6	ϕ 32	F50	⊙	⊙	⊙	⊙					⊙	⊙
	ϕ 32	2					GNDI	6	ϕ 32	F50	⊙	⊙	⊙	⊙					⊙	⊙
			3	4	5			10	ϕ 40	F50	⊙	⊙	⊙	⊙					⊙	⊙
ϕ 40		3	4	5	6	GNDI	11	ϕ 50	F50	⊙	⊙	⊙	⊙					⊙	⊙	

■: In Stock

⊙: Best ○: Suitable

GND series 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.

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 operations such as radius grooving when using the RG type chipbreaker with the GND type holder for facing. Use GNDXL type holders at feed rate 80% or below.

Recommended Cutting Conditions

Recommended Cutting Conditions for GNDIS type F49

Work Material	P Carbon Steel / Alloy Steel					M Stainless Steel			K Cast Iron				S Exotic Alloy		N Non-Ferrous Metal
Tool Grades	AC8025P	AC8035P AC830P	AC5015S AC520U	AC5025S AC530U AC1030U	T2500A	AC8035P AC830P	AC5015S AC520U	AC5025S AC530U AC1030U	AC8025P	AC425K	AC5015S AC520U	AC5025S AC530U AC1030U	AC5015S AC520U	AC5025S AC530U AC1030U	H10 DL1500
Cutting Speed vc (m/min)	80-250	80-200	80-200	50-200	50-200	70-150	70-150	50-150	80-200	80-200	60-200	50-200	20-80	20-60	150-300

Tools

L

Grooving

Cut-off

Threading

External Turning

Facing

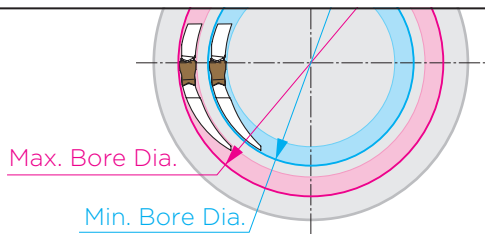
Internal Turning

Necking

CBN

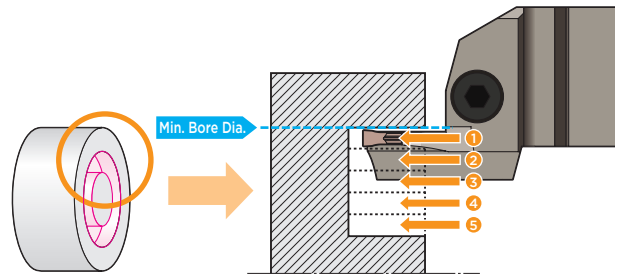
Key Points for Facing

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 turning start point 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 **ensure long chips for evacuation purposes**. (In face grooving, **very short chips easily get stuck in grooves**, which causes problems.)
- For breaking chips, step feed is required.

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

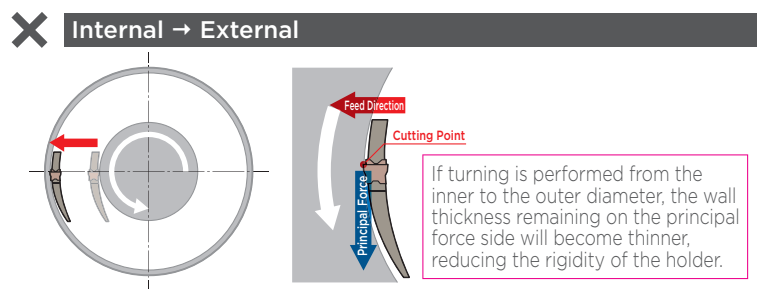
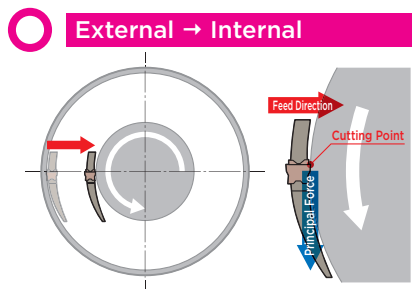


- If the first groove is within the effective work diameter range during groove expansion via plunging, the work diameter will not be limited for subsequent passes.

Precautions for Traverse Cutting

Recommended Chipbreakers **MG ML RN**

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



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

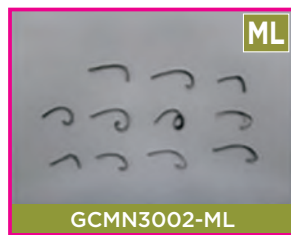
- If the turning start point for traverse face cutting operation is within the effective work diameter range, the work diameter will not be limited for traverse cutting.

Key Points in Internal Machining

Precautions for Internal Machining

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-OO
Cutting Conditions: $v_c = 100\text{m/min}$ $f = 0.1\text{mm/rev}$ $ap = 3.0\text{mm}$ Wet

Internal Machining



External Machining



Chip shapes differ between internal machining and external machining even under the same cutting conditions.

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

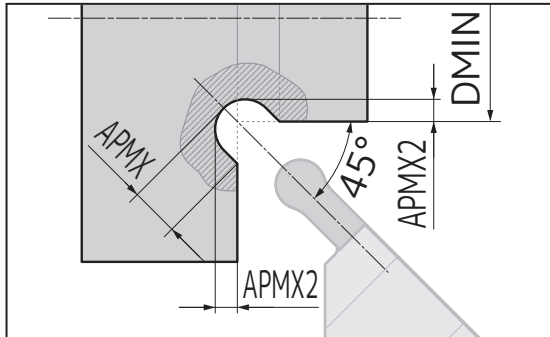


Key Points for Necking

Precautions for Necking

Recommended Chipbreaker **RN**

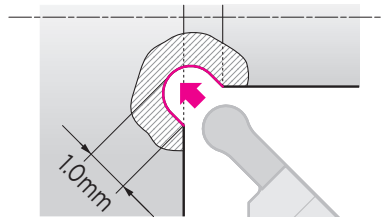
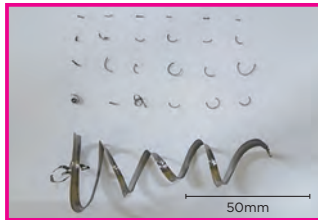
Distance from Work Material to Necking Depth



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 bore diameter (DMIN) or less.

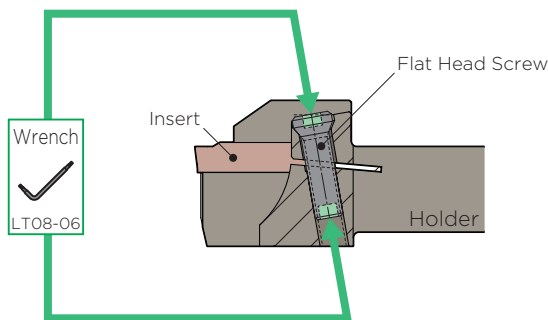
Chip Shape



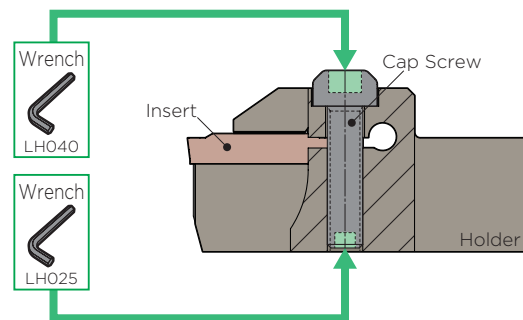
Work Material : SCM435 Groove Width: 3.0mm
 Holder : GNDN R2020K-320-020
 Insert : GCMN3015-RN
 Cutting Conditions : $vc = 100\text{m/min}$ $f = 0.1\text{mm/rev}$
 Necking Depth = 1.0mm Wet

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**



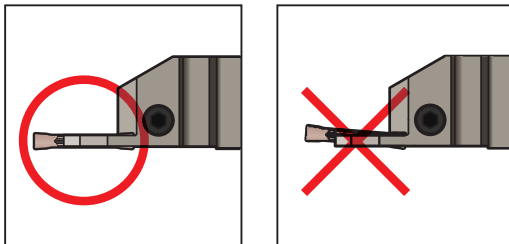
16mm square holder: **GNDM R/L1616JX-000J**
GNDL R/L1616JX-000J

Precautions for SEC-Grooving Tool Holders GND series

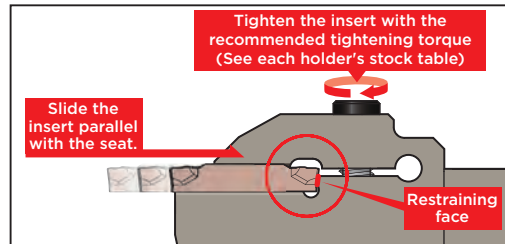
■ Insert Mounting Precautions

- (1) Remove any dust, etc. from the insert seat, bolt, and bolt hole before attaching the insert.
- (2) Remove any scratches or burrs found on the insert seat.
- (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.**

Mount the insert parallel to the seat



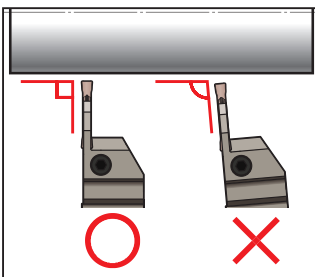
Be sure to push the insert to the end



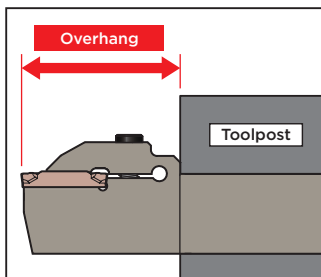
■ Precautions when Mounting Holders

- (1) Remove any dust and oil from the toolpost before setting the holder.
- (2) Remove any scratches or burrs found on the toolpost.
- (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 $\pm 0\text{mm}$ as possible. (Within $\pm 0.1\text{mm}$ is recommended.)
Incorrect centre height adjustment may cause chattering. In cut-off applications, adjust the centre height of the cutting edge to a value from 0 to $+0.2\text{mm}$.
A lower centre height will result in a larger pip at the centre.
- (6) Position the coolant supply nozzle so that the coolant can be directed at the top of the upper clamp unit.

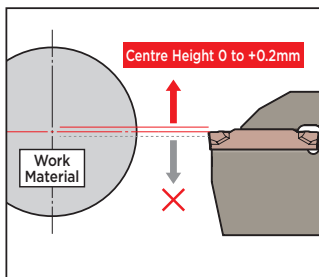
Mount the holder perpendicular to the workpiece.



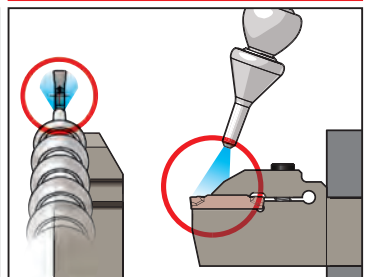
The overhang should be short.



Centre height adjustment in cut-off applications



Supply coolant to 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 series

■ Piping Method for Hoses and Connectors

Internal Coolant Holders
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 figures below.

Piping from bottom (at shipping)
 Piping from bottom

Piping from back end
 Piping from back end

*The plug will protrude a few millimetres 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 figures below.

Piping from side (at shipping)
 Piping from side

Piping from back end
 Piping from back end

Coolant Supply without Hose Compatible Products
 Plug XP02

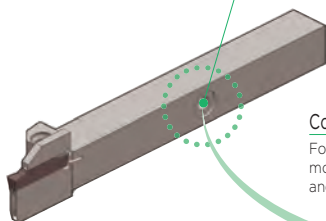
*1: The plug will protrude a few millimetres when mounted on the side.
 *2: The plug is mounted as default, so remove it for use with coolant supply without hose.

Coolant Supply to Holders Without Hose

Coolant can be supplied directly from the toolpost without a hose

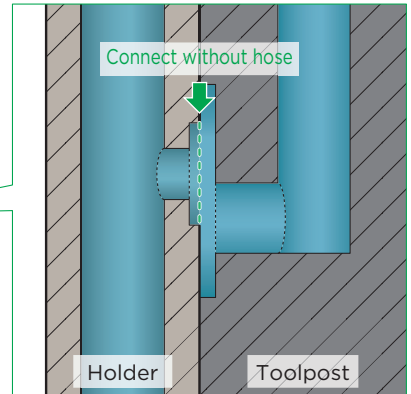
Connecting Point for Coolant Supply without Hose

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

Connecting point cross-section



Compatible Toolpost for Coolant Supply without Hose

Coolant Supply to Holders Without Hose

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

GNDM type / GNDL type



*For traverse cutting (groove expansion), use a multi-functional or profiling insert.

For Small Lathes, External Multi-Functional (Grooving, Traverse Cutting and Profiling) Clamp-on



Grooving Tools

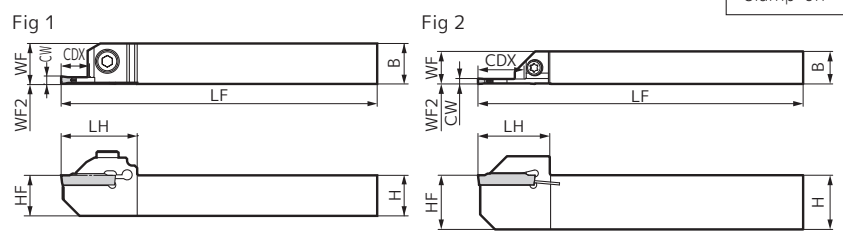
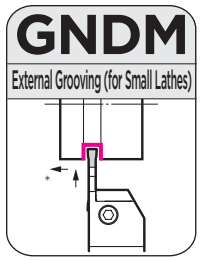


Figure shows right-handed (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Head	Offset	Width of Cut	Maximum Groove Depth	Max. Cut-off Dia.	Applicable Insert	Fig	Cap Screw		Wrench
	R	L													B	LF	
GNDM R/L1616JX-1.2508	●	●	16	16	120	(16)	16	26	0	1.25	8.0	16	GCM N125005-GF	1	BX0515		LT15-10
R/L1616JX-1.510	●	●	16	16	120	(16)	16	26	0	1.50	10.0	20	GCM N150005-GF	1	BFTX0414	4.0	LH040
R/L1616JX-212	●	●	16	16	120	(16)	16	30	0	2.00	12.0	24	GCC □200□-□□	1	BX0515	4.0	LH040
R/L1616JX-312	●	●	16	16	120	(16)	16	30	0	3.00	12.0	24	GCC □300□-□□	1	BX0515	4.0	LH040
GNDM R/L2012JX-217	●	●	20	12	120	(12)	20	26.5	0	2.00	17.0	34	GCC □200□-□□	2	BFTX0414	3.0	LT15-10
R/L2012JX-317	●	●	20	12	120	(12)	20	26.5	0	3.00	17.0	34	GCC □300□-□□	2	BFTX0414	3.0	LT15-10

Select holders and inserts with matching width of cut (CW). Refer to page F27 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.

External Turning



For Small Lathes, External Grooving & Cut-off Clamp-on



Facing
Internal Turning

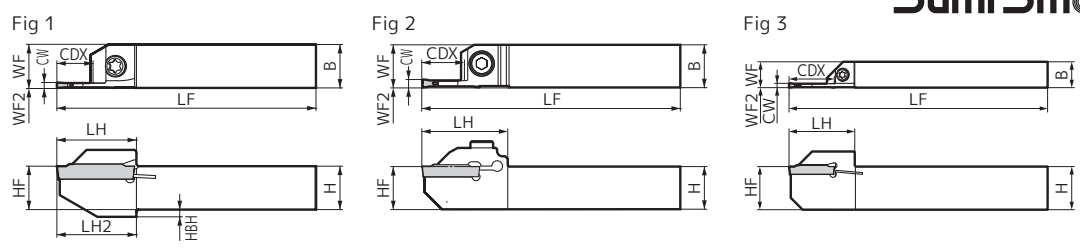
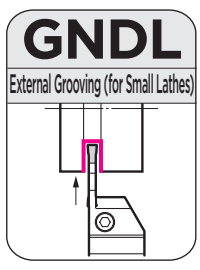


Figure shows right-handed (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Step	Head	Head	Offset	Width of Cut	Maximum Groove Depth	Max. Cut-off Dia.	Applicable Insert	Fig	Flat Head Screw / Cap Screw		Wrench
	R	L															B	LF	
GNDL R/L1010JX-1.2510	●	●	10	10	120	(10)	10	2.0	18	18.3	0	1.25	10.0	20	GCM N125005-GF	1	BFTX0412N		LT15-10
R/L1010JX-1.510	●	●	10	10	120	(10)	10	2.0	18	18.3	0	1.50	10.0	20	GCM N150005-GF	1	BFTX0414	3.0	LT15-10
R/L1010JX-210	●	●	10	10	120	(10)	10	2.0	22	22.3	0	2.00	10.0	20	GCC □200□-□□	1	BFTX0412N	3.0	LT15-10
R/L1010JX-310	●	●	10	10	120	(10)	10	2.0	22	22.3	0	3.00	10.0	20	GCC □300□-□□	1	BFTX0412N	3.0	LT15-10
GNDL R/L1212JX-1.2512	●	●	12	12	120	(12)	12	2.0	19	19.3	0	1.25	12.0	24	GCM N125005-GF	1	BFTX0412N	3.0	LT15-10
R/L1212JX-1.512	●	●	12	12	120	(12)	12	2.0	19	19.3	0	1.50	12.0	24	GCM N150005-GF	1	BFTX0412N	3.0	LT15-10
R/L1212JX-212.5	●	●	12	12	120	(12)	12	2.0	22	22.3	0	2.00	12.5	25	GCC □200□-□□	1	BFTX0412N	3.0	LT15-10
R/L1212JX-312.5	●	●	12	12	120	(12)	12	2.0	22	22.3	0	3.00	12.5	25	GCC □300□-□□	1	BFTX0412N	3.0	LT15-10
GNDL R/L1616JX-1.2512.5	●	●	16	16	120	(16)	16	—	28	—	0	1.25	12.5	20	GCM N125005-GF	2	BX0515	4.0	LH040
R/L1616JX-1.512.5	●	●	16	16	120	(16)	16	—	28	—	0	1.50	12.5	25	GCM N150005-GF	2	BX0515	4.0	LH040
R/L1616JX-216	●	●	16	16	120	(16)	16	—	32	—	0	2.00	16.0	32	GCC □200□-□□	2	BX0515	4.0	LH040
R/L1616JX-316	●	●	16	16	120	(16)	16	—	32	—	0	3.00	16.0	32	GCC □300□-□□	2	BX0515	4.0	LH040
GNDL R/L2012JX-221	●	●	20	12	120	(12)	20	—	30.5	—	0	2.00	21.0	42	GCC □200□-□□	3	BFTX0414	3.0	LT15-10
R/L2012JX-321	●	●	20	12	120	(12)	20	—	30.5	—	0	3.00	21.0	42	GCC □300□-□□	3	BFTX0414	3.0	LT15-10

Select holders and inserts with matching width of cut (CW). Refer to page F27 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.

GNDM type / GNDL type



Inserts for GNDM type (For Small Lathes)/GNDL type (For Small Lathes)

Coated Carbide / Cermet / Cemented Carbide / DLC

Fig 1

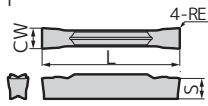


Fig 2 (Figure shows right-handed (R) tool)

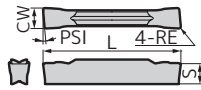


Fig 3

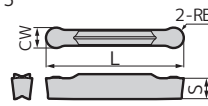
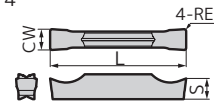


Fig 4



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															
	Width of Cut	Tolerance	RE	L	S	Pcs/Pack	Fig									
GCM N3002-MG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	3.0	±0.03	0.2	21.1	3.8	5	1
N3004-MG	●	●	▲	●	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	5	1
GCM N2002-ML	—	—	—	—	●	●	●	—	—	2.0	±0.03	0.2	21.1	3.6	1	1
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	1	1

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															
	Width of Cut	Tolerance	RE	L	S	Pcs/Pack	Fig									
GCM N2002-GG	—	—	●	▲	—	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	1	1
GCM N3002-GG	—	—	●	▲	—	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	5	1
N3004-GG	—	—	●	▲	—	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	1	1
GCM N2002-GL	—	—	●	▲	—	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	1	1
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	1	1
N3004-GL	—	—	●	▲	—	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	1	1
GCM N125005-GF	—	—	—	—	—	—	—	—	—	1.25	±0.03	0.05	17.4	3.2	1	1
GCM N150005-GF	—	—	—	—	—	—	—	—	—	1.5	±0.03	0.05	17.8	3.7	1	1
GCM N2002-GF	—	—	—	—	●	●	●	—	—	2.0	±0.03	0.2	21.1	3.6	5	1
N2004-GF	—	—	—	—	●	●	●	—	—	2.0	±0.03	0.4	21.1	3.6	1	1
GCM N3002-GF	—	—	●	▲	—	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
N3004-GF	—	—	●	▲	—	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	1	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															
	Width of Cut	Tolerance	RE	L	S	Pcs/Pack	Fig									
GCM R2002-CG-05	AC8025P	AC8035P	AC830P	AC5015S	AC5025S	AC520U	AC530U	AC1030U	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	5	2
GCM R3002-CG-05	—	—	●	▲	—	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	2	2
L3002-CG-05	—	—	●	▲	—	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	2	2
GCM R20003-CF-10	—	—	—	—	●	●	—	●	10°	2.0	±0.08	0.03	22.4	3.6	2	2
L20003-CF-10	—	—	—	—	●	●	—	●	10°	2.0	±0.08	0.03	22.4	3.6	2	2
GCM R30003-CF-10	—	—	—	—	●	●	—	●	10°	3.0	±0.08	0.03	22.4	3.8	2	2
L30003-CF-10	—	—	—	—	●	●	—	●	10°	3.0	±0.08	0.03	22.4	3.8	5	2
GCM R20003-CF-15	—	—	—	—	●	●	—	●	15°	2.0	±0.08	0.03	22.4	3.6	2	2
L20003-CF-15	—	—	—	—	●	●	—	●	15°	2.0	±0.08	0.03	22.4	3.6	2	2
GCM R30003-CF-15	—	—	—	—	●	●	—	●	15°	3.0	±0.08	0.03	22.4	3.8	2	2
L30003-CF-15	—	—	—	—	●	●	—	●	15°	3.0	±0.08	0.03	22.4	3.8	2	2

GCM R: Right-handed, GCM L: Left-handed

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															
	Width of Cut	Tolerance	RE	L	S	Pcs/Pack	Fig									
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

Dimensions (mm)

Cat. No.	Width of Cut CW							Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig				
	Width of Cut															
	Width of Cut	Tolerance	RE	L	S	Pcs/Pack	Fig									
GCM N2010-RN	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	—	2.0	±0.03	1.0	21.7	3.6	5	3
N3015-RN	●	●	▲	●	●	●	●	●	—	3.0	±0.03	1.5	22.6	3.8	5	3

Non-Ferrous Metals

Dimensions (mm)

Cat. No.	Width of Cut CW							Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig				
	Width of Cut															
	Width of Cut	Tolerance	RE	L	S	Pcs/Pack	Fig									
GCG N2002-GA	H10	DL1500	—	—	—	—	—	—	—	2.0	±0.025	0.2	21.1	3.6	5	4
N3002-GA	●	●	—	—	—	—	—	—	—	3.0	±0.025	0.2	21.1	3.8	5	4

Part Number Suffix Code (Chipbreakers)

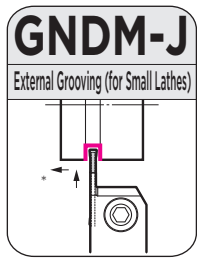
Type	Symbol	Application	Type	Symbol	Application
Grooving / Traverse Cutting	MG	Multi-functional / General-purpose	Cut-off (Handed Edge)	CG	Cut-off / General-purpose
	ML	Multi-functional / Low feed		CF	Cut-off / Low cutting force
Grooving / Cut-off	GG	Grooving / General-purpose	External Profiling / External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

Chipbreaker Selection **F15** Precautions for Use **F24** Recommended Cutting Conditions **F21**

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

● mark: Standard stocked item (new product/expanded item) ▲ mark: To be replaced by a new product, made to order, or discontinued (please confirm stock availability)

GNDM-J type / GNDL-J type



- External
- Zero Offset
- Internal Coolant

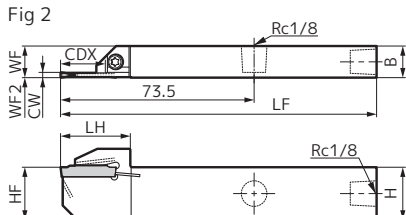
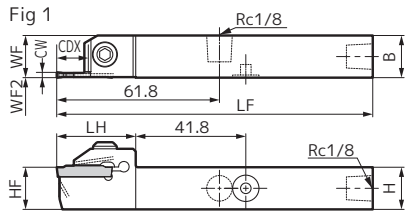


Figure shows right-handed (R) tool.

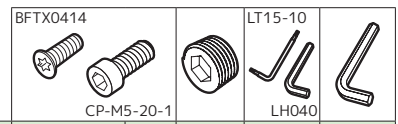
*For traverse cutting (groove expansion), use a multi-functional or profiling insert.

Holder

Dimensions (mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Head	Offset	Width of Cut	Maximum Groove Depth	Max. Cut-off Dia.	Applicable Insert	Fig	Flat Head Screw / Cap Screw	N·m	Plug	Top Hex Wrench	Bottom Hex Wrench
	R	L																	
GNDM R/L1616JX-212J	●	●	16	16	120	(16)	16	30.0	0	2.0	12.0	24	GCO □2000-□□	1	CP-M5-20-1	5.0	XPO2	LH040	LH025
R/L1616JX-312J	●	●	16	16	120	(16)	16	30.0	0	3.0	12.0	24	GCO □3000-□□	1	CP-M5-20-1	5.0	XPO2	LH040	LH025
GNDM R/L2012JX-217J	●	●	20	12	120	(12)	20	26.5	0	2.0	17.0	34	GCO □2000-□□	2	BFTX0414	3.0	XPO2	LT15-10	—
R/L2012JX-317J	●	●	20	12	120	(12)	20	26.5	0	3.0	17.0	34	GCO □3000-□□	2	BFTX0414	3.0	XPO2	LT15-10	—

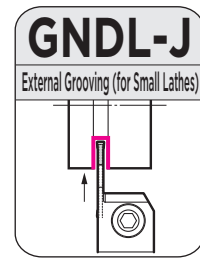
Parts



Select holders and inserts with matching width of cut (CW). Refer to page F29 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.

Indexable Heads D20



- External
- Zero Offset
- Internal Coolant

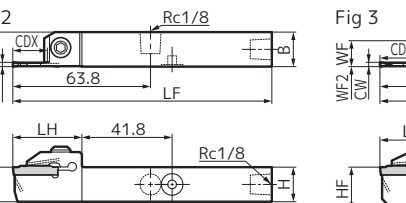
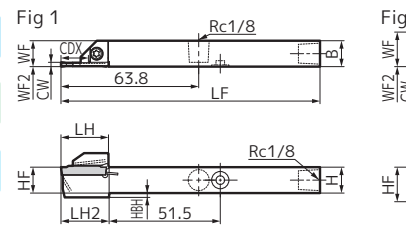


Figure shows right-handed (R) tool.

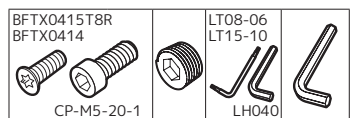


Holder

Dimensions (mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Step	Head	Head	Offset	Width of Cut	Maximum Groove Depth	Max. Cut-off Dia.	Applicable Insert	Fig	Flat Head Screw / Cap Screw	N·m	Plug	Top Hex Wrench	Bottom Hex Wrench
	R	L																			
GNDL R/L1212JX-212.5J	●	●	12	12	120	(12)	12	2.0	22.0	22.3	0	2.0	12.5	25	GCO □2000-□□	1	BFTX0415T8R	1.5	XPO2	LT08-06	←
R/L1212JX-312.5J	●	●	12	12	120	(12)	12	2.0	22.0	22.3	0	3.0	12.5	25	GCO □3000-□□	1	BFTX0415T8R	1.5	XPO2	LT08-06	←
GNDL R/L1616JX-216J	●	●	16	16	120	(16)	16	—	32.0	—	0	2.0	16.0	32	GCO □2000-□□	2	CP-M5-20-1	5.0	XPO2	LH040	LH025
R/L1616JX-316J	●	●	16	16	120	(16)	16	—	32.0	—	0	3.0	16.0	32	GCO □3000-□□	2	CP-M5-20-1	5.0	XPO2	LH040	LH025
GNDL R/L2012JX-221J	●	●	20	12	120	(12)	20	—	30.5	—	0	2.0	21.0	42	GCO □2000-□□	3	BFTX0414	3.0	XPO2	LT15-10	—
R/L2012JX-321J	●	●	20	12	120	(12)	20	—	30.5	—	0	3.0	21.0	42	GCO □3000-□□	3	BFTX0414	3.0	XPO2	LT15-10	—

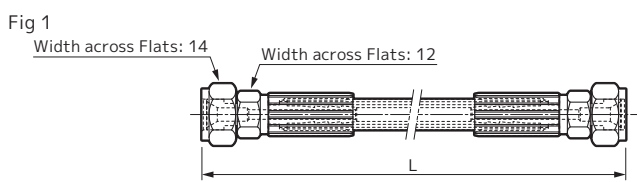
Parts



Select holders and inserts with matching width of cut (CW). Refer to page F29 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.

Indexable Heads D20



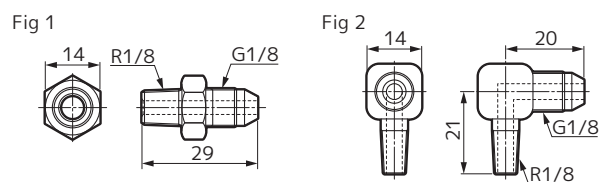
Parts (Hose)

Dimensions (mm)

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

Hoses are sold separately.

Piping Method for Hoses and Connectors F25



Parts (Connector)

Dimensions (mm)

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

Connectors are sold separately.

Piping Method for Hoses and Connectors F25

GNDM-J type / GNDL-J type

Expansion

Inserts for GNDM-J type (For Small Lathes)/GNDL-J type (For Small Lathes)

Coated Carbide / Cermet / Cemented Carbide / DLC

Fig 1

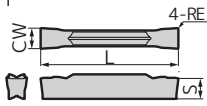


Fig 2 (Figure shows right-handed (R) tool.)

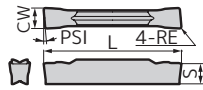


Fig 3

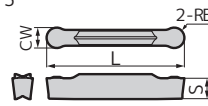
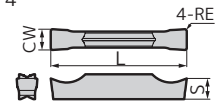


Fig 4



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	RE	L	S										
GCM N3002-MG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	3.0	±0.03	0.2	21.1	3.8	5	1
N3004-MG	●	●	▲	●	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	5	1
GCM N2002-ML	—	—	—	—	●	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	5	1
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	5	1

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	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	●	●	▲	●	●	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	5	1
N3004-GG	●	●	—	●	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	5	1
GCM N2002-GL	—	—	—	—	●	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	5	1
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	5	1
N3004-GL	—	—	—	—	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	5	1
GCM N2002-GF	—	—	—	—	●	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	5	1
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	5	1
N3004-GF	—	—	—	—	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	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	S	RE	L	S											
GCM R2002-CG-05	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	AC1030U	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	5	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	5	2
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	5	2
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	5	2
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	5	2
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	5	2

GCM R: Right-handed, GCM L: Left-handed

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	S	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

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	RE	L	S										
GCM N2010-RN	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	—	2.0	±0.03	1.0	21.7	3.6	5	3
N3015-RN	●	●	▲	●	●	●	●	●	—	3.0	±0.03	1.5	22.6	3.8	5	3

Non-Ferrous Metals

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	RE	L	S										
GCG N2002-GA	H10	DL1500	—	—	—	—	—	—	—	2.0	±0.025	0.2	21.1	3.6	5	4
N3002-GA	●	●	—	—	—	—	—	—	—	3.0	±0.025	0.2	21.1	3.8	5	4

Part Number Suffix Code (Chipbreakers)

Type	Symbol	Application	Type	Symbol	Application
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 cutting force
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 cutting force	For Non-Ferrous Metals / General-purpose	GA	Non-Ferrous Metals / General-purpose

Chipbreaker Selection F15 Precautions for Use F24 Recommended Cutting Conditions F21

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

● mark: Standard stocked item (new product/expanded item) ▲ mark: To be replaced by a new product, made to order, or discontinued (please confirm stock availability)

SEC-Grooving Tool Holders

GNDS type



*For traverse cutting (groove expansion), use a multi-functional or profiling insert.

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

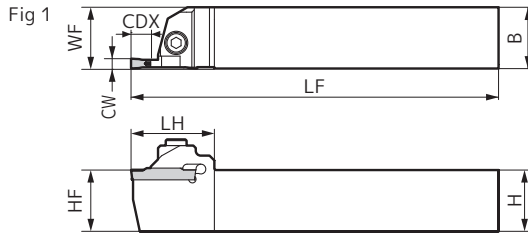


Figure shows right-handed (R) tool.

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	Maximum Groove Depth CDX	Max. Cut-off Dia.	Applicable Insert	Fig	Parts		
	R	L												Cap Screw	Wrench	
GNDS R/L2020K-206	●	●	20	20	125	20	20	30	2.0	6	12	GC □ 2000-□□	1	BX0520	5.0	LH040
R/L2020K-306	●	●	20	20	125	20	20	30	3.0	6	12	GC □ 3000-□□	1			
R/L2020K-410	●	●	20	20	125	20	20	34	4.0	10	20	GC □ 4000-□□	1			
R/L2020K-510	●	●	20	20	125	20	20	34	5.0	10	20	GC □ N5000-□□	1			
R/L2020K-610	●	●	20	20	125	20	20	34	6.0	10	20	GC □ N6000-□□	1			
GNDS R/L2525M-206	●	●	25	25	150	25	25	30	2.0	6	12	GC □ 2000-□□	1	BX0520	5.0	LH040
R/L2525M-306	●	●	25	25	150	25	25	30	3.0	6	12	GC □ 3000-□□	1			
R/L2525M-410	●	●	25	25	150	25	25	34	4.0	10	20	GC □ 4000-□□	1			
R/L2525M-510	●	●	25	25	150	25	25	34	5.0	10	20	GC □ N5000-□□	1			
R/L2525M-610	●	●	25	25	150	25	25	34	6.0	10	20	GC □ N6000-□□	1			

Select holders and inserts with matching width of cut (CW). Refer to page F31 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.

Grooving Tools

T

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

Necking

CBN

GNDM type / GNDMS type



*For traverse cutting (groove expansion), use a multi-functional or profiling insert.

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

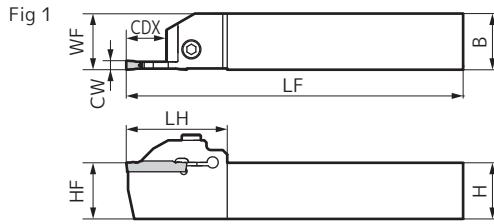
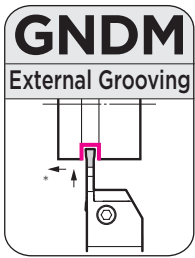


Figure shows right-handed (R) tool.

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	Maximum Groove Depth CDX	Max. Cut-off Dia.	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	20	GCM N125005-GF	1	BX0520	5.0	LH040
R/L2020K-1.510	●	●	20	20	125	20	20	34.0	1.50	10	20	GCM N150005-GF	1			
R/L2020K-210	●	●	20	20	125	20	20	33.6	2.00	10	20	GCC □2000-□□	1			
R/L2020K-312	●	●	20	20	125	20	20	36.6	3.00	12	24	GCC □3000-□□	1			
R/L2020K-418	●	●	20	20	125	20	20	45.0	4.00	18	36	GCC □4000-□□	1			
R/L2020K-518	●	●	20	20	125	20	20	45.0	5.00	18	36	GCC N5000-□□	1			
R/L2020K-618	●	●	20	20	125	20	20	45.0	6.00	18	36	GCC N6000-□□	1			
GNDM R/L2525M-1.2510	●	●	25	25	150	25	25	36.0	1.25	10	20	GCM N125005-GF	1	BX0520	5.0	LH040
R/L2525M-1.510	●	●	25	25	150	25	25	36.0	1.50	10	20	GCM N150005-GF	1			
R/L2525M-210	●	●	25	25	150	25	25	33.6	2.00	10	20	GCC □2000-□□	1			
R/L2525M-312	●	●	25	25	150	25	25	36.6	3.00	12	24	GCC □3000-□□	1			
R/L2525M-418	●	●	25	25	150	25	25	45.0	4.00	18	36	GCC □4000-□□	1			
R/L2525M-518	●	●	25	25	150	25	25	45.0	5.00	18	36	GCC N5000-□□	1			
R/L2525M-618	●	●	25	25	150	25	25	45.0	6.00	18	36	GCC N6000-□□	1			
GNDM R/L3225P-312			32	25	170	25	32	36.6	3.00	12	24	GCC □3000-□□	1	BX0520	5.0	LH040
R/L3225P-418			32	25	170	25	32	45.0	4.00	18	36	GCC □4000-□□	1			
R/L3225P-518			32	25	170	25	32	45.0	5.00	18	36	GCC N5000-□□	1			
R/L3225P-618			32	25	170	25	32	45.0	6.00	18	36	GCC N6000-□□	1			
R/L3225P-718			32	25	170	25	32	50.0	7.00	18	36	GCM N7000-□□	1			
R/L3225P-818			32	25	170	25	32	50.0	8.00	18	36	GCM N8000-□□	1			
GNDM R/L3232P-312	●	●	32	32	170	32	32	36.6	3.00	12	24	GCC □3000-□□	1			
R/L3232P-418	●	●	32	32	170	32	32	45.0	4.00	18	36	GCC □4000-□□	1			
R/L3232P-518	●	●	32	32	170	32	32	45.0	5.00	18	36	GCC N5000-□□	1			
R/L3232P-618	●	●	32	32	170	32	32	45.0	6.00	18	36	GCC N6000-□□	1			
R/L3232P-718	●	●	32	32	170	32	32	50.0	7.00	18	36	GCM N7000-□□	1			
R/L3232P-818	●	●	32	32	170	32	32	50.0	8.00	18	36	GCM N8000-□□	1			

Select holders and inserts with matching width of cut (CW). Refer to page F33 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.



*For traverse cutting (groove expansion), use a multi-functional or profiling insert.

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

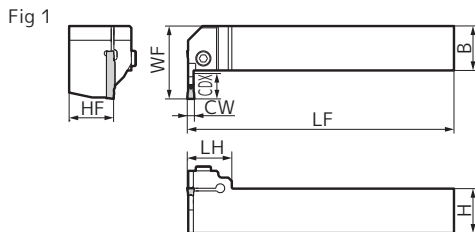
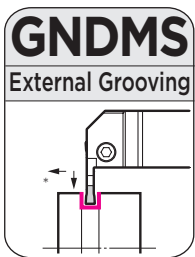


Figure shows right-handed (R) tool.

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	Maximum Groove Depth CDX	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	GCC □3000-□□	1	BX0520	5.0	LH040
R/L2020K-412	●	●	20	20	125	34	20	25.0	4.0	12	GCC □4000-□□	1			
R/L2020K-512	●	●	20	20	125	34	20	25.0	5.0	12	GCC N5000-□□	1			
GNDMS R/L2525M-312	●	●	25	25	150	39	25	25.0	3.0	12	GCC □3000-□□	1	BX0520	5.0	LH040
R/L2525M-414	●	●	25	25	150	41	25	25.0	4.0	14	GCC □4000-□□	1			
R/L2525M-514	●	●	25	25	150	41	25	25.0	5.0	14	GCC N5000-□□	1			
R/L2525M-614	●	●	25	25	150	41	25	25.0	6.0	14	GCC N6000-□□	1			

Select holders and inserts with matching width of cut (CW). Refer to page F33 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.

GNDM type / GNDMS type

Expansion

Inserts for GNDM type/GNDMS type

(Coated Carbide / Cermet / Cemented Carbide / DLC)

Fig 1

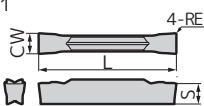


Fig 2 (Figure shows right-handed (R) tool.)

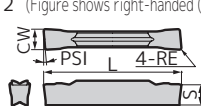


Fig 3

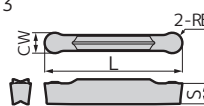
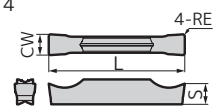


Fig 4



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		RE	L	S	Pcs/Pack	Fig						
	Width of Cut	Tolerance											
GCM N3002-MG N3004-MG	●	●	●	●	●	●	●	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 N7004-MG N7008-MG	●	●	●	●	●	●	●	7.0	±0.04	0.4	28.8	5.5	1
GCM N8004-MG N8008-MG	●	●	●	●	●	●	●	8.0	±0.04	0.4	28.8	6.0	1
GCM N2002-ML N3004-ML	●	●	●	●	●	●	●	2.0	±0.03	0.2	21.1	3.6	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
GCM N7004-ML N7008-ML	●	●	●	●	●	●	●	7.0	±0.04	0.4	28.8	5.5	1
GCM N8004-ML N8008-ML	●	●	●	●	●	●	●	8.0	±0.04	0.4	28.8	6.0	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		RE	L	S	Pcs/Pack	Fig							
	Width of Cut	Tolerance												
GCM R2002-CG-05 L2002-CG-05	●	●	●	●	●	●	●	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 R20003-CF-10 L20003-CF-10	●	●	●	●	●	●	●	10°	2.0	±0.08	0.03	22.4	3.6	2
GCM R30003-CF-10 L30003-CF-10	●	●	●	●	●	●	●	10°	3.0	±0.08	0.03	22.4	3.8	2
GCM R20003-CF-15 L20003-CF-15	●	●	●	●	●	●	●	15°	2.0	±0.08	0.03	22.4	3.6	2
GCM R30003-CF-15 L30003-CF-15	●	●	●	●	●	●	●	15°	3.0	±0.08	0.03	22.4	3.8	2

GCM R: Right-handed, GCM L: 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		RE	L	S	Pcs/Pack	Fig						
	Width of Cut	Tolerance											
GCM N2002-GG N3004-GG	●	●	●	●	●	●	●	2.0	±0.03	0.2	21.1	3.6	1
GCM N4002-GG N4004-GG N4008-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 N7004-GG N8004-GG	●	●	●	●	●	●	●	7.0	±0.04	0.4	28.8	5.5	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 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 N7004-GL N8004-GL	●	●	●	●	●	●	●	7.0	±0.04	0.4	28.8	5.5	1
GCM N125005-GF N150005-GF	●	●	●	●	●	●	●	1.25	±0.03	0.05	17.4	3.2	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
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
GCM N7002-GF N7004-GF	●	●	●	●	●	●	●	7.0	±0.04	0.2	28.8	5.5	1
GCM N8002-GF N8004-GF	●	●	●	●	●	●	●	8.0	±0.04	0.2	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		RE	L	S	Pcs/Pack	Fig						
	Width of Cut	Tolerance											
GCM N2010-RN N3015-RN	●	●	●	●	●	●	●	2.0	±0.03	1.0	21.7	3.6	3
GCM N4020-RN N5025-RN	●	●	●	●	●	●	●	4.0	±0.03	2.0	28.2	4.0	5
GCM N6030-RN N8040-RN	●	●	●	●	●	●	●	6.0	±0.03	3.0	28.3	4.5	5

Non-Ferrous Metals

Dimensions (mm)

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

Part Number Suffix Code (Chipbreakers)

Type	Symbol	Application	Type	Symbol	Application
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 cutting force
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 cutting force	For Non-Ferrous Metals	GA	Non-Ferrous Metals / General-purpose

Chipbreaker Selection **F15** Precautions for Use **F24** Recommended Cutting Conditions **F21**

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

● mark: Standard stocked item (new product/expanded item) ▲ mark: To be replaced by a new product, made to order, or discontinued (please confirm stock availability)

GNDM-J type



*For traverse cutting (groove expansion), use a multi-functional or profiling insert.

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

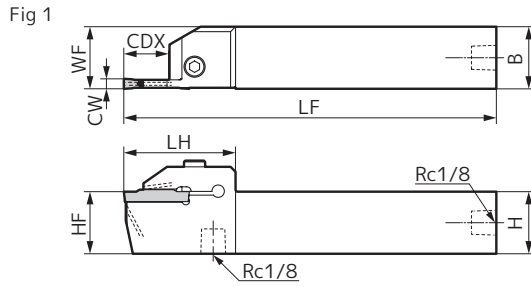
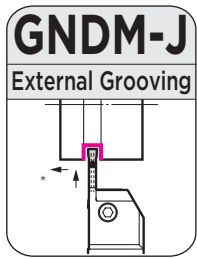


Figure shows right-handed (R) tool.

Holder

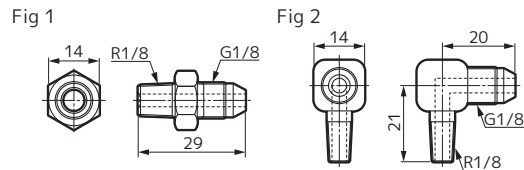
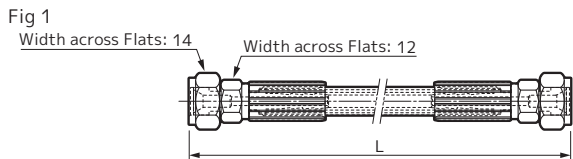
Parts

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	Maximum Groove Depth CDX	Max. Cut-off Dia.	Applicable Insert	Fig	Parts			
	R	L												Cap Screw	Plug	Wrench	
GNDM R/L2020K-210J	●	●	20	20	125	20	20	33.6	2.00	10	20	GC □ 2000-□ □	1	BX0520	6.0	XP02	LH040
R/L2020K-312J	●	●	20	20	125	20	20	36.6	3.00	12	24	GC □ 3000-□ □	1				
R/L2020K-418J	●	●	20	20	125	20	20	45	4.00	18	36	GC □ 4000-□ □	1				
R/L2020K-518J	●	●	20	20	125	20	20	45	5.00	18	36	GC N5000-□ □	1				
R/L2020K-618J	●	●	20	20	125	20	20	45	6.00	18	36	GC N6000-□ □	1				
GNDM R/L2525K-210J	●	●	25	25	125	25	25	33.6	2.00	10	20	GC □ 2000-□ □	1	BX0520	6.0	XP02	LH040
R/L2525K-312J	●	●	25	25	125	25	25	36.6	3.00	12	24	GC □ 3000-□ □	1				
R/L2525K-418J	●	●	25	25	125	25	25	45	4.00	18	36	GC □ 4000-□ □	1				
R/L2525K-518J	●	●	25	25	125	25	25	45	5.00	18	36	GC N5000-□ □	1				
R/L2525K-618J	●	●	25	25	125	25	25	45	6.00	18	36	GC N6000-□ □	1				

Select holders and inserts with matching width of cut (CW). Refer to page F35 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.



Parts (Hose)

Dimensions (mm)

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

Hoses are sold separately.

Piping Method for Hoses and Connectors **F25**

Parts (Connector)

Dimensions (mm)

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

Connectors are sold separately.

Piping Method for Hoses and Connectors **F25**

Grooving Tools

T

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

Necking

CBN

GNDM-J type



Inserts for GNDM-J type

Coated Carbide / Cermet / Cemented Carbide / DLC

Fig 1

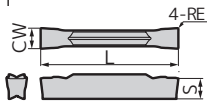


Fig 2 (Figure shows right-handed (R) tool)



Fig 3

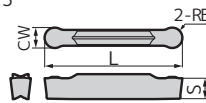
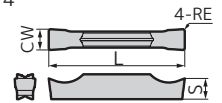


Fig 4



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	RE	L	S									
GCM N3002-MG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	3.0	±0.03	0.2	21.1	3.8	1
N3004-MG	●	●	▲	●	●	●	●	—	—	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-MG	●	●	●	●	●	●	●	—	—	4.0	±0.03	0.2	26.4	4.0	1
N4004-MG	●	●	●	●	●	●	●	—	—	4.0	±0.03	0.4	26.4	4.0	1
N4008-MG	●	●	▲	●	●	●	●	—	—	4.0	±0.03	0.8	26.4	4.0	5
GCM N5004-MG	●	●	●	●	●	●	●	—	—	5.0	±0.03	0.4	26.4	4.1	1
N5008-MG	●	●	▲	●	●	●	●	—	—	5.0	±0.03	0.8	26.4	4.1	1
GCM N6004-MG	●	●	●	●	●	●	●	—	—	6.0	±0.03	0.4	26.4	4.5	1
N6008-MG	●	●	▲	●	●	●	●	—	—	6.0	±0.03	0.8	26.4	4.5	1
GCM N2002-ML	—	—	—	—	—	—	—	—	—	2.0	±0.03	0.2	21.1	3.6	1
N3002-ML	●	●	▲	●	●	●	●	—	—	3.0	±0.03	0.2	21.1	3.8	1
N3004-ML	●	●	●	●	●	●	●	—	—	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-ML	●	●	●	●	●	●	●	—	—	4.0	±0.03	0.2	26.4	4.0	1
N4004-ML	●	●	▲	●	●	●	●	—	—	4.0	±0.03	0.4	26.4	4.0	5
N4008-ML	●	●	●	●	●	●	●	—	—	4.0	±0.03	0.8	26.4	4.0	1
GCM N5004-ML	●	●	▲	●	●	●	●	—	—	5.0	±0.03	0.4	26.4	4.1	1
N5008-ML	●	●	●	●	●	●	●	—	—	5.0	±0.03	0.8	26.4	4.1	1
GCM N6004-ML	●	●	▲	●	●	●	●	—	—	6.0	±0.03	0.4	26.4	4.5	1
N6008-ML	●	●	●	●	●	●	●	—	—	6.0	±0.03	0.8	26.4	4.5	1

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	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	1
N3002-GG	●	●	▲	●	●	●	●	—	—	3.0	±0.03	0.2	21.1	3.8	1
N3004-GG	●	●	●	●	●	●	●	—	—	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-GG	●	●	●	●	●	●	●	—	—	4.0	±0.03	0.2	26.4	4.0	1
N4004-GG	●	●	▲	●	●	●	●	—	—	4.0	±0.03	0.4	26.4	4.0	5
N4008-GG	●	●	●	●	●	●	●	—	—	4.0	±0.03	0.8	26.4	4.0	1
GCM N5002-GG	●	●	●	●	●	●	●	—	—	5.0	±0.03	0.2	26.4	4.1	1
N5004-GG	●	●	▲	●	●	●	●	—	—	5.0	±0.03	0.4	26.4	4.1	1
GCM N6002-GG	●	●	●	●	●	●	●	—	—	6.0	±0.03	0.2	26.4	4.5	1
N6004-GG	●	●	▲	●	●	●	●	—	—	6.0	±0.03	0.4	26.4	4.5	1
GCM N2002-GL	●	●	▲	●	●	●	●	—	—	2.0	±0.03	0.2	21.1	3.6	1
N2004-GL	●	●	●	●	●	●	●	—	—	2.0	±0.03	0.4	21.1	3.6	1
GCM N3002-GL	●	●	▲	●	●	●	●	—	—	3.0	±0.03	0.2	21.1	3.8	1
N3004-GL	●	●	●	●	●	●	●	—	—	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-GL	●	●	▲	●	●	●	●	—	—	4.0	±0.03	0.2	26.4	4.0	5
N4004-GL	●	●	●	●	●	●	●	—	—	4.0	±0.03	0.4	26.4	4.0	1
GCM N5002-GL	●	●	▲	●	●	●	●	—	—	5.0	±0.03	0.2	26.4	4.1	1
N5004-GL	●	●	●	●	●	●	●	—	—	5.0	±0.03	0.4	26.4	4.1	1
GCM N6002-GL	●	●	▲	●	●	●	●	—	—	6.0	±0.03	0.2	26.4	4.5	1
N6004-GL	●	●	●	●	●	●	●	—	—	6.0	±0.03	0.4	26.4	4.5	1
GCM N125005-GF	—	—	—	—	—	—	—	—	—	1.25	±0.03	0.05	17.4	3.2	1
N150005-GF	—	—	—	—	—	—	—	—	—	1.5	±0.03	0.05	17.8	3.7	1
GCM N2002-GF	—	—	—	—	—	—	—	—	—	2.0	±0.03	0.2	21.1	3.6	1
N2004-GF	—	—	—	—	—	—	—	—	—	2.0	±0.03	0.4	21.1	3.6	1
GCM N3002-GF	●	●	▲	●	●	●	●	—	—	3.0	±0.03	0.2	21.1	3.8	1
N3004-GF	●	●	●	●	●	●	●	—	—	3.0	±0.03	0.4	21.1	3.8	5
GCM N4002-GF	●	●	▲	●	●	●	●	—	—	4.0	±0.03	0.2	26.4	4.0	1
N4004-GF	●	●	●	●	●	●	●	—	—	4.0	±0.03	0.4	26.4	4.0	1
GCM N5002-GF	●	●	▲	●	●	●	●	—	—	5.0	±0.03	0.2	26.4	4.1	1
N5004-GF	●	●	●	●	●	●	●	—	—	5.0	±0.03	0.4	26.4	4.1	1
GCM N6002-GF	●	●	▲	●	●	●	●	—	—	6.0	±0.03	0.2	26.4	4.5	1
N6004-GF	●	●	●	●	●	●	●	—	—	6.0	±0.03	0.4	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	S	RE	L	S										
GCM R2002-CG-05	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	AC1030U	5°	2.0	±0.03	0.2	21.1	3.6	2
L2002-CG-05	●	●	▲	●	●	●	●	—	—	5°	2.0	±0.03	0.2	21.1	3.6	2
GCM R3002-CG-05	●	●	●	●	●	●	●	—	—	5°	3.0	±0.03	0.2	21.3	3.8	5
L3002-CG-05	●	●	▲	●	●	●	●	—	—	5°	3.0	±0.03	0.2	21.3	3.8	2
GCM R4002-CG-05	●	●	●	●	●	●	●	—	—	5°	4.0	±0.04	0.2	26.7	4.0	2
L4002-CG-05	●	●	▲	●	●	●	●	—	—	5°	4.0	±0.04	0.2	26.7	4.0	2
GCM R20003-CF-10	—	—	—	—	—	—	—	—	—	10°	2.0	±0.08	0.03	22.4	3.6	2
L20003-CF-10	—	—	—	—	—	—	—	—	—	10°	2.0	±0.08	0.03	22.4	3.6	2
GCM R30003-CF-10	—	—	—	—	—	—	—	—	—	10°	3.0	±0.08	0.03	22.4	3.8	2
L30003-CF-10	—	—	—	—	—	—	—	—	—	10°	3.0	±0.08	0.03	22.4	3.8	5
GCM R20003-CF-15	—	—	—	—	—	—	—	—	—	15°	2.0	±0.08	0.03	22.4	3.6	2
L20003-CF-15	—	—	—	—	—	—	—	—	—	15°	2.0	±0.08	0.03	22.4	3.6	2
GCM R30003-CF-15	—	—	—	—	—	—	—	—	—	15°	3.0	±0.08	0.03	22.4	3.8	2
L30003-CF-15	—	—	—	—	—	—	—	—	—	15°	3.0	±0.08	0.03	22.4	3.8	2

GCM R: Right-handed, GCM L: Left-handed

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	S	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	3
N4020-RG	●	●	▲	●	●	●	●	—	—	4.0	±0.03	2.0	26.4	4.0	5
GCM N5025-RG	●	●	●	●	●	●	●	—	—	5.0	±0.03	2.5	27.2	4.1	3
N6030-RG	●	●	▲	●	●	●	●	—	—	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	S	RE	L	S									
GCM N2010-RN	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	—	2.0	±0.03	1.0	21.7	3.6	3
N3015-RN	●	●	▲	●	●	●	●	—	—	3.0	±0.03	1.5	22.6	3.8	3

GNDL type/GNDLS type



External Deep Grooving and Cut-off Clamp-on

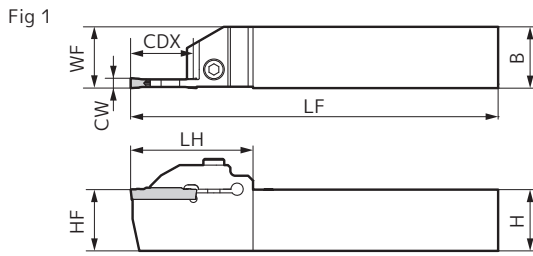
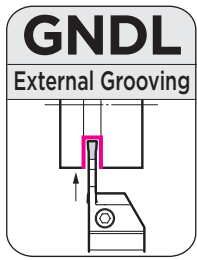


Figure shows right-handed (R) tool.

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	Maximum Groove Depth CDX	Max. Cut-off Dia.	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	32	GCM N125005-GF	1	BX0520	5.0	LH040
R/L2020K-1.516	●	●	20	20	125	20	20	38.0	1.50	16	32	GCM N150005-GF	1			
R/L2020K-220	●	●	20	20	125	20	20	44.5	2.00	20(18)	40	GCC □2000-□□	1			
R/L2020K-320	●	●	20	20	125	20	20	44.5	3.00	20(18)	40	GCC □3000-□□	1			
R/L2020K-425	●	●	20	20	125	20	20	50.0	4.00	25(23)	50	GCC □4000-□□	1			
R/L2020K-525	●	●	20	20	125	20	20	50.0	5.00	25(23)	50	GCC N5000-□□	1			
R/L2020K-625	●	●	20	20	125	20	20	50.0	6.00	25(23)	50	GCC N6000-□□	1			
GNDL R/L2525M-1.2516	●	●	25	25	150	25	25	40.0	1.25	16	32	GCM N125005-GF	1	BX0520	5.0	LH040
R/L2525M-1.516	●	●	25	25	150	25	25	40.0	1.50	16	32	GCM N150005-GF	1			
R/L2525M-220	●	●	25	25	150	25	25	44.5	2.00	20(18)	40	GCC □2000-□□	1			
R/L2525M-320	●	●	25	25	150	25	25	44.5	3.00	20(18)	40	GCC □3000-□□	1			
R/L2525M-425	●	●	25	25	150	25	25	50.0	4.00	25(23)	50	GCC □4000-□□	1			
R/L2525M-525	●	●	25	25	150	25	25	50.0	5.00	25(23)	50	GCC N5000-□□	1			
R/L2525M-625	●	●	25	25	150	25	25	50.0	6.00	25(23)	50	GCC N6000-□□	1			
GNDL R/L3225P-320			32	25	170	25	32	44.5	3.00	20(18)	40	GCC □3000-□□	1	BX0520	5.0	LH040
R/L3225P-425			32	25	170	25	32	50.0	4.00	25(23)	50	GCC □4000-□□	1			
R/L3225P-525			32	25	170	25	32	50.0	5.00	25(23)	50	GCC N5000-□□	1			
R/L3225P-625			32	25	170	25	32	50.0	6.00	25(23)	50	GCC N6000-□□	1			
R/L3225P-725			32	25	170	25	32	50.0	7.00	25(23)	50	GCM N7000-□□	1			
R/L3225P-825			32	25	170	25	32	50.0	8.00	25(23)	50	GCM N8000-□□	1			
GNDL R/L3232P-320	●	●	32	32	170	32	32	44.5	3.00	20(18)	40	GCC □3000-□□	1	BX0620	6.0	LH050
R/L3232P-425	●	●	32	32	170	32	32	50.0	4.00	25(23)	50	GCC □4000-□□	1			
R/L3232P-525	●	●	32	32	170	32	32	50.0	5.00	25(23)	50	GCC N5000-□□	1			
R/L3232P-625	●	●	32	32	170	32	32	50.0	6.00	25(23)	50	GCC N6000-□□	1			
R/L3232P-725	●	●	32	32	170	32	32	50.0	7.00	25(23)	50	GCM N7000-□□	1			
R/L3232P-825	●	●	32	32	170	32	32	50.0	8.00	25(23)	50	GCM N8000-□□	1			

Select holders and inserts with matching width of cut (CW). Dimensions in parentheses under maximum groove depth are for profiling inserts (RG type / RN type chipbreakers). Refer to page F37 for applicable inserts. The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.



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

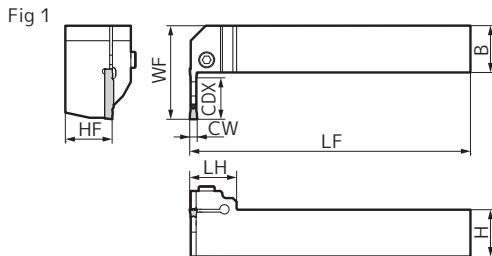
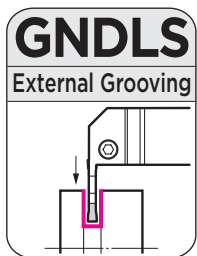


Figure shows right-handed (R) tool.

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	Maximum Groove Depth 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	GCC □2000-□□	1	BX0520	5.0	LH040
R/L2020K-316	●	●	20	20	125	38	20	25	3.0	16	GCC □3000-□□	1			
GNDLS R/L2525M-218	●	●	25	25	150	45	25	25	2.0	18	GCC □2000-□□	1	BX0520	5.0	LH040
R/L2525M-318	●	●	25	25	150	45	25	25	3.0	18	GCC □3000-□□	1			
R/L2525M-423	●	●	25	25	150	50	25	25	4.0	23	GCC □4000-□□	1			
R/L2525M-523	●	●	25	25	150	50	25	25	5.0	23	GCC N5000-□□	1			
R/L2525M-623	●	●	25	25	150	50	25	25	6.0	23	GCC N6000-□□	1			

Select holders and inserts with matching width of cut (CW). Refer to page F37 for applicable inserts. The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.

GNDL type / GNDLS type

Expansion

Inserts for GNDL type / GNDLS type

(Coated Carbide / Cermet / Cemented Carbide / DLC)

Fig 1

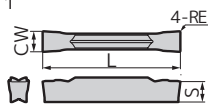


Fig 2 (Figure shows right-handed (R) tool.)

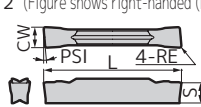


Fig 3

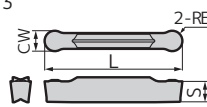
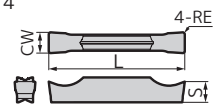


Fig 4



Grooving / Traverse Cutting

Dimensions (mm)

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

Grooving / Cut-off

Dimensions (mm)

Cat. No.	Width of Cut CW							Corner Radius	Overall Length	Thickness	Pcs/Pack	Fig	
	Width of Cut		RE	L	S	Pcs/Pack	Fig						
	Width of Cut	Tolerance											
GCM N2002-GG	●	▲	●	●	●	●	●	2.0	±0.03	0.2	21.1	3.6	1
GCM N3002-GG	●	▲	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	1
N3004-GG	●	●	▲	●	●	●	●	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-GG	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0	1
N4004-GG	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0	1
GCM N5002-GG	●	●	●	●	●	●	●	5.0	±0.03	0.2	26.4	4.1	5
N5004-GG	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1	1
GCM N6002-GG	●	●	●	●	●	●	●	6.0	±0.03	0.2	26.4	4.5	1
N6004-GG	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5	1
GCM N7004-GG	●	●	●	●	●	●	●	7.0	±0.04	0.4	28.8	5.5	1
N8004-GG	●	●	●	●	●	●	●	8.0	±0.04	0.4	28.8	6.0	1
GCM N2002-GL	●	●	●	●	●	●	●	2.0	±0.03	0.2	21.1	3.6	1
N2004-GL	●	●	●	●	●	●	●	2.0	±0.03	0.4	21.1	3.6	1
GCM N3002-GL	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	1
N3004-GL	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-GL	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0	1
N4004-GL	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0	1
GCM N5002-GL	●	●	●	●	●	●	●	5.0	±0.03	0.2	26.4	4.1	5
N5004-GL	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1	1
GCM N6002-GL	●	●	●	●	●	●	●	6.0	±0.03	0.2	26.4	4.5	1
N6004-GL	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5	1
GCM N7004-GL	●	●	●	●	●	●	●	7.0	±0.04	0.4	28.8	5.5	1
N8004-GL	●	●	●	●	●	●	●	8.0	±0.04	0.4	28.8	6.0	1
GCM N125005-GF	●	●	●	●	●	●	●	1.25	±0.03	0.05	17.4	3.2	1
N150005-GF	●	●	●	●	●	●	●	1.5	±0.03	0.05	17.8	3.7	1
GCM N2002-GF	●	●	●	●	●	●	●	2.0	±0.03	0.2	21.1	3.6	1
N2004-GF	●	●	●	●	●	●	●	2.0	±0.03	0.4	21.1	3.6	1
GCM N3002-GF	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	1
N3004-GF	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-GF	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0	1
N4004-GF	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0	1
GCM N5002-GF	●	●	●	●	●	●	●	5.0	±0.03	0.2	26.4	4.1	5
N5004-GF	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1	1
GCM N6002-GF	●	●	●	●	●	●	●	6.0	±0.03	0.2	26.4	4.5	1
N6004-GF	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5	1
GCM N7002-GF	●	●	●	●	●	●	●	7.0	±0.04	0.2	28.8	5.5	1
N7004-GF	●	●	●	●	●	●	●	7.0	±0.04	0.4	28.8	5.5	1
GCM N8002-GF	●	●	●	●	●	●	●	8.0	±0.04	0.2	28.8	6.0	1
N8004-GF	●	●	●	●	●	●	●	8.0	±0.04	0.4	28.8	6.0	1

Cut-off (Handed Edge)

Dimensions (mm)

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

GCM R: Right-handed, GCM L: Left-handed

External Profiling / External Radius Grooving

Dimensions (mm)

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

Profiling / Radius Grooving / Necking

Dimensions (mm)

Cat. No.	Width of Cut CW							Corner Radius	Overall Length	Thickness	Pcs/Pack	Fig	
	Width of Cut		RE	L	S	Pcs/Pack	Fig						
	Width of Cut	Tolerance											
GCM N2010-RN	●	●	●	●	●	●	●	2.0	±0.03	1.0	21.7	3.6	3
N3015-RN	●	●	●	●	●	●	●	3.0	±0.03	1.5	22.6	3.8	3
N4020-RN	●	●	●	●	●	●	●	4.0	±0.03	2.0	28.2	4.0	5
N5025-RN	●	●	●	●	●	●	●	5.0	±0.03	2.5	28.3	4.1	3
N6030-RN	●	●	●	●	●	●	●	6.0	±0.03	3.0	28.3	4.5	3

Non-Ferrous Metals

GNDL-J type



External Deep Grooving and Cut-Off
Internal Coolant Supply,
Clamp-on

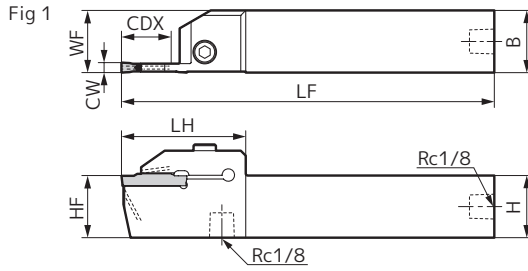
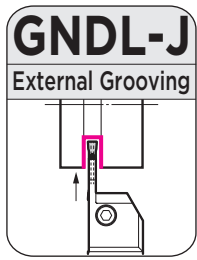


Figure shows right-handed (R) tool.

Holder

Parts

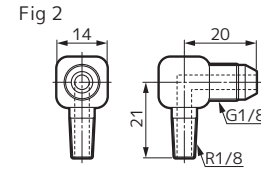
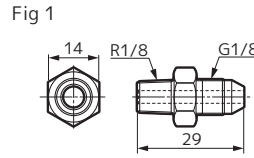
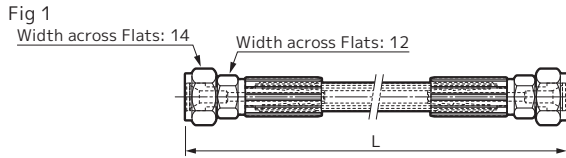
Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Width of Cut CW	Maximum Groove Depth CDX	Max. Cut-off Dia.	Applicable Insert	Fig	Dimensions (mm)			
	R	L												Cap Screw	Plug	Wrench	
GNDL R/L2020K-220J	●	●	20	20	125	20	20	44.5	2.00	20(18)	40	GC □ 2000-□ □	1	BX0520	6.0	XP02	LH040
R/L2020K-320J	●	●	20	20	125	20	20	44.5	3.00	20(18)	40	GC □ 3000-□ □	1				
R/L2020K-425J	●	●	20	20	125	20	20	50	4.00	25(23)	50	GC □ 4000-□ □	1				
R/L2020K-525J	●	●	20	20	125	20	20	50	5.00	25(23)	50	GC N5000-□ □	1				
R/L2020K-625J	●	●	20	20	125	20	20	50	6.00	25(23)	50	GC N6000-□ □	1				
GNDL R/L2525K-220J	●	●	25	25	125	25	25	44.5	2.00	20(18)	40	GC □ 2000-□ □	1	BX0520	6.0	XP02	LH040
R/L2525K-320J	●	●	25	25	125	25	25	44.5	3.00	20(18)	40	GC □ 3000-□ □	1				
R/L2525K-425J	●	●	25	25	125	25	25	50	4.00	25(23)	50	GC □ 4000-□ □	1				
R/L2525K-525J	●	●	25	25	125	25	25	50	5.00	25(23)	50	GC N5000-□ □	1				
R/L2525K-625J	●	●	25	25	125	25	25	50	6.00	25(23)	50	GC N6000-□ □	1				

Select holders and inserts with matching width of cut (CW). Dimensions in parentheses under maximum groove depth are for profiling inserts (RG type / RN type chipbreakers).

Refer to page F39 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.



Parts (Hose)

Dimensions (mm)

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

Hoses are sold separately.

Piping Method for Hoses and Connectors F25

Parts (Connector)

Dimensions (mm)

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

Connectors are sold separately.

Piping Method for Hoses and Connectors F25

Grooving Tools

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

Necking

CBN

SEC-Grooving Tool Holders GNDL-J type

Expansion

Inserts for GNDL-J type

Fig 1

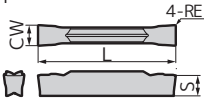


Fig 2 (Figure shows right-handed (R) tool.)

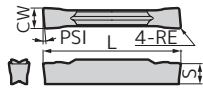


Fig 3

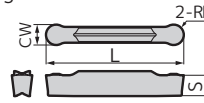
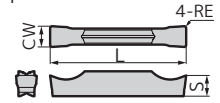


Fig 4



(Coated Carbide / Cermet / Cemented Carbide / DLC)

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	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	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	3.8	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

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	S	RE	L	S								
GCM R2002-CG-05 L2002-CG-05	AC8035P	AC830P	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 R20003-CF-10 L20003-CF-10	—	—	—	—	—	—	—	10°	2.0	±0.08	0.03	22.4	3.6	2
GCM R30003-CF-10 L30003-CF-10	—	—	—	—	—	—	—	10°	3.0	±0.08	0.03	22.4	3.8	2
GCM R20003-CF-15 L20003-CF-15	—	—	—	—	—	—	—	15°	2.0	±0.08	0.03	22.4	3.6	2
GCM R30003-CF-15 L30003-CF-15	—	—	—	—	—	—	—	15°	3.0	±0.08	0.03	22.4	3.8	2

GCM R: Right-handed, GCM L: 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	S	RE	L	S								
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 N4008-GG	●●	●●	●●	●●	●●	●●	●●	—	4.0	±0.03	0.2	26.4	4.0	1
GCM N5002-GG N5004-GG N5008-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 N2002-GL N2004-GL N3002-GL N3004-GL	●●	●●	●●	●●	●●	●●	●●	—	2.0	±0.03	0.2	21.1	3.6	1
GCM N4002-GL N4004-GL N4008-GL	●●	●●	●●	●●	●●	●●	●●	—	4.0	±0.03	0.2	26.4	4.0	1
GCM N5002-GL N5004-GL N5008-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 N125005-GF N150005-GF	—	—	—	—	—	—	—	—	1.25	±0.03	0.05	17.4	3.2	1
GCM N2002-GF N2004-GF N3002-GF N3004-GF	—	—	—	—	—	—	—	—	2.0	±0.03	0.2	21.1	3.6	1
GCM N4002-GF N4004-GF N4008-GF	●●	●●	●●	●●	●●	●●	●●	—	4.0	±0.03	0.2	26.4	4.0	1
GCM N5002-GF N5004-GF N5008-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

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	S	RE	L	S								
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	3
	—	—	—	—	—	—	—	—	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	S	RE	L	S								
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	22.6	3.8	3
	—	—	—	—	—	—	—	—	4.0	±0.03	2.0	28.2	4.0	3
	—	—	—	—	—	—	—	—	5.0	±0.03	2.5	28.3	4.1	3
	—	—	—	—	—	—	—	—	6.0	±0.03	3.0	28.3	4.5	3

Non-Ferrous Metals

Dimensions (mm)

Cat. No.	H10 DL1500	Width of Cut CW							Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	
		Width of Cut		Tolerance										
		RE	L	S	RE	L	S							
GCG N2002-GA N3002-GA	●●	●●	—	—	—	—	—	—	2.0	±0.025	0.2	21.1	3.6	4
GCG N4004-GA N5004-GA N6004-GA	●●	●●	●●	●●	●●	●●	●●	●●	4.0	±0.025	0.4	26.4	4.0	4
	—	—	—	—	—	—	—	—	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	Application	Type	Symbol	Application
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 cutting force
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 cutting force	For Non-Ferrous Metals	GA	Non-Ferrous Metals / General-purpose

Chipbreaker Selection **F15** Precautions for Use **F24** Recommended Cutting Conditions **F21**

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

● mark: Standard stocked item (new product/expanded item) ▲ mark: To be replaced by a new product, made to order, or discontinued (please confirm stock availability)

GNDXL type



External Deep Grooving and Cut-off Clamp-on

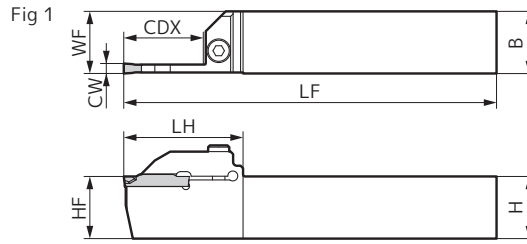
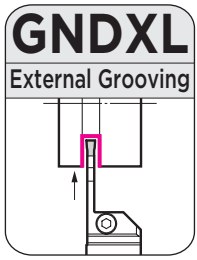


Figure shows right-handed (R) tool.

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	Maximum Groove Depth CDX	Max. Cut-off Dia.	Applicable Insert	Fig	Parts		
	R	L												Cap Screw	Wrench	
GNDXL R/L2020K-226			20	20	125	20	20	42.0	2.0	26	52	GCM N2002-GF1	1	BX0520	5.0	LH040
R/L2020K-332	●	●	20	20	125	20	20	48.0	3.0	32	64	GCM N3000-□□1	1			
R/L2020K-432	●	●	20	20	125	20	20	48.0	4.0	32	64	GCM N4000-□□1	1			
R/L2020K-532	●	●	20	20	125	20	20	48.0	5.0	32	64	GCM N5000-□□1	1			
R/L2020K-632	●	●	20	20	125	20	20	48.0	6.0	32	64	GCM N6000-□□1	1			
GNDXL R/L2525M-226			25	25	150	25	25	42.0	2.0	26	52	GCM N2002-GF1	1	BX0520	5.0	LH040
R/L2525M-332	●	●	25	25	150	25	25	48.0	3.0	32	64	GCM N3000-□□1	1			
R/L2525M-432	●	●	25	25	150	25	25	48.0	4.0	32	64	GCM N4000-□□1	1			
R/L2525M-532	●	●	25	25	150	25	25	48.0	5.0	32	64	GCM N5000-□□1	1			
R/L2525M-632	●	●	25	25	150	25	25	48.0	6.0	32	64	GCM N6000-□□1	1			

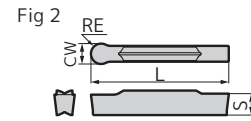
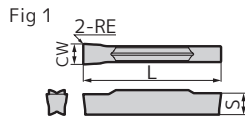
Select holders and inserts with matching width of cut (CW). **Only 1-cornered inserts can be used.** Refer to page F41 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.

GNDXL type

Inserts for GNDXL type (1-cornered)

(Coated Carbide)



Grooving / Traverse Cutting (1-cornered) Dimensions (mm)

Cat. No.	AC5015S	AC5025S	AC530U	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
				Width of Cut	Tolerance					
				GCM N3002-ML1	●	●	●	3.0		
N4004-ML1	●	●	●	4.0	±0.03	0.4	26.4	4.0	1	
N5004-ML1	●	●	●	5.0	±0.03	0.4	26.4	4.1	1	
N6004-ML1	●	●	●	6.0	±0.03	0.4	26.4	4.5	1	

Profiling / Radius Grooving (1-cornered) Dimensions (mm)

Cat. No.	AC5015S	AC5025S	AC530U	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
				Width of Cut	Tolerance					
				GCM N3015-RN1	●	●	●	3.0		
N4020-RN1	●	●	●	4.0	±0.03	2.0	28.2	4.0	2	
N5025-RN1	●	●	●	5.0	±0.03	2.5	28.3	4.1	2	
N6030-RN1	●	●	●	6.0	±0.03	3.0	28.3	4.5	2	

Grooving / Cut-off (1-cornered) Dimensions (mm)

Cat. No.	AC5015S	AC5025S	AC530U	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
				Width of Cut	Tolerance					
				GCM N2002-GF1	●	●	●	2.0		
N3002-GF1	●	●	●	3.0	±0.03	0.2	21.1	3.8	1	
N4002-GF1	●	●	●	4.0	±0.03	0.2	26.4	4.0	1	
N5002-GF1	●	●	●	5.0	±0.03	0.2	26.4	4.1	1	
N6002-GF1	●	●	●	6.0	±0.03	0.2	26.4	4.5	1	

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

Grooving Tools

L

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

Necking

CBN

Part Number Suffix Code (Chipbreakers)

Type	Symbol	Application	Type	Symbol	Application
Grooving / Traverse Cutting	ML1	Multi-functional / Low feed	Profiling / Radius Grooving	RN1	General-purpose
Grooving / Cut-off	GF1	Grooving / Low cutting force			

Chipbreaker Selection **F15** Precautions for Use **F24** Recommended Cutting Conditions **F21**

Note: The values in red have been changed from those in the 2023-2024 General Catalogue.

GNDN type



Necking
Clamp-on

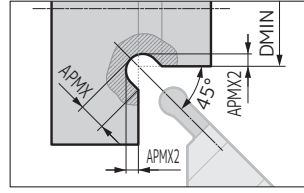
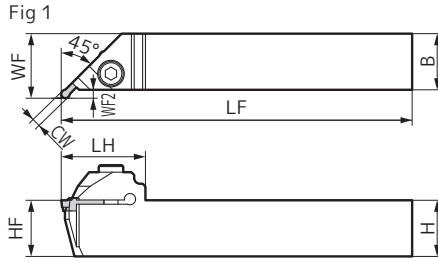
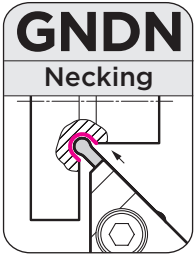


Figure shows right-handed (R) tool.

Holder

Parts

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Head	Offset	Min. Bore Dia.	Width of Cut	APMX	APMX2	Applicable Insert	Fig	Dimensions (mm)		
	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
R/L2020K-320-020	●	●	20	20	125	23	20	35	3.0	20	3.0	2.0	0.79	GCM N3015-RN	1			
R/L2020K-430-030	●	●	20	20	125	24	20	37	4.0	30	4.0	3.0	1.29	GCM N4020-RN	1			
R/L2020K-535-030	●	●	20	20	125	25	20	40	5.0	30	5.0	3.5	1.44	GCM N5025-RN	1			
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
R/L2525M-320-020	●	●	25	25	150	28	25	35	3.0	20	3.0	2.0	0.79	GCM N3015-RN	1			
R/L2525M-430-030	●	●	25	25	150	29	25	37	4.0	30	4.0	3.0	1.29	GCM N4020-RN	1			
R/L2525M-535-030	●	●	25	25	150	30	25	40	5.0	30	5.0	3.5	1.44	GCM N5025-RN	1			
R/L2525M-640-030	●	●	25	25	150	30	25	40	5.0	30	6.0	4.0	1.59	GCM N6030-RN	1			

Select holders and inserts with matching width of cut (CW). Refer to page F43 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.

Identification Code

GND N R 20 20 K - 2 15 - 020

Series Code Application Symbol Feed Direction Shank Height (mm) Shank Width (mm) Shank Length Width of Cut (mm) APMX x10 (mm) Min. Bore Dia. (mm)

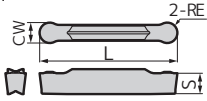
: Necking

SEC-Grooving Tool Holders GNDN type

Inserts for GNDN type

(Coated Carbide)

Fig 1



Profiling / Radius Grooving / Necking Dimensions (mm)

Cat. No.	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	Width of Cut CW				Pcs/Pack	Fig	
									Width of Cut		Corner Radius	Overall Length			
									RE	L	S	Thickness			
GCM N2010-RN	●	●	●	●	●	●	●	●	2.0	±0.03	1.0	21.7	3.6	5	1
N3015-RN	●	●	●	●	●	●	●	●	3.0	±0.03	1.5	22.6	3.8	5	1
N4020-RN	●	●	●	●	●	●	●	●	4.0	±0.03	2.0	28.2	4.0	5	1
N5025-RN	●	●	●	●	●	●	●	●	5.0	±0.03	2.5	28.3	4.1	5	1
N6030-RN	●	●	●	●	●	●	●	●	6.0	±0.03	3.0	28.3	4.5	5	1

Grooving Tools

L

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

Necking

CBN

Part Number Suffix Code (Chipbreakers)

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

Chipbreaker Selection **F15** Precautions for Use **F24** Recommended Cutting Conditions **F21**

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

SEC-Grooving Tool Holders

GNDF type



*For traverse cutting (groove expansion), use a multi-functional or profiling insert.

Face Grooving
Clamp-on

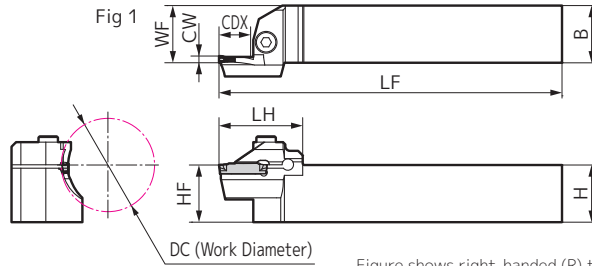
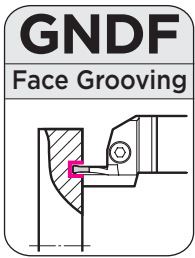
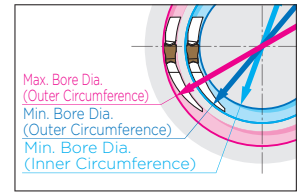


Figure shows right-handed (R) tool.
Use a right-handed (R) tool for reverse rotation.



Holder

Parts Dimensions (mm)

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

Select holders and inserts with matching width of cut (CW). Refer to page F45 for applicable inserts.

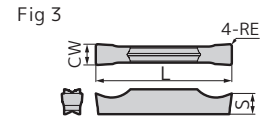
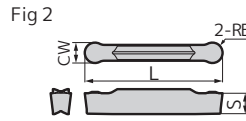
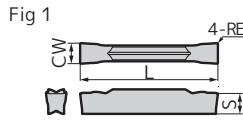
The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.

SEC-Grooving Tool Holders GNDF type

Expansion

Inserts for GNDF type

(Coated Carbide / Cermet / Cemented Carbide / DLC)



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	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	3.0	±0.03	0.2	21.1	3.8	1
N3004-MG	●	●	▲	●	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-MG	●	●	●	●	●	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	1
N4004-MG	●	●	●	●	●	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	1
N4008-MG	●	●	▲	●	●	●	●	●	—	4.0	±0.03	0.8	26.4	4.0	5
GCM N5004-MG	●	●	●	●	●	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	1
N5008-MG	●	●	▲	●	●	●	●	●	—	5.0	±0.03	0.8	26.4	4.1	1
GCM N6004-MG	●	●	●	●	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	1
N6008-MG	●	●	▲	●	●	●	●	●	—	6.0	±0.03	0.8	26.4	4.5	1
GCM N3002-ML	●	●	▲	●	●	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1
N3004-ML	●	●	●	●	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-ML	●	●	●	●	●	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	1
N4004-ML	●	●	▲	●	●	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	1
N4008-ML	●	●	●	●	●	●	●	●	—	4.0	±0.03	0.8	26.4	4.0	5
GCM N5004-ML	●	●	▲	●	●	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	1
N5008-ML	●	●	●	●	●	●	●	●	—	5.0	±0.03	0.8	26.4	4.1	1
GCM N6004-ML	●	●	●	●	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	1
N6008-ML	●	●	●	●	●	●	●	●	—	6.0	±0.03	0.8	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	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	3.0	±0.03	1.5	22.6	3.8	2
N4020-RN	●	●	▲	●	●	●	●	●	4.0	±0.03	2.0	28.2	4.0	5
N5025-RN	●	●	●	●	●	●	●	●	5.0	±0.03	2.5	28.3	4.1	2
N6030-RN	●	●	▲	●	●	●	●	●	6.0	±0.03	3.0	28.3	4.5	2

Non-Ferrous Metals

Dimensions (mm)

Cat. No.	H10	DL1500	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 N3002-GA	●	●	3.0	±0.025	0.2	21.1	3.8	3						
GCG N4004-GA	●	●	4.0	±0.025	0.4	26.4	4.0	5						
N5004-GA	●	●	5.0	±0.025	0.4	26.4	4.1	3						
N6004-GA	●	●	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	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	3.0	±0.03	0.2	21.1	3.8	1
N3004-GG	●	●	▲	●	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-GG	●	●	●	●	●	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	1
N4004-GG	●	●	●	●	●	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	1
GCM N5002-GG	●	●	●	●	●	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	5
N5004-GG	●	●	●	●	●	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	1
GCM N6002-GG	●	●	●	●	●	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	1
N6004-GG	●	●	●	●	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	1
GCM N3002-GL	●	●	▲	●	●	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1
N3004-GL	●	●	●	●	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-GL	●	●	●	●	●	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	1
N4004-GL	●	●	▲	●	●	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	1
GCM N5002-GL	●	●	●	●	●	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	5
N5004-GL	●	●	●	●	●	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	1
GCM N6002-GL	●	●	●	●	●	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	1
N6004-GL	●	●	●	●	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	1
GCM N3002-GF	●	●	▲	●	●	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1
N3004-GF	●	●	●	●	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-GF	●	●	●	●	●	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	1
N4004-GF	●	●	▲	●	●	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	1
GCM N5002-GF	●	●	●	●	●	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	5
N5004-GF	●	●	●	●	●	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	1
GCM N6002-GF	●	●	●	●	●	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	1
N6004-GF	●	●	▲	●	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	1

Part Number Suffix Code (Chipbreakers)

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

Chipbreaker Selection **F15** Precautions for Use **F24** Recommended Cutting Conditions **F21**

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

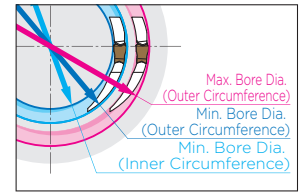
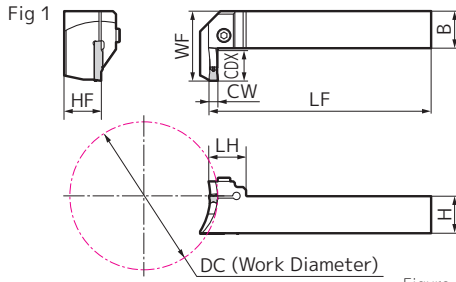
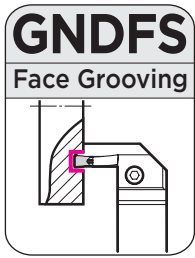
● mark: Standard stocked item (new product/expanded item) ▲ mark: To be replaced by a new product, made to order, or discontinued (please confirm stock availability)

GNDFS type



*For traverse cutting (groove expansion), use a multi-functional or profiling insert.

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



Holder

Figure shows right-handed (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 Dia. Inner Circumference	Width of Cut CW	Maximum Groove Depth CDX	Applicable Insert	Cap Screw		Wrench	
	R	L												Fig	N·m		
	BX0520																
GNDFS R/L2525M-620-070			25	25	150	47	25	25	70 to 100	58	6.0	20		1			
R/L2525M-620-100			25	25	150	47	25	25	100 to 200	88	6.0	20		1			
R/L2525M-620-180			25	25	150	47	25	25	180 to 300	168	6.0	20	GCC N6000-□□	1	BX0520	5.0	LH040
R/L2525M-620-280			25	25	150	47	25	25	280 to 1000	268	6.0	20		1			
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			
R/L3232P-620-100			32	32	170	54	32	25	100 to 200	88	6.0	20		1			
R/L3232P-620-180			32	32	170	54	32	25	180 to 300	168	6.0	20	GCC N6000-□□	1	BX0620	6.0	LH050
R/L3232P-620-280			32	32	170	54	32	25	280 to 1000	268	6.0	20		1			
R/L3232P-620-450			32	32	170	54	32	25	450 up	438	6.0	20		1			
GNDFS R/L2525M-820-070			25	25	150	47	25	30	70 to 100	54	8.0	20		1			
R/L2525M-820-100			25	25	150	47	25	30	100 to 200	84	8.0	20		1			
R/L2525M-820-180			25	25	150	47	25	30	180 to 300	164	8.0	20	GCM N8000-□□	1	BX0620	6.0	LH050
R/L2525M-820-280			25	25	150	47	25	30	280 to 1000	264	8.0	20		1			
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		1			
R/L3232P-820-100			32	32	170	54	32	30	100 to 200	84	8.0	20		1			
R/L3232P-820-180			32	32	170	54	32	30	180 to 300	164	8.0	20	GCM N8000-□□	1	BX0620	6.0	LH050
R/L3232P-820-280			32	32	170	54	32	30	280 to 1000	264	8.0	20		1			
R/L3232P-820-450			32	32	170	54	32	30	450 up	434	8.0	20		1			

Select holders and inserts with matching width of cut (CW). Refer to page F47 for applicable inserts.

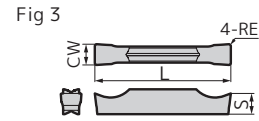
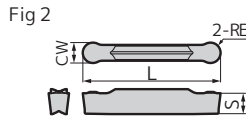
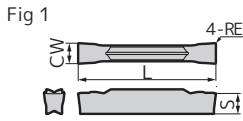
The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.

SEC-Grooving Tool Holders GNDFS type

Expansion

Inserts for GNDFS type

Coated Carbide / Cermet / Cemented Carbide / DLC



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 N6004-MG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	6.0	±0.03	0.4	26.4	4.5	5	1
N6008-MG	●	●	▲	●	●	●	●	●	—	6.0	±0.03	0.8	26.4	4.5	5	1
GCM N8004-MG	●	●	●	●	●	●	●	●	—	8.0	±0.04	0.4	28.8	6.0	5	1
N8008-MG	●	●	▲	●	●	●	●	●	—	8.0	±0.04	0.8	28.8	6.0	5	1
GCM N6004-ML	●	●	●	●	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	5	1
N6008-ML	●	●	▲	●	●	●	●	●	—	6.0	±0.03	0.8	26.4	4.5	5	1
GCM N8004-ML	●	●	●	●	●	●	●	●	—	8.0	±0.04	0.4	28.8	6.0	5	1
N8008-ML	●	●	▲	●	●	●	●	●	—	8.0	±0.04	0.8	28.8	6.0	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 N6030-RN	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	6.0	±0.03	3.0	28.3	4.5	5	2

Non-Ferrous Metals

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													
GCG N6004-GA	H10	DL1500							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	RE	L	S	Pcs/Pack									
	Width of Cut	Tolerance														
GCM N6002-GG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	6.0	±0.03	0.2	26.4	4.5	5	1
N6004-GG	●	●	▲	●	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	5	1
GCM N8004-GG	●	●	●	●	●	●	●	●	—	8.0	±0.04	0.4	28.8	6.0	5	1
GCM N6002-GL	●	●	●	●	●	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	5	1
N6004-GL	●	●	▲	●	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	5	1
GCM N8004-GL	●	●	●	●	●	●	●	●	—	8.0	±0.04	0.4	28.8	6.0	5	1
GCM N6002-GF	●	●	●	●	●	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	5	1
N6004-GF	●	●	▲	●	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	5	1
GCM N8002-GF	●	●	●	●	●	●	●	●	—	8.0	±0.04	0.2	28.8	6.0	5	1
N8004-GF	●	●	▲	●	●	●	●	●	—	8.0	±0.04	0.4	28.8	6.0	5	1

Part Number Suffix Code (Chipbreakers)

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

Chipbreaker Selection **F15** Precautions for Use **F24** Recommended Cutting Conditions **F21**

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

● mark: Standard stocked item (new product/expanded item) ▲ mark: To be replaced by a new product, made to order, or discontinued (please confirm stock availability)

Grooving Tools

L

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

Necking

CBN

GNDIS type



Internal Grooving
Clamp-on

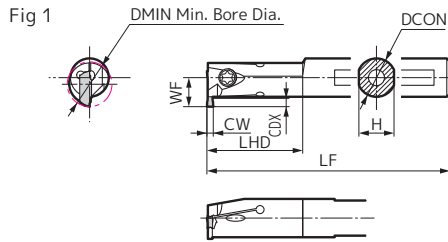
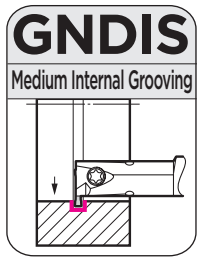


Figure shows right-handed (R) tool.

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	Maximum Groove Depth CDX	Applicable Insert	Fig	Flat Head Screw		Wrench
	R	L											N·m	Wrench	
GNDIS R/L1214-T1526	●	●	12	11	150	30	9.0	14	1.5	2.6	GXM N150005S-GF	1	BFTX0409N	3.4	LT15
R/L1214-T1536	●	●	12	11	150	30	10.0	14	1.5	3.6		1			
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
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			
R/L1214-T2036	●	●	12	11	150	30	10.0	14	2.0	3.6	GXM N3002S-□□	1	BFTX0409N	3.4	LT15
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			
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
R/L1214-T3036	●	●	12	11	150	30	10.0	14	3.0	3.6		1			
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	BFTX0409N	3.4	LT15
R/L2025-T3066	●	●	20	19	180	40	19.0	25	3.0	6.6		1			

Select holders and inserts with matching width of cut (CW). **Only GXM inserts can be used.** Refer to page F49 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.

Identification Code

GND IS R 12 14 - T 15 26

Series Code Application Feed Shank Min. For Width of Maximum Groove
Symbol: Direction Dia. Bore Internal Cut x 10 Depth x 10
Internal Grooving (mm) Dia. (mm) Grooving (mm) (mm)

Grooving Tools

T

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

Necking

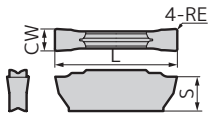
CBN



Inserts for GNDIS type

(Coated Carbide)

Fig 1



Grooving / Traverse Cutting

Dimensions (mm)

Cat. No.	AC5015S	AC5025S	AC520U	AC1030U	Width of Cut CW		Corner Radius		Overall Length L	Thickness S	Pcs/Pack	Fig
					Width of Cut	Tolerance	RE	L				
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.	AC5015S	AC5025S	AC520U	AC1030U	Width of Cut CW		Corner Radius		Overall Length L	Thickness S	Pcs/Pack	Fig
					Width of Cut	Tolerance	RE	L				
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	

Select holders and inserts with matching width of cut (CW). GCM/GCG inserts are not compatible.

Recommended Cutting Conditions (GNDIS)

Work Material	P Carbon Steel / Alloy Steel		M Stainless Steel		K Cast Iron		S Exotic Alloy	
Insert Grade	AC5015S	AC5025S	AC5015S	AC5025S	AC5015S	AC5025S	AC5015S	AC5025S
	AC520U	AC1030U	AC520U	AC1030U	AC520U	AC1030U	AC520U	AC1030U
Cutting Speed vc (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	0.02-0.10
	2.0	0.03-0.12
	3.0	0.05-0.15

Traverse Cutting

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

Precautions for Use F24

GNDI type



Internal Grooving
Clamp-on

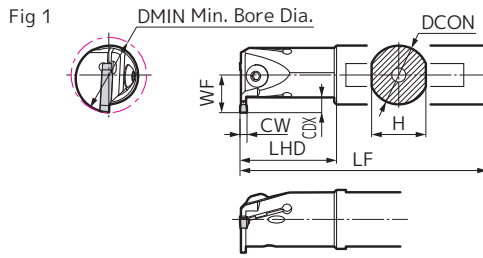
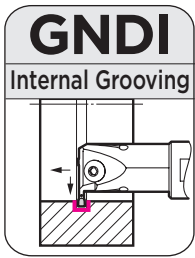


Figure shows right-handed (R) tool.

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	Maximum Groove Depth CDX	Applicable Insert	Fig	Dimensions (mm)		
	R	L											Bolt	N-m	Wrench
GNDI R/L2532-T206	●	●	25	23	40	200	16	32	2.0	6	GC□ N200□-□□	1	BH0516	5.0	LH030
R/L3240-T210	●	●	32	30	50	250	26	40	2.0	10		1	BH0616	6.0	LH040
GNDI R/L2532-T306	●	●	25	23	40	200	16	32	3.0	6	GC□ N300□-□□	1	BH0516	5.0	LH030
R/L3240-T310	●	●	32	30	50	250	26	40	3.0	10		1	BH0616	6.0	LH040
R/L4050-T311	●	●	40	38	60	300	31	50	3.0	11		1	BH0516	5.0	LH030
GNDI R/L2532-T406	●	●	25	23	40	200	19	32	4.0	6	GC□ N400□-□□	1	BH0516	5.0	LH030
R/L3240-T410	●	●	32	30	50	250	26	40	4.0	10		1	BH0616	6.0	LH040
R/L4050-T411	●	●	40	38	60	300	31	50	4.0	11		1	BH0516	5.0	LH030
GNDI R/L2532-T506	●	●	25	23	40	200	19	32	5.0	6	GC□ N500□-□□	1	BH0516	5.0	LH030
R/L3240-T510	●	●	32	30	50	250	26	40	5.0	10		1	BH0616	6.0	LH040
R/L4050-T511	●	●	40	38	60	300	31	50	5.0	11		1	BH0616	6.0	LH040
GNDI R/L4050-T611	●	●	40	38	60	300	31	50	6.0	11	GC□ N600□-□□	1	BH0616	6.0	LH040

Select holders and inserts with matching width of cut (CW). Refer to page F51 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.

Grooving Tools

T

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

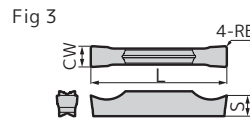
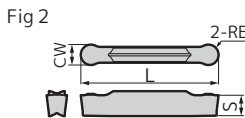
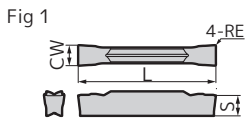
Necking

CBN



Inserts for GNDI type

(Coated Carbide / Cermet / Cemented Carbide / DLC)



Grooving / Traverse Cutting

Dimensions (mm)

Cat. No.	Width of Cut CW							Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig		
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U						AC530U	T2500A
GCM N3002-MG	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	1	
N3004-MG	●	●	▲	●	●	●	●	3.0	±0.03	0.4	21.1	3.8	1	
GCM N4002-MG	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0	1	
N4004-MG	●	●	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0	1	
N4008-MG	●	●	▲	●	●	●	●	4.0	±0.03	0.8	26.4	4.0	5	
GCM N5004-MG	●	●	●	●	●	●	●	5.0	±0.03	0.4	26.4	4.1	1	
N5008-MG	●	●	▲	●	●	●	●	5.0	±0.03	0.8	26.4	4.1	1	
GCM N6004-MG	●	●	●	●	●	●	●	6.0	±0.03	0.4	26.4	4.5	1	
N6008-MG	●	●	▲	●	●	●	●	6.0	±0.03	0.8	26.4	4.5	1	
GCM N2002-ML	—	—	—	—	●	●	●	2.0	±0.03	0.2	21.1	3.6	1	
N3002-ML	—	—	▲	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	1	
N3004-ML	—	—	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8	1	
GCM N4002-ML	●	●	●	●	●	●	●	4.0	±0.03	0.2	26.4	4.0	1	
N4004-ML	●	●	▲	●	●	●	●	4.0	±0.03	0.4	26.4	4.0	5	
N4008-ML	●	●	●	●	●	●	●	4.0	±0.03	0.8	26.4	4.0	1	
GCM N5004-ML	●	●	▲	●	●	●	●	5.0	±0.03	0.4	26.4	4.1	1	
N5008-ML	●	●	●	●	●	●	●	5.0	±0.03	0.8	26.4	4.1	1	
GCM N6004-ML	●	●	▲	●	●	●	●	6.0	±0.03	0.4	26.4	4.5	1	
N6008-ML	●	●	●	●	●	●	●	6.0	±0.03	0.8	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	
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U						AC530U
GCM N2010-RN	—	—	—	—	●	●	●	2.0	±0.03	1.0	21.7	3.6	2
N3015-RN	●	●	▲	●	●	●	●	3.0	±0.03	1.5	22.6	3.8	2
N4020-RN	●	●	●	●	●	●	●	4.0	±0.03	2.0	28.2	4.0	5
N5025-RN	●	●	●	●	●	●	●	5.0	±0.03	2.5	28.3	4.1	2
N6030-RN	●	●	▲	●	●	●	●	6.0	±0.03	3.0	28.3	4.5	2

Non-Ferrous Metals

Dimensions (mm)

Cat. No.	H10	DL1500	Width of Cut CW							Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig	
			AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U						AC530U
GCG N2002-GA	●	●	—	—	—	—	—	2.0	±0.025	0.2	21.1	3.6	3		
N3002-GA	●	●	—	—	—	—	—	3.0	±0.025	0.2	21.1	3.8	3		
GCG N4004-GA	●	●	—	—	—	—	—	4.0	±0.025	0.4	26.4	4.0	5		
N5004-GA	●	●	—	—	—	—	—	5.0	±0.025	0.4	26.4	4.1	3		
N6004-GA	●	●	—	—	—	—	—	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		
	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U						AC530U	T2500A
GCM N2002-GG	—	—	▲	—	—	—	—	2.0	±0.03	0.2	21.1	3.6	1	
GCM N3002-GG	—	—	▲	—	—	—	—	3.0	±0.03	0.2	21.1	3.8	1	
N3004-GG	—	—	▲	—	—	—	—	3.0	±0.03	0.4	21.1	3.8	1	
GCM N4002-GG	●	●	▲	—	—	—	—	4.0	±0.03	0.2	26.4	4.0	1	
N4004-GG	●	●	▲	—	—	—	—	4.0	±0.03	0.4	26.4	4.0	5	
GCM N5002-GG	●	●	▲	—	—	—	—	5.0	±0.03	0.2	26.4	4.1	1	
N5004-GG	●	●	▲	—	—	—	—	5.0	±0.03	0.4	26.4	4.1	1	
GCM N6002-GG	●	●	▲	—	—	—	—	6.0	±0.03	0.2	26.4	4.5	1	
N6004-GG	●	●	▲	—	—	—	—	6.0	±0.03	0.4	26.4	4.5	1	
GCM N2002-GL	—	—	▲	—	—	—	—	2.0	±0.03	0.2	21.1	3.6	1	
N2004-GL	—	—	▲	—	—	—	—	2.0	±0.03	0.4	21.1	3.6	1	
GCM N3002-GL	—	—	▲	—	—	—	—	3.0	±0.03	0.2	21.1	3.8	1	
N3004-GL	—	—	●	—	—	—	—	3.0	±0.03	0.4	21.1	3.8	1	
GCM N4002-GL	●	●	▲	—	—	—	—	4.0	±0.03	0.2	26.4	4.0	5	
N4004-GL	●	●	▲	—	—	—	—	4.0	±0.03	0.4	26.4	4.0	1	
GCM N5002-GL	●	●	▲	—	—	—	—	5.0	±0.03	0.2	26.4	4.1	1	
N5004-GL	●	●	▲	—	—	—	—	5.0	±0.03	0.4	26.4	4.1	1	
GCM N6002-GL	●	●	▲	—	—	—	—	6.0	±0.03	0.2	26.4	4.5	1	
N6004-GL	●	●	▲	—	—	—	—	6.0	±0.03	0.4	26.4	4.5	1	
GCM N2002-GF	—	—	—	—	●	●	●	2.0	±0.03	0.2	21.1	3.6	1	
N2004-GF	—	—	—	—	●	●	●	2.0	±0.03	0.4	21.1	3.6	1	
GCM N3002-GF	—	—	▲	—	—	—	—	3.0	±0.03	0.2	21.1	3.8	1	
N3004-GF	—	—	●	—	—	—	—	3.0	±0.03	0.4	21.1	3.8	1	
GCM N4002-GF	●	●	▲	—	—	—	—	4.0	±0.03	0.2	26.4	4.0	5	
N4004-GF	●	●	▲	—	—	—	—	4.0	±0.03	0.4	26.4	4.0	1	
GCM N5002-GF	●	●	▲	—	—	—	—	5.0	±0.03	0.2	26.4	4.1	1	
N5004-GF	●	●	▲	—	—	—	—	5.0	±0.03	0.4	26.4	4.1	1	
GCM N6002-GF	●	●	▲	—	—	—	—	6.0	±0.03	0.2	26.4	4.5	1	
N6004-GF	●	●	▲	—	—	—	—	6.0	±0.03	0.4	26.4	4.5	1	

Part Number Suffix Code (Chipbreakers)

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

Chipbreaker Selection **F15** Precautions for Use **F24** Recommended Cutting Conditions **F21**

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

● mark: Standard stocked item (new product/expanded item) ▲ mark: To be replaced by a new product, made to order, or discontinued (please confirm stock availability)

GNDCM type



SumiPolygon Cassette for External Grooving
Clamp-on

Grooving Tools

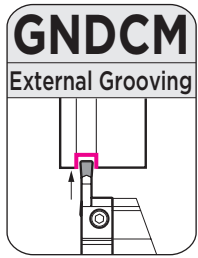


Fig 1

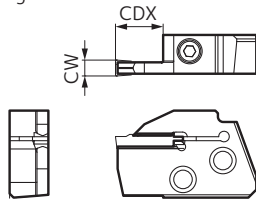


Figure shows right-handed (R) tool.

SumiPolygon GND series Cassettes

Parts

Dimensions (mm)

Cat. No.	Stock		Width of Cut CW	Maximum Groove Depth CDX	Applicable Insert	Applicable Holder	Fig	Cap Screw		Wrench
	R	L						N·m		
GNDCM R/L 212	●	●	2	12	GC□□2000-□□		1			
R/L 312	●	●	3	12	GC□□3000-□□	PSC00GND000000 R/L	1			
R/L 418	●	●	4	18	GC□□4000-□□		1	BX0512	5.0	LH040
R/L 518	●	●	5	18	GC□N5000-□□	PSC00GND000000 90 R/L	1			
R/L 618	●	●	6	18	GC□N6000-□□		1			

Select holders and inserts with matching width of cut (CW). Refer to page F53 for applicable inserts.

The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to page F21.

Cassette Identification Code

GNDCM R 2 12

Series Code

Feed Direction

Width of Cut (mm)

Maximum Groove Depth (mm)

Threading

External Turning

Fig 1

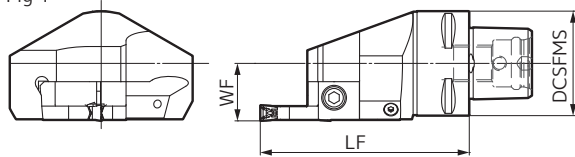


Figure shows right-handed (R) tool.

Fig 1

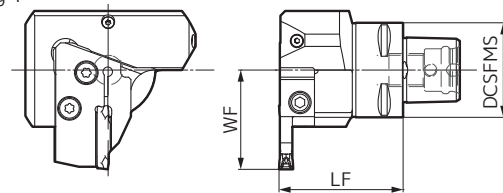


Figure shows right-handed (R) tool.

Facing

Internal Turning

SumiPolygon GND series Tool Holder (Straight)

Parts

Dimensions (mm)

Cat. No.	Stock		Cutting Edge WF	Overhang LF	Mounting DCS-FMS	Applicable Cassettes	Fig	Flat Head Screw		Wrench
	R	L						N·m		
PSC40 GND 228000 R/L	●	●	22	80	40	GNDCM R/LO00	1	BFTX0619N	7.5	TT25
PSC50 GND 278000 R/L	●	●	27	80	50		1			
PSC63 GND 338000 R/L	●	●	33	80	63		1			

Inserts and cassettes are not included with the holders.

SumiPolygon GND series Tool Holder (L type)

Parts

Dimensions (mm)

Cat. No.	Stock		Cutting Edge WF	Overhang LF	Mounting DCS-FMS	Applicable Cassettes	Fig	Flat Head Screw		Wrench
	R	L						N·m		
PSC40 GND 425290 R/L	●	●	42	52.5	40	GNDCM L/RO00	1	BFTX0619N	7.5	TT25
PSC50 GND 475590 R/L	●	●	47	55	50		1			
PSC63 GND 545790 R/L	●	●	54	57	63		1			

Inserts and cassettes are not included with the holders.

CBN

Holder Identification Code

PSC40 GND 42 52 90 R

SumiPolygon Shank Size

Series Code: GND series

WF Dimension (mm)

LF Dimension (mm)

00: Straight 90: L type

Feed Direction

GNDCM type



Inserts for GNDCM type

Fig 1

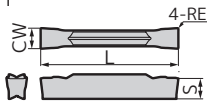


Fig 2 (Figure shows right-handed (R) tool.)

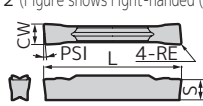


Fig 3

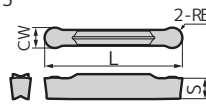
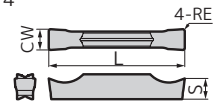


Fig 4



Coated Carbide / Cermet / Cemented Carbide / DLC

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	RE	L	S									
GCM N3002-MG	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	3.0	±0.03	0.2	21.1	3.8	1
N3004-MG	●	●	▲	●	●	●	●	—	—	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-MG	●	●	●	●	●	●	●	—	—	4.0	±0.03	0.2	26.4	4.0	1
N4004-MG	●	●	●	●	●	●	●	—	—	4.0	±0.03	0.4	26.4	4.0	1
N4008-MG	●	●	▲	●	●	●	●	—	—	4.0	±0.03	0.8	26.4	4.0	5
GCM N5004-MG	●	●	●	●	●	●	●	—	—	5.0	±0.03	0.4	26.4	4.1	1
N5008-MG	●	●	▲	●	●	●	●	—	—	5.0	±0.03	0.8	26.4	4.1	1
GCM N6004-MG	●	●	●	●	●	●	●	—	—	6.0	±0.03	0.4	26.4	4.5	1
N6008-MG	●	●	▲	●	●	●	●	—	—	6.0	±0.03	0.8	26.4	4.5	1
GCM N2002-ML	—	—	—	—	—	—	—	—	—	2.0	±0.03	0.2	21.1	3.6	1
N3002-ML	●	●	▲	●	●	●	●	—	—	3.0	±0.03	0.2	21.1	3.8	1
N3004-ML	●	●	●	●	●	●	●	—	—	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-ML	●	●	●	●	●	●	●	—	—	4.0	±0.03	0.2	26.4	4.0	1
N4004-ML	●	●	▲	●	●	●	●	—	—	4.0	±0.03	0.4	26.4	4.0	5
N4008-ML	●	●	●	●	●	●	●	—	—	4.0	±0.03	0.8	26.4	4.0	1
GCM N5004-ML	●	●	●	●	●	●	●	—	—	5.0	±0.03	0.4	26.4	4.1	1
N5008-ML	●	●	▲	●	●	●	●	—	—	5.0	±0.03	0.8	26.4	4.1	1
GCM N6004-ML	●	●	●	●	●	●	●	—	—	6.0	±0.03	0.4	26.4	4.5	1
N6008-ML	●	●	▲	●	●	●	●	—	—	6.0	±0.03	0.8	26.4	4.5	1

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	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	1
N3002-GG	●	●	▲	●	●	●	●	—	—	3.0	±0.03	0.2	21.1	3.8	1
N3004-GG	●	●	●	●	●	●	●	—	—	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-GG	●	●	●	●	●	●	●	—	—	4.0	±0.03	0.2	26.4	4.0	1
N4004-GG	●	●	▲	●	●	●	●	—	—	4.0	±0.03	0.4	26.4	4.0	5
GCM N5002-GG	●	●	●	●	●	●	●	—	—	5.0	±0.03	0.2	26.4	4.1	1
N5004-GG	●	●	▲	●	●	●	●	—	—	5.0	±0.03	0.4	26.4	4.1	1
GCM N6002-GG	●	●	●	●	●	●	●	—	—	6.0	±0.03	0.2	26.4	4.5	1
N6004-GG	●	●	▲	●	●	●	●	—	—	6.0	±0.03	0.4	26.4	4.5	1
GCM N2002-GL	●	●	●	●	●	●	●	—	—	2.0	±0.03	0.2	21.1	3.6	1
N2004-GL	●	●	▲	●	●	●	●	—	—	2.0	±0.03	0.4	21.1	3.6	1
GCM N3002-GL	●	●	●	●	●	●	●	—	—	3.0	±0.03	0.2	21.1	3.8	1
N3004-GL	●	●	▲	●	●	●	●	—	—	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-GL	●	●	●	●	●	●	●	—	—	4.0	±0.03	0.2	26.4	4.0	5
N4004-GL	●	●	▲	●	●	●	●	—	—	4.0	±0.03	0.4	26.4	4.0	1
GCM N5002-GL	●	●	●	●	●	●	●	—	—	5.0	±0.03	0.2	26.4	4.1	1
N5004-GL	●	●	▲	●	●	●	●	—	—	5.0	±0.03	0.4	26.4	4.1	1
GCM N6002-GL	●	●	●	●	●	●	●	—	—	6.0	±0.03	0.2	26.4	4.5	1
N6004-GL	●	●	▲	●	●	●	●	—	—	6.0	±0.03	0.4	26.4	4.5	1
GCM N125005-GF	—	—	—	—	—	—	—	—	—	1.25	±0.03	0.05	17.4	3.2	1
N150005-GF	—	—	—	—	—	—	—	—	—	1.5	±0.03	0.05	17.8	3.7	1
GCM N2002-GF	●	●	●	●	●	●	●	—	—	2.0	±0.03	0.2	21.1	3.6	1
N2004-GF	●	●	▲	●	●	●	●	—	—	2.0	±0.03	0.4	21.1	3.6	1
GCM N3002-GF	●	●	●	●	●	●	●	—	—	3.0	±0.03	0.2	21.1	3.8	1
N3004-GF	●	●	▲	●	●	●	●	—	—	3.0	±0.03	0.4	21.1	3.8	1
GCM N4002-GF	●	●	●	●	●	●	●	—	—	4.0	±0.03	0.2	26.4	4.0	5
N4004-GF	●	●	▲	●	●	●	●	—	—	4.0	±0.03	0.4	26.4	4.0	1
GCM N5002-GF	●	●	●	●	●	●	●	—	—	5.0	±0.03	0.2	26.4	4.1	1
N5004-GF	●	●	▲	●	●	●	●	—	—	5.0	±0.03	0.4	26.4	4.1	1
GCM N6002-GF	●	●	●	●	●	●	●	—	—	6.0	±0.03	0.2	26.4	4.5	1
N6004-GF	●	●	▲	●	●	●	●	—	—	6.0	±0.03	0.4	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	S	RE	L	S										
GCM R2002-CG-05	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	AC1030U	5°	2.0	±0.03	0.2	21.1	3.6	2
L2002-CG-05	●	●	▲	●	●	●	●	—	—	5°	2.0	±0.03	0.2	21.1	3.6	2
GCM R3002-CG-05	●	●	●	●	●	●	●	—	—	5°	3.0	±0.03	0.2	21.3	3.8	5
L3002-CG-05	●	●	▲	●	●	●	●	—	—	5°	3.0	±0.03	0.2	21.3	3.8	2
GCM R4002-CG-05	●	●	●	●	●	●	●	—	—	5°	4.0	±0.04	0.2	26.7	4.0	2
L4002-CG-05	●	●	▲	●	●	●	●	—	—	5°	4.0	±0.04	0.2	26.7	4.0	2
GCM R20003-CF-10	—	—	—	—	—	—	—	—	—	10°	2.0	±0.08	0.03	22.4	3.6	2
L20003-CF-10	—	—	—	—	—	—	—	—	—	10°	2.0	±0.08	0.03	22.4	3.6	2
GCM R30003-CF-10	—	—	—	—	—	—	—	—	—	10°	3.0	±0.08	0.03	22.4	3.8	2
L30003-CF-10	—	—	—	—	—	—	—	—	—	10°	3.0	±0.08	0.03	22.4	3.8	5
GCM R20003-CF-15	—	—	—	—	—	—	—	—	—	15°	2.0	±0.08	0.03	22.4	3.6	2
L20003-CF-15	—	—	—	—	—	—	—	—	—	15°	2.0	±0.08	0.03	22.4	3.6	2
GCM R30003-CF-15	—	—	—	—	—	—	—	—	—	15°	3.0	±0.08	0.03	22.4	3.8	2
L30003-CF-15	—	—	—	—	—	—	—	—	—	15°	3.0	±0.08	0.03	22.4	3.8	2

GCM R: Right-handed, GCM L: Left-handed

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	S	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	3
N4020-RG	●	●	▲	●	●	●	●	—	—	4.0	±0.03	2.0	26.4	4.0	5
GCM N5025-RG	●	●	●	●	●	●	●	—	—	5.0	±0.03	2.5	27.2	4.1	3
N6030-RG	●	●	▲	●	●	●	●	—	—	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	S	RE	L	S									
GCM N2010-RN	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	—	2.0	±0.03	1.0	21.7	3.6	3
N3015-RN	●	●	▲	●	●	●	●	—	—	3.0	±0.03	1.5	22.6	3.8	3
N4020-RN	●	●	●	●	●	●	●	—	—	4.0	±0.03	2.0	28.2	4.0	5
N5025-RN															

SEC-Grooving Tool Holders GND series Special Grooving Insert Request Form

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

External Grooving: GNDS type (→F30), GNDM type (→F26, F28, F32, F34), GNDMS type (→F32), GNDL type (→F26, F28, F36, F38), GNDLS type (→F36), GNDCM type (→F52) *GNDXL types cannot be used as the insert shape is different

Internal Grooving: GNDI type (→F50) *GNDIS types cannot be used as the insert shape is different

Face Grooving: GNDF type (→F44), GNDFS type (→F46)

Special inserts with ground chipbreaker (customised width of cut and insert corner radius) can be made-to-order. To order, fill out the form below (indicate your 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.)

Shape	Item	Description
	Width of Cut CW (2.00 to 6.59mm)	mm
	Corner Radius RER	mm
	Corner Radius REL	mm
	Grade (Select from right)*1	AC5015S / AC5025S / AC530U / AC520U / EH520 / H10 / KH03 / CBN Grade / PCD Grade
	Grooving Depth CDX *2	mm
	<p>*1: If H10 is selected as the grade, the cutting edge will have a sharp edge. *2: Set the chipbreaker width based on CDX. The actual groove depth can only be less than or equal to the maximum groove depth configurable by each holder.</p>	

Form instructions

- The applicable standard holder depends on the 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 and internal grooving 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.
 (Standard holder dimension WF) + (WF - CWS) / 2
- For inch widths of cut, inserts can also be supplied partially unground. Contact your local sales office for details.

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	

SEC-Grooving Tool Holders GND series 90° Insert Request Form

Applicable holders: Inquire along with inserts.

To order, fill out the form below (indicate your 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.)

Shape	Item	Description
	Width of Cut CW (2.00 to 5.00mm)	mm
	Corner Radius RER	mm
	Corner Radius REL	mm
	Grade (Select from right)	EH510 / EH520 / AC5015S / AC5025S
	Grooving Depth CDX	mm
	Cutting Edge Position L (5.80mm up) (Enter the maximum allowable value)	mm
	Feed Direction	Right-handed / Left-handed
	Insert Thickness (Select from right)	Standard / High rigidity

Machined positions on workpiece and machining method (Select one of the options below and enter the machining diameter)		
Face Grooving	External Grooving	Internal Grooving
Work Dia.: <input type="text"/> mm	Work Dia.: <input type="text"/> mm	Work Dia.: <input type="text"/> mm

SGE series



External Shallow Grooves
Clamp-on

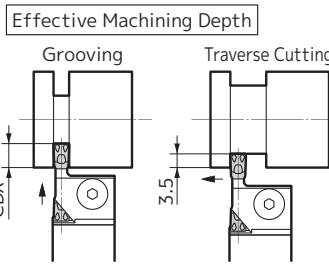
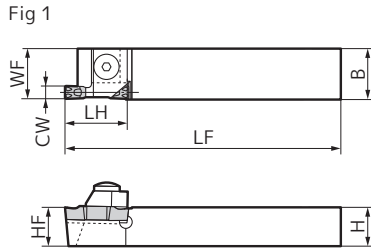
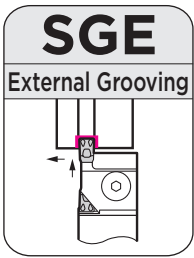


Figure shows right-handed (R) tool.

Holder

Parts

Dimensions (mm)

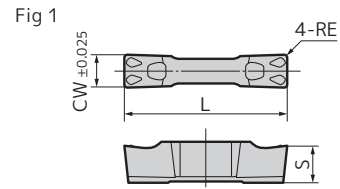
Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Width of Cut CW	Maximum Groove Depth CDX	Applicable Insert	Fig	Clamp Plate	Bolt	Spring	Wrench
	R	L											GCLR/L-3	FBH0516NT	GSP-5	LH025NT
SGE R/L1016-3	●	●	10	16	120	15.7	10	19.5	3.0	6.2	GEN3000	1	GCLR/L-3	FBH0516NT	GSP-5	LH025NT
R/L1216-3	●	●	12	16	120	15.7	12	19.5	3.0	6.2		1				
R/L1616-3	●	●	16	16	120	15.7	16	22.0	3.0	8.0		1				
R/L2020-3	●	●	20	20	120	19.7	20	22.0	3.0	8.0		1				
SGE R/L1016-45	●	●	10	16	120	15.7	10	19.5	4.0	6.2	GEN4000 GEN5000	1	GCLR/L-4	FBH0516NT	GSP-5	LH025NT
R/L1216-45	●	●	12	16	120	15.7	12	19.5	5.0	8.0		1				
R/L1616-45	●	●	16	16	120	15.7	16	22.0	5.0	8.0		1				
R/L2020-45	●	●	20	20	120	19.7	20	22.0	5.0	8.0		1				
SGE R/L1020-6	●	●	10	20	120	19.7	10	19.5	6.0	6.2	GEN6000	1	GCLR/L-6	FBH0516NT	GSP-5	LH025NT
R/L1220-6	●	●	12	20	120	19.7	12	19.5	6.0	6.2		1				
R/L1620-6	●	●	16	20	120	19.7	16	22.0	6.0	8.0		1				
R/L2020-6	●	●	20	20	120	19.7	20	22.0	6.0	8.0		1				

*Width of cut CW = 4mm when the insert is mounted. Width of cut CW is 0.5mm larger when a 5mm insert is mounted.

Insert (Coated Carbide)

Dimensions (mm)

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



Recommended Cutting Conditions **A24**

Grooving Tools

T

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

Necking

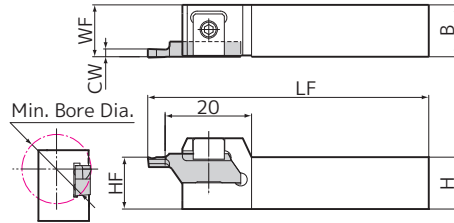
CBN



Very Small Diameter Face Grooving
Clamp-on



Fig 1



Holder

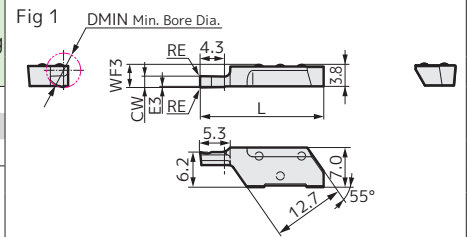
Cat. No.	Stock	Dimensions (mm)						Fig	Parts		
		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Clamp Plate		Double Screw	Wrench	
CKBR 1010-16	●	10	10	111	10	10	1	CKBW16	WB4-8	LH020	
1212-16	●	12	12	136	12	12	1				
1616-16	●	16	16	136	16	16	1				
2020-16	●	20	20	136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

*For round shank holders, refer to page E66.

Round Shank Holders E64

Insert (Coated Carbide)

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

Facing

Internal Turning

Necking

CBN

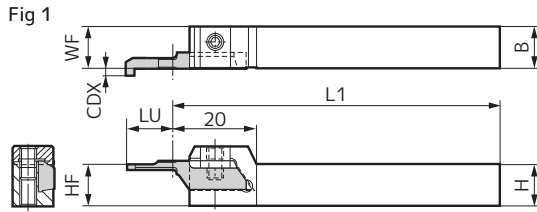
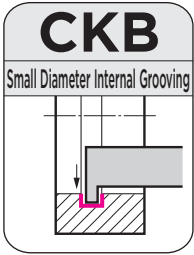
CKB series



Internal Narrow Grooving
Clamp-on



Grooving Tools



Refer to the insert table for CDX and LU values.

T

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
CKB R1010-16	●	10	10	100	10	10	1			
R1212-16	●	12	12	125	12	12	1			
R1616-16	●	16	16	125	16	16	1			
R2020-16	●	20	20	125	20	20	1			
R2525-16	●	25	25	150	25	25	1			

Refer to the insert table for CDX and LU values.

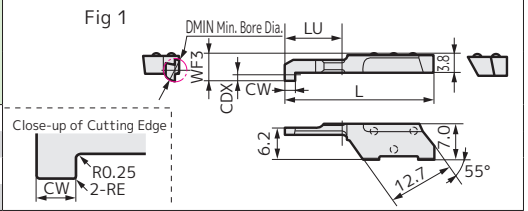
Round Shank Holders E64

Threading

Insert (Coated Carbide)

Dimensions (mm)

Cat. No.	AC1030U	Min. Bore Dia.	Width of Cut	Cutting Edge Distance	Corner Radius	Overall Length	Maximum Groove Depth	Machinable Length	Fig
		DMIN	CW	WF3	RE	L	CDX	LU	
KBMG R0411-05	●	4.0	1.00	4.90	0.05	28.5	0.8	11	1
R0411-10	●	4.0	2.00	4.90	0.10	28.5	0.8	11	1
R0511-05	●	5.0	1.00	5.10	0.05	28.5	1.0	11	1
R0511-10	●	5.0	2.00	5.10	0.10	28.5	1.0	11	1



Recommended Cutting Conditions A24

Facing

Internal Turning

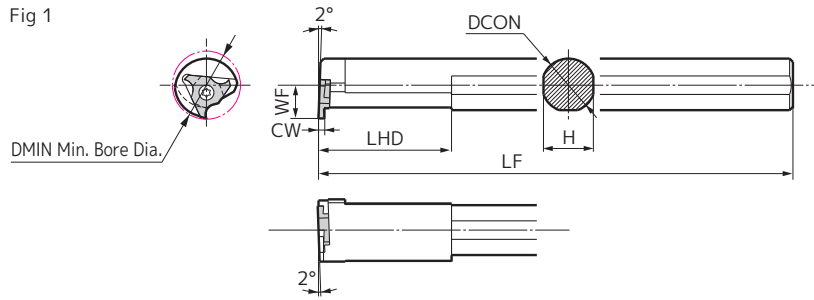
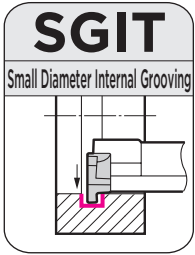
Necking

CBN

Note: The values in red have been changed from those in the 2023-2024 General Catalogue.



Internal Narrow Grooving
Screw-on



Holder

Parts Dimensions (mm)

Cat. No.	Stock	Diameter DCON	Height H	Overall Length LF	Cutting Edge Distance WF	Head LHD	Min. Bore Dia. DMIN	Width of Cut CW	Maximum Groove Depth	Applicable Insert	Fig		
											Flat Head Screw	Wrench	
SGIT R08	●	8	7.0	125	5.0	20	10.0	0.50 to 2.00	0.8*	GITL3000	1	BFTX02506NS	RT08
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
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
R20	●	20	19.0	200	12.0	40	25.0	1.50 to 2.00	2.8	GITL6000	1	BFTX0307NS	RT10

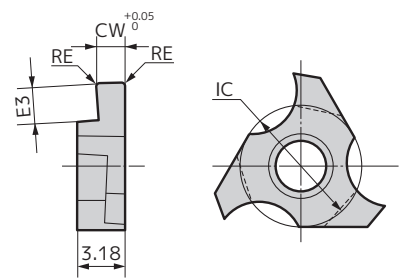
*The maximum groove depth is 0.5mm when GITL3050 is set (width of cut CW = 0.5mm).

Insert (Coated Carbide)

Dimensions (mm)

Cat. No.	ACZ150	Width of Cut CW	Offset E3	Corner Radius RE	Inscribed Circle IC	Applicable Holder	Fig
GIT L3050	●	0.50	1.2	0.05	5.56	SGIT R08 SGIT R10	1
L3065	●	0.65	1.2	0.05	5.56		1
L3075	●	0.75	1.2	0.05	5.56		1
L3100	●	1.00	1.2	0.05	5.56		1
L3125	●	1.25	1.2	0.20	5.56		1
L3145	●	1.45	1.2	0.20	5.56		1
L3150	●	1.50	1.2	0.05	5.56	SGIT R12 SGIT R14	1
L3200	●	2.00	1.2	0.10	5.56		1
GIT L5100	●	1.00	2.2	0.05	7.94		1
L5145	●	1.45	2.2	0.20	7.94		1
L5150	●	1.50	2.2	0.05	7.94	SGIT R16 SGIT R20	1
L5175	●	1.75	2.2	0.20	7.94		1
L5200	●	2.00	2.2	0.10	7.94		1
GIT L6150	●	1.50	3.2	0.20	9.525		1
L6175	●	1.75	3.2	0.20	9.525	1	
L6200	●	2.00	3.2	0.20	9.525	1	

Fig 1



Recommended Cutting Conditions **A24**

Grooving
Tools

T

Grooving

Cut-off

Threading

External
Turning

Facing

Internal
Turning

Necking

CBN



Grooving Tools

T

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

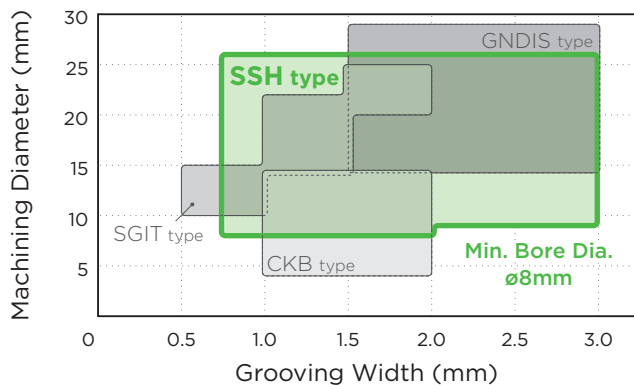
Necking

CBN

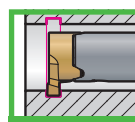
Features

- 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 from $\varnothing 8\text{mm}$
 - Wide range of grooving widths
- In addition to grooving applications, the lineup includes inserts for threading and circlip groove machining
- Inserts and holders supporting internal face grooving are now available as a series

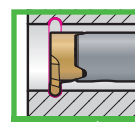
Application Range (Grooving)



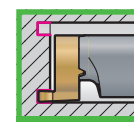
Insert Lineup



Grooving
SSHG type
Insert Size: 08 | 09 | 10 | 14

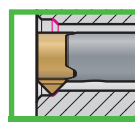


Radius Grooving/Profiling
SSHR type
Insert Size: 08 | 09 | 10 | 14

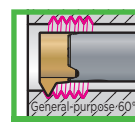


Internal Face Grooving
SSHFI type
Insert Size: 08 | 09 | 10 | 14

Use a dedicated SSHFI holder



Chamfering
SSHC type
Insert Size: 08 | 09 | 10 | 14



Threading
SSHT type
Insert Size: 08 | 09 | 10 | 14

08 Pitch 0.50 to 1.75mm
14 Pitch 0.50 to 2.00mm

Product Range (Grooving)

■ Grooving/Radius Shape
 ■ Grooving/C-Chamfering
 ■ Radius Grooving/Profiling
 ■ Chamfering

Application	Insert Type	Insert Size	Min. Bore Dia. (mm)	Max. Grooving Depth (mm)	Width of Cut / Cutting Edge Corner Shape (mm)													Applicable Holder				
					0.74	0.80	0.84	0.94	1.00	1.19	1.20	1.39	1.50	1.69	1.80	2.00	2.20		2.50	3.00	Chamfering	
Grooving	SSHG	08	8	1.0																E00□-SSHMN000-08		
		09	9	2.0																		
		10	10	3.0																		
		14	14	1.2																		
				1.3																		
				1.5																		
	1.6																					
	14	14	4.0																			
Radius Grooving/Profiling	SSHR	08	8	1.0																E00□-SSHMN000-08		
		14	14	1.6																		
Internal Face Grooving	SSHFI	14	14	1.5																E00□-SSHFR000-14*		
		14	14	2.5																		
Chamfering	SSHC	08	8	1.4																E00□-SSHMN000-08		

SSHG type 09/10 sized inserts and SSHFI type inserts are available as right-handed only. * The applicable holder for SSHFI type inserts is SSHFI type.

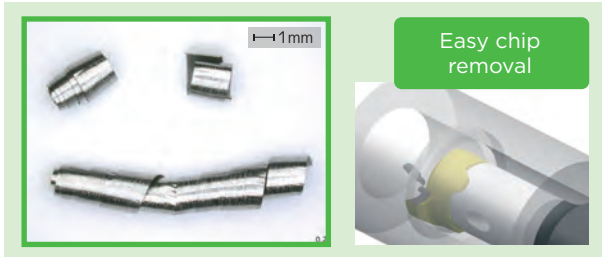
Product Range (Threading)

Application	Insert Type	Insert Size	Min. Bore Dia. (mm)	Thread Type	Pitch (mm)						Applicable Holder
					0.50	0.75	1.00	1.25	1.50	1.75	
Threading	SSHT	08	8	General-purpose 60°	[Green bar]						E00□-SSHMN000-08
		14	14	General-purpose 60°	[Green bar]						E00□-SSHMN000-14

SSHT type inserts are available as right-handed only.

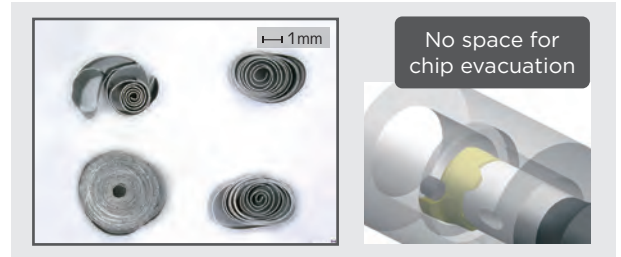
■ Chip Evacuation

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



SSH series

Evacuation is poor, may cause sudden tool fracture

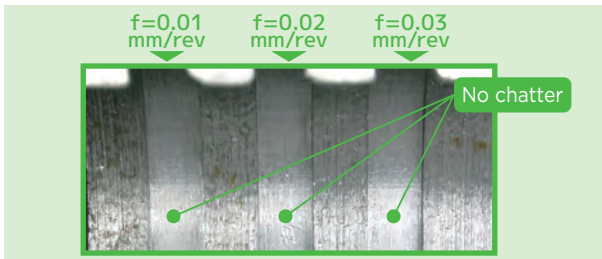


Competitor's Product A

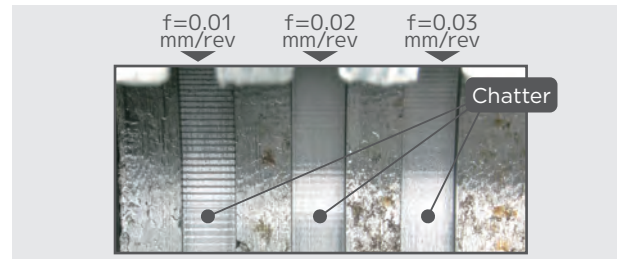
Work Material: S45C Machining Diameter: ϕ 13mm Insert: SSHGR0820000 Cutting Conditions: $v_c = 50\text{m/min}$ $f = 0.02\text{mm/rev}$ $a_p = 1.0\text{mm}$ Wet (Oil-based)

■ Chatter Resistance

Outstanding sharpness and carbide shank suppress chatter



SSH series

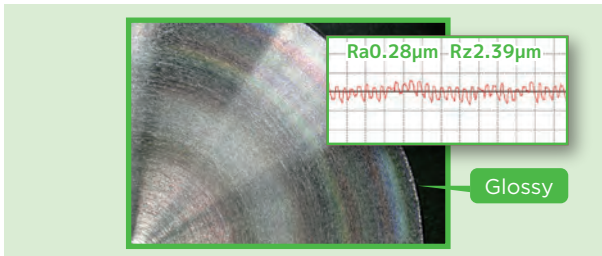


Competitor's Product B

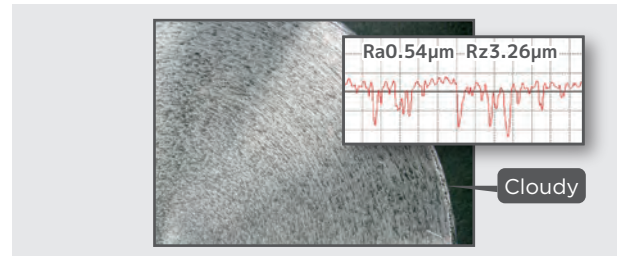
Work Material: S45C Machining Diameter: ϕ 13mm Insert: SSHGR0820000 Cutting Conditions: $v_c = 100\text{m/min}$ $f = 0.01, 0.02, 0.03\text{mm/rev}$ $a_p = 0.2\text{mm}$ Wet (Oil-based)

■ Machined Surface Quality

Glossy, beautiful surface finish



SSH series

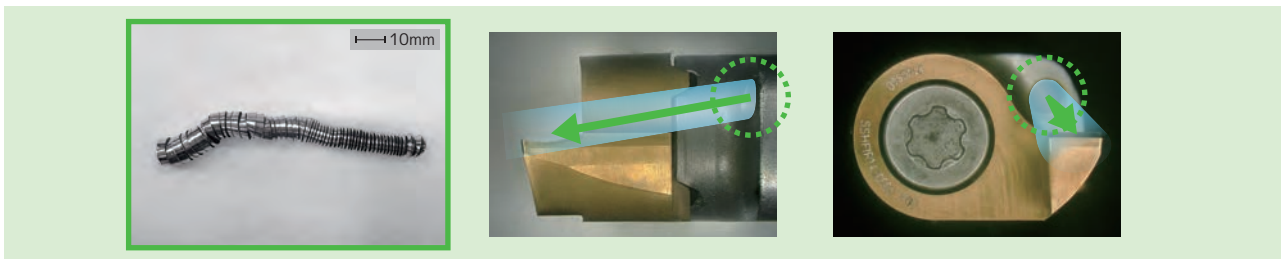


Competitor's Product C

Work Material: SCM440 Machining Diameter: ϕ 30mm Insert: SSHGR0820000 Cutting Conditions: $v_c = 180\text{m/min}$ $f = 0.02\text{mm/rev}$ $a_p = 0.2\text{mm}$ Wet (Oil-based)

■ Chip Evacuation (Holders for Internal Face Grooving)

Stable chip control is possible with a coolant ejection port dedicated for internal face grooving

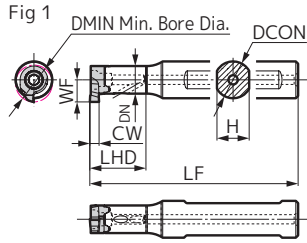


SSH series

Reliable coolant supply near the cutting edge

Work Material: SS400 Machining Diameter: ϕ 16mm (Periphery) Insert: SSHFIR1430020 Cutting Conditions: $v_c = 100\text{m/min}$ $f = 0.02\text{mm/rev}$ $a_p = 3.0\text{mm}$ Wet (Oil-based)

SSH series



Grooving Tools

T

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

Necking

CBN

Holder

Parts

Dimensions (mm)

Cat. No.	Stock	Shank Diameter DCON	Neck Dia. DN	Width H	Overall Length LF	Head Length LHD	Min. Bore Dia. DMIN	Width of Cut CW	Applicable Inserts	Fig	Dimensions (mm)		
											Flat Head Screw	Wrench	
E08D-SSH M N125-08	●	8	6	7	60(60.4)	12.5(12.9)	8 ~	0.74 to 3.00	SSH□ R/L 08 ... SSH□ R 09 ... SSH□ R 10 ...	1	BFTX02608IPS	1.2	TRX08IP
E08E-SSH M N210-08	●	8	6	7	70(70.4)	21.0(21.4)	8 ~	0.74 to 3.00		1			
E12E-SSH M N125-08	●	12	6	11	70(70.4)	12.5(12.9)	8 ~	0.74 to 3.00		1			
E12F-SSH M N210-08	●	12	6	11	80(80.4)	21.0(21.4)	8 ~	0.74 to 3.00		1			
E12G-SSH M N300-08	●	12	6	11	90(90.4)	30.0(30.4)	8 ~	0.74 to 3.00		1			
E12H-SSH M N420-08	●	12	6	11	100(100.4)	42.0(42.4)	8 ~	0.74 to 3.00		1			

Overall Length LF and Head Length LHD are dimensions with SSHG type / SSHR type inserts mounted. Parentheses show dimensions with SSHG R09... type (09 size) / SSHG R10... type (10 size) mounted. Min. Bore Dia. DMIN above is the dimension when 08 sized inserts are mounted; it is 9mm with 09 sized inserts and 10mm with 10 sized inserts.

Refer to the Insert Stock Table on page F63 for cutting edge distance WF dimensions.

Identification Code

E 08 D - SSHM N 125 - 08

Shank Material Code	Shank Dia. (mm)	Shank Length Code	Series Code	Feed Direction	Head Length Reference (mm) × 10	Min. Bore Dia. (mm)
---------------------	-----------------	-------------------	-------------	----------------	---------------------------------	---------------------

*With sized 08 insert mounted



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

Dimensions (mm)

Application	Cat. No.	AC1030U		Width of Cut	Maximum Groove Depth	Corner Radius	Cutting Edge Distance	Cutting Edge Distance	Thickness	Offset	Applicable Holder	Fig	Diagram
		R	L										
Grooving (08 size)	SSHG R/L 0807400	●	●	0.74	1.0	—	3.2	4.80	3.6	0.4	E08□-SSHMN○○○-08 E12□-SSHMN○○○-08	1	
	R/L 0808400	●	●	0.84	1.0	—	3.2	4.80	3.6	0.4		1	
	R/L 0809400	●	●	0.94	1.0	—	3.2	4.80	3.6	0.4		1	
	R/L 0810000	●	●	1.00	1.0	—	3.2	4.80	3.1	—		1	
	R/L 0810010	●	●	1.00	1.0	0.10	3.2	4.80	3.1	—		2	
	R/L 0811900	●	●	1.19	1.0	—	3.2	4.80	3.1	—		1	
	R/L 0813900	●	●	1.39	1.0	—	3.2	4.80	3.0	—		1	
	R/L 0815000	●	●	1.50	1.0	—	3.2	4.80	3.0	—		1	
	R/L 0815010	●	●	1.50	1.0	0.10	3.2	4.80	3.0	—		2	
	R/L 0816900	●	●	1.69	1.0	—	3.2	4.80	3.0	—		1	
	R/L 0820000	●	●	2.00	1.0	—	3.2	4.80	3.0	—		1	
	R/L 0820010	●	●	2.00	1.0	0.10	3.2	4.80	3.0	—		2	
	R/L 0820020	●	●	2.00	1.0	0.20	3.2	4.80	3.0	—		2	
Grooving (09 size)	SSHG R 0910010	●	—	1.00	2.0	0.10	3.6	5.50	3.5	—	E08□-SSHMN○○○-08 E12□-SSHMN○○○-08	2	
	R 0915010	●	—	1.50	2.0	0.10	3.6	5.50	3.4	—		2	
	R 0920010	●	—	2.00	2.0	0.10	3.6	5.50	3.4	—		2	
	R 0920020	●	—	2.00	2.0	0.20	3.6	5.50	3.4	—		2	
	R 0925010	●	—	2.50	2.0	0.10	3.6	5.50	3.4	—		2	
	R 0925020	●	—	2.50	2.0	0.20	3.6	5.50	3.4	—		2	
	R 0930010	●	—	3.00	2.0	0.10	3.6	5.50	3.4	—		2	
	R 0930020	●	—	3.00	2.0	0.20	3.6	5.50	3.4	—		2	
Grooving (10 size)	SSHG R 1010010	●	—	1.00	3.0	0.10	3.6	6.50	3.5	—	E08□-SSHMN○○○-08 E12□-SSHMN○○○-08	2	
	R 1015010	●	—	1.50	3.0	0.10	3.6	6.50	3.4	—		2	
	R 1020010	●	—	2.00	3.0	0.10	3.6	6.50	3.4	—		2	
	R 1020020	●	—	2.00	3.0	0.20	3.6	6.50	3.4	—		2	
	R 1025010	●	—	2.50	3.0	0.10	3.6	6.50	3.4	—		2	
	R 1025020	●	—	2.50	3.0	0.20	3.6	6.50	3.4	—		2	
	R 1030010	●	—	3.00	3.0	0.10	3.6	6.50	3.4	—		2	
R 1030020	●	—	3.00	3.0	0.20	3.6	6.50	3.4	—	2			
Radius Grooving/Profiling	SSHR R/L 08080	●	●	0.80	1.0	0.40	3.2	4.80	3.1	—	E08□-SSHMN○○○-08 E12□-SSHMN○○○-08	3	
	R/L 08100	●	●	1.00	1.0	0.50	3.2	4.80	3.1	—		3	
	R/L 08120	●	●	1.20	1.0	0.60	3.2	4.80	3.1	—		3	
	R/L 08150	●	●	1.50	1.0	0.75	3.2	4.80	3.0	—		3	
	R/L 08180	●	●	1.80	1.0	0.90	3.2	4.80	3.0	—		3	
R/L 08200	●	●	2.00	1.0	1.00	3.2	4.80	3.0	—	3			
Chamfering	SSHC R/L 08454502	●	●	—	1.4	0.20	1.8	4.65	3.6	—	E08□-SSHMN○○○-08 E12□-SSHMN○○○-08	4	Figure shows right-handed (R) tool.

Min. Bore Dia. DMIN dimension for 08 size: 8mm, 09 size: 9mm, 10 size: 10mm.

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

Dimensions (mm)

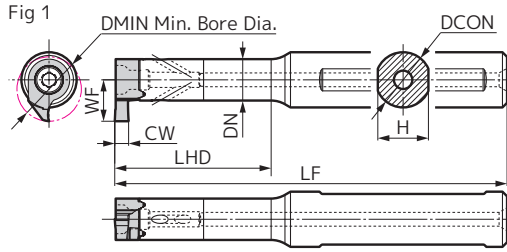
Application	Cat. No.	AC1030U		Pitch (mm)	Flat	Cutting Edge Distance	Cutting Edge Distance	Included Angle	Thickness	Applicable Holder	Fig	Diagram
		R	L									
Threading (08 size)	SSHT R 086005 New	●	—	0.50 - 0.75	0.04	2.8	4.8	60	3.6	E08□-SSHMN○○○-08 E12□-SSHMN○○○-08	1	
	SSHT R 086010 New	●	—	1.00 - 1.25	0.09	2.8	4.8	60	3.6		1	
	SSHT R 086015 New	●	—	1.50 - 1.75	0.14	2.6	4.8	60	3.6		1	

Min. Bore Dia. DMIN dimension for 08 size: 8mm.

Recommended Cutting Conditions

Work Material	P Carbon Steel / Alloy Steel	M Stainless Steel	K Cast Iron
Cutting Speed vc (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

SSH series



Grooving Tools

T

Grooving

Cut-off

Threading

External Turning

Facing

Internal Turning

Necking

CBN

Holder

Parts

Dimensions (mm)

Cat. No.	Stock	Diameter DCON	Neck Dia. DN	Height H	Overall Length LF	Head LHD	Min. Bore Dia. DMIN	Width of Cut CW	Applicable Insert	Fig	Dimensions (mm)		
											Flat Head Screw	Wrench	
E12X-SSHM N195-14	●	12	9	11	75	19.5	14	0.74 to 3.00	SSH□ R/L 14...	1	BFTX0412IPS	5.0	LT15IP
E12H-SSHM N340-14	●	12	9	11	100	34.0	14	0.74 to 3.00		1			
E12J-SSHM N450-14	●	12	9	11	110	45.0	14	0.74 to 3.00		1			
E12X-SSHM N640-14	●	12	9	11	130	64.0	14	0.74 to 3.00		1			
E16F-SSHM N195-14	●	16	9	14	80	19.5	14	0.74 to 3.00		1			
E16H-SSHM N340-14	●	16	9	14	100	34.0	14	0.74 to 3.00		1			
E16J-SSHM N450-14	●	16	9	14	110	45.0	14	0.74 to 3.00		1			
E16X-SSHM N640-14	●	16	9	14	130	64.0	14	0.74 to 3.00		1			

Refer to the Insert Stock Table on page F65 for cutting edge distance WF dimensions.

Identification Code

E 12 X - SSHM N 195 - 14

Shank Material Code	Shank Dia. (mm)	Shank Length Code	Series Code	Feed Direction	Head Length Reference (mm)×10	Min. Bore Dia. (mm)
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Insert (For E12□-SSHMN000-14 / E16□-SSHMN000-14) (Coated Carbide)

Dimensions (mm)

Application	Cat. No.	AC1030U		Width of Cut	Maximum Groove Depth	Corner Radius	Cutting Edge Distance	Cutting Edge Distance	Thickness	Offset	Applicable Holder	Fig	Diagram
		R	L										
Grooving (14 size)	SSHG R/L 1407400	●	●	0.74	1.2	—	5.3	9.0	5.5	0.2	E12□-SSHMN000-14 E16□-SSHMN000-14	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	●	●	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	●	●	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	●	●	2.00	4.0	0.10	5.3	9.0	5.1	—		2	
	R/L 1420020	●	●	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	
Radius Grooving/ Profiling	R/L 1425010	●	●	2.50	4.0	0.10	5.3	9.0	5.1	—	2		
	R/L 1425020	●	●	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	●	●	3.00	4.0	0.10	5.3	9.0	5.1	—	2		
	R/L 1430020	●	●	3.00	4.0	0.20	5.3	9.0	5.1	—	2		
	SSHR R/L 14100	●	●	1.00	1.6	0.50	5.3	9.0	5.2	—	3		
	R/L 14120	●	●	1.20	4.0	0.60	5.3	9.0	5.2	—	3		
	R/L 14150	●	●	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			
Radius Grooving/ Profiling	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	●	●	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		

Min. Bore Dia. DMIN dimension for 14 size: 14mm.

Inserts for Threading (For E12□-SSHMN000-14 / E16□-SSHMN000-14) (Coated Carbide)

Dimensions (mm)

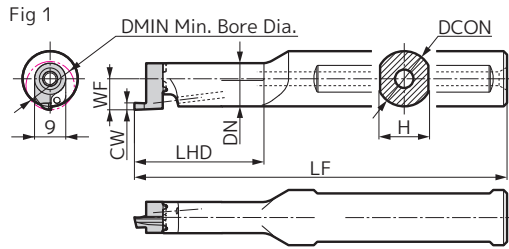
Application	Cat. No.	AC1030U		Pitch (mm)	Flat	Cutting Edge Distance	Cutting Edge Distance	Included Angle	Thickness	Applicable Holder	Fig	Diagram
		R	L									
Threading (14 size)	SSHT R 146005 <i>New</i>	●	—	0.50 - 0.75	0.04	4.8	9.0	60	5.5	E12□-SSHMN000-14 E16□-SSHMN000-14	1	
	SSHT R 146010 <i>New</i>	●	—	1.00 - 1.25	0.09	4.7	9.0	60	5.5		1	
	SSHT R 146015 <i>New</i>	●	—	1.50 - 1.75	0.14	4.5	9.0	60	5.5		1	
	SSHT R 146020 <i>New</i>	●	—	2.00	0.20	4.2	9.0	60	5.5		1	
	SSHT R 146025 <i>New</i>	●	—	2.50	0.25	4.2	9.0	60	5.5		1	

Min. Bore Dia. DMIN dimension for 14 size: 14mm. Not usable with SSHF type holders.

Recommended Cutting Conditions

Work Material	P Carbon Steel / Alloy Steel	M Stainless Steel	K Cast Iron
Cutting Speed vc (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

SSH series



Grooving Tools

T

Holder

Parts

Dimensions (mm)

Cat. No.	Stock	Diameter		Neck Dia.	Height	Overall Length	Head Length	Min. Bore Dia.	Width of Cut	Applicable Insert	Fig	Flat Head Screw		Wrench
		DCON	DN									N-m	Wrench	
E16H-SSH R370-14	●	16	9	14	108	37	14	14	1.0 to 3.0	SSHFI R/L 14...	1	BFTX0412IPS	5.0	LT15IP
E16J-SSH R480-14	●	16	9	14	118	48	14	14	1.0 to 3.0		1			

Refer to the Insert Stock Table for cutting edge distance WF dimensions.

Grooving

Cut-off

Threading

Identification Code

E 16 H - SSHF R 370 - 14

Shank Material Code Shank Dia. (mm) Shank Length Code Series Code Feed Direction Head Length Reference (mm)×10 Min. Bore Dia. (mm)

External Turning

Facing

Inserts for Face Grooving (For E16□-SSHFR000-14) (Coated Carbide)

Dimensions (mm)

Application	Cat. No.	AC1030U		Width of Cut	Maximum Groove Depth	Corner Radius	Cutting Edge Distance	Cutting Edge Distance	Thickness	Applicable Holder	Fig	Fig 1 (Face Grooving 14 size)
		R	L									
Facing (14 size)	SSHFI R1410000	●	—	1.0	1.5	(C0.05)	8.3	9.0	5.5	E16□-SSHFR000-14	1	
	SSHFI R1415020	●	—	1.5	2.5	0.20	8.3	9.0	5.5		1	
	SSHFI R1420020	●	—	2.0	3.0	0.20	8.3	9.0	4.9		1	
	SSHFI R1425020	●	—	2.5	3.0	0.20	8.3	9.0	4.9		1	
	SSHFI R1430020	●	—	3.0	3.0	0.20	8.3	9.0	4.9		1	

Min. Bore Dia. DMIN dimension for 14 size: 14mm. We recommend use with SSHF holders for facing.

Internal Turning

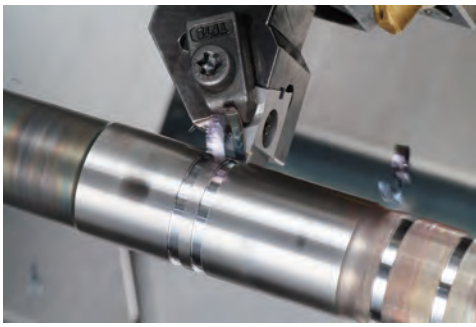
Necking

CBN

Recommended Cutting Conditions

Work Material	P Carbon Steel / Alloy Steel	M Stainless Steel	K Cast Iron
Cutting Speed vc (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 series



■ Features

- Tangentially-mounted insert enhances tool rigidity.
- Double clamping holder design improves stability during continuous and interrupted grooving. 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 1.5mm to 6.0mm.



Hardened Steel, Shallow Grooves
Double Clamp

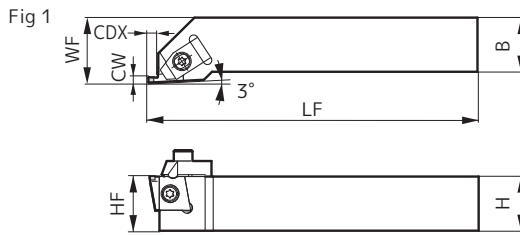
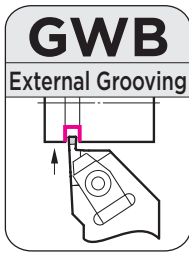


Figure shows right-handed (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Width of Cut	Maximum Groove Depth	Group No.	Fig	Clamp Plate	Cap Screw	Flat Head Screw	Spring	Wrench	
	R	L										H	B	LF	WF	HF	CW
GWB R/L 2525-45	●	●	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
R/L 2525-60	●	●	25	25	151	30	25	4.5 < CW ≤ 6.0	5.0	2	1						

Dimensions in () are for width of cut (CW) of 3.0 or less. Right-handed (R) tool holders are applicable with right-handed (R) inserts and clamp plates (TF72).

Insert (SUMIBORON)

Dimensions (mm)

Cat. No.	BN2000		BNC30G		Width of Cut	Groove Depth	Inscribed Circle	Thickness	Group No.	Applicable Holder	Fig	Fig 1
	R	L	R	L								
CGA R/L 1504150	●	●	●	●	1.5	3.5	15.875	4.76	1	GWB R/L 2525-45	1	
R/L 1504200	●	●	●	●	2.0	3.5	15.875	4.76				
R/L 1504250	●	●	●	●	2.5	4.0	15.875	4.76				
R/L 1504300	●	●	●	●	3.0	4.0	15.875	4.76				
R/L 1504350	●	●	●	●	3.5	5.0	15.875	4.76				
R/L 1504400	●	●	●	●	4.0	5.0	15.875	4.76				
R/L 1504450	●	●	●	●	4.5	5.0	15.875	4.76	2	GWB R/L 2525-60	1	
CGA R/L 1506500	●	●	●	●	5.0	5.0	15.875	6.35				
R/L 1506550	●	●	●	●	5.5	5.0	15.875	6.35				
R/L 1506600	●	●	●	●	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		Hardened Steel
Cutting Speed v_c (m/min)		80-120
Feed Rate f (mm/rev)		0.04-0.08

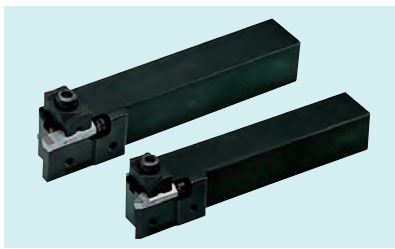
* In order to avoid thermal cracking of the SUMIBORON cutting edge during interrupted cutting, ensure that the work material is thoroughly dry before cutting.

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 BN2000	v_c : 120m/min f : 0.05mm/rev Groove Depth: 2mm Dry	
Spline Grooving: Interrupted 	Carburised steel 58 to 62 HRC	CGAR1504200 BNC30G	v_c : 100m/min f : 0.05mm/rev Groove Depth: 1.6mm Dry	

BNGG series

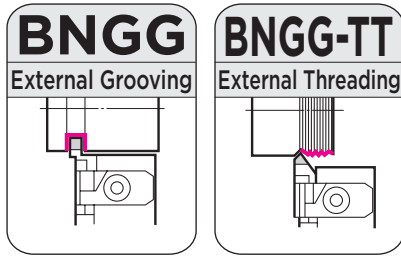
Grooving Tools



External



Grooving



Cut-off

Threading

Holder

	Cat. No.	Stock		Cutting Edge Distance WF	Overall Length LF	Overall Length 2 LF2	Applicable Insert	Fig
		R	L					
Grooving	BNGG R/L2525-200	●		30.5	150	145	BNGNT0200 R/L	1
	R/L2525-250	●		30.5	150	145	BNGNT0250 R/L	1
	R/L2525-300	●		30.5	150	145	BNGNT0300 R/L	1
	R/L2525-400	●		30.5	151	145	BNGNT0400 R/L	1
	R/L2525-500	●		30.5	151	145	BNGNT0500 R/L	1
	R/L2525-600	●		30.5	152	145	BNGNT0600 R/L	1
Threading	BNGG R/L2525-TT	●		28.5	150	145	BNTT1020 R/L, BNTT1530 R/L	2

Inserts are not included with the tool holders.

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

Expansion

Insert (SUMIBORON)

	Cat. No.	BN2000			BNX20			BN350			Width of Cut CW	Groove Depth CDX	Corner Radius RE	Overall Length L	Cutting Edge Distance WF3	Applicable Holder	Fig
		R	L	R	L	R	L	R	L								
Grooving	BNGNT0200 R/L	●				●				2.0	4.0	0.2	25	6.0	BNGG R/L 2525-200	1	
	BNGNT0250 R/L	●				●			2.5	4.0	0.2	25	6.0	BNGG R/L 2525-250	1		
	BNGNT0300 R/L	●				●			3.0	5.0	0.4	25	6.0	BNGG R/L 2525-300	1		
	BNGNT0400 R/L	●				●			4.0	6.0	0.4	26	6.0	BNGG R/L 2525-400	1		
	BNGNT0500 R/L	●				●			5.0	6.0	0.4	26	6.0	BNGG R/L 2525-500	1		
	BNGNT0600 R/L	●				●			6.0	7.0	0.4	27	6.0	BNGG R/L 2525-600	1		
Threading	BNTT1020 R/L	●								Pitch 1.0 to 2.0	0.14	25	4.0	BNGG R/L 2525-TT	2		
	BNTT1530 R/L	●								Pitch 1.5 to 3.0	0.2	25	4.0	BNGG R/L 2525-TT	2		

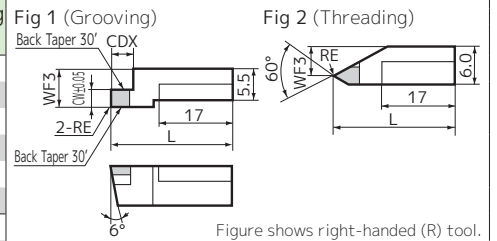


Figure shows right-handed (R) tool.

CBN

Parts

Applicable Holder	Support	Clamp Plate	Adjustment Screw	Spring	Cap Screw	Wrench
BNGG R/L2525-200	BNGSR/L200					
BNGG R/L2525-250	BNGSR/L250					
BNGG R/L2525-300	BNGSR/L300					
BNGG R/L2525-400	BNGSR/L400	BNGCR/L	FMJ	GSP06	BX0615 (For Clamp Plate) BX0414 (For Support)	LH050 (For Clamp Plate) LH030 (For Support)
BNGG R/L2525-500	BNGSR/L500					1.8x45
BNGG R/L2525-600	BNGSR/L600					
BNGG R/L2525-TT	BNGSR/LTT					

Recommended Cutting Conditions

• Grooving

Cutting Conditions	H Hardened Steel
Cutting Speed <i>vc</i> (m/min)	80-120
Feed Rate <i>f</i> (mm/rev)	0.03-0.07

• Threading

Cutting Conditions	H Hardened Steel
Cutting Speed <i>vc</i> (m/min)	80-120
Feed Rate <i>f</i> (mm)	Maximum Pitch 3.0