

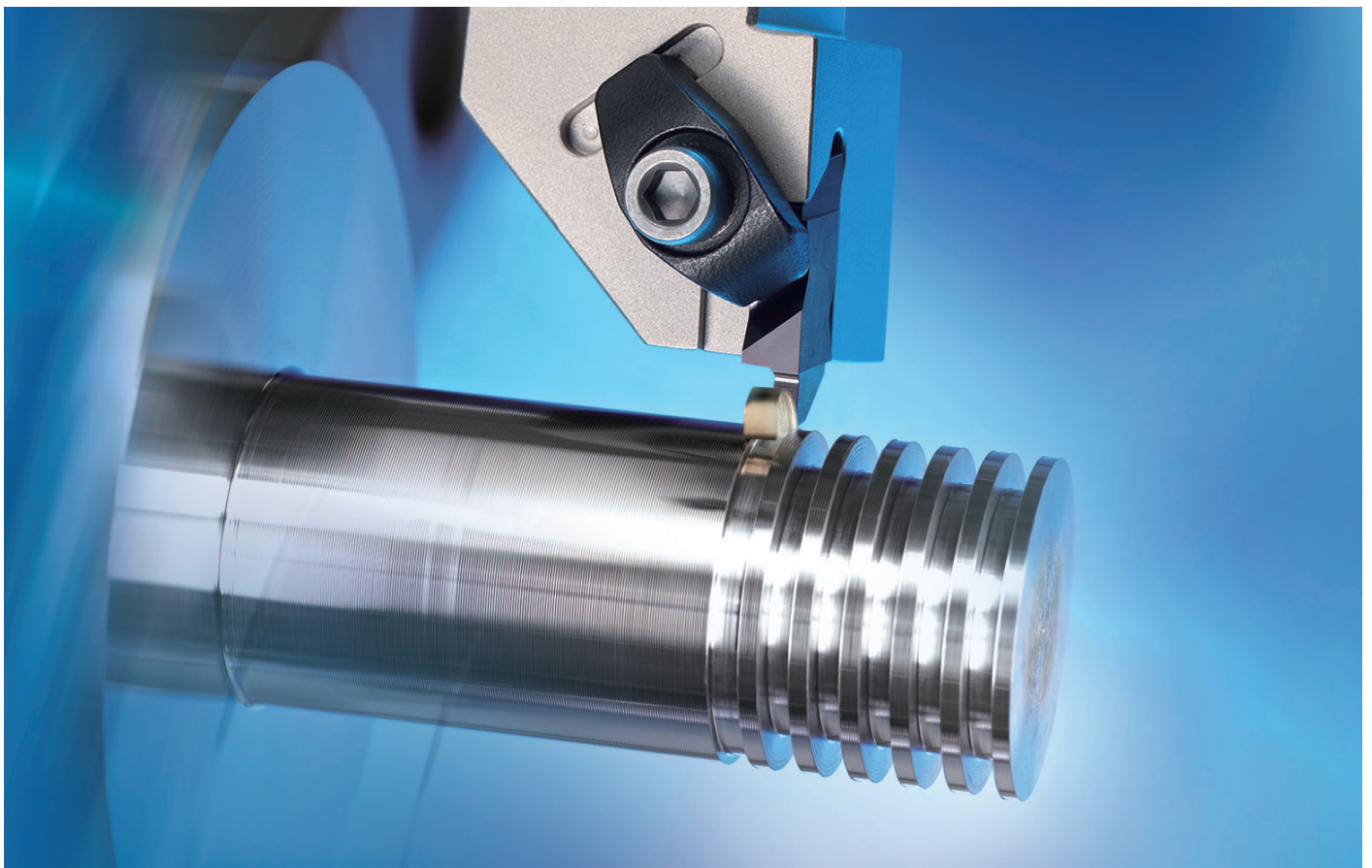
KORLOY Grooving Tool

K Notch



The Solution for High-Precision Grooving

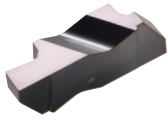
- KORLOY clamping system offers high rigidity for high precision machining
- High-quality cutting edge ensuring long tool life and excellent machinability
- Provides various cutting edge widths for a wide range of selection



High-Precision Grooving Inserts with High-Rigidity Clamping Design

K Notch

The machining stability of cutting tools is a very important issue when machining hard-to-cut materials used for aircraft, medical devices and precision machining parts. Specifically, machining hard-to-cut materials requires not only high-quality surface finish and dimensions accuracy, but also decent cutting life.



Insert



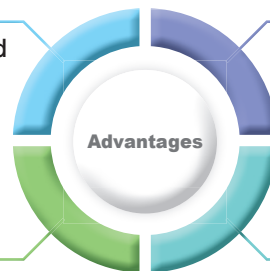
Holder

K Notch holders feature the 3-face clamping design for high rigidity. The clamping force increases with the tightening force for clamp screws. They can minimize chattering even under heavy cutting load, providing long and stable machining life.

K Notch inserts ensure high quality cutting edges with outstanding edge preparation. The mirror-like insert surface provides stronger resistance to welding and chipping for improved surface finish of workpieces.

KORLOY's K Notch offers a single holder type which can be easily clamped to a wide range of cutting edge widths so that it provides higher convenience to its users.

- Extended tool life compared to the existing tools
- Ensuring long tool life



- Strong clamping system
- High-rigidity clamping
- Minimized chattering

- A simple tooling system
- A single holder type compatible with various inserts
- Convenient clamping using clamp screws

- Advanced edge preparation technology applied
- Cutting edges in uniform quality
- Excellent resistance to welding and chipping



Code System

[Insert]

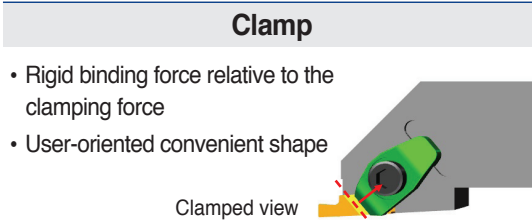
KN	G	P	3	M	200	R
K Notch	Insert type B: Blank G: Grooving R: Full Radius	Additional information P: Positive None: Flat	Insert size 2, 3, 4	Unit M: Metric None: Inch	Insert width 200: 2.00 mm	Hand L: Left R: Right

[Holder]

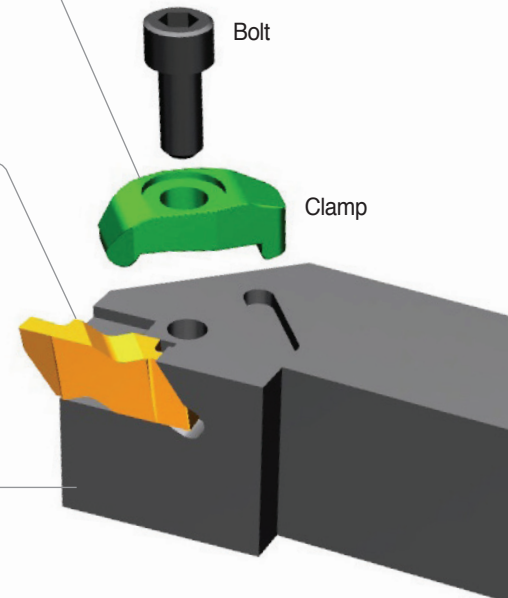
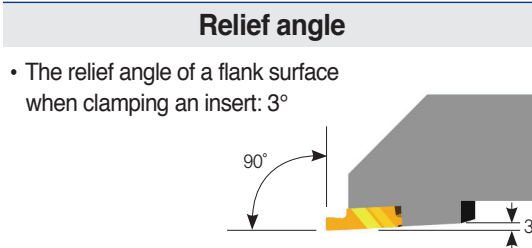
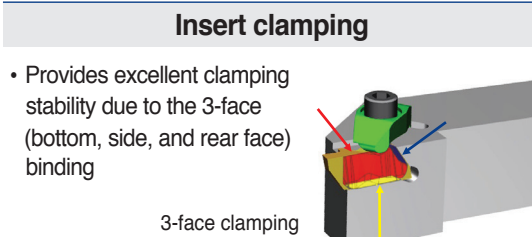
KN	S	R	25	25	M	3
K Notch	Clamping position S: Side	Hand L: Left R: Right	Shank size Height: 25 mm Width: 25 mm	Holder length E: 70 mm F: 80 mm H: 100 mm	K: 125 mm M: 150 mm P: 170 mm	Insert size 2, 3, 4

Holder Features

- High-rigidity clamps enduring a variety of machining conditions

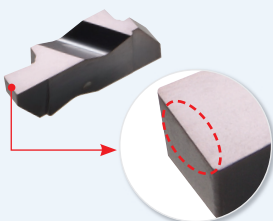


- Compatible with various types of inserts including KNB, KNG and KNR



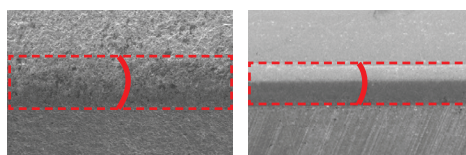
Insert Features

[Edge preparation]



High-quality edge preparation

- Cutting edges in uniform quality
- Long tool life



[Competitor]

[K Notch]

Mirror-like rake surface

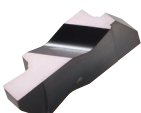
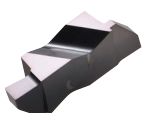
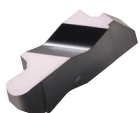
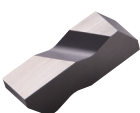
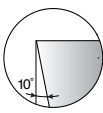
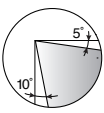
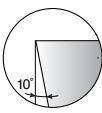
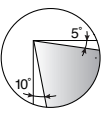
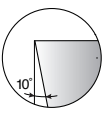
- Improved resistance to welding and chipping
- Improved surface finish of workpieces



[K Notch]

- Various applications and sizes provide customers with a wider selection.

➤ Recommended Feed per Insert Type

Type		KNG	KNGP	KNR	KNRP	KNB
Insert shape						
Cutting-edge						
Application		General grooving	General grooving	Turning profiling	Turning profiling	Blank
Recommended workpiece	1st	P, K	M, N, S	P, K	M, N, S	-
	2nd	M, N, S	P, K	M, N, S	P, K	-
Recommended feed, f_n (mm/rev)	P	0.10 - 0.28	0.08 - 0.25	0.10 - 0.28	0.08 - 0.25	-
	M	0.10 - 0.25	0.08 - 0.25	0.10 - 0.25	0.08 - 0.25	-
	K	0.10 - 0.28	0.08 - 0.25	0.10 - 0.28	0.08 - 0.25	-
	N	0.01 - 0.30	0.01 - 0.30	0.01 - 0.30	0.01 - 0.30	-
	S	0.05 - 0.15	0.05 - 0.15	0.05 - 0.15	0.05 - 0.15	-

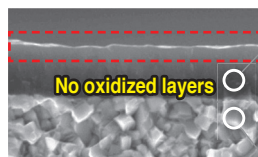
- An appropriate choice for cutting speed is directly linked with surface finish of workpieces.

➤ Recommended Cutting Speed per Grade

Workpiece		Grade	Recommended cutting speed, v_c (m/min)					
			50	100	200	300	600	
P	Grade	PC5300		80	200			
	Alloy steel	PC5300		60	160			
M	Stainless steel	PC5300		80	130			
		PC8110		80	160			
K	Cast iron	PC5300		90	200			
N	Non-ferrous metal	PC5300			150		600	
S	Heat-resistant alloy	PC8110	35	65				

➤ PVD Coated Grades

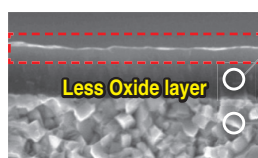
PC5300



No oxidized layers

- PVD coating layer with high hardness and oxidation resistance during machining at high temperature
- Superior oxidation resistance during machining of steel, cast iron, stainless steel, and heat-resistant alloys
- Applying ultra-fine high toughness substrate
- Improved welding and chipping resistance

PC8110



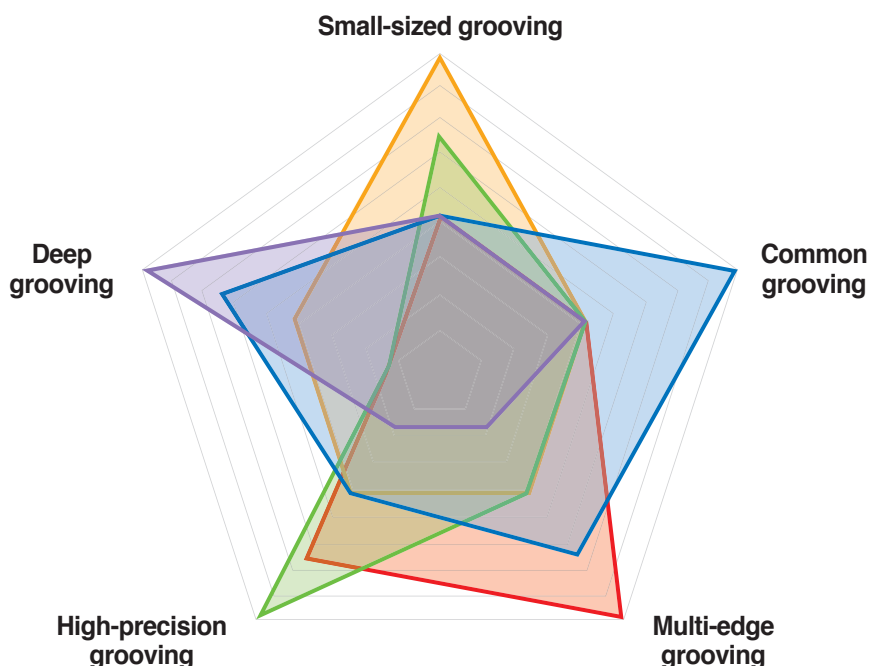
Less Oxide layer

- Prevents wear at a high temperature to apply excellent surface roughness and coating with oxidation resistance and high hardness
- Improves wear resistance to equalize sub-micron matrix, secure stability between corners and improve chipping and wear resistance

⇒ Inserts Selection Guide

Selection system of tools

■ K Notch ■ TB ■ MGT, KGT ■ Saw-man ■ Auto tools



K Notch *New*

- High-rigidity clamping



TB

- 3-corner grooving



MGT, KGT

- Various machining



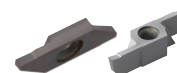
Saw-man

- 1-corner parting machining



Auto tools

- Automatic lathes



Product name	High-precision grooving	Common grooving	Small-sized grooving	Deep grooving	Multi-edge grooving
K Notch <i>New</i>	★★★★★	★★	★★★	★	★★
TB	★★★★	★★	★★	★★	★★★★★
MGT, KGT	★★	★★★★★	★★	★★★	★★
Saw-man	★	★★	★★	★★★★★	★
Auto tools (Blade, Multifunctional)	★★★★	★★	★★★★★	★★	★★

⇒ Cutting Edge Width of Insert and T-max

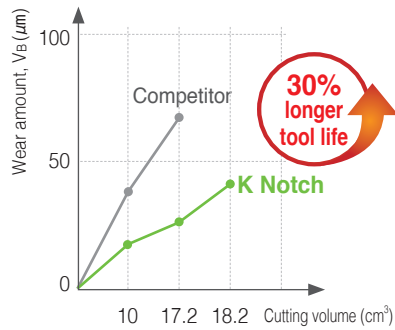
◎: 1st Rec. ○: 2nd Rec.

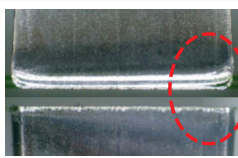
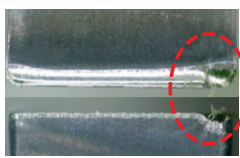
Picture	Cutting edge width (mm)	2	4	6	8	No. of edges	Machining				Features
							External	Internal	Facing	Parting-off	
K Notch	0.75	6.3				2	◎				• Rigid clamping system • High-quality edge preparation
TB	1.25	6.0				3	◎			○	• High-precision ground • Optimized to automated machining
KGT	1.5	8.0				2	◎	○	○	○	• Diverse machining method • Wide range of machining
Saw-man	2.0	6.0	125.0			1	○			◎	• Various lead angle • Minimized burr
Auto tools	0.7	2.0				2	◎			○	• For automatic lathes (Blade) • Machining of small precision parts
	1.0	4.0				2	◎			○	• For automatic lathes (Multi-functional) • Machining of small precision parts

Performance Evaluation

Evaluation of Wear Resistance

- Workpiece Ti-6Al-4V
- Cutting conditions vc (m/min) = 70, fn (mm/rev) = 0.15, ap (mm) = 3, Wet
- Tool
 - Insert KNG3125R (PC8110)
 - Holder KNSR2525M3



Type	K Notch	Competitor
Picture of wear		
Tool life	100%	70%

Application Examples

Input shaft (Carbon steel)

- Workpiece SM40C
- Cutting conditions vc (m/min) = 150, fn (mm/rev) = 0.15, ap (mm) = 3, Wet
- Tool
 - Insert KNG3125R (PC5300)
 - Holder KNSR2525M3

K Notch	100ea/Corner
Competitor	80ea/Corner



➔ 25% longer tool life compared to the competitor

Medical device parts (Titanium)

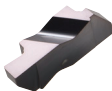
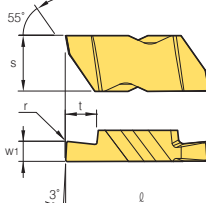
- Workpiece Ti-6Al-4V
- Cutting conditions vc (m/min) = 80, fn (mm/rev) = 0.1, ap (mm) = 2, Wet
- Tool
 - Insert KNGP3088R (PC8110)
 - Holder KNSR2525M3

K Notch	200ea/Corner
Competitor	160ea/Corner

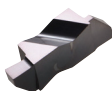
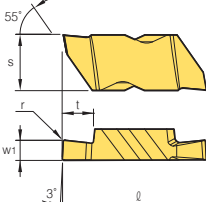


➔ 25% longer tool life compared to the competitor

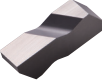
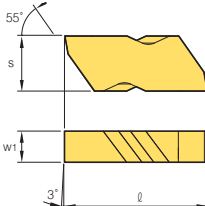
Insert (Metric)

Type	Insert shape	Designation		Coated		Dimensions										Figure
				PC5300	PC8110	mm					inch					
						s	w ₁	r	t	ℓ	s	w ₁	r	t	ℓ	
Flat Top		KNG	2M 150R			5.56	1.50	0.19	2.79	13.030	0.219	0.059	0.0075	0.11	0.513	
			2M 200R			5.56	2.00	0.19	2.79	13.030	0.219	0.079	0.0075	0.11	0.513	
			2M 250R			5.56	2.50	0.19	2.79	13.030	0.219	0.098	0.0075	0.11	0.513	
			2M 300R			5.56	3.00	0.19	2.79	13.030	0.219	0.118	0.0075	0.11	0.513	
			3M 150R	●	●	8.74	1.50	0.19	1.91	22.709	0.344	0.059	0.0075	0.075	0.894	
			3M 200R	●	●	8.74	2.00	0.19	2.79	22.709	0.344	0.079	0.0075	0.11	0.894	
			3M 250R	●	●	8.74	2.50	0.19	3.81	22.709	0.344	0.098	0.0075	0.15	0.894	
			3M 300R	●	●	8.74	3.00	0.19	3.81	22.709	0.344	0.118	0.0075	0.15	0.894	
			3M 400R	●	●	8.74	4.00	0.19	3.81	22.709	0.344	0.157	0.0075	0.15	0.894	
			4M 500R			11.51	5.00	0.20	6.35	28.663	0.453	0.197	0.0079	0.25	1.128	
			4M 600R			11.51	6.00	0.20	6.35	28.663	0.453	0.236	0.0079	0.25	1.128	

● : Stock item

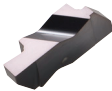
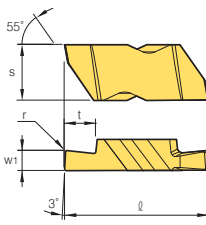
Type	Insert shape	Designation		Coated		Dimensions										Figure
				PC5300	PC8110	mm					inch					
						s	w ₁	r	t	ℓ	s	w ₁	r	t	ℓ	
C/B Ground		KNGP	2M 150R			5.56	1.50	0.19	2.79	13.030	0.219	0.059	0.0075	0.11	0.513	
			2M 200R			5.56	2.00	0.19	2.79	13.030	0.219	0.079	0.0075	0.11	0.513	
			2M 250R			5.56	2.50	0.19	2.79	13.030	0.219	0.098	0.0075	0.11	0.513	
			2M 300R			5.56	3.00	0.19	2.79	13.030	0.219	0.118	0.0075	0.11	0.513	
			3M 150R	●	●	8.74	1.50	0.19	1.91	22.709	0.344	0.059	0.0075	0.075	0.894	
			3M 200R	●	●	8.74	2.00	0.19	2.79	22.709	0.344	0.079	0.0075	0.11	0.894	
			3M 250R	●	●	8.74	2.50	0.19	3.81	22.709	0.344	0.098	0.0075	0.15	0.894	
			3M 300R	●	●	8.74	3.00	0.19	3.81	22.709	0.344	0.118	0.0075	0.15	0.894	
			3M 400R	●	●	8.74	4.00	0.19	3.81	22.709	0.344	0.157	0.0075	0.15	0.894	
			4M 500R			11.51	5.00	0.20	6.35	28.663	0.453	0.197	0.0079	0.25	1.128	
			4M 600R			11.51	6.00	0.20	6.35	28.663	0.453	0.236	0.0079	0.25	1.128	

● : Stock item

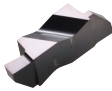
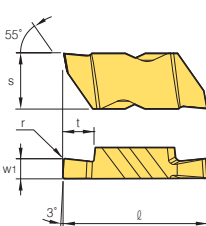
Type	Insert shape	Designation		Coated	Dimensions										Figure
				H05	mm					inch					
					s	w ₁	r	t	ℓ	s	w ₁	r	t	ℓ	
Blank		KNB	2R		5.56	3.81	-	-	13.030	0.219	0.150	-	-	0.513	
			3R		8.74	4.95	-	-	22.709	0.344	0.195	-	-	0.894	
			4R		11.51	6.48	-	-	28.663	0.453	0.255	-	-	1.128	

● : Stock item

Insert (Inch)

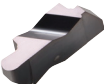
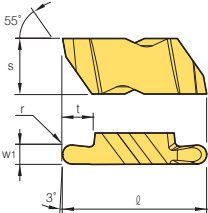
Type	Insert shape	Designation		Coated		Dimensions										Figure
				PC5300	PC8110	mm					inch					
						s	w ₁	r	t	ℓ	s	w ₁	r	t	ℓ	
Flat Top		KNG	2031R			5.56	0.79	0.09	1.27	13.030	0.219	0.031	0.0035	0.05	0.513	
			2041R			5.56	1.04	0.09	1.27	13.030	0.219	0.041	0.0035	0.05	0.513	
			2047R			5.56	1.19	0.09	1.27	13.030	0.219	0.047	0.0035	0.05	0.513	
			2058R			5.56	1.47	0.19	1.27	13.030	0.219	0.058	0.0075	0.05	0.513	
			2062R			5.56	1.57	0.19	2.79	13.030	0.219	0.062	0.0075	0.11	0.513	
			2094R			5.56	2.39	0.19	2.79	13.030	0.219	0.094	0.0075	0.11	0.513	
			2125R			5.56	3.18	0.19	2.79	13.030	0.219	0.125	0.0075	0.11	0.513	
			3047R			8.74	1.19	0.19	1.91	22.709	0.344	0.047	0.0075	0.075	0.894	
			3062R	●	●	8.74	1.57	0.19	2.39	22.709	0.344	0.062	0.0075	0.094	0.894	
			3072R			8.74	1.83	0.19	2.39	22.709	0.344	0.072	0.0075	0.094	0.894	
			3078R	●	●	8.74	1.98	0.19	2.39	22.709	0.344	0.078	0.0075	0.094	0.894	
			3088R			8.74	2.24	0.19	2.39	22.709	0.344	0.088	0.0075	0.094	0.894	
			3094R			8.74	2.39	0.19	3.81	22.709	0.344	0.094	0.0075	0.15	0.894	
			3097R	●	●	8.74	2.46	0.32	3.81	22.709	0.344	0.097	0.0125	0.15	0.894	
			3105R			8.74	2.67	0.19	3.81	22.709	0.344	0.105	0.0075	0.15	0.894	
			3110R			8.74	2.79	0.32	3.81	22.709	0.344	0.110	0.0125	0.15	0.894	
			3122R			8.74	3.10	0.19	3.81	22.709	0.344	0.122	0.0075	0.15	0.894	
			3125R	●	●	8.74	3.18	0.19	3.81	22.709	0.344	0.125	0.0075	0.15	0.894	
			3142R			8.74	3.61	0.32	3.81	22.709	0.344	0.142	0.0125	0.15	0.894	
			3156R	●	●	8.74	3.96	0.19	3.81	22.709	0.344	0.156	0.0075	0.15	0.894	
			3178R			8.74	4.52	0.19	3.81	22.709	0.344	0.178	0.0075	0.15	0.894	
			3185R			8.74	4.70	0.57	3.81	22.709	0.344	0.185	0.0225	0.15	0.894	
			3189R	●	●	8.74	4.80	0.57	3.81	22.709	0.344	0.189	0.0225	0.15	0.894	
			4125R	●	●	11.51	3.18	0.19	3.81	28.663	0.453	0.125	0.0075	0.15	1.128	
			4189R			11.51	4.80	0.57	6.35	28.663	0.453	0.189	0.0225	0.25	1.128	
			4213R			11.51	5.41	0.19	6.35	28.663	0.453	0.213	0.0075	0.25	1.128	
			4219R			11.51	5.56	0.57	6.35	28.663	0.453	0.219	0.0225	0.25	1.128	
			4250R			11.51	6.35	0.57	6.35	28.663	0.453	0.250	0.0225	0.25	1.128	

● : Stock item

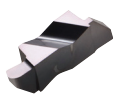
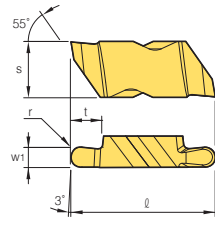
Type	Insert shape	Designation		Coated		Dimensions										Figure
				PC5300	PC8110	mm					inch					
						s	w ₁	r	t	ℓ	s	w ₁	r	t	ℓ	
C/B Ground		KNGP	2031R			5.56	0.79	0.09	1.27	13.030	0.219	0.031	0.0035	0.05	0.513	
			2062R			5.56	1.57	0.19	2.79	13.030	0.219	0.062	0.0075	0.11	0.513	
			2125R			5.56	3.18	0.19	2.79	13.030	0.219	0.125	0.0075	0.11	0.513	
			3088R			8.74	2.24	0.19	2.39	22.709	0.344	0.088	0.0075	0.094	0.894	
			3125R	●	●	8.74	3.18	0.19	3.81	22.709	0.344	0.125	0.0075	0.15	0.894	
			3156R	●	●	8.74	3.96	0.19	3.81	22.709	0.344	0.156	0.0075	0.15	0.894	
			3189R			8.74	4.80	0.57	3.81	22.709	0.344	0.189	0.0225	0.15	0.894	
			4189R			11.51	4.80	0.57	6.35	28.663	0.453	0.189	0.0225	0.25	1.128	
			4250R			11.51	6.35	0.57	6.35	28.663	0.453	0.250	0.0225	0.25	1.128	

● : Stock item

➡ Insert (Inch)

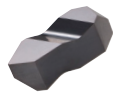
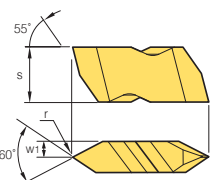
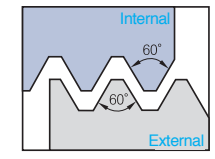
Type	Insert shape	Designation		Coated		Dimensions										Figure
				PC5300	PC8110	mm					inch					
						s	w ₁	r	t	ℓ	s	w ₁	r	t	ℓ	
Round Flat Top		KNR	2031R			5.56	1.57	0.79	2.79	13.030	0.219	0.062	0.031	0.11	0.513	
			2047R			5.56	2.39	1.19	2.79	13.030	0.219	0.094	0.047	0.11	0.513	
			3031R	●	●	8.74	1.57	0.79	2.39	22.709	0.344	0.062	0.031	0.094	0.894	
			3047R	●	●	8.74	2.39	1.19	3.81	22.709	0.344	0.094	0.047	0.15	0.894	
			3062R	●	●	8.74	3.18	1.59	3.81	22.709	0.344	0.125	0.0625	0.15	0.894	
			3078R	●	●	8.74	3.96	1.98	3.81	22.709	0.344	0.156	0.078	0.15	0.894	
			3094R	●	●	8.74	4.78	2.39	3.81	22.709	0.344	0.188	0.094	0.15	0.894	
			4125R			11.51	6.35	3.18	6.35	28.663	0.453	0.250	0.125	0.25	1.128	

● : Stock item

Type	Insert shape	Designation		Coated		Dimensions										Figure
				PC5300	PC8110	mm					inch					
						s	w ₁	r	t	ℓ	s	w ₁	r	t	ℓ	
Round C/B Ground		KNRP	2031R			5.56	1.57	0.79	2.79	13.030	0.219	0.062	0.031	0.11	0.513	
			2047R			5.56	2.39	1.19	2.79	13.030	0.219	0.094	0.047	0.11	0.513	
			3031R	●	●	8.74	1.57	0.79	2.39	22.709	0.344	0.062	0.031	0.094	0.894	
			3047R	●	●	8.74	2.39	1.19	3.81	22.709	0.344	0.094	0.047	0.15	0.894	
			3062R	●	●	8.74	3.18	1.59	3.81	22.709	0.344	0.125	0.0625	0.15	0.894	
			3078R	●	●	8.74	3.96	1.98	3.81	22.709	0.344	0.156	0.078	0.15	0.894	
			3094R	●	●	8.74	4.78	2.39	3.81	22.709	0.344	0.188	0.094	0.15	0.894	
			4125R			11.51	6.35	3.18	6.35	28.663	0.453	0.250	0.125	0.25	1.128	

● : Stock item

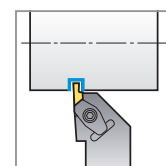
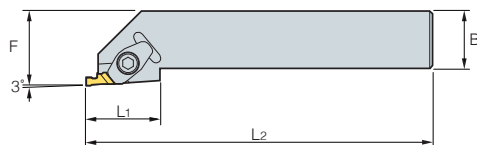
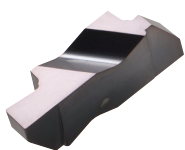
➡ Insert (Threading)

Type	Insert shape	Designation		Coated		Dimensions							Figure	
				PC5300	PC8110	mm			inch			Pitch (External)		
						s	w ₁	r	s	w ₁	r	mm		tpi
Partial Profiling 60°		KNT	2R			5.56	3.81	0.10	0.219	0.150	0.004	0.70-3.00	8-36	  Partial Profiling 60°
			3R			8.74	4.95	0.17	0.344	0.195	0.007	1.25-4.00	6-20	
			4R			11.51	6.48	0.17	0.453	0.255	0.007	1.25-6.25	4-20	

● : Stock item

Holder (Metric)

• Grooving, Profiling



R type insert

KNG KNGP KNT
KNR KNRP KNB

Designation		Stock	mm					inch					Insert	Clamp	Screw	Wrench
			H	B	F	L1	L2	H	B	F	L1	L2				
KNSR	1010E2		10	10	14	19	70	0.394	0.394	0.551	0.748	2.756	KNG2□ KNGP2□ KNR2□ KNB2R KNT2R	CM74	MHB3010	HW25L
	1212F2		12	12	16	19	80	0.472	0.472	0.630	0.748	3.150				
	1616H2		16	16	20	19	100	0.630	0.630	0.787	0.748	3.937				
	2020K2		20	20	25	19	125	0.787	0.787	0.984	0.748	4.921				
	2525M2		25	25	32	19	150	0.984	0.984	1.260	0.748	5.906				
	2020K3	●	20	20	25	32	125	0.787	0.787	0.984	1.260	4.921	KNG3□ KNGP3□ KNR3□ KNRP3□ KNB3R KNT3R	CM72LP	MHA0512	HW40L
	2525M3	●	25	25	32	32	150	0.984	0.984	1.260	1.260	5.906				
	3225P3		32	32	32	32	170	1.260	1.260	1.260	1.260	6.693				
	3232P3	●	32	32	40	32	170	1.260	1.260	1.575	1.260	6.693				
	2525M4		25	25	32	35	150	0.984	0.984	1.260	1.378	5.906	KNG4□ KNGP4□ KNR4□ KNB4R KNT4R	CM72LP	MHA0512	HW40L
	3225P4		32	32	32	35	170	1.260	1.260	1.260	1.378	6.693				
	3232P4		32	32	40	35	170	1.260	1.260	1.575	1.378	6.693				

● : Stock item



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